STUDY OF BICYCLE SAFETY AND BICYCLE TRAILS IN NEVADA

Bulletin No. 91-2

LEGISLATIVE COMMISSION
OF THE
LEGISLATIVE COUNSEL BUREAU
STATE OF NEVADA

SEPTEMBER 1990

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LEGISLATIVE COMMISSION

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STATE OF NEVADA

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Senate Concurrent Resolution No. 47—Committee on Legislative Affairs and Operations

FILE NUMBER 196

SENATE CONCURRENT RESOLUTION—Directing the Legislative Commission to conduct an interim study of bicycle safety and bicycle trails in this state.

WHEREAS, Nevada is one of the fastest growing states in the nation; and

WHEREAS, Riding bicycles is an inexpensive way to get exercise and stay in shape; and

WHEREAS, Bicycle riding is good for the rider's cardiovascular system and health; and

WHEREAS, The quality of life in our state is improved by providing safe routes for bicycle riders; now, therefore, be it

RESOLVED BY THE SENATE OF THE STATE OF NEVADA, THE ASSEMBLY CONCURRING, That the Legislative Commission is hereby directed to appoint a subcommittee to conduct an interim study on the use of bicycles in this state; and be it further

RESOLVED, That the study include an evaluation of:

1. The current status of bicycle safety;

2. The feasibility of mandatory licensing of bicycles and the use of fees for licensing, established and collected at the local level, to support programs of bicycle safety;

3. The desirability of establishing a statewide master plan of bicycle trails, to be established and carried out by the department of transportation; and

4. The cost of carrying out such a plan;

and be it further

RESOLVED, That the subcommittee be comprised of three members of both houses of the Legislature; and be it further

RESOLVED, That the results of the study and any recommended legislation be reported to the 66th session of the Legislature.

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REPORT OF THE LEGISLATIVE COMMISSION

TO THE MEMBERS OF THE 66TH SESSION OF THE NEVADA LEGISLATURE:

The following report is submitted in compliance with Senate Concurrent Resolution No. 47 of the 1989 legislative session (File No. 196, Statutes of Nevada 1989, pages 2373-2374). The resolution directed the Legislative Commission to conduct a study evaluating: (1) the current status of bicycle safety; (2) the feasibility of mandatory bicycle licensing to support bicycle safety programs; and (3) the desirability and estimated cost of establishing a statewide master plan of bicycle trails.

In order to conduct the study, the Legislative Commission appointed a subcommittee consisting of the following members:

Senator Nicholas J. Horn, Chairman
Assemblyman Bruce R. Bogaert, Vice Chairman
Assemblyman Matthew Q. Callister

Legislative Counsel Bureau (LCB) staff services for the subcommittee were provided by Caren Jenkins of the Research Division (principal staff), Kerry L. Schomer of the Legal Division (legal counsel), and Debby Richards of the Research Division (subcommittee secretary).

This report presents the subcommittee's findings and recommendations, as well as background information relative to the major topics. All supporting documents and minutes of the subcommittee's meetings are on file in the Research Library of the LCB.

This report is transmitted to the members of the 66th session of the Nevada Legislature for their consideration and appropriate action.

Respectfully submitted,

Legislative Commission
Legislative Counsel Bureau
State of Nevada

Carson City, Nevada
September 1990

* *

LEGISLATIVE COMMISSION

Assemblyman John E. Jeffrey, Chairman
Assemblyman Robert M. Sader, Vice Chairman

Senator Charles W. Joerg	Assemblyman Louis W. Bergevin
Senator William R. O'Donnell	Assemblyman Joseph E. Dini, Jr.
Senator Raymond C. Shaffer	Assemblyman James W. McGaughey
Senator Randolph J. Townsend	Assemblyman Danny L. Thompson
Senator John M. Vergiels	

SUMMARY OF RECOMMENDATIONS

The Legislative Commission's Subcommittee to Study Bicycle Safety and Bicycle Trails in Nevada recommends that the 66th session of the Nevada Legislature:

BICYCLE FACILITIES AND PLANNING

1. Adopt legislation creating the "Nevada Bicycle Task Force," totaling 14 members composed of:

   a. Seven residents, appointed by the Governor to serve staggered 2-year terms, representing various geographic regions of the state and a diversity of bicycling interests and skills, as follows:

      - A person under 21 years of age at the time of his or her appointment;
      - A representative of a Nevada organization involved in environmental issues;
      - A representative of a Nevada organization involved in promoting bicycling;
      - A representative of a widely-recognized organization involved in bicycle safety training programs;
      - An owner or manager of a shop which sells and/or repairs bicycles; and
      - Two members at large. The members at large may include a bicycle racer, bicycling commuter, corporate wellness representative, or mountain bicyclist, among others.

   b. One representative of each of the following seven state agencies:

      - State Department of Education;
      - Department of Motor Vehicles and Public Safety (DMV&PS);
      - Division of Environmental Protection, State Department of Conservation and Natural Resources (SDC&NR);

- Division of State Parks, SDC&NR;
- Health Division, Department of Human Resources;
- Planning and Program Development Division, Nevada's Department of Transportation (NDOT); and
- Commission on Tourism.

The purpose of the "Nevada Bicycle Task Force" would be to coordinate and promote bicycle safety and facilities in Nevada, and to integrate such programs into the operations and policies of any and all related state agencies. The task force would meet at least quarterly and also review the activities of the Motor Vehicle Recovery/Bicycle Safety/Transportation Planner and receive quarterly reports from that office. The task force would annually elect a chairman from its members. (BDR 43-359)

2. Adopt legislation adding 50 cents to each new and renewed driver's license and appropriating 65 percent of the revenue generated from this increase to NDOT for the establishment of a permanent, full-time Motor Vehicle Recovery/Bicycle Safety/Transportation Planner position, and fund the operations of a statewide motor vehicle recovery and bicycle program. Thirty-five percent of the funds generated will be dedicated to DMV&PS for a Drivers' Education Officer position to facilitate safety education among bicycles, motor vehicles and pedestrians. (BDR 43-360)

3. Adopt a resolution directing NDOT, through the Motor Vehicle Recovery/Bicycle Safety/Transportation Planner, among other things, to:

   a. Develop a maintenance plan for statewide motor vehicle recovery and bicycle routes;

   b. Develop and distribute statewide motor vehicle recovery and bicycle route information, safety manuals and maps;

   c. Develop design standards for motor vehicle recovery/bicycle lanes, bicycle paths, and routes;

   d. Establish and coordinate placement of standardized bicycle lane and route signage and markings on state highways;

e. Evaluate, establish and produce a statewide plan of motor vehicle recovery/bicycle lanes, paths and routes, and update the plan annually;

f. Identify and prioritize motor vehicle recovery and bicycle-related projects;

g. Identify the tourism potential of bicycle programs;

h. Inquire about and participate in, to the extent feasible, programs of the Rails to Trails Conservancy;

i. Investigate and solicit funding from any available sources to promote motor vehicle recovery and bicycle facilities and programs throughout Nevada;

j. Provide assistance to DMV&PS in coordinating motor vehicle and bicycle safety-related activities in communities; and

k. Serve as staff to, and meet at least quarterly with, the Nevada Bicycle Task Force.
(BDR 43-360)

4. Adopt legislation requiring NDOT's Motor Vehicle Recovery/Bicycle Safety/Transportation Planner to plan for the construction of, and NDOT to provide, no less than 3 feet of motor vehicle recovery/bicycle lane in the new construction and major repair of all state highways based on appropriate design standards, and authorizing NDOT to adopt the regulations necessary to implement this policy. The NDOT will be directed to integrate the consideration of bicycle routes, facilities and signage, according to bicycle route design standards, into all planning, design, construction and maintenance activities. (BDR 43-360)

5. Adopt legislation mandating the construction of at least 3 feet of motor vehicle recovery/bicycle lane, according to bicycle route design standards, on roads built by private developers as directed by a county or city planning commission. Every county or city with a population of 25,000 or more shall include at least one designated bicycle right-of-way in each major compass direction in its master plan, and the designated roadways shall be constructed according to bicycle route design standards and clearly identified as such. (BDR 22-362)

6. Adopt legislation mandating the installation of secure bicycle racks for employee and public use at all buildings constructed or occupied by the State of Nevada after July 1, 1992. The minimum capacity of the bicycle racks would be one space for each 25 employees, with a minimum of five spaces for each building. (BDR 28-363)

7. Adopt a resolution encouraging business owners and employers to provide secure bicycle racks for employee and customer use. (BDR R-367)

BICYCLE SAFETY AND EDUCATION

8. Adopt legislation requiring DMV&PS to promote the development of bicycle safety and education programs, aimed at all ages and developed by individuals trained in bicycle safety techniques, to improve bicycle skills, observance of traffic laws and overall safety. (BDR 43-386)

9. Adopt legislation to preclude any person operating a bicycle from having a passenger who is 5 years of age or younger on a bicycle, or in a bicycle trailer, unless that passenger is wearing a helmet meeting the standards of the American National Standards Institute or of the Snell Memorial Foundation's "Standards for Protective Headgear for Use in Bicycling." The first violation by any person may be dismissed by the court if the person charged produces proof that a helmet meeting the standards prescribed has been purchased for use by the passenger 5 years of age or younger. Any violation would be punishable by a fine not to exceed $50. The term "wearing a helmet" means having a helmet of good fit fastened securely upon the head with the helmet straps. (BDR 43-364)

10. Adopt a resolution encouraging DMV&PS to include at least one question in each written examination for a driver's license regarding the interaction between bicycles and motor vehicles. (BDR R-368)

11. Adopt a resolution encouraging the Drivers' Education Officer to coordinate with the State Department of Education to adopt regulations which require elementary schools to offer bicycle safety examinations and issue certificates to students who successfully complete the examinations. (BDR R-369)

12. Adopt a resolution encouraging the State Department of Education to adopt regulations which require each school district to develop and enforce a policy asking all students who bicycle to school to obtain a certificate from the principal after demonstrating that they have access to and wear protective headgear. The schools would notify the Drivers' Education Officer when they are in compliance. (BDR R-370)

13. Adopt a resolution encouraging the Drivers' Education Officer to coordinate with the State Board of Education in adopting regulations to include bicycle awareness, rider respect and bicycle rights-of-way in the drivers' education curriculum. (BDR R-371)

14. Adopt a resolution encouraging the Drivers' Education Officer to coordinate with the State Board of Education in adopting regulations to include bicycle safety education in the basic living skills or health curriculum in all elementary schools. (BDR R-369)

STATUTORY REVISIONS

15. Adopt legislation amending subsection 1 of Nevada Revised Statutes (NRS) 484.313, "Restrictions on use of controlled-access highway; penalty," to allow NDOT and local authorities to prohibit or require a permit for the use of a controlled-access highway by pedestrians, bicycles or other nonmotorized traffic or by a person operating a power cycle only if the highway is determined by NDOT and local authorities, in cooperation with the Nevada Bicycle Task Force, to be unsafe for use by nonmotorized traffic or a power cycle. (BDR 43-359)

16. Adopt legislation amending subsection 1 of NRS 484.509, "Riding on roadway or path for bicycles," which requires a person riding a bicycle on a roadway to ride as near to the right side of the road as practicable, to add:

    a. Except when traveling at the speed of the traffic;

    b. Except when doing so would be unsafe for the person riding the bicycle or another person; and

    c. Except when the person riding a bicycle is making a turn.

    (BDR 43-359)

17. Adopt legislation deleting subsection 3 of NRS 484.509, "Riding on a roadway or path for bicycles," which requires a bicycle rider to use a bicycle path when one has been provided adjacent to a roadway. (BDR 43-359)

18. Adopt legislation amending NRS 484.513, "Lamp, reflector and other equipment on bicycle," to delete the requirement that a bicycle be equipped with a bell or similar device. (BDR 43-359)

19. Adopt legislation to include bicycle facilities in subsection 2, of NRS 278.250, "Zoning districts and regulations," which specifies that zoning regulations shall be designed:

> * * * (f) to develop a timely, orderly and efficient arrangement of transportation and public facilities and services. * * * (BDR 43-359)

20. Adopt legislation to include bikeways in paragraph (b), subsection 1 of NRS 408.233, "Responsibilities and duties; operation of railroad or airport prohibited," which outlines the responsibilities of the Planning and Program Development Division of NDOT regarding coordinating local plans for balanced transportation facilities and services. (BDR 43-359)

21. Adopt legislation amending Chapter 484 of NRS, "Traffic Laws," to require a person who is operating a vehicle to yield to a bicycle on a bicycle lane or path. A violation of this provision would be a misdemeanor, a written traffic citation may be issued and demerit points may be assessed upon conviction. (BDR 43-359)

22. Adopt legislation amending Chapter 484 of NRS to prohibit a person from operating a vehicle on a bicycle lane or path unless the person is:

    a. Entering or leaving an alley or private drive;

    b. Involved in or rendering aid in an emergency;

    c. Making a turn;

    d. Operating or parking a disabled motor vehicle; or

    e. Required to perform official duties which involve operating a vehicle on a bicycle lane or path.

A person shall be prohibited from stopping or parking a vehicle on a bicycle lane or path unless the person is:

a. Involved in or rendering aid in an emergency; or

b. Required to perform official duties which involve stopping or parking a vehicle on a bicycle lane or path.

A violation of these provisions would be a misdemeanor, a written traffic citation may be issued and demerit points would be assessed upon conviction. (BDR 43-359)

23. Adopt legislation amending Chapter 484 of NRS to prohibit a person from using a vehicle to intentionally interfere with the lawful movement of a bicycle. A violation of this provision would be a misdemeanor. (BDR 43-359)

24. Adopt legislation amending Chapter 484 of NRS to prohibit a person driving a vehicle from passing a bicycle unless the vehicle is able to pass safely without endangering the person riding the bicycle. A violation of this provision would be a misdemeanor, a written traffic citation may be issued and demerit points may be assessed upon conviction. (BDR 43-359)

25. Adopt legislation amending NRS 205.2741, "Throwing substance at or willfully damaging motor vehicle," to include bicycles in the types of vehicles listed. (BDR 43-359)

REPORT TO THE 66TH SESSION OF THE NEVADA LEGISLATURE BY THE LEGISLATIVE COMMISSION'S SUBCOMMITTEE TO STUDY BICYCLE SAFETY AND BICYCLE TRAILS IN NEVADA

I. INTRODUCTION

The 65th session of the Nevada Legislature adopted Senate Concurrent Resolution No. 47 (File No. 196, Statutes of Nevada 1989, pages 2373-2374) which directed the Legislative Commission to conduct a study of bicycles in Nevada. The resolution specified that the study include an evaluation of: (1) the current status of bicycle safety; (2) the feasibility of mandatory licensing of bicycles; and (3) the desirability and cost of establishing a statewide master plan of bicycle trails.

The subcommittee which conducted the study held a total of three meetings. The first meeting was held in Reno and the following meetings were held in Las Vegas and Carson City, Nevada, respectively. Public testimony was plentiful at the subcommittee's meetings, and numerous ideas were presented. Individual bicyclists, members of bicycling organizations, representatives of various units of government, business owners, and many others expressed their opinions and ideas to the subcommittee.

II. FINDINGS AND RECOMMENDATIONS

The subcommittee received testimony that determining the status of bicycle safety in Nevada was difficult, since most bicycle accidents are not reported unless an automobile is involved or an injury occurs. Operating under the concept that complete safety may never be achieved, only improved, the subcommittee focused many recommendations on improving bicycle safety in the state.

Some Nevada schools voluntarily offer bicycle safety programs to students. The California State Automobile Association provides interested parties with free guidelines and materials to encourage "bicycle rodeos"--educational and fun programs which teach bicycle safety to children in elementary school.

Requiring bicycles to be licensed, with fees collected and programs established at the local level, was investigated and dismissed by the subcommittee. It was determined that this type of system would be complicated and expensive to administer and enforce. Any revenue collected would need to

be expended to administer the licensing program, rather than for bicycle programs and facilities. The subcommittee found that the end would not justify the means.

The subcommittee reviewed bicycle programs developed in Arizona and Oregon, and based its discussion of a statewide master plan of bicycle trails on the premise that the development and implementation of such a plan would be desirable for Nevada. Results might include uniform bikeway design standards, a tourism-related map of bicycle routes in Nevada and bicycle program information and resources made available to counties and cities.

After careful consideration, the subcommittee developed 25 separate recommendations in three categories: (1) bicycle facilities and planning; (2) bicycle safety and education; and (3) statutory revisions.

A. BICYCLE FACILITIES AND PLANNING

The subcommittee modeled a number of recommendations after existing programs in Arizona and Oregon (see Appendices A and B). The first three recommendations focus on the creation of a bicycle task force and two new staff positions in Nevada state government.

Bicycle Task Force

Composed of interested citizens and representatives from state agencies, the task force would develop and implement a comprehensive, ongoing statewide bicycle program. The composition of the task force is intended to blend the desires of bicyclists with the perspective of the agency personnel responsible to implement and operate such programs.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

1. **Adopt legislation creating the "Nevada Bicycle Task Force," totaling 14 members composed of:**

    a. **Seven residents, appointed by the Governor to serve staggered 2-year terms, representing various geographic regions of the state and a diversity of bicycling interests and skills, as follows:**

        - **A person under 21 years of age at the time of his or her appointment;**

- A representative of a Nevada organization involved in environmental issues;

- A representative of a Nevada organization involved in promoting bicycling;

- A representative of a widely-recognized organization involved in bicycle safety training programs;

- An owner or manager of a shop which sells and/or repairs bicycles; and

- Two members at large. The members at large may include a bicycle racer, bicycling commuter, corporate wellness representative, or mountain bicyclist, among others.

b. One representative of each of the following seven state agencies:

- State Department of Education;

- Department of Motor Vehicles and Public Safety (DMV&PS);

- Division of Environmental Protection, State Department of Conservation and Natural Resources (SDC&NR);

- Division of State Parks, SDC&NR;

- Health Division, Department of Human Resources;

- Planning and Program Development Division, Nevada's Department of Transportation (NDOT); and

- Commission on Tourism.

The purpose of the "Nevada Bicycle Task Force" would be to coordinate and promote bicycle safety and facilities in Nevada, and to integrate such programs into the operations and policies of any and all related state agencies. The task force would meet at least quarterly and also review the activities of the Motor Vehicle Recovery/Bicycle Safety/Transportation Planner and receive quarterly reports from that office. The task force would annually elect a chairman from its members. (BDR 43-359)

Funding for Bicycle Task Force

Funding for the "Nevada Bicycle Task Force" and staff positions is suggested to be tied to fees for drivers' licenses, since the movement of bicycles, motor vehicles and pedestrians are interrelated. The Driver's License Division of DMV&PS estimated the revenue that would have been generated in fiscal year 1989-1990 by an additional fee of 50 cents for each new or renewed motor vehicle driver's license issued.

POTENTIAL REVENUE FOR BICYCLE PROGRAM
based on 1989-1990 driver's license activity

New/Renewed licenses	171,484*
Bicycle fee added	50 cents
Revenue generated	$85,742
65 percent NDOT	$55,732
35 percent DMV&PS	$30,010

*Provided by the Drivers' License Division
Department of Motor Vehicles & Public Safety

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

2. **Adopt legislation adding 50 cents to each new and renewed driver's license and appropriating 65 percent of the revenue generated from this increase to NDOT for the establishment of a permanent, full-time Motor Vehicle Recovery/Bicycle Safety/Transportation Planner position, and fund the operations of a statewide motor vehicle recovery and bicycle program. Thirty-five percent of the funds generated will be dedicated to DMV&PS for a Drivers' Education Officer position to facilitate safety education among bicycles, motor vehicles and pedestrians. (BDR 43-360)**

New Staff Positions at the State Level

The two staff positions created by this recommendation include one within DMV&PS and the other within NDOT. These new positions are intended to be primarily responsible for the implementation of the various programs and projects created by the subcommittee's recommendations.

The concept of creating a Drivers' Education Officer in DMV&PS to coordinate bicycle and motor vehicle safety education was presented to the subcommittee by that department (see Appendix C). The individual in this position would be responsible, among other things, to: (1) develop educational brochures and programs for school children, parents and other adults regarding bicycles and motor vehicles sharing the road; and (2) coordinate, promote and present safety education seminars to elementary, junior high and senior high school students and service organizations throughout the state.

The term "Motor Vehicle Recovery/Bicycle Safety/Transportation Planner" in NDOT appears in a number of recommendations. Generally, a motor vehicle recovery lane is a widened shoulder on the roadway onto which a disabled vehicle may move out of a traffic lane. This motor vehicle recovery area may serve a multiple use as a bicycle lane. The widened shoulder, free of debris and gravel and marked as a bicycle lane, is likely to be safer for a bicyclist than a faster moving traffic lane. Transportation planners work within the Planning and Program Development Division of NDOT and design and administer programs such as motor vehicle recovery lanes, roadway design standards, and so on. The Motor Vehicle Recovery/Bicycle Safety/Transportation Planner would be a likely position to be responsible for a bicycle program and to serve as staff to a state bicycle task force.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

3. **Adopt a resolution directing NDOT, through the Motor Vehicle Recovery/Bicycle Safety/Transportation Planner, among other things, to:**

    a. **Develop a maintenance plan for statewide motor vehicle recovery and bicycle routes;**

b. Develop and distribute statewide motor vehicle recovery and bicycle route information, safety manuals and maps;

c. Develop design standards for motor vehicle recovery/bicycle lanes, bicycle paths, and routes;

d. Establish and coordinate placement of standardized bicycle lane and route signage and markings on state highways;

e. Evaluate, establish and produce a statewide plan of motor vehicle recovery/bicycle lanes, paths and routes, and update the plan annually;

f. Identify and prioritize motor vehicle recovery and bicycle-related projects;

g. Identify the tourism potential of bicycle programs;

h. Inquire about and participate in, to the extent feasible, programs of the Rails to Trails Conservancy;

i. Investigate and solicit funding from any available sources to promote motor vehicle recovery and bicycle facilities and programs throughout Nevada;

j. Provide assistance to DMV&PS in coordinating motor vehicle and bicycle safety-related activities in communities; and

k. Serve as staff to, and meet at least quarterly with, the Nevada Bicycle Task Force.

(BDR 43-360)

Bicycle Facilities

Bicycle paths, separate from but parallel to the roadway, were determined to be unsafe at intersections, impractical to maintain, and used for recreation rather than transportation. Riders are more likely to endanger themselves and others on a recreational bicycle path. These paths are often used by people jogging, walking dogs, riding horses, pushing baby strollers, and so on.

Bicycle lanes, which may also serve as motor vehicle recovery lanes, were determined to be the most desirable facility for bicycle use (see Appendix D). These lanes are an extension of the roadway, and are convenient for bicycle commuting. Bicycle commuting lanes adjacent to the traffic lane are less likely to be used for other recreational activities and serve as an extra wide shoulder for vehicles in need of assistance. These lanes also may be maintained and cleaned along with the primary roadway.

To develop a uniform statewide design of such lanes (see Appendix E), the subcommittee discussed NDOT's ability and authority to develop and impose design standards and provide technical assistance to local governments. It was determined that Nevada Revised Statutes (NRS) directs county and city planning commissions to develop broad master plans. Through these plans, local planning commissions have the ability to determine the most appropriate and feasible locations for bicycle routes in their areas. They also have the ability to impose the design standards developed by NDOT on roads built by private developers.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

4. **Adopt legislation requiring NDOT's Motor Vehicle Recovery/Bicycle Safety/Transportation Planner to plan for the construction of, and NDOT to provide, no less than 3 feet of motor vehicle recovery/bicycle lane in the new construction and major repair of all state highways based on appropriate design standards, and authorizing NDOT to adopt the regulations necessary to implement this policy. The NDOT will be directed to integrate the consideration of bicycle routes, facilities and signage, according to bicycle route design standards, into all planning, design, construction and maintenance activities. (BDR 43-360)**

5. **Adopt legislation mandating the construction of at least 3 feet of motor vehicle recovery/bicycle lane, according to bicycle route design standards, on roads built by private developers as directed by a county or city planning commission. Every county or city with a population of 25,000 or more shall include at least one designated bicycle right-of-way in each major compass direction in its master plan, and the designated roadways shall be constructed according to bicycle route design standards and clearly identified as such. (BDR 22-362)**

Bicycle Parking

A concern was brought to the subcommittee regarding the lack of available safe parking and storage space for bicycles used for commuting, shopping, and so on. To encourage bicycle use for basic transportation purposes, bicycle racks will need to become more available.

The subcommittee determined that the first step toward this end is to direct all state buildings to provide bicycle racks for employee and public use. Private property owners need encouragement to do the same for employees and customers.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

6. **Adopt legislation mandating the installation of secure bicycle racks for employee and public use at all buildings constructed or occupied by the State of Nevada after July 1, 1992. The minimum capacity of the bicycle racks would be one space for each 25 employees, with a minimum of five spaces for each building. (BDR 28-363)**

7. **Adopt a resolution encouraging business owners and employers to provide secure bicycle racks for employee and customer use. (BDR R-367)**

B. BICYCLE SAFETY AND EDUCATION

The education of bicyclists, drivers and pedestrians regarding safety was expressed as an important issue to the subcommittee members. A number of recommendations focus on bicycle safety education for elementary school children, teenagers with drivers' permits and licensed drivers. Other proposals involve requiring bicycle passengers under 5 years of age to wear safety helmets, and encouraging parents and school officials to improve the bicycle safety practices of young children.

Testimony indicated that bicycle riders and drivers of motor vehicles of all ages are uncertain of the rules of the road as they pertain to bicycles. A problem area was presented regarding how a bicycle might legally turn left on a four lane highway if existing statutes require the bicyclist to keep as near to the right side of the roadway as practicable, but also impose on a bicyclist the same rules as are applicable to a driver of a motor vehicle. The public often is unsure where to find answers to such questions, according to public testimony.

The subcommittee pursued the idea of a statewide approach to bicycle safety education through the school system. Developing bicycle safety curricula in the elementary schools and encouraging the practical use of this knowledge was of particular interest to the members. "A Teacher's Guide to Bicycle Safety," developed and published by the American Automobile Association's Traffic Safety Department, provides a guide to the development of such a curriculum. The Traffic Safety Department of the California State Automobile Association publishes "A Guide To Bicycle Rodeos" which may assist in clarifying the relationship between bicycles and motor vehicles. Both of these publications are available in the Research Library of the Legislative Counsel Bureau. Education regarding bicycle and motor vehicle safety and interaction was suggested to be addressed from kindergarten through high school drivers' education.

Helmets are being worn by more and more bicyclists, and certain safety standards have been developed for their construction. The subcommittee encourages the use of helmets by all bicyclists, especially school children and certain bicycle passengers.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

8. **Adopt legislation requiring DMV&PS to promote the development of bicycle safety and education programs, aimed at all ages and developed by individuals trained in bicycle safety techniques, to improve bicycle skills, observance of traffic laws and overall safety. (BDR 43-386)**

9. **Adopt legislation to preclude any person operating a bicycle from having a passenger who is 5 years of age or younger on a bicycle, or in a bicycle trailer, unless that passenger is wearing a helmet meeting the standards of the American National Standards Institute or of the Snell Memorial Foundation's "Standards for Protective Headgear for Use in Bicycling." The first violation by any person may be dismissed by the court if the person charged produces proof that a helmet meeting the standards prescribed has been purchased for use by the passenger 5 years of age or younger. Any violation would be punishable by a fine not to exceed $50. The term "wearing a helmet" means having a helmet of good fit fastened securely upon the head with the helmet straps. (BDR 43-364)**

10. **Adopt a resolution encouraging DMV&PS to include at least one question in each written examination for a driver's license regarding the interaction between bicycles and motor vehicles. (BDR R-368)**

11. **Adopt a resolution encouraging the Drivers' Education Officer to coordinate with the State Department of Education to adopt regulations which require elementary schools to offer bicycle safety examinations and issue certificates to students who successfully complete the examinations. (BDR R-369)**

12. **Adopt a resolution encouraging the State Department of Education to adopt regulations which require each school district to develop and enforce a policy asking all students who bicycle to school to obtain a certificate from the principal after demonstrating that they have access to and wear protective headgear. The schools would notify the Drivers' Education Officer when they are in compliance. (BDR R-370)**

13. **Adopt a resolution encouraging the Drivers' Education Officer to coordinate with the State Board of Education in adopting regulations to include bicycle awareness, rider respect and bicycle rights-of-way in the drivers' education curriculum. (BDR R-371)**

14. **Adopt a resolution encouraging the Drivers' Education Officer to coordinate with the State Board of Education in adopting regulations to include bicycle safety education in the basic living skills or health curriculum in all elementary schools. (BDR R-369)**

C. STATUTORY REVISIONS

The subcommittee heard significant public testimony requesting the modification of certain sections of NRS to clarify the status of a bicycle on a roadway, remove certain language, and strengthen and promote the safety of bicyclists. It was also recommended that NDOT and the proposed bicycle task force be given authority or direction in certain related areas.

Determining the Safety of Certain Highways

The subcommittee agreed that the proposed Nevada Bicycle Task Force should have a role in determining which, if any, highways may be unsafe for nonmotorized traffic. Cooperation between NDOT, the task force and local authorities is preferred.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

15. **Adopt legislation amending subsection 1 of NRS 484.313, "Restrictions on use of controlled-access highway; penalty," to allow NDOT and local authorities to prohibit or require a permit for the use of a controlled-access highway by pedestrians, bicycles or other nonmotorized traffic or by a person operating a power cycle only if the highway is determined by NDOT and local authorities, in cooperation with the Nevada Bicycle Task Force, to be unsafe for use by nonmotorized traffic or a power cycle. (BDR 43-359)**

Bicycles as Vehicles on the Roadway

The rules of the road, as they pertain to bicycles, were questioned in public testimony to the subcommittee. Clarification was determined to be necessary regarding the correct procedure for a left turn and other circumstances when bicycles are expected to abide by the same rules as other vehicles.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

16. **Adopt legislation amending subsection 1 of NRS 484.509, "Riding on roadway or path for bicycles," which requires a person riding a bicycle on a roadway to ride as near to the right side of the road as practicable, to add:**

    a. **Except when traveling at the speed of the traffic;**

    b. **Except when doing so would be unsafe for the person riding the bicycle or another person; and**

    c. **Except when the person riding a bicycle is making a turn.**

    (BDR 43-359)

Repeal of Certain Existing Laws

Certain parts of the statutes are no longer practical, according to testimony provided to the subcommittee. It has been determined that bicycle paths, separate from the roadway, have inherent disadvantages. Racing bicyclists generally do not equip their lightweight bicycles with bells, but they do ride on the public highways. These sections of law were perceived to be unnecessary.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

17. **Adopt legislation deleting subsection 3 of NRS 484.509, "Riding on a roadway or path for bicycles," which requires a bicycle rider to use a bicycle path when one has been provided adjacent to a roadway. (BDR 43-359)**

18. **Adopt legislation amending NRS 484.513, "Lamp, reflector and other equipment on bicycle," to delete the requirement that a bicycle be equipped with a bell or similar device. (BDR 43-359)**

Responsibilities of Certain Governmental Entities

The subcommittee expressed an interest in making bicycle programs a long-term part of the responsibilities of certain government bodies. Directing that bicycle facilities be a part of zoning plans, and mandating that bicycle programs be included in the responsibilities of NDOT, ensures that these concepts will be implemented at all levels.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

19. **Adopt legislation to include bicycle facilities in subsection 2, of NRS 278.250, "Zoning districts and regulations," which specifies that zoning regulations shall be designed:**

    *** * * (f) to develop a timely, orderly and efficient arrangement of transportation and public facilities and services. * * * (BDR 43-359)**

20. **Adopt legislation to include bikeways in paragraph (b), subsection 1 of NRS 408.233, "Responsibilities and duties; operation of railroad or airport prohibited," which outlines the responsibilities of the Planning and Program Development Division of NDOT regarding coordinating local plans for balanced transportation facilities and services. (BDR 43-359)**

Clarification of Certain Traffic Laws

Clarifying certain traffic laws was a priority for the subcommittee. Understanding the relationship between bicycles and motor vehicles can be an important part of the safety of both vehicles on the road. Clearer definitions of the interaction between bicycles and motor vehicles was perceived to be a necessary part of improving bicycle safety in Nevada.

The subcommittee, therefore, recommends that the 66th session of the Nevada Legislature:

21. Adopt legislation amending Chapter 484 of NRS, "Traffic Laws," to require a person who is operating a vehicle to yield to a bicycle on a bicycle lane or path. A violation of this provision would be a misdemeanor, a written traffic citation may be issued and demerit points may be assessed upon conviction. (BDR 43-359)

22. Adopt legislation amending Chapter 484 of NRS to prohibit a person from operating a vehicle on a bicycle lane or path unless the person is:

    a. Entering or leaving an alley or private drive;

    b. Involved in or rendering aid in an emergency;

    c. Making a turn;

    d. Operating or parking a disabled motor vehicle; or

    e. Required to perform official duties which involve operating a vehicle on a bicycle lane or path.

    A person shall be prohibited from stopping or parking a vehicle on a bicycle lane or path unless the person is:

    a. Involved in or rendering aid in an emergency; or

    b. Required to perform official duties which involve stopping or parking a vehicle on a bicycle lane or path.

    A violation of these provisions would be a misdemeanor, a written traffic citation may be issued and demerit points would be assessed upon conviction. (BDR 43-359)

23. Adopt legislation amending Chapter 484 of NRS to prohibit a person from using a vehicle to intentionally interfere with the lawful movement of a bicycle. A violation of this provision would be a misdemeanor. (BDR 43-359)

24. Adopt legislation amending Chapter 484 of NRS to prohibit a person driving a vehicle from passing a bicycle unless the vehicle is able to pass safely without endangering the person riding the bicycle. A violation of this provision would be a misdemeanor, a written traffic citation may be issued and demerit points may be assessed upon conviction. (BDR 43-359)

25. **Adopt legislation amending NRS 205.2741, "Throwing substance at or willfully damaging motor vehicle," to include bicycles in the types of vehicles listed. (BDR 43-359)**

III. CONCLUSION

The subcommittee's recommendations encompass a general intent to improve the safety and awareness of bicyclists and motorists in Nevada. They show that the subcommittee wished to bring interested parties together to facilitate changes through the creation of the bicycle task force. Staff, authority and operating funds are suggested to implement the programs. To improve the status of bicycling in the state, educational programs in communities and schools are recommended. The coordination of bicycle activities, facilities and projects is suggested through statewide bicycle plans. Encouragement for counties and cities to conform to bikeway design standards and construct such bikeways is outlined. The recommendations of the subcommittee point toward a safer and more coordinated bicycling experience for Nevada's residents and visitors.

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V. CREDITS

Information and ideas contributed by the following individuals significantly affected the outcome of this study. The members of the subcommittee wish to thank:

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VI. APPENDICES

APPENDIX A

Arizona Bicycle Planning--As Presented To The Nevada State Legislature, Las Vegas, Nevada--March 28, 1990,
by Louis A. Schmitt, P.E., Deputy Director,
Transportation Planning, Arizona
Department of Transportation

ARIZONA BICYCLE PLANNING

As Presented To

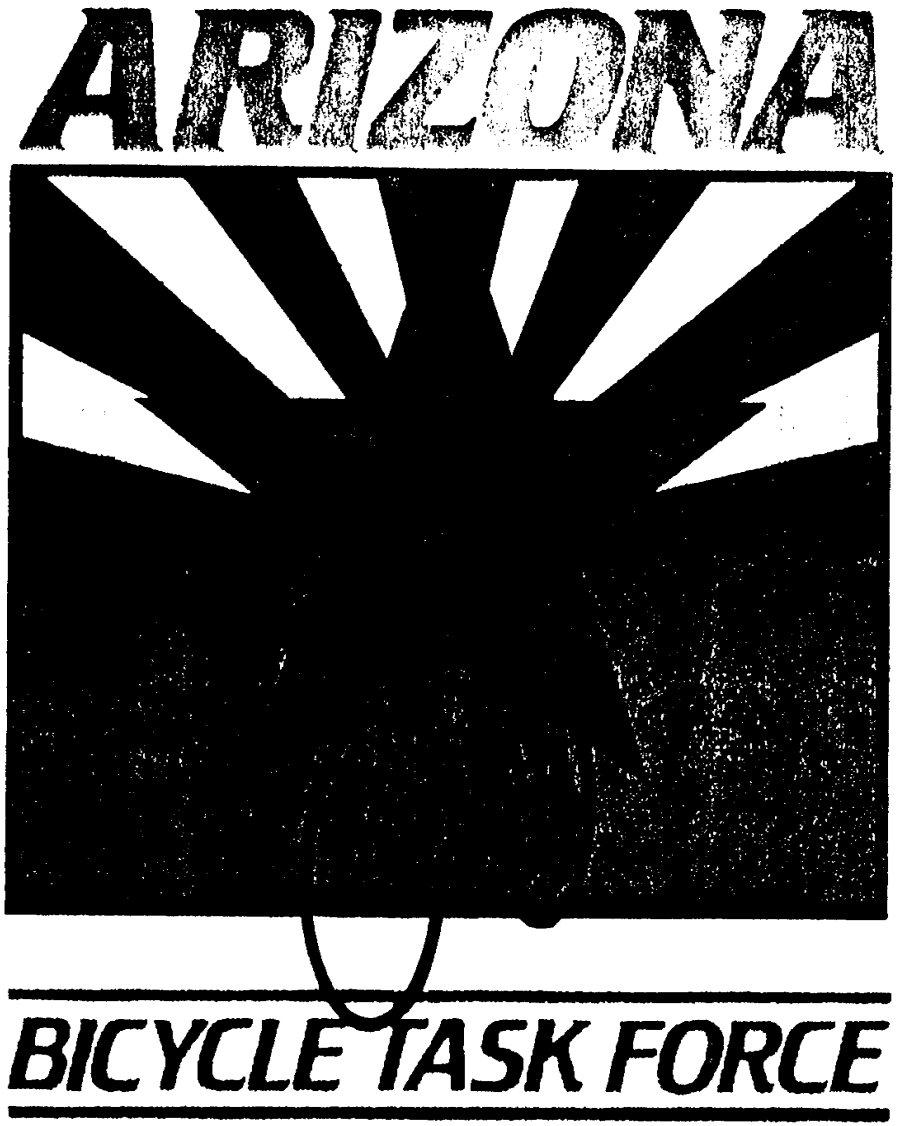
The Nevada State Legislature

Las Vegas, Nevada

March 28, 1990

By

Louis A. Schmitt, P.E.
Deputy Director
Transportation Planning
Arizona Department of Transportation


ARIZONA
BICYCLE TASK FORCE

ARIZONA BICYCLE TASK FORCE

Functions, Purposes & Goals

- Assist & advise Governor in all bicycling related matters
- Serve as information center for development of educational programs & bicycling facilities
- Develop, disseminate & monitor educational programs for bicycling safety
- Develop & maintain information regarding bicycling
- Establish short & long term plans & goals for meeting bicycling needs
- Advise state departments, agencies & institutions on all bicycling related matters

ARIZONA BICYCLE TASK FORCE (continued)

Functions, Purposes & Goals

- Actively facilitate the coordination of federal, state, & local policies regarding bicycle facilities & educational programs
- Advise state & local governmental agencies on integrating bicycling interests in an overall transportation program to improve air quality
- Advise state & local governmental agencies on health & fitness benefits of bicycling
- Review & render advice regarding state highway planning with respect to enhancing bicycling facilities & safety
- Prepare & submit a report each January to the Governor on the activities undertaken by the Task Force during the preceding year

ARIZONA BICYCLE TASK FORCE

Who Is Involved?

A balanced membership of the public & private sectors

State Agencies involved

- Department of Transportation
- Department of Public Safety
- Governor's Council on Physical Fitness
- Department of Health Services
- Governor's Office of Highway Safety
- State Parks Department
- Department of Education
- Office of Tourism
- Department of Commerce
- Governor's Commission on the environment

Representatives From The Private Sector

- Major, statewide bicycling associations
- Statewide bicycle dealers association
- Arizona Parks & Recreation Association
- Private Citizens

Where We Are

The ABTF is comprised
of the following committees:

- Bicycle Safety & Education
- Legislation
- Planning, Engineering, & Mapping
- Central Arizona Project Proposal
- Public Relations

ARIZONA
BICYCLE TASK FORCE

Major Accomplishments

- Printing & distribution of statewide Bicycle Suitability Map
- Senate Bill 1360 (Air Quality) requires that bicycle planning be an element in all state & local plans
- Senate Bill 1218 brings Arizona Bicycle Traffic Laws more into conformance with the Uniform Vehicle Code
- Senate Bill 2302 permits bicycle riders to use a roadway even if a bicycle path is adjacent to it
- A model safety education program for Jr. High School students was developed & implemented in over 150 school districts

(continued)

Major Accomplishments

- The ABTF co-sponsored PRO-BIKE 88, a meeting of international bicycle interest groups from around the world
- Four annual workshops were conducted with emphasis on bicycle planning, education, law enforcement, health & recreation
- A Central Arizona Project Committee was established to study the feasibility of creating a linear parkway along the CAP
- The Arizona Bicycle Facilities Planning & Design Guidelines were developed, printed & distributed

ARIZONA BICYCLE TASK FORCE

Future Plans Include:

- Update the Arizona Bicycle Suitability Map
- Continue to monitor Urban Controlled Access
- Conduct the Fifth Annual Bicycle Workshop
- Institute a bicycle laws training program for state & local law enforcement officials
- Update the bicycle rules & responsibilities in the drivers licence manual
- Secure a bicycle coordinator
- Increase public awareness through the production of multi-media products for distribution

Bicycles on Arizona Roadways

Bicyclists are permitted to ride on all State Routes & Interstates with the following exceptions

- Phoenix Urbanized Area
- Tucson Urbanized Area
- I-10 between Phoenix & Tucson

Bicycle routes on the State Highway & Interstate systems are based on ADT & classified as:

- Prohibited
- Less Suitable
- More Suitable

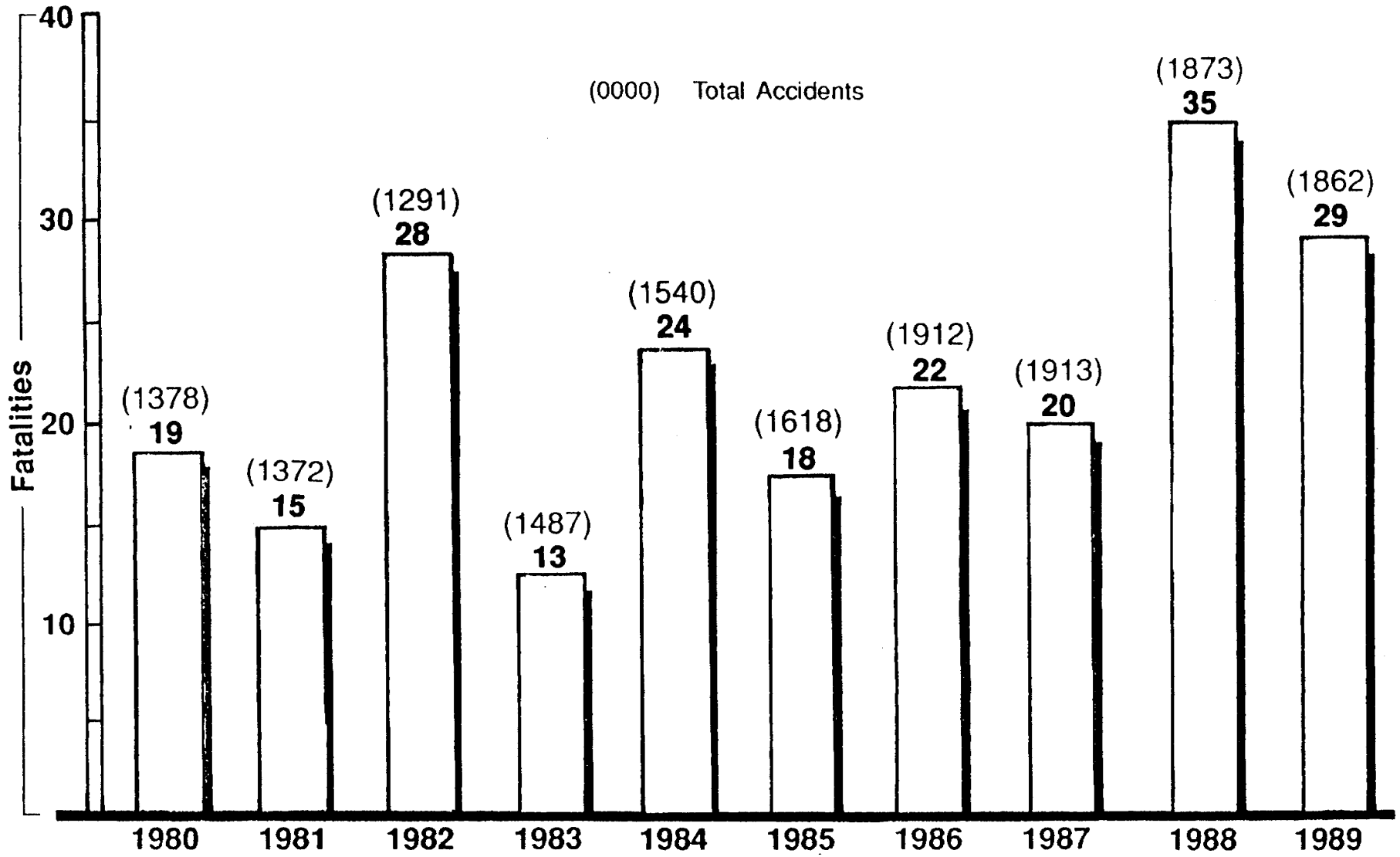
ARIZONA BICYCLE TASK FORCE

Funding Bicycle Facilities

Title 23 Part 652.9 allows for:

- 100% funding with federal-Aid primary, secondary, or urban highway funds for Independent bicycle projects & non-construction bicycle projects
- Totals cannot exceed $4.5 million per state per fiscal year
- Totals for all 52 states must not exceed $45 million
- ADOT funds bicycle planning activities and non-construction projects with HPR funds

Bicycle Accidents & Fatalities in Arizona 1980 - 1989



APPENDIX B

Excerpts from State Of Oregon Bicycle Master Plan,
published by the Highway Division of the
Oregon Department of Transportation,
May 1988

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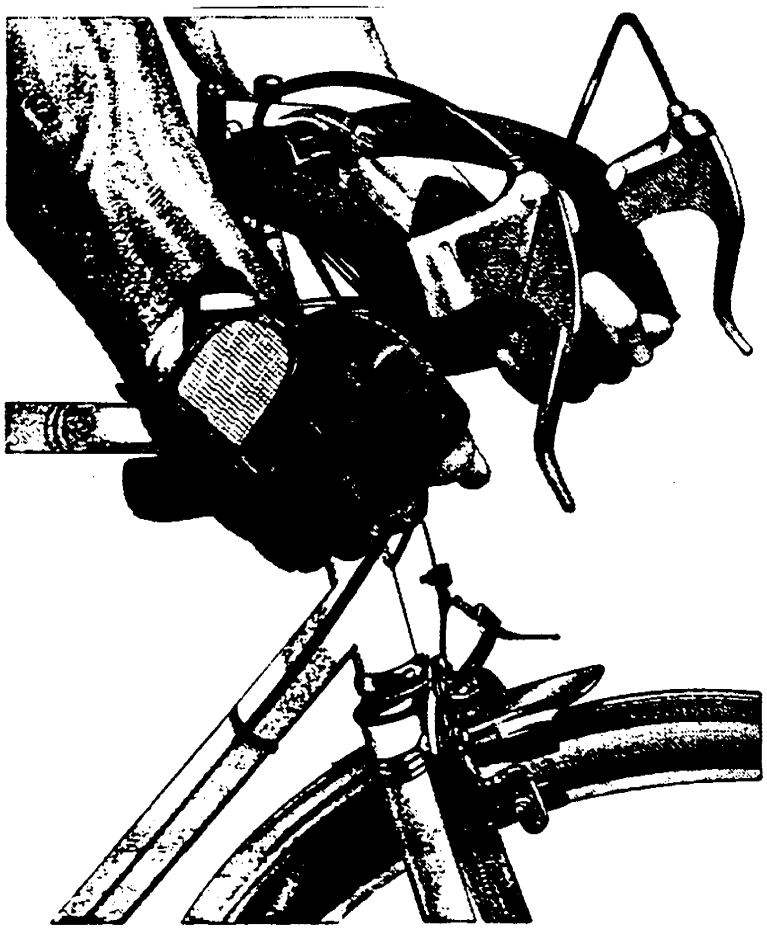
STATE OF OREGON BICYCLE MASTER PLAN



STATE OF OREGON
BICYCLE MASTER PLAN

APPROVED BY
OREGON TRANSPORTATION COMMISSION

March 15, 1988

Michael Hollern, Chairman
John W. Whitty, Vice Chairman
Cynthia Ford
David F. Bolender
Robert F. Duvall

Published By

Highway Division
Oregon Department of Transportation
Transporation Building
Salem, Oregon 97310

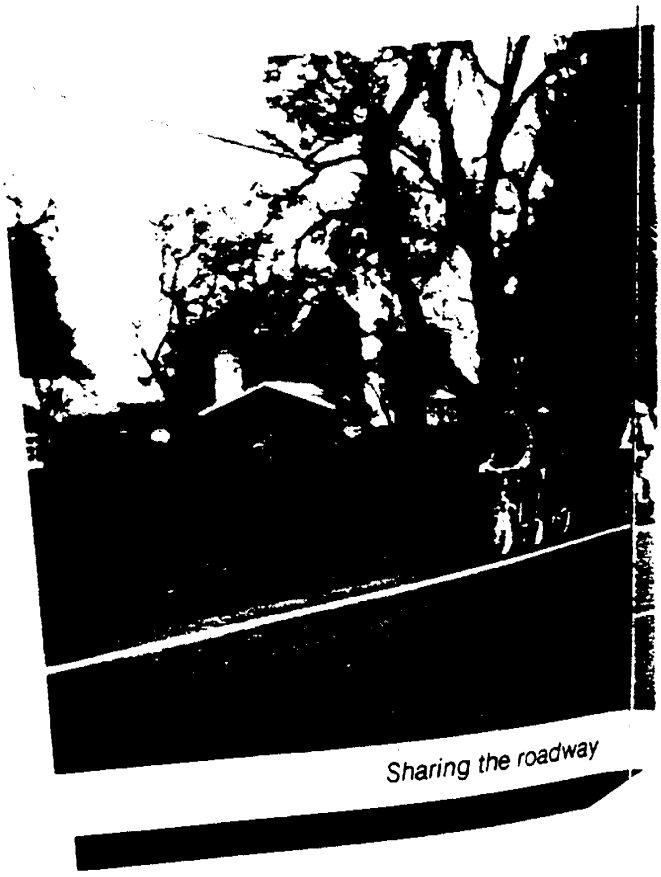
May, 1988

BACKGROUND

INTRODUCTION

Developed originally as a transportation vehicle, the bicycle gained prominence 100 years ago as a sporty alternative to the mundane and cumbersome horse-drawn carriage. With the emergence of the motor vehicle, however, the situation quickly changed. Unlike Europe, where motoring took decades to supersede cycling, American cycling never had the chance to coexist with the motoring community. As a result, when the exchange of transportation modes occurred, bicycles experienced a rapid drop in status from high class fashion to mere

1880's "ordinary" bicycle



Sharing the roadway

CHAPTER 1: THE BICYCLING ENVIRONMENT

children's toys. No merging of these two modes was made. From there the bicycle's popularity fluctuated with the relative availability of cars and fuel costs, and was considered at best, a working class mode of transportation.

Cycling began its great comeback after the postwar urban sprawl. More and more young people turned to bicycles as their only transportation to and from the suburbs and this, in turn, encouraged the development of more suitable bikes. Then, other groups began catching on: open road lovers, fitness enthusiasts and recreationists. Enrollment in cycling clubs grew so fast that approximately 19 out of every 20 members were new and inexperienced, bringing with them their childhood taught "fear of motor vehicles."

This viewpoint placed cyclists and motorists in competition with each other; a competition where the motorist always won. This, being the predominant view of the time, led to the bike path trend of the 1970's. Bike paths physically separate the two types of vehicles so that there can be no competition. They also reinforce the fear of motor vehicles viewpoint by keeping cyclists off the road. Experience with separated bike paths proved that they were not the total answer. They function well in some areas and poorly in other areas. The serious bicyclist will not use poorly designed bike paths due to inconveniences and safety problems.

Modern cyclists and motorists have the roadway sharing viewpoint that is beginning to shape today's cycling trend. The roadway sharing view promotes the integration of motorists and cyclists by improving already existing roadway systems to accommodate bicycles. Bicyclists then share the roadway along with general motor vehicle traffic. Not only does this conserve funds, but it also unites the two groups under one set of rules of the road for better cooperation and safer operation.

With the increasing interest in bicycling, the development of quality bikeway facilities is becoming more and more important. Overall, the number of cyclists is still rising at a tremendous rate--particularly among adults, who now outnumber child cyclists. In 1986, it was estimated that 82 million Americans were bicycling. Bicycling is the fastest growing physical fitness sport in America.

The increased interest in bicycling has led to the development of various types of equipment. Today, all types of specialized bicycles and accessories are available including: touring, sport touring, racing, mountain and commuter bikes.

TYPES OF BICYCLE TRAVEL

Bicycling falls into five general use categories: commuting, utility, recreational, touring and racing. Commuters are those who regularly travel to and from a specific destination, usually as quickly and directly as possible. Utility cyclists ride for very practical purposes. They ride to purchase or transport goods and services. Recreational cyclists include those who take day long or less excursions and are generally riding for pleasure or fitness. Touring, on the other hand, extends over longer periods of time. Touring requires more planning since the destination and route are important factors. Racing is a specialized sport and race courses may use public roadways with the approval of appropriate government agencies.

ROUTE DEVELOPMENT

A significant focus of the Oregon Bicycle Program is on upgrading highway shoulders to develop routes for bicycle riding. The two best known of these are the Oregon Coast Bike Route and the Trans-America Trail through Central Oregon. They have received priority treatment in the past and will continue to receive priority because of their touring importance. Bicycle usage and demand are the primary factors used to set priorities for the improvement of bicycle routes. The Highway Division is also concerned with improving the safety of bicycle routes. Chapter 7 contains a detailed description of the factors used in the designation of Oregon's bicycle routes.

BIKEWAY FACILITIES AND TRENDS

There are four different types of bikeway facilities (as discussed in Chapter 8): shared roadway, shoulder bikeway, bike lane and bike path. All four types of facilities are used where circumstances and economics dictate. (1) A shared roadway facility is where motorists and cyclists occupy the same roadway area and is best used in areas that have minimal motor vehicle travel. These facilities have the lowest cost, and the low usage makes conflicts with vehicles infrequent. However, shared roadways are sometimes necessary in heavy traffic areas where it is too costly to provide other types of bikeways. (2) Shoulder bikeways are common in rural areas and they accommodate the cyclist on the roadway shoulder with few traffic conflicts. (3) Bike lanes go one step further by having a section of the roadway actually designated for exclusive bicycle use. They are generally more costly than the first two types, but for safety reasons are preferred when heavy motor vehicle and bicycle travel exist. (4) Bike paths are entirely separated from the roadway. They are often constructed in situations too hazardous for bicycle travel, such as along heavily traveled metropolitan freeways or arterials, where bicycle demand is high enough to merit the extra cost. Well designed bike paths can provide good commuter and recreational bicycle routes. Bike paths function best where motor vehicle crossings can be eliminated or minimized.

URBAN AND RURAL BICYCLE ENVIRONMENT

Oregon has a very favorable bicycling environment, both in urban and rural areas. Over 44 percent of State highways have paved shoulder widths of 4 feet or more (52 percent in Western Oregon and 37 percent in Eastern Oregon), not including Interstate highways. Oregon is one of the most popular states for bicycle touring. Partially because of the location of the two previously mentioned bike routes which are popular nationally; the TransAmerica Trail (also known as the Bikecentennial Route), established in 1976 to celebrate the nation's 200th birthday, and the Oregon Coast Bike Route. Oregon also enjoys a positive reputation among bicyclists nationwide because of its scenic beauty and climate and its pioneering spirit in the development of bicycle facilities.

Most urban areas in Oregon have good bikeway networks. Eugene is one of the leading bicycling communities in the nation. With federal and state assistance, the city by 1982 had built 21 miles of separated bike paths along the Willamette River and through several parks. This bike path system is supplemented with more than 36 miles of onstreet bike lanes and 18 miles of low traffic volume streets designated for shared roadway use.

Shoulder bikeway

CHAPTER 3: ADMINISTRATIVE ORGANIZATION

INTRODUCTION

In response to Oregon Revised Statute 366.514, the Oregon Department of Transportation has developed an administrative process by which it complies with the intent of this bicycle legislation. The administration of the bicycle program is carried out at several levels within the Oregon Department of Transportation.

HIGHWAY DIVISION

The primary responsibility for administering and developing a safe system of bikeways is given to the Highway Division within the Oregon Department of Transportation. This Division administers the bicycle funds, handles bikeway planning, design, engineering and construction, and provides technical assistance and advice to local governments concerning bikeways.

OREGON BICYCLE ADVISORY COMMITTEE

The primary function of the Oregon Bicycle Advisory Committee (OBAC) is to assist the Highway Division in regulating bicycle traffic and establishing bikeways. The OBAC reviews public and Highway Division bikeway proposals and then forwards its recommendations to the Highway Division for further consideration.

Oregon Bicycle Advisory Committee

BICYCLE PROGRAM MANAGER

Within the Highway Division is the Bicycle Program office headed by the Bicycle Program Manager. This is where policies and programs are formulated and where they are implemented. The Bicycle Program Manager has a variety of responsibilities. One is to identify and prioritize bikeway projects, taking into consideration budget limitations. A prime responsibility is to insure that the one percent Bicycle Funds are spent each year. The manager also gives engineering and technical assistance within the Highway Division regarding bikeway project design and construction. Coordination of Advisory Committee activities is also a responsibility of the Bicycle Program Manager as well as supervision of the Bicycle Program staff. Other important duties include responding to inquiries about the Bicycle Program, developing bicycle maps and brochures, and assisting city and county personnel with their bicycle programs.

OREGON TRANSPORTATION COMMISSION

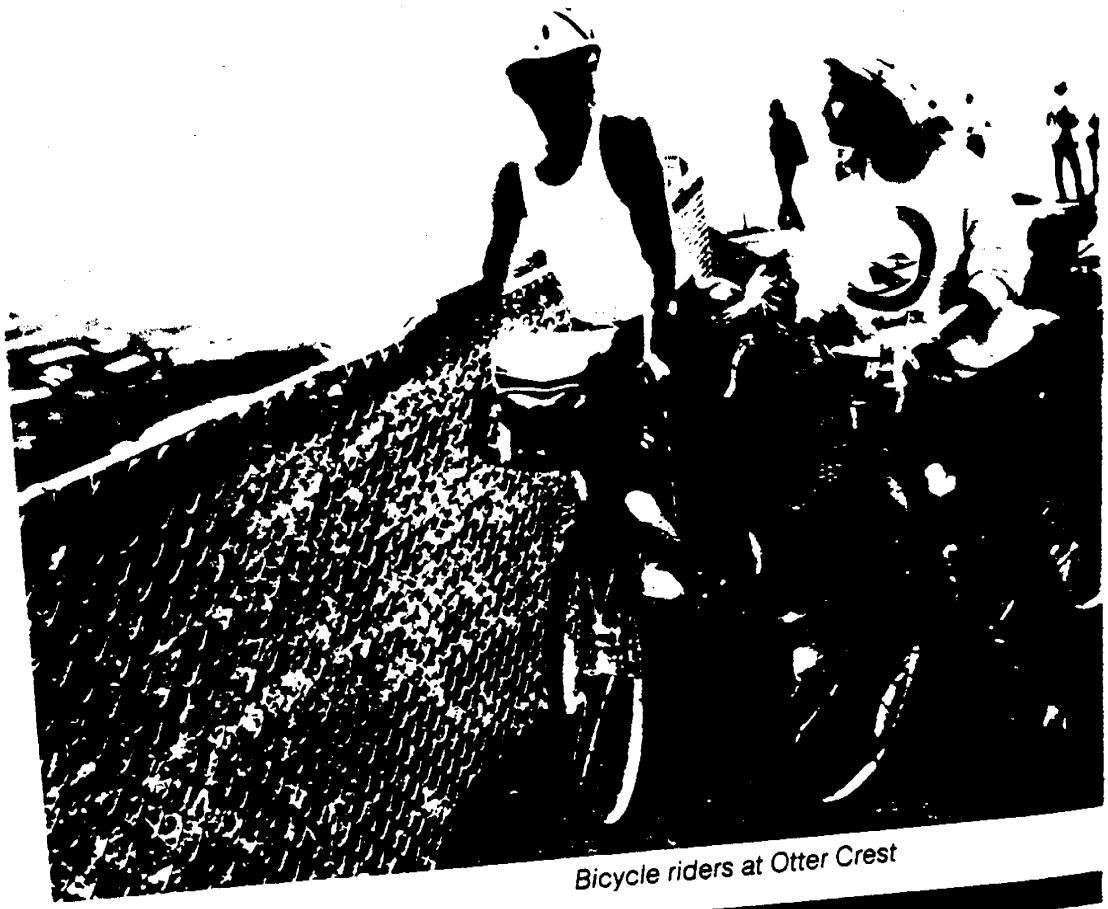
Before implementation, all major bicycle policies and programs must be approved by the Oregon Transportation Commission. The Commission is appointed by the Governor and has the authority to set policy and approve expenditure of funds for the Department of Transportation, which includes the Highway Division. The Highway Division recommends policies or programs to the Transportation Commission for their approval. If approved, they are returned to the Highway Division for implementation.

Bicycle Program office

OREGON BICYCLE PLAN

INTRODUCTION

As a part of this Bicycle Master Plan, the Oregon Transportation Commission has adopted the following mission statement, goals and objectives to give direction and guidance to the Oregon Bicycle Program.



Bicycle riders at Otter Crest

CHAPTER 5: GOALS AND OBJECTIVES

MISSION

To serve the needs of bicyclists within the State by supporting bicycling as a form of transportation and recreation that enhances the livability of Oregon.

GOALS AND OBJECTIVES

GOAL 1 *Provide a statewide bicycle system which is integrated with other transportation systems, that has desirable 6-foot wide (min. 4-foot) paved shoulders in rural areas to accommodate residential and visiting bicyclists.*

OBJECTIVE *Develop bicycle routes that provide for the desired mobility of bicyclists, while being responsive to the social, economic, and environmental objectives of Oregonians.*

OBJECTIVE *Integrate the consideration of bicycle routes and facilities into all planning, design, construction and maintenance activities of the State Highway Division.*

OBJECTIVE *Publish bicycle maps and guides which inform the public of bicycle routes, facilities and services.*

GOAL 2 *Provide and maintain a safe, convenient and pleasing bicycle environment.*

OBJECTIVE *Establish expenditure priorities for the construction, maintenance and operation of bicycle facilities from the 1 percent State Highway Funds set aside by ORS 366.514 for establishing bikeways and footpaths.*

OBJECTIVE *Provide bicycle facilities which consider the needs of commuting, recreational, touring and utility bicyclists of all ages.*

OBJECTIVE *Adopt design standards and policies which promote safe, convenient and pleasing bicycle facilities that encourage bicycle transportation.*

OBJECTIVE *Provide uniform signing and marking of all bikeways on the State highway system.*

OBJECTIVE *Adopt maintenance practices which maintain bikeways in a generally smooth, clean and safe condition.*

GOAL 3 *Encourage and support bicycle safety, education and enforcement programs.*

OBJECTIVE *Advocate the development of bicycle safety and education programs aimed at all ages, to improve bicycle skills, observance of traffic laws and overall safety.*

OBJECTIVE *Monitor and analyze bicycle accident data in order to devise ways to improve bicycle safety.*

PRIORITY 4 PLANNING ASSISTANCE.

Cities, counties and Councils of Government are encouraged to plan and develop comprehensive bikeway systems that can be incorporated into the overall statewide bicycle network. Fifty percent planning grants of up to $20,000 are available from Priority 4 funds. To qualify for this assistance, the applicant must agree to prepare and submit a comprehensive master plan of bike routes for the area under its jurisdiction within a specified time. The comprehensive master plan must include route proposals, anticipated usage and bikeway project priorities. Master plan updates are not eligible for this assistance.

SIX-YEAR HIGHWAY IMPROVEMENT PROGRAM PROCESS

Priority 1 and 3 projects are included in the Highway Division's Six-Year Highway Improvement Program. Citizens who would like a bikeway constructed should submit their project proposal to the appropriate Region Engineer, who will evaluate the proposal and consider it for inclusion in the next preliminary Six-Year Program. The Oregon Bicycle Advisory Committee reviews all proposed Priority 3 bikeway projects at this stage and makes its recommendations to the Highway Division. Citizens are allowed further input later on in the process when public hearings are held to discuss the preliminary Six-Year Program. Here the public can make statements or supply testimony to support the need for their particular project. After evaluation, recommended projects are submitted to the Transportation Commission for approval in the final Six-Year Highway Improvement Program.

CHAPTER 7: DESIGNATED BICYCLE ROUTES

RELEVANT GOALS AND OBJECTIVES:
(from Chapter 5)

GOAL 1 *Provide a statewide bicycle system which is integrated with other transportation systems, that has desirable 6-foot wide (min. 4-foot) paved shoulders in rural areas to accommodate residential and visiting bicyclists.*

OBJECTIVE *Develop bicycle routes that provide for the desired mobility of bicyclists, while being responsive to the social, economic and environmental objectives of Oregonians.*

OBJECTIVE *Integrate the consideration of bicycle routes and facilities into all planning, design, construction and maintenance activities of the State Highway Division.*

OBJECTIVE *Publish bicycle maps and guides which inform the public of bicycle routes, facilities and services.*

GOAL 2 *Provide and maintain a safe, convenient and pleasing bicycle environment.*

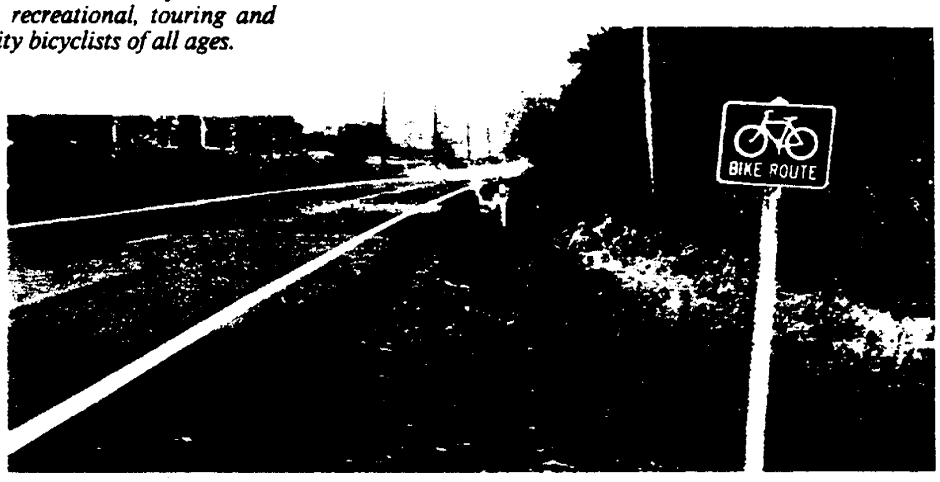
OBJECTIVE *Provide bicycle facilities which consider the needs of commuting, recreational, touring and utility bicyclists of all ages.*

INTRODUCTION

Bicycle transportation planning is much the same as conventional transportation planning because it is also concerned with travel demand, safety, convenience, economics and other factors. A connected system of bicycle routes is needed to guide bicyclists along reasonably direct routes which satisfy their travel desires. These routes also need to connnect to other transportation modes and to bicycle services.

STATE HIGHWAY SYSTEM

The State Highway System is very compatible with the general needs of those bicyclists wishing to travel long distances. Over the years, Oregon has built a network of highways to carry cars, trucks and buses to locations through the State. Existing highways and roadways are the most economically efficient way to accommodate bicycles and are very convenient for bicyclists, most of whom want to travel to the same places as motorists. Oregon is fortunate that its citizens have supported its highway program and many of its main highways have adequate paved or oiled shoulders which can easily and safely accommodate bicycles.



Rural shoulder bikeway

The State Highway System has been classified by the Planning Section into four levels of importance: Interstate, Statewide, Regional, and District (see Map 1, page 20). This classification system is based on the function each highway performs, the traffic character and its sphere of influence.

Highways of Interstate significance are those high-volume "lifelines" of Oregon's economy that link this state with adjacent states and, beyond, to the rest of the nation. Oregon's major urban areas are serviced by highways in the Interstate category. Interstate highways normally have very wide paved shoulders, almost all of which are available for bicycle use.

Highways of Statewide significance are the major connectors between geographic areas in Oregon and adjacent states. Typical Statewide routes include The Dalles-California Highway (US 97), Oregon Coast Highway (US 101), Sunset Highway (US 26) and Willamette Highway (ORE 58). The majority of these highways have adequate width shoulders to accommodate bicycle travel.

Highways of Regional importance are those that are critical to the economy and well-being of a particular geographic area, and that serve as feeder routes to highways of Statewide significance. Examples of Regional highways include Pendleton-John Day Highway (US 395), Wilson River Highway (ORE 6) and Fremont Highway (ORE 31).

Highways of District importance serve the economy and mobility needs of small localized areas, and also serve as feeders to Regional and Statewide routes. Examples of District highways include Green Springs Highway (ORE 66), Silver Creek Falls Highway (ORE 214) and Crooked River Highway (ORE 27).

Regional and District highways tend to have narrower shoulder widths than Statewide highways, but they also tend to have lower traffic volumes. Many District highways lack or have very narrow paved shoulders, but generally motorists can safely pass bicyclists because of low motor vehicle traffic volumes.

ROUTE SELECTION CRITERIA

By law, footpaths and bicycle trails are to be provided wherever a highway, road or street is being constructed, reconstructed or relocated, except for certain circumstances (see ORS 366.514 Appendix A). In the broadest sense all of Oregon's paved roadways are part of the state bikeway system, but for this Master Plan, the Highway Division has selected the most significant State highways where efforts at creating adequate bikeways will be concentrated. These highways have been designated as Statewide Bicycle Routes.

The following three main guidelines were used to identify which routes to designate as Statewide Bicycle Routes:

(1) Demand - The intent of the statewide system is to serve the major portion of present day and projected bicycle use. The most used recreational routes were included, such as the Oregon Coast Highway, Lower Columbia River Highway, and the Trans-America Trail.

(2) Continuity and Linking - Routes linking population centers to one another or to destination points were incorporated, since these can be expected to attract more bicyclists as bicycle use grows. Some routes were included because they connect to another bicycle route or create loop routes which are a particular advantage for recreational cyclists.

(3) Riding Environment - Whenever possible, routes were chosen that offer advantages, such as:

Scenic beauty
Tourist attractions
Safety (due to existing adequate shoulders or lower traffic volumes)
Rest, food and overnight facilities
Lesser gradient (low vertical rise and fall of the route)

The three guidelines were not applied collectively to the selection of each route; in several instances, only one guideline was applicable.

DESIGNATED STATEWIDE BICYCLE ROUTES

Map 2 on page 21 shows the rural Oregon highways which have been designated as Statewide Bicycle Routes. Inside urban areas, adopted local and regional bicycle plans may designate State highways as bicycle routes. It is the intent of this Master Plan that these designated bicycle routes be preserved and improved to safely accommodate bicycle travel.

BICYCLE ROUTE IMPROVEMENTS

Designated bicycle routes may be improved and signed in various ways to accommodate bicycle travel depending upon the location and bicycle use (see Chapters 8 and 9).

Shoulder Bikeways - On many rural highways and roads, the shoulders can be widened to provide a smooth, paved shoulder area to accommodate low to moderate bicycle volumes. Shoulder widths of 6 feet are desirable, but shoulders as narrow as 4 feet may be acceptable. Normally a 4-inch shoulder stripe is painted on the roadway of shoulder bikeways. When bicycle use is significant, the designated routes should be signed as bicycle routes.

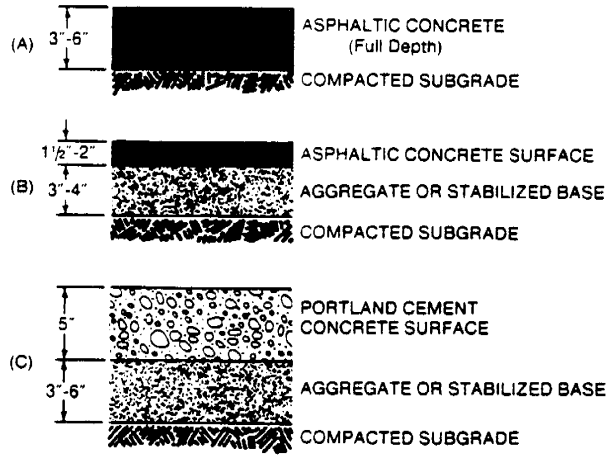
Bike Lanes - In urban areas and other areas where there is considerable bicycle use, a portion of the roadway can be designated as a bike lane for preferential use by bicyclists. Where adequate width is available, bike lanes can easily be striped and signed, otherwise the roadway must be widened to accommodate bike lanes. Bike lanes should be separated from motor vehicle lanes by an 8-inch painted solid line and should be well marked and signed. Bike lanes of 5 or 6 feet width are preferable.

Bike Paths - On some designated bicycle routes, it may be preferable to construct bike paths separated from the roadway and motorized vehicles. Separated bike paths along limited access roadways, such as freeways, provide safe and enjoyable bicycle routes if there are few motor vehicle crossings. Desirable widths of two directional bike paths are 10 to 12 feet.

IMPROVEMENT RECOMMENDATIONS

As roadways are improved, every effort should be made to accommodate bicycles on designated bicycle routes. Bicycle improvements should be made which are appropriate for existing and projected bicycle use. The surface of bikeways should be smooth and free of physical hazards. Highway projects which improve bikeways on designated Statewide Bicycle Routes should warrant extra consideration in the technical ranking of projects during the development of the Highway Division's Six-Year Highway Improvement Program.

FIGURE 6
TYPICAL PAVEMENT DESIGNS



Ramps

Some bicycle ramps that are constructed need to meet specifications for wheelchair use. The maximum slope for a ramp without a level landing is 1:20 or 5 percent. This may be increased to 1:12, or 8.3 percent, with the addition of level landings at every 30" (max.) change in elevation. Landings must be a minimum of 5' in length. There must be a level landing at the bottom and top of each run.

If the total vertical rise is less than 9', a maximum slope of 1 in 10, or 10 percent, may be used; however, one level landing is required when the rise is between 4.5' and 9'.[1]

[1]Federal Register, Volume 49, Number 132/August 76, 1984/Notices

Barrier Posts

Barrier posts may be used to limit vehicle traffic on a bike path; however, when placed in a bike path, they become a hazard to the cyclist. Often a cyclist does not expect them and they may be hard to see. When used, they should be spaced wide enough for easy passage by bicyclists. Other solutions to discouraging motor vehicles should be examined. The most obvious would be adequate signing to inform the motorist. One successful method used in Eugene is for the bike path to branch into two narrower bike paths just before it reaches the roadway. This makes it more difficult for the motor vehicle to access the bike path.

Drainage Grates

Care must be taken to make sure that drainage grates are bicycle safe as required by ORS 810.150. If not, a bicycle wheel may fall into the slots of the grate causing the cyclist to be thrown off the bicycle. Replacing existing grates or welding thin metal straps across the grate perpendicular to the drainage slots may be required. Also, pavement overlays should taper into drainage inlets so they do not cause an abrupt edge at the inlet.

Secure Bicycle Parking

Secure bicycle parking racks should be provided at public bicycle destination points. They should be designed so they do not bend wheels or damage other bicycle parts. Bicycle thefts are common and bicyclists need parking racks which provide good security. Bike racks should be tamper-proof or accommodate the new high security U-shaped bike locks. Covered parking should be considered for those bicyclists who ride in all weather conditions.

CHAPTER 9: SIGNING AND STRIPING

REVELANT GOALS AND OBJECTIVES:
(from Chapter 5)

GOAL 2 *Provide and maintain a safe, convenient and pleasing bicycle environment.*

OBJECTIVE *Adopt design standards and policies which promote safe, convenient and pleasing bicycle facilities that encourage bicycle transportation.*

OBJECTIVE *Provide uniform signing and marking of all bikeways on the State highway system.*

INTRODUCTION

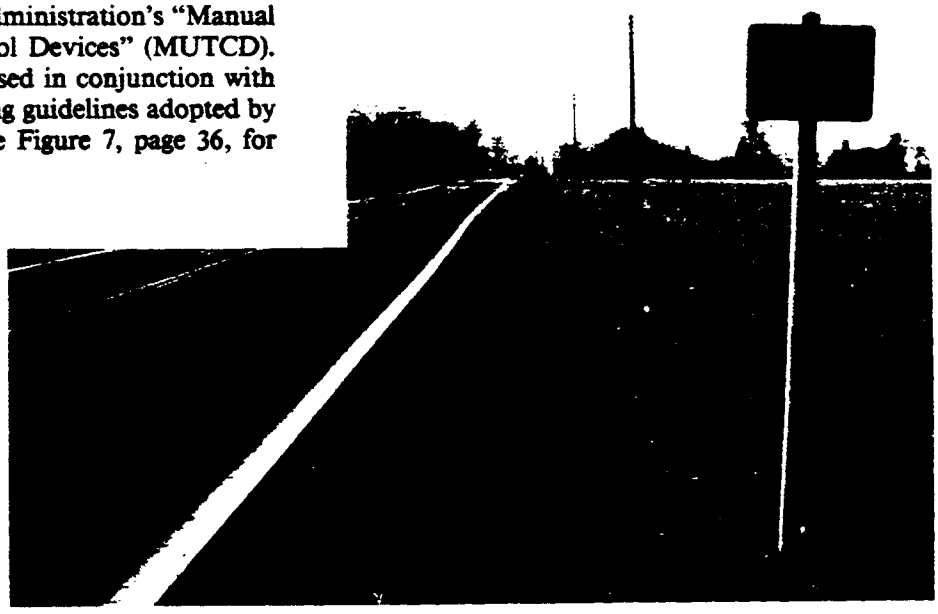
Signing and marking of bikeways must be uniform and consistent if bikeways are to command the respect of the public and provide safety to the users. All signing and marking of bikeways must be warranted by use and need. Basic principles and standards for uniform signing of bikeways are included in the Federal Highway Administration's "Manual on Uniform Traffic Control Devices" (MUTCD). The MUTCD should be used in conjunction with the following bicycle signing guidelines adopted by the Highway Division. See Figure 7, page 36, for typical bikeway signs.

BICYCLE ROUTE SIGNING GUIDELINES

A. Designated bicycle routes should be signed and marked using the following general guidelines:

1. **NO SIGNING:** When bicycle use is less than 20 bikes a day.

2. **BIKE ROUTE SIGNING (Shared Roadway & Shoulder Bikeway):** When bicycle use is significant (20-50 bikes a day) install BIKE ROUTE SIGN (D11-1). If shoulder is less than 3 feet wide, also install BIKE SIGN (W11-1) with a rider "ON ROADWAY". Use normal 4-inch shoulder stripe.



Shoulder bikeway on bike route.

3. **BIKE LANE SIGNING:** In all urban areas, and rural areas where bicycle use exceeds 50 bikes a day, designate a portion of the roadway as a BIKE LANE if a 4* to 6 feet width of roadway is available for bicycle use. (If over 6 feet of roadway is available for bicycle use, sign as a BIKE ROUTE only).

   BIKE LANE DESIGNATION:

   a. Use 8-inch Bike Lane Stripe.

   b. Paint Diamond-shaped pavement symbol with "BIKE ONLY" legend.

   c. Install BIKE LANE SIGNS (R3-16 and R3-17).

*Minimum width and must be wider under certain conditions.

NOTE: Bicycle use should be representative of average daily use during the three months of highest use.

B. General guidelines for placement and spacing of signs (See MUTCD):

1. **BIKE ROUTE SIGN** (D11-1) should be placed at the beginning of a designated bike route and after every major intersection. In rural areas, maximum spacing should be every 10 miles. "BEGIN" and "END" supplemental plaques should only be used at the actual beginning or end of a designated bicycle route and are optional.

2. **BIKE SIGN** (W11-1) should be used with the appropriate rider ("XING", "ON ROADWAY"). Sign W11-1 should be 30"x30", unless a traffic investigation or review recommends a 48"x48" size.

   a. **W11-1 with "Xing"** should be in advance of a point where a bikeway crosses the roadway. If the point of crossing is a controlled intersection, this signing may not be needed.

   b. **W11-1 with "ON ROADWAY"** should be used where the shoulder is less than 3 feet wide. This signing should be in advance of the roadway condition. If the roadway condition is continuous, a rider "NEXT XX MILES" may be used.

3. **BIKE LANE SIGN R3-16** should be used in advance of a marked bike lane. Where appropriate, the message "ENDS" may be substituted for "AHEAD".

Bike lane sign and pavement markings

4. **BIKE LANE SIGN R3-17** should only be used in conjunction with the diamond-shaped preferential lane pavement symbol on marked bike lanes. It should be erected after significant intersections and should have a maximum spacing of 1000 feet in urban areas and 1 mile in rural areas.

BIKE PATH SIGNING GUIDELINES

Bike path signs serve three basic purposes: Regulating bike path usage, directing bicyclists along pre-established routes, and warning of unexpected conditions. Because of a bicyclist's lower line of sight, the bottom of the signs should be about 5 feet above the bike path. If a secondary sign is mounted below another sign, it should be a minimum of 4 feet above the path. The signs should have a maximum practical lateral clearance from the edge of the bike path, but should be at least 2 feet. The basic principles and standards for the signing and marking of separated bike paths are contained in the MUTCD.

General Bike Path Signing Guidelines

A. **Bike Route Sign (D11-1):** Bike Route signs are used to identify bike paths or routes and should be installed at access points to bike paths. They are also used with appropriate arrow and message signs to direct bicyclists to bike paths or to indicate a change in the direction of a bike path or route.

B. **Regulatory Signs:** Regulatory signs are used to inform bicyclists, pedestrians and motorists of traffic laws or regulations. They are erected at the point where the regulations apply. Common regulatory bike path signs are:

Motor Vehicle Prohibition (R5-3)
Stop (R1-1)
Yield (R1-2)

Directional bike route signs

C. **Warning Signs:** Warning signs are used to inform bicyclists of existing or potentially hazardous conditions on a bike path. They should be used in advance of the condition. Common warning signs are:

Turn & Curve Signs (W1-1, 2, 4, 5, 6, 7)
Intersection Signs (W2-1, 2, 3, 4, 5)
Stop Ahead (W3-1)
Hill (W7-5)
Slippery When Wet (W8-10)
Railroad (W10-1)

Heavy Use Bike Path Control Guidelines

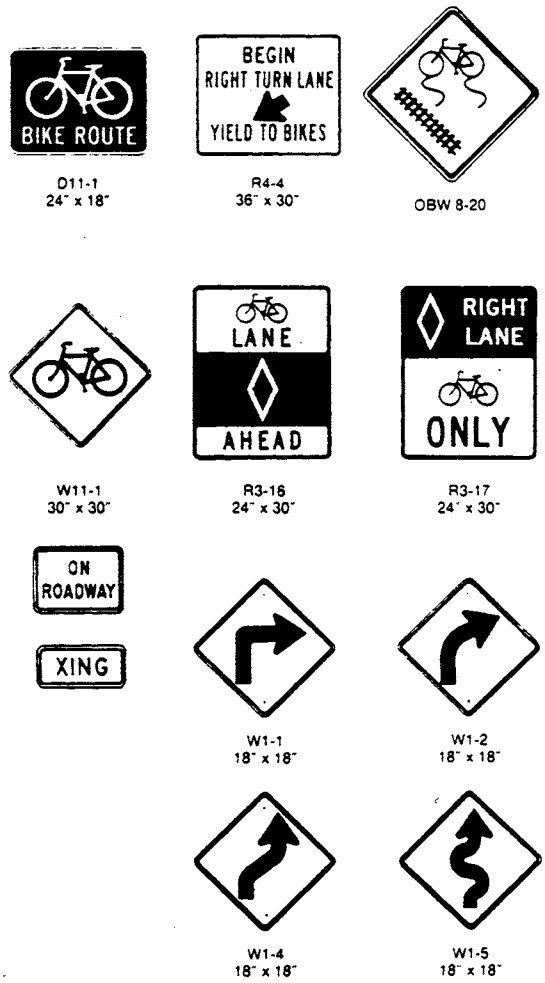
The following guidelines should be used to provide additional signing and control on bike paths which are receiving heavy multiple use by bicyclists, pedestrians and joggers.

A. **Striping:** Where there is heavy multiple use, a broken yellow center line stripe may be used to separate the travel into two directions. (The MUTCD recommends a 3-foot centerline paint segment with 9-foot gaps between segments. A 10-foot segment and a 30-foot gap are also very effective.) Through curves and areas of poor sight distance, a solid centerline stripe should be used.

B. **Signing:** An effective sign used on some heavily used bike paths reads "KEEP RIGHT, PASS LEFT." This helps to reduce directional conflicts and provides safer passing areas for the faster users. Other effective signs read "USE BELL OR VOICE WHEN PASSING" and "BICYCLISTS, THIS IS A MULTI-USE PATH, REDUCE SPEED, WATCH FOR PEDESTRIANS."

C. **Improvements:** If an existing bike path is too narrow to handle user volumes, the bike path can be widened to provide the necessary capacity. Also a jogger/pedestrian path may be constructed along side the bike path to accommodate joggers and pedestrians.

FIGURE 7
TYPICAL BIKEWAY SIGNS



CHAPTER 10: OPERATION AND MAINTENANCE

RELEVANT GOALS AND OBJECTIVES:
(from Chapter 5)

GOAL 1 *Provide a statewide bicycle system which is integrated with other transportation systems, that has desirable 6-foot wide (min. 4-foot) paved shoulders in rural areas to accommodate residential and visiting bicyclists.*

OBJECTIVE *Integrate the consideration of bicycle routes and facilities into all planning, design, construction and maintenance activities of the State Highway Division.*

GOAL 2 *Provide and maintain a safe, convenient and pleasing bicycle environment.*

OBJECTIVE *Establish expenditure priorities for the construction, maintenance and operation of bicycle facilities from the 1 percent State Highway Funds set aside by ORS 366.514 for establishing bikeways and footpaths.*

OBJECTIVE *Provide uniform signing and marking of all bikeways on the State highway system.*

OBJECTIVE *Adopt maintenance practices which maintain bikeways in a generally smooth, clean and safe condition.*

INTRODUCTION

The proper operation and maintenance of bikeways is frequently lost in the urgency to plan and develop new bikeway facilities. Adequate operation and maintenance of existing bikeways is necessary to protect the investment of public funds and to continue the safe enjoyment and service of these facilities.

OPERATION AND MAINTENANCE

Bikeways will always be subject to collecting debris and falling into disrepair. To counteract this, a regularly scheduled inspection and routine maintenance program should be established. Travelway litter, including broken glass and gravel, is the most hazardous of problems demanding regular pick up and sweeping. Often during winter icy conditions, it is not cost effective to sweep bikeways frequently to remove sanding materials; however, they should be swept after the winter season ends or after major storms in high bicycle use areas. A smooth surface, free of potholes and large bumps, should be provided and care should be taken to eliminate other physical hazards. Vegetation encroaching into and under the bikeway is both a nuisance and a hazard. Trees, shrubs and other vegetation and their roots should be controlled to provide adequate clearances and sight distances.

Attention should be given to maintaining the full paved width and not allowing the edges to ravel. Signs and pavement markings should also be inspected regularly and kept in good condition.

Trash receptacles should be placed along bike paths at convenient locations. Seeded and sodded areas in the vicinity of bike paths should have a regular schedule of mowing and debris pickup.

If winter conditions warrant snow removal, it should be in the form of plowing, since deicing agents and abrasives can damage bicycles and bikeways. Law enforcement is usually necessary to prevent unauthorized motor vehicles from using a bike path which reduces damage to the path and provides a safer environment for path users.

Neglected maintenance will render bicycle facilites unridable and they may become a potential legal liability. Cyclists who continue to use them will be risking damage to their equipment and themselves due to the hazardous conditions, but most will choose not to use the bikeway at all.

To assure adequate maintenance of bikeway facilities, the government agency with maintenance responsibility should conduct routine inspections and establish a regular maintenance budget. This will help to guarantee the condition of the route and encourage cyclists to make regular use of it.

Bike path maintenance vehicle

CHAPTER 11: SAFETY, EDUCATION AND ENFORCEMENT

RELEVANT GOALS AND OBJECTIVES:
(from Chapter 5)

GOAL 3 *Encourage and support bicycle safety, education and enforcement programs.*

OBJECTIVE *Advocate the development of bicycle safety and education programs aimed at all ages, to improve bicycle skills, observance of traffic laws and overall safety.*

OBJECTIVE *Monitor and analyze bicycle accident data in order to devise ways to improve bicycle safety.*

INTRODUCTION

Engineering, education and enforcement are the three major constituents of bicycle safety. In Oregon, the quality of engineering on bikeways has been very good and the number of facility related bicycle accidents have been few. As long as the facilities are maintained as outlined in Chapter 10, there should continue to be no major problems in this area. Education and enforcement, however, are areas that need special attention. State bicycle funds are not eligible for these activities; but, federal safety funds are available to the Oregon Traffic Safety Commission.

BICYCLE/MOTOR VEHICLE ACCIDENTS

Education and enforcement could significantly reduce bicycle/motor vehicle accidents. Of the 860 bicycle/motor vehicle accidents that took place in 1986, 45 percent took place at intersections while a lower but still significant 26 percent were a result of bicycles or motor vehicles entering or leaving the roadway at a mid-block location. Thirteen percent of the 1986 accidents resulted from wrong-way bicycle riding. Eight percent were caused by the cyclist or motorist turning or swerving. The other 8 percent of the accidents were caused by miscellaneous movements.

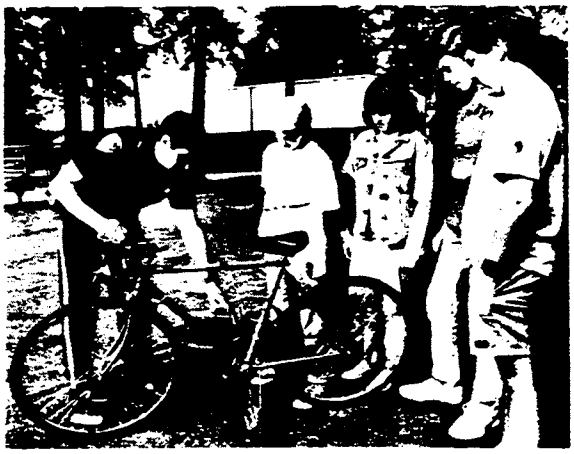
The majority of these accidents were due to bicyclists or motorists disobeying the law, whether intentionally or out of ignorance. Education would certainly curtail unintentional infractions of the law, while stricter enforcement would limit both intentional and unintentional infractions.

EDUCATION

Bicyclists especially need to know the vehicle laws which pertain to them and they also need to develop good bicycling skills. This will help them to safely co-exist with motorists. Education of bicyclists assists in obtaining these skills and knowledge. Comprehensive bicycle safety education requires a program designed for each age group with emphasis on errors commonly committed by that group. On-bike training is an important element of such a program. Education is also needed on the safety value of helmets and other protective measures.

At present, only a few Oregon communities have a comprehensive bicycle education program, while others have elements of one. Limited funds, lack of personnel expert in cycling, and lack of a person or agency directly responsible for bicycle education are the primary reasons. In some communities, volunteer service groups or police departments do some education, but support materials are often not well developed. Usually, only elementary school age children are selected as the target group.

The 1987 Legislature took a big step forward in the passage of Senate Bill 514 (ORS 802.325) which requires that the Oregon Traffic Safety Commission establish a bicycle safety program (see Appendix A for a copy of this statute). This program should help to educate school age children, adult bicyclists, motorists, parents and law enforcement personnel.



Police safety education

ENFORCEMENT

Law enforcement is a necessary component of bicycle safety. As with any law, lack of enforcement leads to a general disregard of the law. Some communities have had difficulty in getting the police to enforce the motor vehicle code with bicyclists. Discussions with bicycle coordinators have led to the conclusion that the lack of enforcement is partly caused by insufficiently trained police forces who are not aware of the importance of citing bicyclists. Also, there are the practical problems in citing bicyclists, since some lack positive identification, such as a driver's license.

Frequent contact between local bicycle advisory committees and the police can highlight the need for enforcement and identify problem areas. Significant violation problems that have been identified by the bicycling community include: running stop signs and traffic signals, riding the wrong way on a street and riding at night without lights. Use of bicycles or motorcycles rather than police cars by traffic patrols makes the contact with bicycle offenders easier. Community education and support of enforcement efforts builds respect between bicyclists and motorists.

APPENDIX C

A memorandum dated September 6, 1990, from Donna L. Varin, Chief of the Driver's License Division of Nevada's Department of Motor Vehicles and Public Safety, which outlines suggested responsibilities of the proposed Drivers' Education Officer

STATE OF NEVADA
DEPARTMENT OF
MOTOR VEHICLES AND PUBLIC SAFETY
DRIVER'S LICENSE DIVISION
555 Wright Way
Carson City, Nevada 89711-0400
(702) 885-5360

BOB MILLER
Acting Governor

WAYNE R. TEGLIA
Director

M E M O R A N D U M

September 6, 1990

TO:
Senator Nicholas J. Horn
Subcommittee Chairman of Bicycle Safety and Bicycle Trails

VIA:
Caren Jenkins, Research Analyst
Legislative Council Building
401 South Carson Street
Carson City, NV 89710

FROM:
Donna L. Varin, Chief, Driver's License Division

RE: S.C.R. 47, BICYCLE SAFETY AND BICYCLE TRAILS IN NEVADA

Thank you very much for your consideration of funding a driver education officer for the Driver License Division through your subcommittee's report on bicycle safety and bicycle trails in Nevada.

As you requested in the subcommittee meeting on June 21, 1990, I am providing you an outline of what we feel the responsibilities of this driver education officer could be.

Responsibilities of Driver Education Officer

I. Coordinate and promote a variety of highway safety issues and develop and present educational seminars to elementary, junior, and senior high schools, and to public service organizations throughout the state.

II. Develop Highway Safety Information
(a) general safe driving tips
(b) driving in inclement weather
(c) bicyle safety

(continued on following page)

(O)-3518

II. Develop Highway Safety Information (continued)
   1. Information for elementary school children on riding bicycles safely in traffic.
   2. A brochure for parents on training their young bicyclist to interact safely with traffic.
   3. Safe bicycling tips for adults.

III. Develop booklets discussing highway safety issues.

1. A Parents Guide for Teaching the New Driver

2. How to Get Your Nevada Driver License Application and Testing Information

3. Sharing the Road With Others
   (a) Barge, trucks, and buses
   (b) Bicycles
   (c) Pedestrians
   (d) general defensive driving techniques

4. How the Mature Driver Can Continue to Drive Safely
   (a) Vision information for elderly drivers.
   (b) Physical conditioning and exercise for the elderly driver.
   (c) How medication affects your driving.
   (d) Special conditions for the mature driver.
   (e) How family members can help the mature driver.

5. Safety Belt Information

6. Alcohol and Drug Information

7. Driver Improvement Programs

Our intent of the driver education officer would be to have them develop these specialized brochures and programs for presentation throughout the state, either personally or by use of existing driver license examiners and supervisors. This exposure to elementary schools, junior high schools, senior high schools, and public service groups would enhance the Driver License Division's image as a highway safety agency.

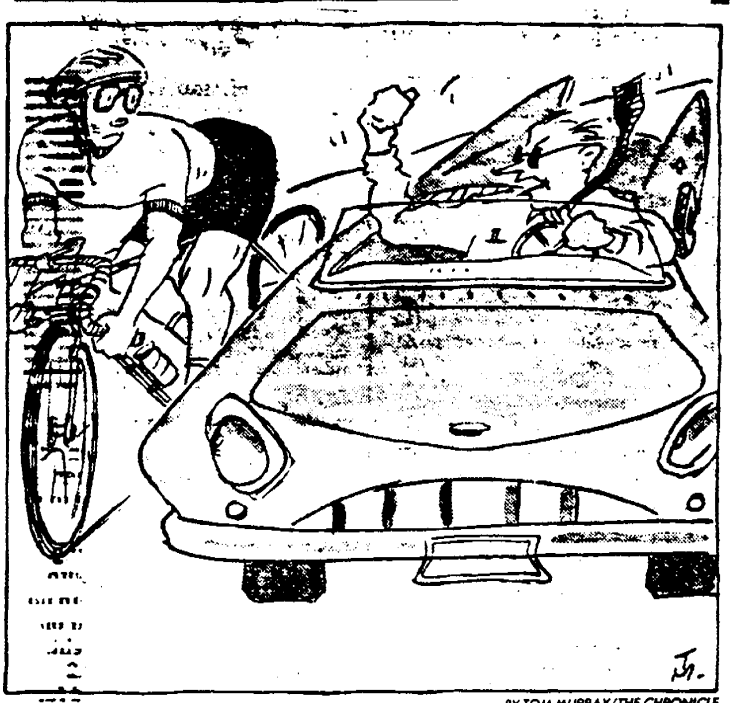
By providing education to the elementary schools and junior high schools we will bridge an important gap that will allow young people to understand the importance of the privilege to drive and to learn to respect that privilege at a very early age.

As I indicated in my testimony, we believe that providing a service to our customers is important, and the services that this program could provide could be truly invaluable.

Again, thank you very much for your consideration.

APPENDIX D

An article, titled "Why Bike Paths and Lanes May Not Be a Good Idea," from the April 23, 1990, edition of the San Francisco Chronicle



BY TOM MURRAY/THE CHRONICLE

Why Bike Paths and Lanes May Not Be a Good Idea

Douglas Moss
CYCLING

The driver honked his horn, then yelled at me through the window: "Hey, buddy. There's a bike path over there that you're supposed to be using."

I was in no position to argue. As I pedaled southward alongside the Pacific on San Francisco's Great Highway, a string of concrete construction barricades choked off the road's wide, right shoulder. There was only one prudent course to take; I moved three feet farther into the right-hand lane of the four-lane highway and held steady.

Under the circumstances, I could do no better than peer in through the car's passenger window and nod. "Yeah, sure," I said. "Thanks a lot."

The driver angrily down-shifted, swung into the empty left-hand lane and sped away.

In point of fact, the separate, paved strip to which the motorist referred is defined by traffic engineers as a multi-use path. Furthermore, even if it had been signed as a bike path, a cyclist would have no legal obligation to use it.

Apart from a bike "path," there's something called a bike "lane." California law views this differently; it is an integral part of the road surface, usually indicated by stripes on the pavement between the normal auto lane and the cars parked along the right-hand curb. If the road you are riding includes a bike lane, you are required to ride there except to avoid obstructions or to turn left.

Neither of these is to be confused with something else called a bike "route," which is a friendly suggestion of a way to avoid tough hills and heavy traffic.

Most of the tactics I use for riding safely come from John Forester's "Effective Cycling." Presented as a course "for safe, fast bike travel," Forester's technique for 15 years has borne the seal of approval from the League of American Wheelmen, the nation's oldest bicycle club.

Forester teaches that cyclists should never use anything designated as a bike path, unless it parallels a controlled-access highway. Studies have shown that bike paths result in nearly three times as many accidents with cars per mile as riding normally along the road. At almost every intersection, these paths surprise motorists with a bicycle from an unexpected direction.

More subjectively, Forester, who lives in Sunnyvale, personally views these paths as considerably more hazardous to ride, what with having to share them with joggers baby strollers, and dogs tending to business. This certainly has been the experience of any serious rider who has tried to use one of these facilities.

Effective Cycling also advises cyclists to avoid roads with bike lanes and opt for normal roads with the normal rules. These lanes seem to confuse everybody. Riders with a submissive streak tend to stick obediently in the lanes and then execute left turns by cutting dangerously across the normal lane of traffic.

Even worse, motorists often try to avoid the bike lane altogether and then, at intersections, abruptly turn right from what is, in effect, the left-hand lane. Department of Motor Vehicle records indicate that more than one-third of applicants for driver's licenses fail test questions on this subject; in my experience, most of the others just guessed right on their exam.

Because cars stay out of the bike lane, that tends to be the area that accumulates the most debris, especially in communities that sweep the streets infrequently. I ride in this lane just enough to be legal, but close enough to the real road to avoid flat tires as much as possible.

These are not radical concepts. Most traffic engineers and bicycle advocacy groups, such as the Regional Bicycle Advisory Council of the San Francisco Bay Area, now believe the solution to a safe mix of bicycle and motor traffic on our roadways simply lies in constructing wider, more generous right-hand lanes to share.

That leaves bike paths and lanes as the imperfect efforts of an earlier era.

Douglas Moss was technical director on the 1983 Tour of America, and has worked in the bicycle industry for the past 10 years.

APPENDIX E

Excerpts from Arizona Bicycle Facilities Planning & Design Guidelines, prepared by the Facilities Planning Committee--Arizona Bicycle Task Force, November 1, 1988

Arizona Bicycle Facilities Planning & Design Guidelines

INTRODUCTION

Purpose

This manual provides individuals and agencies in the State of Arizona with location, selection, and design information for bicycle facilities. The information presented in this manual reflects the state-of-the-art practice and is in agreement with proposed Federal guidelines.

The manual has been prepared by the Arizona Bicycle Task Force for the use in jurisdictions throughout the State of Arizona. The use of this manual will help to establish uniform bicycle facilities in conformance with Federal Highway Administration guidelines.

It is important to note that this manual reflects suggested planning and design guidelines. These guidelines are not to be construed as adopted design criteria.

Philosophy

The underlying philosophy of this manual is summarized in the following four points:

1. Official Recognition of the Bicycle as a Vehicle

   The Arizona Revised Statutes (A.R.S. 28-812) recognize the bicycle as a vehicle and, therefore, the bicycle is entitled to share the roadway with other vehicles except where expressly prohibited.

2. Selection of Appropriate Facilities

   Bicycles Facilities (i.e., bicycle routes, bicycle lanes, wide curb-lanes, and separate paths) should not be viewed as a hierarchy of facilities, but rather as various alternatives, each of which may be most appropriate depending on the circumstances. Sidewalk bikeway facilities are not a recommended alternative. The decision to use a sidewalk as a bicycle facility is at the discretion of the local municipality.

3. Desirability of Shared Roadway Facilities

   Shared roadway facilities (bike lanes, wide curb-lanes), if properly designed and located, can afford the bicyclist with facilities equally as safe as separate facilities. The most significant advantages result from increased visibility and maneuverability, greater system directness and continuity, and lower cost (as compared to a totally separate system).

4. Bicycles as a Transportation Alternative

   The Urban and rural bicycling population consists of people of all ages who use the bicycle for exercise, efficient transportation, recreation, and an alternative to motorized transportation. A very significant percentage of the bicycling population includes youngsters and adults who have no other means of transporting themselves. In urban areas, special attention should be given to providing safe bicycle facilities in school zones and residential areas.

Organization of This Manual

The remaining portion of the manual is organized into three major chapters. Chapter 2 discusses general location and selection criteria for bicycle facilities. Chapter 3 presents specific design guidelines for bicycle facility design. The Appendices include information on bicycle storage facilities, bicycle loop detectors and bicycle facility signing. A glossary of bicycle related terms and a selected bibliography is also included.

LOCATION AND SELECTION CRITERIA

The factors to be considered in choosing the proper location for bicycle facilities vary depending on the situation. The most important variables usually include those discussed in this chapter.

LOCATION CRITERIA FOR INCREASING ACCESSIBILITY

Potential Use

The facility should be located along a route where use can be maximized. The following factors should be examined to identify origins and destinations of trips:

1. Household distribution (single-family and multi-family)
2. Location of employment center
3. Location of major commercial areas and shopping centers
4. Enrollment and location of educational institutions
5. Location of multi-modal interface points (e.g., end points of the transit system; major transfer points)
6. Location of parks and recreational areas
7. Location of fast food and convenience stores

Access

In locating a bikeway, consideration should be given to provision of adequate access points. The more frequent and convenient the access points, the more the facility will be used. This is important for bikeways serving utility trips as well as recreational trips. Adequate access for emergency and service vehicles should also be provided. [2]

Directness

The bikeway should serve activity centers along a direct course. If a bikeway is not located between the trip origin and desired destination points (desire lines), it will be inconvenient and will not be used by most bicycle riders. Along recreational routes, this factor is not as important. [2]

The bicycle is considered to be a legitimate mode of transportation; accordingly, access is required from all major origins to all destinations. Ideally, all origin and destination pairs should be made accessible.

Existing Barriers

In some areas, there are major physical barriers to bicycle travel, caused by topographical features, freeways, canals, railroad tracks, or other impediments. In such cases, development of a bicycle facility crossing a barrier can provide new opportunities for bicyclists. [2] This would better optimize the available land and facilities.

Delays

Bicycle travel is inherently a slower mode of travel, particularly for longer trips. If bicyclists are required to make frequent stops, they will generally avoid the route. [2]

For this reason, when a bikeway is established on a minor street, consideration should be given to orienting stop signs to restrict cross traffic at most intersections, rather than on the bike route. This does not apply to major crossings, such as arterials and collectors, where stopping the traffic in favor of the bike route would disrupt the hierarchy of the street systems. However, it should be pointed out that this measure might also permit motorized vehicles traveling on these minor streets to increase their speed, thus attracting more traffic to this particular roadway.

Through streets for bicycles can be created without attracting more auto traffic if the implementing agency is willing to install "DO NOT ENTER - BICYCLES EXEMPTED" signs at strategic points such as mile and half-mile streets.

LOCATION CRITERIA FOR PROMOTING BICYCLE SAFETY

Use Conflicts

Different types of facilities introduce different types of conflicts. Facilities on the roadway can involve conflicts between bicyclists and motor vehicles. Bike paths usually involve conflicts with other bicyclists, with pedestrians on the path, and with motor vehicles at street intersections, curb cuts, and driveways. Sidewalk facilities can increase conflicts with pedestrians, with motor vehicles at highway and driveway intersections, and with fixed objects such as utility poles and guy wires. [2]

In accordance with this criterion, the following are recommended:

1. Roadway facilities should be provided only if the design criteria--intended to reduce bicycle/motor vehicle conflicts--are met.
2. Wherever possible, bike paths and pedestrian paths should be separate from each other.

3. The location of two-way bike paths immediately adjacent to a roadway should be discouraged.
4. Sidewalk facilities may be used by youthful bicyclists and only under very special conditions should they become part of the adult bikeway system.

Accidents

Reducing the number of bicycle accidents (i.e., bicycle/motor vehicle, bicycle/bicycle, bicycle/pedestrian, and single bicycle accidents) along routes is obviously important. The potential for alleviating accident problems through the improvement of a facility should be assessed, as should the potential for introducing new accident problems. [3]

When locating bicycle facilities, the following guidelines should be followed in order to reduce the potential for accidents:

1. In general, the location of bike facilities should be governed by the principle that the facility should not encourage or require bicyclists or motorists to operate in a manner inconsistent with the normal rules of the road.
2. Bicycle lanes should always be one-way facilities and carry traffic in same direction as adjacent motor vehicle traffic.
3. Sidewalk bikeway facilities are not a recommended alternative. The decision to use a sidewalk as a bicycle facility is at the discretion of the local municipality.

Traffic Volumes and Speeds

For facilities on the roadway, traffic volumes and speeds must be considered along with the roadway width, frequency of intersections, number of driveways, and signs. Commuting bicyclists frequently use arterial streets because they minimize delay and offer continuity for trips of several miles. If adequate width for all vehicles is available on more heavily traveled streets, improving heavily traveled streets can be more desirable than improving adjacent streets. When this is not possible, a nearby parallel street may be improved for bicyclists, provided that stops are minimal and the route conditions are adequate. [3]

Truck and Bus Traffic

Because of their aerodynamic effect and width, high-speed trucks, buses, motor homes, and trailers can cause special safety problems for bicyclists. [3]

Thus, if there is a choice between comparable routes, the route with the lower traffic volume would be preferable. As a general guide, shared roadway bikeways may be placed on roadways that carry truck/bus volumes of less than five percent of average daily traffic (ADT), and bike lanes may be accommodated on roadways with a combined truck/bus volume greater than five percent.

page 4

Pavement Surface Quality

Facilities located on roadways must have smooth pavement. The need for a bikeway surface as smooth if not smoother than the normal road surface is predicated on the fact that most bicycles have high-pressure tires that transmit every bump and do not have a suspension system to absorb these bumps. (However, care should be taken so that pavement surfaces used by other vehicles are not so smooth as to be slick and, thus, hazardous.) Utility covers and drainage grates should be flush with the pavement surface, and drainage grates should be designed to allow the crossing of bicycles without causing a fall. Grates should have a checkerboard pattern, or have slats oriented perpendicular to the flow of traffic. Approaches to railroad crossings should be improved as necessary to provide for safe bicycle crossings. [3]

The criteria for pavement surface quality are discussed in subsequent sections.

Maintenance

Ease of maintenance is important when locating facilities. Inadequately maintained facilities may prove to be poor investments. [3]

Proper maintenance can correct some unsafe conditions for bicycling; however, the cost of additional maintenance should also be considered.

On-Street Parking

The turnover and density of on-street parking can affect the safety of bicyclists (e.g., opening car doors and cars entering or leaving angle parking spaces.) [3]

LOCATION CRITERIA FOR IMPROVING SECURITY

Providing bicycle parking facilities is an essential element in an overall effort to promote bicycling and improve security. People are discouraged from bicycling unless sufficient and secure parking is available. Bicycle parking devices should be provided at both the trip origin and the destination and should offer protection from theft and damage.

The wide variety of bicycle parking devices fall into two categories of user needs: commuter or long-term parking, and convenience or short-term parking. The minimum needs for each differ with respect to placement and protection.

Long-term parking is needed at locations such as employment centers, schools, transit stations, and multi-family dwellings. Facilities should be provided which support the bicycle by the frame, secure both wheels and accessories, and offer protection from the weather. Bike lockers and attendant-operated storage areas are good examples of long-term parking facilities.

Short-term parking is needed at locations such as shopping centers, convenience and fast-food stores, libraries, recreation areas, and post offices. Facilities should be very convenient and should be near building entrances or other highly visible areas which are largely self-policing, and should support the bicycle by the frame. Where bicycle parking is not properly designed and located, bicyclists often use trees, railings, parking meters, and other fixed objects which can both cause damage to the object and create a hazard for pedestrians.

Several factors should be considered when planning and providing bicycle parking facilities. The facilities should protect bicycles from damage by automobiles and should not interfere with the normal pedestrian flow. Also, facilities should be adequately spaced so that persons parking their bicycles will not disturb other parked bicycles. Facilities should be able to accommodate a wide range of bicycle shapes and sizes. Finally, facilities should be simple to operate. If possible, signs depicting how to operate the facility should be posted. [3]

A wide variety of bicycle parking facilities are on the market today, ranging from simple racks, to racks complete with cable or locking devices, to lockers. Racks that rely on either of the wheels to support the bicycle can cause problems resulting in bent wheels, toppled over bicycles, and insufficient protection against theft. The best facilities do not rely on either wheel for support, yet provide secure locking. Parts theft can best be controlled by locating parking facilities in highly visible areas, or by providing for lockers or attendant-operated storage. Good design of bicycle parking facilities can help to make them attractive as well as convenient and secure.

LOCATION CRITERIA FOR IMPROVING RIDING ENVIRONMENT

Air Quality

The proximity to concentrations of air pollution should be considered for its possible effect on the health of bicyclists. [3]

Roadways with heavy, slow traffic are potential offenders, although a recent study by the U.S. DOT has shown that bicyclists do not develop higher bloodstream levels of carbon monoxide than do motorists traveling in the same corridor. Known air quality problem areas, or "hot spots," whether related to stationary or mobile pollutant sources, should be avoided if possible.

Attractiveness

The scenic value is particularly important along a bikeway intended to serve a recreational purpose. [3]

Grades

Steep grades on bikeways should be avoided if possible. Most bicyclists cannot negotiate steep uphill grades greater than 6 percent; these can be a severe deterrent to use of the facility. Also, riding downhill can be risky, particularly for unskilled bicyclists or for bicyclists with faulty equipment.

INTRODUCTION TO SELECTION CRITERIA

The selection process should be governed by the principle that facilities should not encourage bicycle or motor vehicle use in a manner contrary to the normal rules of the road. Adherence to this principle enhances both user safety and convenience.

One important consideration in selecting the type of facility is continuity. Alternating segments of bike paths and bike lanes (or bike routes) along a route are generally incompatible, as street crossings by bicyclists are required when the route changes character. Also, wrong way bicycle travel will occur on the street beyond the ends of bike paths because of the inconvenience of having to cross the street.

BICYCLE FACILITY TYPE AND ROADWAY FUNCTION

Once the bikeway options have been identified, each bicycle facility/roadway function combination must be further evaluated in terms of a number of location and design criteria such as traffic volumes and speeds, truck and bus traffic, street widths, on-street parking, etc.

Selection of the appropriate facility type to meet the bicycle need is dependent on many factors. The following paragraphs describe the most common uses for each facility type.

Bicycle Paths

Generally, bike paths should be used to serve corridors not served by streets and highways or where wide rights-of-way exist permitting such facilities to be constructed away from the influence of parallel streets. Bike paths should offer opportunities not provided by the road system. They can either provide a recreational opportunity or, in some instances, can serve as direct high-speed commuter routes if crossflow by motor vehicles can be minimized. The most common uses are along rivers, lake shores, canals, utility rights-of-way, abandoned railroad rights-of-way, within college campuses, or within and between parks. There may also be situations where such facilities can be provided as part of planned developments. Another common application is to eliminate impediments to bicycle travel caused by construction of freeways, or because of the existence of natural barriers. [2]

In some cases, bike paths could also be accommodated within the interstate rights-of-way, assuming that applicable laws permit and the criteria for bicycle and motorized traffic separation and compliance with the normal rules of the road are met. Right-of-way widths would have to be such that adequate room exists for the separated facilities.

Bicycle Lanes

Bicycle lanes are a portion of the roadway which has been designated for the preferential or exclusive use of bicyclists. This designation includes striped bike lanes, paved shoulders, and lanes for joint use by bicycles and disabled motor vehicles and bus-only diamond lanes. Tucson, for instance, uses a lane designated as BUS/RIGHT TURN ONLY (BICYCLES EXEMPTED).

Bike lanes are established along streets in corridors where there is significant bicycle demand, and where there are distinct needs that can be served by them. The purpose should be to improve conditions for bicyclists in the corridors and to better accommodate bicyclists through corridors with insufficient room for safe bicycling on existing streets. Other corridors that may warrant bike lanes include:

1. Corridors with heavy bicycle traffic, where bicyclists must frequently pass each other traveling in the same direction.
2. Insufficiently lighted corridors on which frequent nighttime usage is expected, e.g., those with a nighttime entertainment/shopping/education/recreational center as a common destination.
3. Corridors on which lane designation is not complicated by frequent residential or commercial driveways or roadway intersections.

Additional measures that might not be possible on all streets must be implemented on bike lane streets to improve the situation for bicyclists, (e.g., pavement surface improvements, stronger sweeping programs, special signal facilities, etc.). Special efforts should be made to ensure that high levels of service are provided with these lanes (i.e., bicycle-sensitive signal actuators, pavement markings, etc.), if bicycle travel is to be regulated by delineation. Additional night lighting of extensively traveled bicycle corridors also increases safety and comfort.

Bicycle lanes can be provided by widening existing roadways, paving shoulder areas, eliminating parking, or using emergency lanes for disabled vehicles.

Wide Curb-Lanes

Like bike lanes, wide curb-lanes are placed along streets in corridors where there is significant bicycle demand. Unlike bicycle lanes, however, wide curb-lanes are for shared use by bicycle and motorized traffic. The added lane width provides greater room for maneuvering and increases the lateral distance between bicyclists and vehicles.

Wide curb-lanes are appropriate bicycle facilities where traffic speeds and volumes are tolerable for shared roadway facilities.

Wide curb-lane facilities are selected when there is insufficient room for a separate bike lane, yet significant demand exists for providing a facility of some kind. To many experienced riders, wide curb-lanes are a preferred facility type because it integrates bicycle and vehicular traffic, and forces recognition and awareness on the part of the motorist. Some studies have indicated that on-road facilities have a higher safety index than off-road (side-walk) facilities (Deleuw, Cather and Co.) [5]

Wide curb-lane facilities can be created by widening roadways, by narrowing traffic lanes, or a combination of both. It should be noted that both the AASHTO (American Association of State Highway Transportation Officials) and the National Advisory Committee on Uniform Traffic Control Devices have commented in favor of reducing vehicle lanes from 12 feet to 11 feet for the purpose of widening the rightmost curb-lane for bicycle use.

Bicycle Routes

Bike routes are shared facilities which serve either to: (1) provide continuity to other bicycle facilities (usually bike lanes); or (2) designate preferred routes through high-demand corridors. As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes. This means that responsible agencies have taken actions to ensure that these routes are suitable as shared routes and will be maintained in a manner consistent with the needs of bicyclists. Normally, bike routes are shared with motor vehicles. [2]

Bike route planning should be undertaken in conjunction with the local area's transportation planning so that the special needs for bicycle routes are integrated with the area's circulation needs.

Shared Roadway (No Bikeway Designation)

Most bicycle travel now occurs on streets and highways without bikeway designations. This will probably be true in the future as well. In some instances, entire street systems may be fully adequate for safe and efficient bicycle travel, and signing and striping for bicycle use may be necessary. In other cases, a street may be inherently unsafe for bicycle travel and it would be inappropriate to encourage additional bicycle travel by designating the street as a bikeway.

Many rural highways are used by touring and recreational bicyclists for intercity travel. In most cases, it would be inappropriate to designate the highways as bikeways because of the limited use and the lack of continuity with other bike routes. [2]

DESIGN CRITERIA

DEFINITIONS

AASHTO

American Association of State Highway and Transportation Officials.

A.R.S.

Arizona Revised Statutes

Bicycle

Every device propelled by human power upon which any person may ride, having two tandem wheels either of which is more than 16" in diameter or having three wheels in contact with the ground any of which is more than 16" in diameter. (A.R.S. 28-101)

Bicycle Facilities

A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, maps, all bikeways, and shared roadways not specifically designated for bicycle use.

Bicycle Lane

A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Path

A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.

Bicycle Route

A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without a specific bicycle route number.

Bikeway

Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Highway

A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

MUTCD

Manual of Uniform Traffic Control Devices. State law (A.R.S. 28-641) requires the adoption of a uniform system of traffic control devices which . . . shall correlate with and so far as possible conform to the system set forth in the most recent edition of the manual of uniform traffic control devices for streets and highways prepared by the National Joint Committee on Uniform Traffic Control Devices.

Right-of-Way

A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes, but with other associated uses such as utilities, water and sewage lines, bus benches and buffer zones.

Right-of-Way

The right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

Roadway

The portion of the highway, including shoulders, for vehicle use.

Shared Roadway

Any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway.

Sidewalk

The portion of a highway designed for preferential or exclusive use by pedestrians.

INTRODUCTION

There is a wide range of facility improvements which can enhance transportation. Improvements can be simple and involve minimal design consideration (e.g., changing drainage grate inlets) or they can involve a detailed design (e.g., providing a bicycle path). The controlling feature of the design of every bicycle facility is its location (i.e., whether it is on the roadway or on an independent alignment).

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Roadway improvements such as bicycle lanes depend on the roadway's design. On the other hand, bicycle paths are located on independent alignments; consequently, their design depends on many factors, including the performance capabilities of the bicyclist and the bicycle.

Improvements for motor vehicles through appropriate planning and design can enhance bicycle travel and in any event should avoid adverse impacts on bicycling. A community's overall goals for transportation improvements should, whenever possible, include the enhancement of bicycling. Public involvement in the form of public meetings or hearings or bicycle advisory groups is desirable during the planning and design process.

Guidelines are presented in this chapter to help design and construct both roadway improvements and separate paths that accommodate the operation characteristics of "bicycles" as defined in the guide. Modifications to facilities (e.g., widths, curve radii, superelevations, etc.) that are necessary to accommodate adult tricycles, bicycle trailers, and other special purpose human powered vehicles and accessories should be made in accordance with expected use, using sound engineering judgment. Minimum standards should be strictly adhered to.

ROADWAY IMPROVEMENTS

Bicycle-safe design practices, as described in this guide, should be followed to avoid the necessity for costly subsequent improvements. Because most highways have not been designed with bicycle travel in mind, there are often many ways in which roadways should be improved to more safely accommodate bicycle traffic. Roadway conditions should be examined and, where necessary, safe drainage grates and railroad crossings, smooth pavements, and signals responsive to bicycles should be provided. In addition, the desirability of adding facilities such as bicycle lanes, bicycle routes, shoulder improvements, and wide curb-lanes should be considered. Information on each of the different roadway improvements is contained in this section.

Drainage Grates

Drainage grate inlets and utility covers are potential problems to bicyclists. When a new roadway is designed, all such grates and covers should be kept out of bicyclists' expected path. On new construction where bicyclists will be permitted, curb inlets should be used wherever possible to completely eliminate exposure of bicyclists to grate inlets. It is important that grates and utility covers be adjusted flush with the surface, including after a roadway is resurfaced.

Parallel bar drainage grate inlets can trap the front wheel of a bicycle causing loss of steering control and, often, the bar spacing is such that they allow narrow bicycle wheels to drop into the grates, resulting in serious damage to the bicycle wheel and frame and/or injury to the bicyclist. These grates should be replaced with bicycle-safe and hydraulically efficient ones. When this is not immediately possible, weld steel cross straps of bars perpendicular to the parallel bars to provide a maximum safe opening between straps. This should be considered a temporary correction.

While identifying a grate with pavement markings, the treatment indicated in the MUTCD (Appendix A), would be acceptable. In most situations, parallel bar grate inlets deserve special attention. Because of the serious consequences of a bicyclist missing the pavement marking in the dark or being forced over such a grate inlet by other traffic, these grates should be physically corrected as described above, as soon as practicable after they are identified.

Railroad Crossings

Railroad highway grade crossings should ideally be at a right angle to the rails. The greater the crossing deviates from this ideal crossing angle, the greater is the potential for a bicyclist's front wheel to be trapped in the flangeway, causing loss of steering control. It is also important that the roadway approach be at the same elevation as the rails.

Consideration should be given to the materials of the crossing surface and to the flangeway depth and width. If the crossing angle is less than approximately 45 degrees, consideration should be given to widening the outside lane, shoulder, or bicycle lane to allow bicyclists adequate room to cross the tracks at a right angle (see Figure 1). Where this is not possible, commercially available compressible flangeway fillers can enhance bicyclist safety. In some cases, abandoned tracks can be removed. Warning signs and pavement markings should be installed in accordance with the MUTCD.

Pavements

Pavement surface irregularities can do more than cause an unpleasant ride. Gaps between pavement slabs or drop-offs at overlays parallel to the direction of travel can trap a bicycle wheel and cause loss of control; holes and bumps can cause bicyclists to swerve into the path of motor vehicle traffic. Thus, to the extent practicable, pavement surfaces should be free of irregularities and the edge of the pavement should be uniform in width. On older pavements it may be necessary to fill joints, adjust utility covers or, in extreme cases, overlay the pavement to make it suitable for bicycling.

Traffic Control Devices

At intersections where bicycle facilities are in place, bicycles should be considered in the timing of the traffic signal cycle, as well as the traffic detection device. Normally, a bicyclist can cross an intersection under the same signal phasing arrangement as motor vehicles; however, on multi-lane streets special consideration should be given to ensure that short clearance intervals are not used. If necessary, an all-red clearance interval may be used.

To check the clearance interval, a bicyclist's speed of 10 m.p.h. (16km/h) and a perception/-reaction/braking time of 2.5 seconds should be used. Detectors for traffic-actuated signals should be sensitive to bicycles and should be located in the bicyclists' expected path, including left-turn lanes. Where programmed visibility signal heads are used, they should be checked to insure that they are visible to bicyclists who are properly positioned on the road.

The MUTCD should be consulted for requirements on signs and pavement markings. Where bicyclists are expected to use differ-ent routings than motorists, directional signing should be used to confirm to bicyclists that the special routing leads to their destination. For additional information refer to Appendix A.

Shoulders

Wide-curb lanes and bicycle lanes are usually preferred over shoulders for use by bicyclists. Shoulders are typically rough and contain much debris such as glass and obstacles. Therefore, they are usually a safety hazard. However, if it is intended that bicyclists ride on shoulders, smooth paved shoulder surfaces should be provided and maintained in a clean and safe condition. Pavement edge lines supplement surface texture in delineating the shoulder from the motor vehicle lanes. Rumble strips can be a deterrent to bicycling on shoulders and their benefits should be weighed against the probability that bicyclists will ride in the motor vehicle lanes to avoid them.

Shoulder width should be a minimum of 4 feet (1.2m) when intended to accommodate bicycle travel. Roads with shoulders less than 4 feet (1.2m) wide normally should not be signed as bikeways. If motor vehicle speeds exceed 35 mph (55km/h), if the percentage of trucks, buses, and recreational vehicles is high, or if static obstructions exist at the right side, then additional width is recommended.

Adding or improving shoulders can often be the best way to accommodate bicyclists in rural areas, and they are also a benefit to motor vehicle traffic. Where funding is limited, adding or improving shoulders on uphill sections first will give slow moving bicyclists needed maneuvering space and decrease conflicts with faster moving motor vehicle traffic.

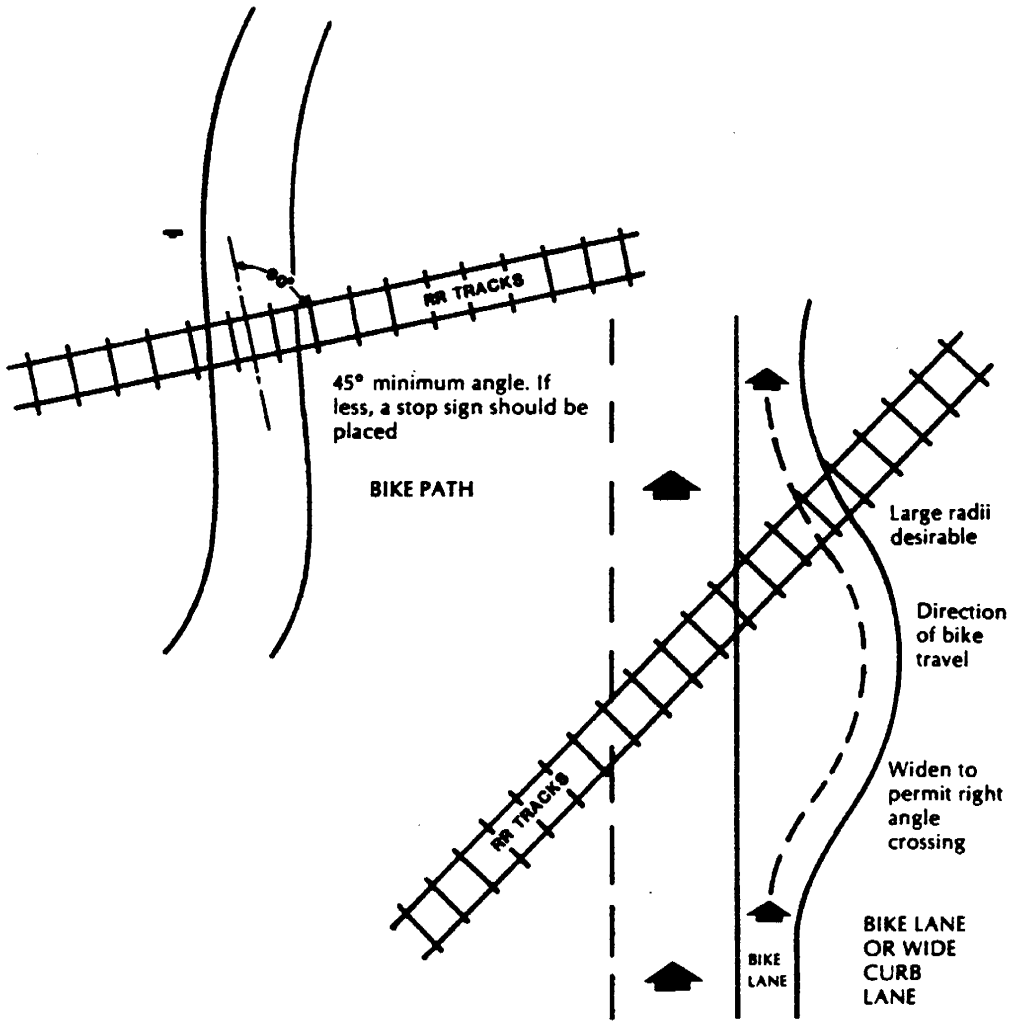


Figure 1

Wide Curb-Lanes

On highway sections without bicycle lanes, a right lane wider than 12 feet (3.7m) can better accommodate both bicycles and motor vehicles in the same lane and thus is beneficial to both bicyclists and motorists. In many cases where there is a wide curb-lane, motorist will not need to change lanes to pass a bicyclist.

Also, more maneuvering room is provided when drivers are exiting from driveways or in areas with limited sight distance. In general, a lane width of 15 feet (4.3m) of usable pavement width is desired. Drainage grates, parking, and longitudinal ridges between pavement and gutter sections are not considered usable pavement.

Widths greater than these can encourage the undesirable operation of two motor vehicles in one lane, especially in urban areas. When widths exceed 14 feet of usable pavement surface, a pavement edge line should be striped to discourage the undesirable operation of two motor vehicles in one lane. For example, if 15 feet of usable pavement surface exists, 11 feet could be striped for the motor vehicle lane, whereby, the minimum desirable 4 feet of remaining width adjacent to the motor vehicle lane would be provided for the cyclist. [3]

Figure 2(a) shows a typical urban roadway with wide curb-lane.

When a right-turn only lane exists at an intersection the additional width should be placed in the right-most through lane (see Figure 3).

Restriping to provide wide curb-lanes can be accomplished on most existing multi-lane facilities by making the remaining travel lanes and left-turn lanes narrower. This should be performed after careful review of traffic characteristics along the corridor.

BICYCLE ROUTES

It may be advantageous to sign some urban and rural roadways as bicycle routes. When providing continuity to other bicycle facilities, such as commuting facilities, a bicycle route can be relatively short. However, a bicycle touring route can be quite long. For long bicycle routes, a standard bicycle route marker with a numerical designation can be used in place of a bicycle route sign. Refer to Appendix A, (MUTCD Page 9B-10, Figure M1-8).

It is often desirable to use supplemental plaques with bicycle route signs or markers to furnish additional information, such as direction changes in the route, and intermediate range distance and destination information. [3]

Overall, the decision whether to provide a bicycle route should be based on the advisability of encouraging bicycle use on a particular road, instead of on parallel and adjacent highways. The roadway width, along with factors such as the volume, speed, type of traffic, parking conditions, grade, and sight distance, should be considered when determining the feasibility of a bicycle route.

Generally, bicycle traffic cannot be diverted to a less direct alternate route unless the favorable factors outweigh the inconvenience to the bicyclist. Roadway improvements, such as safe drainage grates, railroad crossings, smooth pavements, maintenance schedules, and signals responsive to bicycles, should always be considered before a roadway is identified as a bicycle route.

Further guidance on signing bicycle routes is provided in the MUTCD.

BICYCLE LANES

Bicycle lanes can be considered when it is desirable to delineate the rights-of-way assigned to bicyclists and motorists and to provide for more predictable movements by each. Bicycle lanes may include striped lanes on the roadway, use of emergency parking lanes, or use of paved shoulders. Passing motorists are less likely to swerve into the bicycle lane, since the two have separate lanes. Bicycle lane markings can increase bicyclists' confidence in motorists not straying into their path of travel. Likewise, passing motorists do not move to the left to avoid bicyclists on their right. Raised pavement markings and raised barriers present a hazard to bicyclists and should not be used to delineate bicycle lanes. The use of paint or thermoplastic markings to delineate bike lanes are generally preferred. [3] Thermoplastic markings may be slick when wet.

Presently, State design directives require use of thermoplastic markings for most State contracted roadway improvements. One potential compromise may be to permit painted markings along shoulders or to delineate bicycle lanes, stop bars, crosswalks in a bicycle lane, or other areas where encounters with bicycles are likely.

Bicycle lanes should always be one-way facilities and flow in the same direction as adjacent motor vehicle traffic. Two-way bicycle lanes on each side of the roadway are undesirable because they promote riding against the flow of traffic. Wrong way riding is a major cause of bicycle accidents and violates the Rules of the Road stated in the Arizona Statutes.

In addition, the maintenance of a bike lane may require more sweeping than normal to clear surface debris from the lane.

Bicycle Lane Widths

Under ideal conditions, the minimum desirable bicycle lane width is 4 feet (1.2m). However, certain edge conditions dictate additional desirable bicycle lane width. To examine the width requirements for bicycle lanes, Figure 2 shows three usual locations for such facilities in relation to the roadway. Figure 2b depicts bicycle lanes on an urban curbed street where a parking lane is provided. The recommended bicycle lane width for this location is 5 feet (1.5m). Bicycle lanes should always be placed between the parking lane and the motor vehicle lanes. Bicycle lanes between curb and the

parking lane create hazards for bicyclists from opening doors and poor visibility at intersections and driveways, and they prohibit bicyclists from making left turns; therefore, this placement shall never be considered.

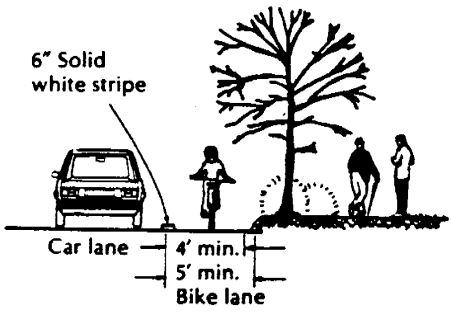
Where parking is permitted but a parking lane is not provided, the combination lane, intended for both motor vehicle parking and bicycle use, should be a minimum of 12 feet (3.7m) wide. However, if it is likely the combination lane will be used as an additional motor vehicle lane, it is preferable to designate separate parking and bicycle lanes as shown in Figure 2b. In both instances, if parking volume is substantial or turnover is high, an additional 1 or 2 feet (0.3 or 0.6m) of width is desirable for safe bicycle operation.

Figure 2c depicts bicycle lanes along the outer portions of an urban curbed street where parking is prohibited. Bicyclists do not generally ride near a curb because of the possibility of debris, of hitting a pedal on the curb, of an uneven longitudinal joint, or of a steep cross slope.

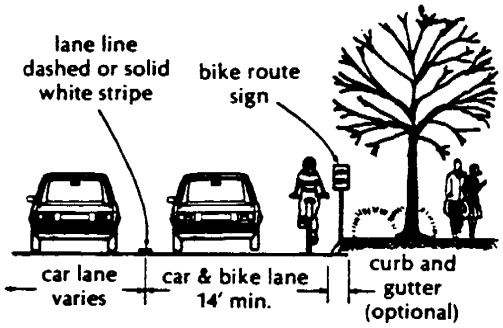
Bicycle lanes in this location should have a minimum width of 5 feet (1.5m) from the curb face. If the longitudinal joint between the gutter pan and the roadway surface is uneven and falls within 5 feet (1.5m) of the curb face, a minimum of 4 feet (1.2m) should be provided between the joint and the motor vehicle lanes.

Figure 2d depicts bicycle lanes on a highway without curb or gutter. Bicycle lanes shall be located between the motor vehicle lanes and the roadway shoulders. Bicycle lanes may have a minimum width of 4 feet (1.2m) where the shoulder can provide additional maneuvering width if paved. A width of 5 feet (1.5m) or greater is preferable; additional widths are desirable where substantial truck traffic is present, where prevailing winds are a factor, where motor vehicle speeds exceed 35 mph (55km/h), or if the shoulder is not paved.

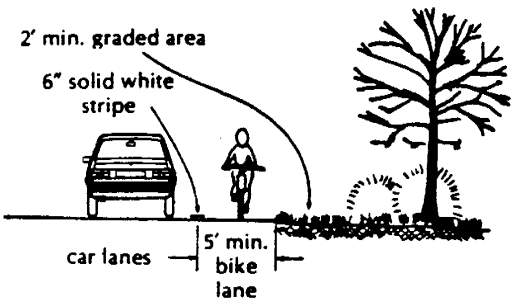
The typical width for a motor vehicle lane adjacent to a bike lane is 12 feet (3.6m). There are situations where it may be necessary to reduce the width of motor vehicle lanes in order to stripe bike lanes. In determining the appropriateness of narrower motor vehicle lanes, consideration should be given to factors such as motor vehicle speeds, truck volumes, alignment, and sight distance. Where favorable conditions exists, narrow motor vehicle lanes may be feasible.



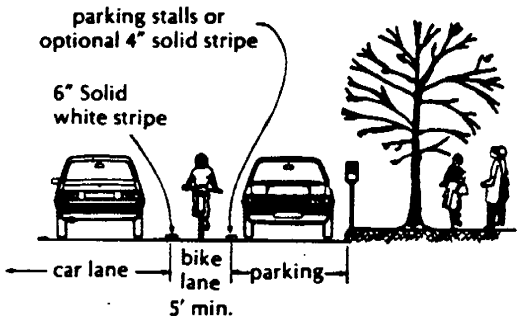
CURBED STREET WHERE
PARKING IS PROHIBITED



WIDE CURB LANE

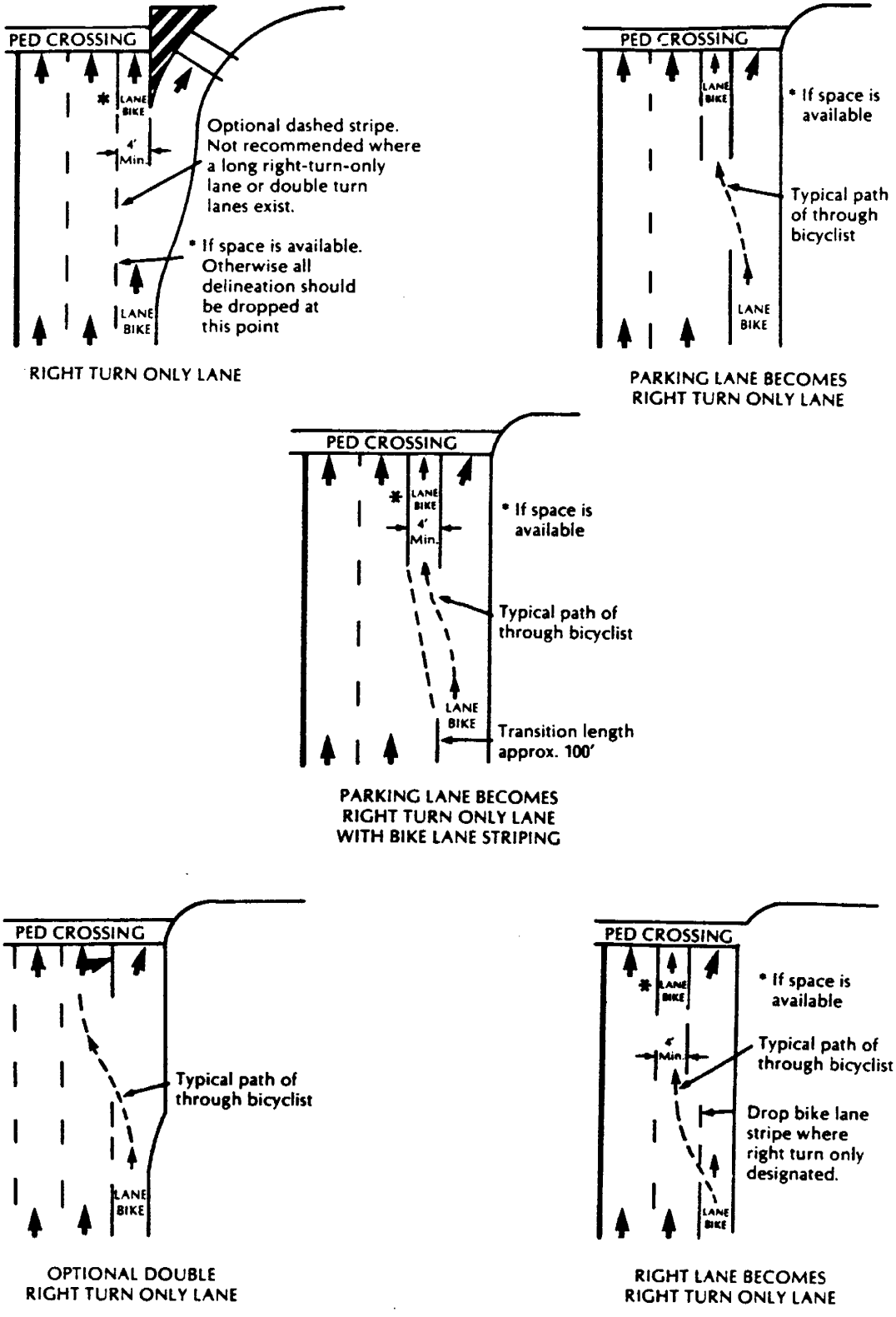


STREET WITHOUT CURB
OR GUTTER



CURBED STREET WITH
STRIPPED PARKING

Figure 2



Source: AASHTO Guide for Development of New Bicycle Facilities

BIKE LANES APPROACHING MOTORIST RIGHT-TURN ONLY LANES

Figure 3

Bike Lanes on One-Way Streets

If the bike lanes are to be located on one-way streets, the following guidelines should be kept in mind:

1. It is preferable to have lanes on the right side of the one-way street.
2. Bicycle lanes on the left side may be desirable if they reduce conflicts that may occur with heavy bus traffic.

Intersections With Bike Lanes

Bicycle lanes tend to complicate both bicycle and motor vehicle turning movements at intersections. Because they encourage bicyclists to keep to the right and motorists to keep to the left, both operators are somewhat discouraged from merging in advance of turn. Thus, some bicyclists will begin left turns from the right-side bicycle lane and some motorists will begin right turns from the left of the bicycle lane. Both maneuvers are contrary to established Rules of the Road and result in conflicts. Common movements of motorists and bicyclists are shown in Figure 4.

At intersections, bicyclists proceeding through and motorists turning right must cross paths. Striping and signing configurations which encourage these crossings in advance of the intersections, in a merging fashion, are generally preferable to those that force the crossing in the immediate vicinity of the intersection. To a lesser extent, the same is true for left-turning bicyclists; however, in this maneuver, vehicle codes allow the bicyclist the option of making either a "vehicle style" left turn (where the bicyclist merges leftward to the same lane used for motor vehicle left turns) or a "pedestrian style" left turn (where the bicyclist proceeds straight through the intersection, turns left at the far side, then proceeds across the intersection on the cross street).

When confronted with such intersections, bicyclists have to merge with right-turning motorists. Since bicyclists are typically traveling at lower speeds than motorists, they should signal and merge where there is a sufficient gap in right-turning traffic, rather than at a predetermined location. For this reason, it is recommended that either all delineation be dropped at the approach of the right-turn lane (or off ramp) or that a single, dashed bike lane line be used to aid smooth transition across the right-turn lane (see Figure 3). A pair of parallel lines (delineating a bike lane crossing) to channel the bike merge is not recommended, as bicyclists will be encouraged to cross at a predetermined location, rather than when there is a safe gap in right-turning traffic. Also, some bicyclists are apt to assume they have the right-of-way, and may not check for right-turning motor vehicle traffic.

A dashed line across the right-turn-only lane (or off-ramp) is not recommended on extremely long lanes, or where there are double right-turn-only lanes. For these types of intersections, all striping should be dropped to allow the bicyclist's judgment to prevail. Bike lanes crossing on-ramps do not present the same problems, as bicyclist normally have a good view of traffic entering the roadway, and will adjust their path as necessary to cross ramp traffic. A "Bike Xing" sign may be used to warn motorists of the potential for bicyclists crossing their path. [2]

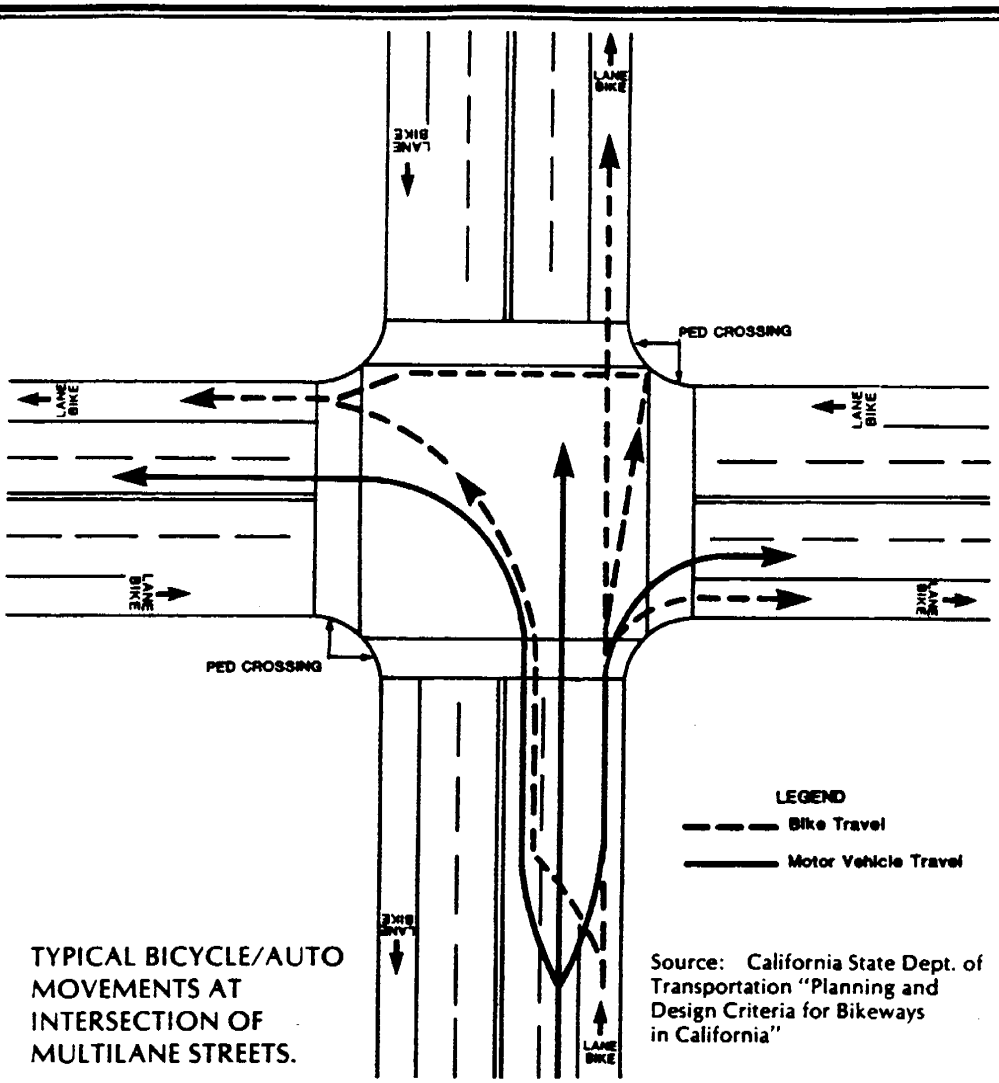
Figures 3 and 5 present examples of details on pavement markings for bicycle lanes, approaching motorists right-turn-only lanes and for on and off ramps. Where there are numerous left-turning bicyclists, a separate turning lane, as indicated in Part IX of the MUTCD (see Appendix A) should be considered. The design of bicycle lanes should also include appropriate signing at intersections to reduce the number of conflicts. General guidance for pavement markings for bicycle lanes is contained in the MUTCD.

A minimum 2-foot (0.6m) width graded area should be maintained adjacent to both sides of the pavement; however, 3 feet (0.9m) or more is desirable to provide clearance from trees, poles, walls, fences, guardrails, or their lateral obstructions. A wider graded area on either side of the bicycle path can serve as a separate jogging path.

A wide separation between a bicycle path and canals, ditches or other significant depressions is essential for safety. A minimum 5 foot separation from the edge of the bike path pavement to the top of the slope is desirable. If this is not possible, a positive barrier such as dense shrubbery or a chain link fence should be provided (see Figure 7).

A wide separation between a bicycle path and an adjacent highway is desirable to confirm to both the bicyclist and the motorist that the bicycle path functions as an independent highway for bicycles. When this is not possible and the distance between the edge of the roadway and the bicycle path is less than 5 feet (1.5m), a suitable physical divider, such as a fence, dense shrubs, or other barrier should be included in the design. Such dividers serve both to prevent bicyclists from making unwanted movements between the path and the highway shoulder and to reinforce the concept that the bicycle path is an independent facility. Where used, the divider should be a minimum of 4.5 feet (1.4m) high to prevent bicyclist from toppling over it, and it should be designed so that it does not become a hazard in itself.

The vertical clearance to obstructions should be a minimum of 8 feet (2.4m). However, vertical clearance may need to be greater to permit passage of maintenance vehicles and, in undercrossings and tunnels, a clearance of 10 feet (3m) is desirable for adequate vertical shy distance.



TYPICAL BICYCLE/AUTO MOVEMENTS AT INTERSECTION OF MULTILANE STREETS.

Source: California State Dept. of Transportation "Planning and Design Criteria for Bikeways in California"

Figure 4

Signal Design for Bicycle Lanes

At intersections where there are bike lanes and traffic signals, installation of bicycle-sensitive loop detectors within the bike lane is desirable. This is particularly important where signals are traffic-actuated, and will not change for a bicyclist unless a motor vehicle is present, or unless the bicyclist leaves the bike lane to trip the signal within the traffic lane. Generally, push button actuators are unsatisfactory at intersections; if the actuator is not properly located near the curb, bicyclists may have to dismount to reach it on the sidewalk. Often button activators are located 4 feet from the face of the curb.

It is also important that loop detectors in left-turn lanes be sensitive enough to detect bicycles. Where significant bicycle use is anticipated on any street with traffic-actuated signals it is recommended to install loop detectors that are sensitive enough to detect bicycles. [2] An example of such a loop detector is included in Appendix C.

Striping and Signing Bicycle Lanes

General requirements for striping and signing of bike lanes are contained in the MUTCD (see Appendix A and Figures 3 and 5). These guidelines are appropriate for Arizona and should always be consulted and followed.

Raised barriers (e.g., raised traffic bars and asphalt concrete dikes) or raised pavement markers should not be used to delineate bike lanes. Raised barriers and pavement markers prevent motorists from merging into bike lanes before making right turns, as required by the UVC (Uniform Vehicle Code), and restrict the movement of bicyclists desiring to enter or exit bike lanes. In addition, they can impede routine maintenance activities.

Adequate pavement surface, bicycle-safe grate inlets, and safe railroad crossings should always be provided on roadways where bicycle lanes are being designated. [2]

Where funding is limited, adding or improving bike lanes on uphill sections first will give slower moving bicyclists needed maneuvering space and decrease conflicts with faster moving motor vehicle traffic.

function best on hard surfaces, horses function best on soft surfaces. A compromise to accommodate both would result in less than adequate surface for both.

SUPPLEMENTAL BICYCLE FACILITIES

Providing bicycle parking facilities is an essential element in an overall effort to promote bicycling. People are discouraged from bicycling unless adequate parking is available. Bicycle parking facilities should be provided at both the trip origin and the trip destination and should offer protection from theft and damage. (See the Appendix for example bicycle parking facilities.)

The wide variety of bicycle parking devices fall into two categories of user needs; commuter or long-term parking, and convenience or short-term parking. The minimum needs for each differ in their placement and protection. Long-term parking is needed at locations such as employment centers, transit or subway stations, and multi-family dwellings. Facilities should be provided which secure the frame, both wheels, and accessories and which offer protection from the weather. Bicycle lockers and attended storage areas are good examples of long-term parking facilities. Short-term parking is needed at locations such as shopping centers, libraries, recreation areas, and post offices. Facilities should be very convenient and be near building entrances or other highly visible areas which are self-policing. The facility should be designed so that it will not damage bicycles (bent rims are common with racks that only support one wheel). If bicycle parking is not properly designed and located, bicyclists will use trees, railings, and other appurtenances. This practice can damage the appurtenances and create a hazard for pedestrians.

Several factors should be considered when planning and providing bicycle parking facilities. Care should be given in selecting the location to ensure that bicycles will not be damaged by motor vehicles. Parking facilities should not interfere with the normal pedestrian flow. Also, facilities should be designed so that persons parking their bicycles will not disturb other parked bicycles. The amount of security needed to prevent theft needs to be evaluated for each area.

Facilities should be able to accommodate a wide range of bicycle shapes and sizes including tricycles and trailers, if used locally. Finally, facilities should be simple to operate. If possible, signs depicting how to operate the facility should be posted.

In addition to bicycle parking facilities, there are several other improvements that complement bicycle paths and roadway improvements. Provisions should be considered for interfacing bicycle travel with public transit, such as racks on buses, buses converted to carry bicycles aboard, or allowing bicycles on rapid rail facilities. Printing and distributing bicycle route maps is a high-benefit, low-cost project that is easily accomplished. Maps can help bicyclists locate bikeways, parking facilities, and identify the relative suitability of different segments of the road system. Also, maps can help bicyclists avoid narrow, high-speed, or high-volume roads, one-way streets, barriers and other problems to bicyclists. In addition, maps can provide information on Rules of the Road, bicycle safety tips, and interfacing with mass transit.

OPERATION/MAINTENANCE OF BICYCLE FACILITIES

The agency responsible for the control, maintenance, and policing of bicycle facilities should be established prior to construction. The costs involved with the operation and maintenance should be considered and budgeted for when planning a facility. Neglected maintenance will render bicycle facilities unsafe, and the facilities will become a liability to the State or community. Bicyclists should be encouraged to report bicycle paths and roadways needing maintenance. A central contact person with authority to authorize maintenance work should be designated to receive such reports.

Bikeways, and roadways with bicycle traffic are often susceptible to having debris, such as glass or sand, accumulate in the area where bicyclists ride, therefore, regular sweeping is necessary. A smooth surface, free of potholes and debris, should be provided. The pavement edges should be uniform. Signs and pavement markings should be inspected regularly and kept in good condition. Highways with bicycle traffic may require a more frequent and higher level of maintenance than other highways.

For bicycle paths, attention should be given to maintaining the full paved width and not allowing the edges to ravel. Trees, shrubs and other vegetation should be controlled to provide adequate clearances and sight distances. Trash receptacles should be placed and maintained at convenient locations. Seeded and sodded areas in the vicinity of bicycle paths should have a regular schedule of mowing. Also, enforcement is usually necessary to prevent unauthorized motor vehicles from using the bicycle path. Routine maintenance patrolling of bicycle paths is desirable.

The routine maintenance of roadways provides an excellent opportunity to improve bicycle travel on those roads. Several bicycle facilities described in this manual can be implemented during routine maintenance activities. When lane markings for four or six lane streets are restriped, consideration can be given to adjusting the lane widths and providing a wide curb-lane for bicycles. Addition of edge lines can better delineate a shoulder, especially at night. When shoulders are resurfaced, a smooth surface suitable for bicycle riding should be considered. Additional roadway sweeping may be necessary for roadway facilities.

APPENDIX F

Suggested Legislation

SUMMARY--Directs certain planning commissions to include motor vehicle recovery and bicycle lanes in master plan and requires local governments to ensure lanes are constructed in certain cases. (BDR 22-362)

FISCAL NOTE: Effect on Local Government: Yes.

Effect on the State or on Industrial Insurance: No.

AN ACT relating to infrastructure; requiring certain city and county planning commissions to include motor vehicle recovery and bicycle lanes in their master plans; requiring local governments to ensure that lanes are constructed in certain cases; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 278 of NRS is hereby amended by adding thereto a new section to read as follows:

1. Each local planning commission responsible for the preparation of a city or county master plan shall consider the need for motor vehicle recovery and bicycle lanes and shall include in the master plan at least one right of way

which is designated for bicycles in at least each of the four major directions of the compass which is:

(a) Constructed according to appropriate standards of design for bicycle routes; and

(b) Clearly identified as a right of way for bicycles.

2. This section does not apply to a city whose population is less than 25,000.

Sec. 2. NRS 278.462 is hereby amended to read as follows:

1. The governing body may require:

[1.] *(a)* Street grading, drainage provisions and lot designs as are reasonably necessary.

[2.] *(b)* Offsite access, street alignment, surfacing and width, water quality, water supply and sewerage provisions as are reasonably necessary and consistent with the existing use of any land zoned for similar use which is within 660 feet of the proposed parcel. If the proposed parcels are less than 1 acre, the governing body may require additional improvements which are reasonably necessary and consistent with the use of the land if it is developed as proposed.

[3.] *(c)* For a second or subsequent parcel map with respect to a single parcel or contiguous tract of land under the same ownership any reasonable improvement, but not more than would be required if the parcel were a subdivision.

2. The governing body shall require a motor vehicle recovery and bicycle lane which is at least 3 feet wide on each street, highway or other road on which

the planning commission has determined such a lane to be appropriate. The lane must be designed, constructed and marked in accordance with any regulations concerning motor vehicle recovery and bicycle lanes adopted by the department of transportation.

SUMMARY--Requires installation of secure racks for parking bicycles at certain public buildings. (BDR 28-363)

FISCAL NOTE: Effect on Local Government: No.

Effect on the State or on Industrial Insurance: Yes.

AN ACT relating to public buildings; requiring the installation of secure racks for parking bicycles at certain public buildings; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 338 of NRS is hereby amended by adding thereto a new section to read as follows:

1. Each building or other facility which serves as a workplace for employees of this state or any entity of this state, except a political subdivision, must be equipped with a secure rack for parking bicycles which is available for free use by employees and members of the public who enter the facility.

2. The rack or racks for each facility must:

(a) Be located near an entrance to the facility which is open during all regular working hours; and

(b) Provide at least one space to park a bicycle for each 25 employees who work in the facility or five spaces, whichever is greater.

Sec. 2. This act becomes effective on July 1, 1992.

SUMMARY--Makes various changes regarding bicycles. (BDR 43-359)

FISCAL NOTE: Effect on Local Government: Yes.

Effect on the State or on Industrial Insurance: Effect less than $2,000.

AN ACT relating to bicycles; creating the Nevada bicycle advisory board; requiring governmental planning for transportation by bicycle; making various changes regarding the operation of bicycles and motor vehicles; prohibiting persons from throwing substances at or damaging bicycles; providing a penalty; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 484 of NRS is hereby amended by adding thereto a new section to read as follows:

1. The driver of a motor vehicle shall not:

(a) Intentionally interfere with the movement of a person lawfully riding a bicycle; or

(b) Overtake and pass a person riding a bicycle unless he can do so safely without endangering the person riding the bicycle.

2. The driver of a motor vehicle shall not stop, stand, park or drive within a pathway or lane provided for bicycles except:

(a) When preparing to make or making a turn;

(b) When entering or exiting an alley or driveway;

(c) When operating or parking a disabled vehicle;

(d) To avoid conflict with other traffic;

(e) In the performance of official duties;

(f) In compliance with the directions of a police officer; or

(g) In an emergency.

Except when necessary in an emergency, the driver shall yield the right of way to any person riding a bicycle on the pathway or lane.

Sec. 2. NRS 484.313 is hereby amended to read as follows:

484.313 1. The department of transportation [and local authorities] *or a local authority, after considering the advice of the Nevada bicycle advisory board,* may with respect to any controlled-access highway under [their respective jurisdictions prohibit or require] *its jurisdiction:*

(a) Require a permit for the use of the highway *by pedestrians, bicycles or other nonmotorized traffic or by any person operating a power cycle; or*

(b) If it determines that the use of the highway for such a purpose would not be safe, prohibit the use of the highway by pedestrians, bicycles or other nonmotorized traffic or by any person operating a power cycle.

2. Any person who violates any prohibition or restriction enacted pursuant to subsection 1 is guilty of a misdemeanor.

Sec. 3. NRS 484.509 is hereby amended to read as follows:

484.509 1. Every person operating a bicycle upon a roadway shall , *except:*

(a) When traveling at a lawful rate of speed commensurate with the speed of any nearby traffic;

(b) When preparing to turn left; or

(c) When doing so would not be safe,

ride as near to the right side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.

2. Persons riding bicycles upon a roadway shall not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles.

[3. Wherever a usable path for bicycles has been provided adjacent to a roadway, bicycle riders shall use such path and shall not use the roadway.]

Sec. 4. NRS 484.513 is hereby amended to read as follows:

484.513 1. Every bicycle when in use at night must be equipped with:

(a) A lamp on the front which emits a white light visible from a distance of at least 500 feet to the front;

(b) A red reflector on the rear of a type approved by the department which must be visible from 50 feet to 300 feet to the rear when directly in front of lawful lower beams of head lamps on a motor vehicle; and

(c) Reflective material of a sufficient size and reflectivity to be visible from both sides of the bicycle for 600 feet when directly in front of the lawful lower

beams of the head lamps of a motor vehicle, or in lieu of such material, a lighted lamp visible from both sides from a distance of at least 500 feet.

2. [A person shall not operate a bicycle unless it is equipped with a bell or other device capable of giving a signal audible for a distance of at least 100 feet, except a bicycle must not be equipped with and a person shall not use upon a bicycle any siren or whistle.

3.] Every bicycle must be equipped with a brake which will enable the operator to make the wheels skid on dry, level, clean pavement.

Sec. 5. Chapter 486 of NRS is hereby amended by adding thereto the provisions set forth as sections 6 and 7 of this act.

Sec. 6. *1. The Nevada bicycle advisory board, consisting of 14 members appointed by the governor, is hereby created.*

2. The governor shall appoint to the board:

(a) Seven members who reside in various geographical areas of this state, of which:

(1) One member must be less than 21 years of age at the time of his appointment.

(2) One member must be representative of an organization in this state interested in environmental issues.

(3) One member must be representative of an organization in this state interested in the promotion of bicycling.

(4) One member must be representative of an organization in this state involved in training persons in the safe use of bicycles.

(5) One member must own or manage a business for the sale or repair of bicycles.

(6) Two members must be representative of the public at large.

(b) One member who is a representative of the department of education.

(c) One member who is a representative of the division of environmental protection of the state department of conservation and natural resources.

(d) One member who is a representative of the division of state parks of the state department of conservation and natural resources.

(e) One member who is a representative of the health division of the department of human resources.

(f) One member who is a representative of the planning division of the department of transportation.

(g) One member who is a representative of the department of motor vehicles and public safety.

(h) One member who is a representative of the commission on tourism.

After the initial terms, the term of each member of the board appointed pursuant to paragraph (a) is 2 years. The remaining members serve at the pleasure of the governor.

3. Members of the board must serve in that capacity without compensation, except that necessary travel and per diem expenses may be reimbursed, not to exceed the amounts provided for state officers and employees generally, to the extent that money is made available for that purpose.

Sec. 7. *1. The Nevada bicycle advisory board shall:*

(a) At its first meeting and annually thereafter elect a chairman from among its members.

(b) Meet regularly at least once each calendar quarter and may meet at other times upon the call of the chairman.

(c) Promote programs and facilities for the safe use of bicycles in this state.

(d) Advise appropriate agencies of the state on policies, programs and facilities for the safe use of bicycles.

2. The board may apply for any available grants and accept and use any gifts, grants or donations to aid the board in carrying out its duties.

3. The department of transportation shall provide secretarial services to the board.

Sec. 8. NRS 486.061 is hereby amended to read as follows:

486.061 Except for a nonresident who is at least 16 years of age and is authorized by the state of his residency to drive a motorcycle, a person shall not drive:

1. A motorcycle, except a trimobile, upon a highway unless that person holds a valid motorcycle driver's license issued pursuant to [this chapter] *NRS 486.011 to 486.381, inclusive,* or a driver's license issued pursuant to chapter 483 of NRS endorsed to authorize the holder to drive a motorcycle.

2. A trimobile upon a highway unless that person holds a valid motorcycle driver's license issued pursuant to [this chapter] *NRS 486.011 to 486.381, inclusive,* or a driver's license issued pursuant to chapter 483 of NRS.

Sec. 9. NRS 486.101 is hereby amended to read as follows:

486.101 1. The application of any person under the age of 18 years for a motorcycle driver's license [shall] *must* be signed and verified, before a person authorized to administer oaths, by either or both the father or mother of the applicant, if either or both are living and have custody of him, or if neither parent is living, then by the [person or] guardian having [such] custody, or by an employer of [such] *the* minor, or if there is no guardian or employer, then by any responsible person who is willing to assume the obligation imposed [under this chapter,] *pursuant to NRS 486.011 to 486.381, inclusive,* upon a person signing the application of a minor.

2. Any negligence or willful misconduct of a minor under the age of 18 years when driving a motorcycle upon a highway [shall be] *is* imputed to the person who [has] signed the application of [such] *the* minor for a license . [, which person shall be] *That person is* jointly and severally liable with [such] *the* minor for any damages caused by [such] negligence or willful misconduct.

Sec. 10. NRS 486.111 is hereby amended to read as follows:

486.111 Any person who has signed the application of a minor for an instruction permit or license may thereafter file with the department a verified written request that the permit or license of the minor so granted be canceled. Thereupon, the department shall cancel the permit or license of the minor, and the person who signed the application of [such minor shall be] *the minor is* relieved from the liability imposed [under this chapter] *pursuant to NRS 486.011 to 486.381, inclusive,* by reason of having signed such application on

account of any subsequent negligence or willful misconduct of such minor in driving a motorcycle.

Sec. 11. NRS 486.121 is hereby amended to read as follows:

486.121 The department, upon receipt of satisfactory evidence of the death of the persons who signed the application of a minor for a license, shall cancel [such] *the* license and shall not issue a new license until [such time as] a new application, [duly] signed and verified, is made as required by [this chapter.] *NRS 486.011 to 486.381, inclusive.* This provision [shall] *does* not apply if the minor has attained the age of 18 years.

Sec. 12. NRS 486.141 is hereby amended to read as follows:

486.141 Every application for an instruction permit or driver's license under the provisions of [this chapter shall] *NRS 486.011 to 486.381, inclusive, must* be made upon a form furnished by the department. There [shall] *must* be no charge for the making and filing of the application.

Sec. 13. NRS 486.171 is hereby amended to read as follows:

486.171 A person shall not authorize or knowingly permit a motorcycle, except a trimobile, owned by him or under his control to be driven upon any highway by any person who is not authorized [by this chapter] *pursuant to NRS 486.011 to 486.381, inclusive,* to drive a motorcycle.

Sec. 14. NRS 486.251 is hereby amended to read as follows:

486.251 1. Every motorcycle or moped operated upon a highway of this state at any time from one-half hour after sunset to one-half hour before sunrise and at any other time when, because of insufficient light or unfavorable

atmospheric conditions, persons and vehicles on the highway are not clearly discernible at a distance of 1,000 feet ahead [shall] *must* display lighted lamps and illuminating devices as respectively required [in this chapter.] *pursuant to NRS 486.011 to 486.381, inclusive.*

2. Every motorcycle or moped operated upon a highway [shall] *must* be equipped with stop lights to be lighted in the manner prescribed for the use of such devices.

Sec. 15. NRS 486.261 is hereby amended to read as follows:

486.261 1. Every motorcycle or moped [shall] *must* be equipped with at least one tail lamp mounted on the rear, which, when lighted as required by [this chapter, shall emit] *NRS 486.011 to 486.381, inclusive, emits* a red light plainly visible from a distance of 500 feet to the rear.

2. [Such lamp shall] *The tail lamp must* be wired to be lighted whenever the head lamp is lighted.

Sec. 16. NRS 486.381 is hereby amended to read as follows:

486.381 Any person violating any provisions of [this chapter] *NRS 486.011 to 486.361, inclusive,* is guilty of a misdemeanor.

Sec. 17. NRS 205.2741 is hereby amended to read as follows:

205.2741 1. It is unlawful for any person:

(a) To throw any stone, rock, missile or any substance at any *bicycle, or at any* motorbus, truck or other motor vehicle; or

(b) Wrongfully to injure, deface or damage any *bicycle, or any* motorbus, truck or other motor vehicle, or any part thereof.

2. Any person who violates any of the provisions of subsection 1 is guilty of a public offense, as prescribed in NRS 193.155, proportionate to the value of the property damaged and in no event less than a misdemeanor.

Sec. 18. NRS 278.250 is hereby amended to read as follows:

278.250 1. For the purposes of NRS 278.010 to 278.630, inclusive, the governing body may divide the city, county or region into zoning districts of such number, shape and area as are best suited to carry out the purposes of NRS 278.010 to 278.630, inclusive. Within the zoning district it may regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures or land.

2. The zoning regulations [shall] *must* be adopted in accordance with the master plan for land use and [shall] be designed:

(a) To preserve the quality of air and water resources.

(b) To promote the conservation of open space and the protection of other natural and scenic resources from unreasonable impairment.

(c) To provide for recreational needs.

(d) To protect life and property in areas subject to floods, landslides and other natural disasters.

(e) To conform to the adopted population plan, if required by NRS 278.170.

(f) To develop a timely, orderly and efficient arrangement of transportation and public facilities and services [.] , *including facilities and services for bicycles.*

(g) To ensure that the development on land is commensurate with the character and the physical limitations of the land.

(h) To take into account the immediate and long-range financial impact of the application of particular land to particular kinds of development, and the relative suitability of the land for development.

(i) To promote health and the general welfare.

3. The zoning regulations [shall] *must* be adopted with reasonable consideration, among other things, to the character of the area and its peculiar suitability for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout the city, county or region.

Sec. 19. NRS 408.233 is hereby amended to read as follows:

408.233 1. The primary responsibilities of the planning division are to:

(a) Develop and coordinate balanced transportation policy and planning which are consistent with the social, economic and environmental goals of the state. The plan must be designed to meet the present and future needs of the state and local areas of the state for adequate, safe and efficient transportation facilities and services at a reasonable cost to the taxpayer . [; and]

(b) Coordinate local plans for balanced transportation facilities and services and assist in application for federal grants which must be submitted through an appropriate or designated state agency. The facilities and services may include, but are not limited to, highways, *pathways and special lanes for bicycles,* railways, urban public transportation and aviation. The authority and duties of

the department with respect to aviation are limited to areas outside the jurisdiction of any airport authority.

2. The planning division, in cooperation with other state agencies and with agencies of local government, shall:

(a) Establish planning techniques and processes for all modes of transportation at an appropriate level, according to the requirements of the state and local areas of the state.

(b) Prepare, revise when appropriate, provide supporting information for and assist in carrying out the transportation plan by providing assistance in the development of the department's capital program for all modes of transportation.

(c) Test and evaluate the policies, plans, proposals, systems, programs and projects of the department within the framework of the goals of the department.

(d) Conduct research in planning techniques, travel needs, transportation potential for the state, investigating, testing and demonstrating methods and equipment suitable for application to the problems of transportation facing the state.

3. The department shall not operate any railroad or airport.

Sec. 20. As soon as practicable after October 1, 1991, the governor shall appoint to the Nevada bicycle advisory board:

1. Three of the members required pursuant to paragraph (a) of subsection 2 of section 6 of this act to terms that expire on September 30, 1992;

2. Four of the members required pursuant to paragraph (a) of subsection 2 of section 6 of this act to terms that expire on September 30, 1993; and

3. The seven members required pursuant to paragraphs (b) to (h), inclusive, of subsection 2 of section 6 of this act to serve at the pleasure of the governor.

SUMMARY--Creates new positions to promote traffic safety and planning.

(BDR 43-360)

FISCAL NOTE: Effect on Local Government: No.

Effect on the State or on Industrial Insurance: No.

AN ACT relating to transportation; creating the position of drivers' education and safety officer in the department of motor vehicles and public safety; creating the position of motor vehicle recovery and transportation planner in the department of transportation; increasing the fee for drivers' licenses to provide money for the support of these new positions; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 483 of NRS is hereby amended by adding thereto the provisions as set forth as sections 2 and 3 of this act.

Sec. 2. *The position of drivers' education and safety officer is hereby created in the department. The drivers' education and safety officer shall plan and administer a program of safety education which includes safety information concerning interaction among motor vehicles, bicycles and pedestrians.*

Sec. 3. *1. The department shall charge and collect a fee of 50 cents, in addition to the fees set forth in NRS 483.410, for every driver's license, including a motorcycle driver's license, issued or renewed.*

2. The department shall deposit the money into the highway and safety administrative fund which is hereby created as a special revenue fund. The money in the fund may be used only as follows:

(a) Sixty-five percent of the money must be used for the support of the position of motor vehicle recovery and transportation planner created within the department of transportation pursuant to section 5 of this act; and

(b) Thirty-five percent of the money must be used for the support of the position of drivers' education and safety officer created pursuant to section 2 of this act.

Sec. 4. NRS 483.410 is hereby amended to read as follows:

483.410 1. For every driver's license, including a motorcycle driver's license, issued and service performed the following fees must be charged:

A license issued to a person 65 years of age or older	$4
An original license issued to any other person	9
A renewal license issued to any other person	9
Reinstatement of a license after suspension, revocation or cancellation except a revocation for a violation of NRS 484.379 or 484.3795 or pursuant to NRS 484.384 and 484.385	25

Reinstatement of a license after revocation for a violation of NRS 484.379 or 484.3795 or pursuant to NRS 484.384 and 484.385 50

A duplicate license, new photograph, change of name, change of address or any combination 5

2. For every motorcycle endorsement to a driver's license a fee of $5 must be charged.

3. If no other change is requested or required, the department shall not charge a fee to convert the number of a license from the licensee's Social Security number to a unique number based upon it.

4. The increase in fees authorized by NRS 483.347 *and the fee charged pursuant to section 3 of this act* must be paid in addition to the fees charged pursuant to subsections 1 and 2.

5. A penalty of $5 must be paid by each person renewing his license after it has expired for a period of 30 days or more as provided in NRS 483.386 unless he is exempt [under] *pursuant to* that section.

6. All fees and penalties are payable to the administrator at the time a license or a renewal license is issued.

7. [All] *Except as otherwise provided in section 3 of this act, all* money collected by the department [under] *pursuant to* this chapter must be deposited in the state treasury for credit to the motor vehicle fund.

Sec. 5. Chapter 408 of NRS is hereby amended by adding thereto the provisions set forth as sections 6 and 7 of this act.

Sec. 6. *1. The position of motor vehicle recovery and transportation planner is hereby created in the department.*

2. The motor vehicle recovery and transportation planner shall:

(a) Develop and administer a plan for the construction of motor vehicle recovery and bicycle lanes that are not less than 3 feet wide in all new construction and major repair work on every highway in the state, in accordance with appropriate standards of design;

(b) Develop a plan for the maintenance of motor vehicle recovery and bicycle lanes throughout the state;

(c) Prepare and distribute information on motor vehicle recovery and bicycle lanes, bicycle safety manuals and bicycle route maps throughout the state;

(d) Develop standards for the design of motor vehicle recovery and bicycle lanes and bicycle paths and routes;

(e) Develop standardized signs and markings which indicate bicycle lanes;

(f) Determine where appropriate signs and markings will be located on state highways and coordinate their placement;

(g) Establish a statewide plan of motor vehicle recovery and bicycle lanes and bicycle paths and routes and update the plan annually;

(h) Identify projects which are related to motor vehicle recovery and bicycle lanes and place each project in its proper order of priority;

(i) Investigate possible sources of money which may be available to promote motor vehicle recovery and bicycle lanes and bicycle facilities and programs throughout this state and solicit money from those sources;

(j) Provide assistance to the department of motor vehicles and public safety in coordinating activities which are related to motor vehicle and bicycle safety in the communities of this state;

(k) Investigate the programs of the Rails to Trails Conservancy and where feasible, participate in those programs;

(l) Identify the potential effect of bicycle programs on tourism in this state; and

(m) Carry out any other duties assigned to him by the director.

3. The director may remove any of the duties set out in subsection 2 if he determines that the duty is no longer necessary or appropriate.

Sec. 7. *The department shall integrate the consideration of motor vehicle recovery and bicycle lanes and bicycle routes, facilities and signs into all plans, designs, construction and maintenance of highways, in accordance with appropriate standards of design.*

Sec. 8. This act becomes effective on July 1, 1991.

SUMMARY--Requires that passenger on bicycle who is under 6 years of age wear a helmet. (BDR 43-364)

FISCAL NOTE: Effect on Local Government: No.

Effect on the State or on Industrial Insurance: No.

AN ACT relating to bicycles; requiring that a passenger on a bicycle who is under 6 years of age wear a helmet; providing a penalty; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 486 of NRS is hereby amended by adding thereto a new section to read as follows:

1. A person shall not ride a bicycle upon a highway while carrying a passenger who is under 6 years of age on the bicycle or in a bicycle trailer, unless the passenger is wearing a helmet which meets:

(a) The standards adopted by the American National Standards Institute concerning bicycle helmets; or

(b) The Snell Memorial Foundation's "Standards for Protective Headgear for Use in Bicycling."

2. A person who violates the provisions of subsection 1 shall be punished by a fine of not more than $50 unless, within 14 days after the issuance of the citation for the violation, the person presents to the court specified in the citation proof of his purchase of a helmet that meets the requirements of subsection 1. Upon presentation of such proof, the court shall void the citation.

3. A violation of this section may not be considered as evidence of negligence in a civil action.

4. As used in this section, "wearing a helmet" means having a helmet of good fit fastened securely upon the head.

Sec. 2. NRS 486.061 is hereby amended to read as follows:

486.061 Except for a nonresident who is at least 16 years of age and is authorized by the state of his residency to drive a motorcycle, a person shall not drive:

1. A motorcycle, except a trimobile, upon a highway unless that person holds a valid motorcycle driver's license issued pursuant to [this chapter] *NRS 486.011 to 486.381, inclusive,* or a driver's license issued pursuant to chapter 483 of NRS endorsed to authorize the holder to drive a motorcycle.

2. A trimobile upon a highway unless that person holds a valid motorcycle driver's license issued pursuant to this chapter or a driver's license issued pursuant to chapter 483 of NRS.

Sec. 3. NRS 486.101 is hereby amended to read as follows:

486.101 1. The application of any person under the age of 18 years for a motorcycle driver's license [shall] *must* be signed and verified, before a person

authorized to administer oaths, by either or both the father or mother of the applicant, if either or both are living and have custody of him, or if neither parent is living, then by the person or guardian having such custody, or by an employer of [such] *the* minor, or if there is no guardian or employer, then by any responsible person who is willing to assume the obligation imposed [under this chapter,] *pursuant to NRS 486.011 to 486.381, inclusive,* upon a person signing the application of a minor.

2. Any negligence or willful misconduct of a minor under the age of 18 years when driving a motorcycle upon a highway [shall be] *is* imputed to the person who [has] signed the application of [such] *the* minor for a license . [, which person shall be] *The person is* jointly and severally liable with [such] *the* minor for any damages caused by such negligence or willful misconduct.

Sec. 4. NRS 486.111 is hereby amended to read as follows:

486.111 Any person who [has signed] *signs* the application of a minor for an instruction permit or license may thereafter file with the department a verified written request that the permit or license of the minor so granted be canceled. Thereupon, the department shall cancel the permit or license of the minor, and the person who signed the application of [such minor shall be] *the minor is* relieved from the liability imposed [under this chapter] *pursuant to NRS 486.011 to 486.381, inclusive,* by reason of having signed [such] *the* application on account of any subsequent negligence or willful misconduct of [such] *the* minor in driving a motorcycle.

Sec. 5. NRS 486.121 is hereby amended to read as follows:

486.121 The department, upon receipt of satisfactory evidence of the death of the persons who signed the application of a minor for a license, shall cancel [such] *the* license and shall not issue a new license until such time as a new application, duly signed and verified, is made as required by [this chapter.] *NRS 486.011 to 486.381, inclusive.* This provision [shall] *does* not apply if the minor has attained the age of 18 years.

Sec. 6. NRS 486.141 is hereby amended to read as follows:

486.141 Every application for an instruction permit or driver's license [under the provisions of this chapter shall] *pursuant to NRS 486.011 to 486.381, inclusive, must* be made upon a form furnished by the department. There [shall be] *is* no charge for the making and filing of the application.

Sec. 7. NRS 486.171 is hereby amended to read as follows:

486.171 A person shall not authorize or knowingly permit a motorcycle, except a trimobile, owned by him or under his control to be driven upon any highway by any person who is not authorized by [this chapter] *NRS 486.011 to 486.381, inclusive,* to drive a motorcycle.

Sec. 8. NRS 486.251 is hereby amended to read as follows:

486.251 1. Every motorcycle or moped operated upon a highway of this state at any time from one-half hour after sunset to one-half hour before sunrise and at any other time when, because of insufficient light or unfavorable atmospheric conditions, persons and vehicles on the highway are not clearly discernible at a distance of 1,000 feet ahead [shall] *must* display lighted lamps

and illuminating devices as [respectively required in this chapter.] *required by NRS 486.011 to 486.381, inclusive.*

2. Every motorcycle or moped operated upon a highway [shall] *must* be equipped with stop lights to be lighted in the manner prescribed for the use of such devices.

Sec. 9. NRS 486.261 is hereby amended to read as follows:

486.261 1. Every motorcycle or moped [shall] *must* be equipped with at least one tail lamp mounted on the rear, which, when lighted as required by [this chapter, shall emit] *NRS 486.011 to 486.381, inclusive, emits* a red light plainly visible from a distance of 500 feet to the rear.

2. [Such lamp shall] *The lamp must* be wired to be lighted whenever the head lamp is lighted.

Sec. 10. NRS 486.381 is hereby amended to read as follows:

486.381 Any person violating any provisions of [this chapter] *NRS 486.011 to 486.361, inclusive,* is guilty of a misdemeanor.

SUMMARY--Requires development of educational program concerning bicycle safety. (BDR 43-386)

FISCAL NOTE: Effect on Local Government: No.

Effect on the State or on Industrial Insurance: Yes.

AN ACT relating to bicycles; requiring the department of motor vehicles and public safety to develop an educational program to promote bicycle safety; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Chapter 486 of NRS is hereby amended by adding thereto a new section to read as follows:

1. The department shall develop an educational program concerning bicycle safety which must be:

(a) Suitable for children and adults; and

(b) Developed by a person who is trained in the techniques of bicycle safety.

2. The program must be designed to:

(a) Aid bicyclists in improving their riding skills;

(b) Inform bicyclists of applicable traffic laws and encourage observance of those laws; and

(c) Promote bicycle safety.

SUMMARY--Encourages owners of businesses and other employers to provide secure bicycle racks. (BDR R-367)

CONCURRENT RESOLUTION--Encouraging the owners of businesses and other employers to provide secure bicycle racks for use by customers and employees.

WHEREAS, The residents of Nevada use bicycles for commuting, shopping, recreation and to improve their physical fitness; and

WHEREAS, Bicycles are an alternative form of transportation which do not contribute to the deterioration of the quality of the air; and

WHEREAS, Persons should be encouraged to ride bicycles; and

WHEREAS, Providing secure places to park bicycles will encourage persons to ride bicycles; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That owners of businesses and other employers are hereby encouraged to provide bicycle racks for the secure parking of the bicycles of customers and employees.

SUMMARY--Urges Department of Motor Vehicles and Public Safety to include at least one question concerning bicyclists on examination for driver's license. (BDR R-368)

CONCURRENT RESOLUTION--Urging the Department of Motor Vehicles and Public Safety to include at least one question concerning the interaction between bicycles and motor vehicles on each written examination for a driver's license.

WHEREAS, The safety of persons who drive motor vehicles and persons who ride bicycles is an important concern; and

WHEREAS, Members of the public who drive motor vehicles need to be made aware of the rights of persons who are riding bicycles; and

WHEREAS, Members of the public who drive motor vehicles must be educated concerning their duty of care toward persons who are riding bicycles; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE CONCURRING, That the Department of Motor Vehicles and Public Safety is hereby urged to include at least one question which concerns the interaction between bicycles and motor vehicles on each written examination for a driver's license; and be it further

RESOLVED, That a copy of this resolution be transmitted by the of the to the Director of the Department of Motor Vehicles and Public Safety.

SUMMARY--Urges State Board of Education to adopt regulations concerning bicycle safety for pupils in elementary schools. (BDR R-369)

CONCURRENT RESOLUTION--Urging the State Board of Education to adopt regulations concerning bicycle safety for pupils in elementary schools.

WHEREAS, The safety of the children who ride bicycles in Nevada is a major concern; and

WHEREAS, The education of these children concerning the rights and responsibilities of a bicyclist is important to their safety; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE

CONCURRING, That the State Board of Education is hereby urged to adopt regulations which require the school districts to offer bicycle safety examinations in elementary schools and to issue certificates to pupils who successfully complete the examinations; and be it further

RESOLVED, That the State Board of Education is hereby urged to adopt regulations to include bicycle safety education in the basic living skills or health curriculum in all elementary schools; and be it further

RESOLVED, That a copy of this resolution be transmitted by the of the to the President of the State Board of Education.

SUMMARY--Urges State Board of Education to adopt regulations requiring each school district to develop policy concerning protective headgear for pupils who ride bicycles to school. (BDR R-370)

CONCURRENT RESOLUTION--Urging the State Board of Education to adopt regulations which require each school district to develop a policy concerning protective headgear for pupils who ride bicycles to school.

WHEREAS, Many pupils ride their bicycles to school each day; and

WHEREAS, These pupils often must travel on roads congested with motor vehicles to reach the school; and

WHEREAS, Potential accidents with these motor vehicles pose a threat of serious injury to these pupils; and

WHEREAS, The wearing of protective headgear should greatly reduce the severity of the injuries which a child may suffer in such an accident; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE

CONCURRING, That the State Board of Education is hereby urged to adopt regulations which require each school district to develop and enforce a policy concerning protective headgear for pupils who ride bicycles to school and providing for the issuance of certificates by the principal of the school to

pupils who have demonstrated that they have access to and wear protective headgear when riding their bicycles to and from school; and be it further

RESOLVED, That a copy of this resolution be transmitted by the of the to the President of the State Board of Education.

SUMMARY--Urges State Board of Education to require inclusion of information concerning bicycles in curriculum of automobile driver education. (BDR R-371)

CONCURRENT RESOLUTION--Urging the State Board of Education to require the inclusion of information concerning the rights and duties of bicyclists and drivers of motor vehicles in the curriculum of programs for automobile driver education.

WHEREAS, Bicycling is a healthy and inexpensive method of transportation; and

WHEREAS, It is important for persons who ride bicycles to know their rights and responsibilities when riding on highways; and

WHEREAS, It is important for drivers of motor vehicles to know their rights and responsibilities concerning the interaction between bicycles and motor vehicles; and

WHEREAS, Educating the pupils of the State of Nevada concerning laws relating to the interaction between bicycles and motor vehicles is important in developing responsible bicyclists and drivers of motor vehicles; now, therefore, be it

RESOLVED BY THE OF THE STATE OF NEVADA, THE

CONCURRING, That the State Board of Education is hereby urged to include a requirement for information concerning the rights and duties of

bicyclists and drivers of motor vehicles in the regulations adopted pursuant to NRS 389.090, concerning the scope of automobile driver education in public schools; and be it further

RESOLVED, That a copy of this resolution be transmitted by the of the to the President of the State Board of Education.