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1975



BIKE ROUTE

August, 1975

COUNTY OF OAKLAND

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858-0720

BICYCLING IN OAKLAND COUNTY

THE EARLY YEARS

Recalling what we like to think was a slower-paced, simpler era, these classic, turn-of-the-century cyclists pictured on the right, suggest the beginning of bicycling in Oakland County. This past may now seem romantically remote to us, but from its outset bicycling was a serious form of transportation as well as a highly organized form of recreation.

Of all the bicycling activities from this early period, best known to us and the most colorful were those of early bicycling organizations. The League of American Wheelmen, a national organization composed of more than 100,000 members, was perhaps the most active in Oakland County. It had, as early as 1890, charted out bike routes throughout southeastern Michigan and many other parts of the nation. Formed in 1880 at Newport, Rhode Island, the Wheelmen used their influence, through their membership strength, to upgrade the activity of bicycling - with emphasis being given to the quality of roads.

The bicycle, a "rapid and individualized transportation machine" using the latest improved ball bearings, led the way for the development and eventual acceptance of the motor car. By pressuring for better road technology, bicycling ultimately set the stage for its own decline, for good roads further helped to increase the demand for the faster, more dynamic automobile.

Organizations like the League of American Wheelmen declined in the early part of the twentieth century when their ridership began to drop off. Americans were becoming more and more adept in exploiting the energies contained in fossil fuels. In the excitement over this new-found "power," the bicycle's popularity diminished.

When World War II began to consume the resources from the nation's industrial centers the bicycle again found acceptance, owing to the temporary shortage of steel, rubber and gasoline. Our current fuel shortage, however, can merely be added to other recently "discovered" problems such as pollution, traffic fatalities, and urban "sprawl." Despite these difficulties, the mass-produced automobile has emerged as and remains an integral part of our lives. Some motorists though are now seeking alternate means of getting from one place to another - especially for short distances. Concurrent with this change in transportation attitude is the increasing public awareness of the relationship between the bicycle, physical exercise, and health.

It seems that we are unintentionally coming full-circle from the turn-of-the-century. Our present urban environment, however, poses considerable problems for this form of activity - in particular, for human safety.



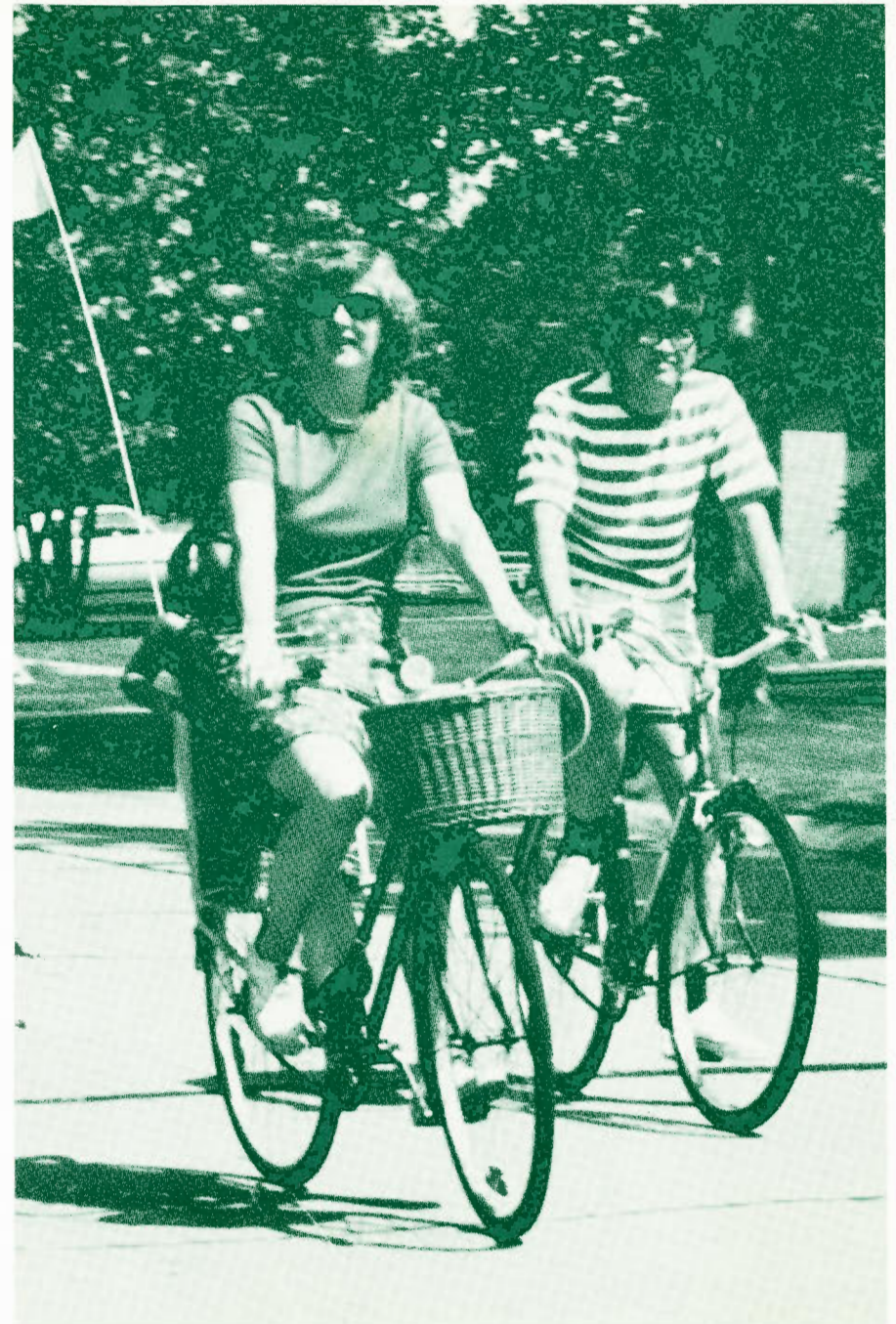
TODAY'S BICYCLING RENAISSANCE

More than 30% of the U.S. population now rides bicycles. In 1974, national sales rose to approximately 14 million - of which 65% were "adult type" bikes. At last estimate (1973) there were about 318,600 bicyclists in Oakland County, and as more and more of the County's increasing population rides bicycles there is every reason to expect considerable increases in the number of bicyclists.

Accelerating and unanticipated popularity of bicycling activities has led to another trend: rising fatalities and accidents. Fatalities involving Michigan bicyclists have increased more than 100% since 1963. In 1973, there were 4,644 accidents involving bicyclists, and of these, 501 were in Oakland County. Contributing very greatly to these unfortunate statistics has been an inappropriate and almost competitive relationship between the cyclist and the motorist for space on our roadways.

One hope for decreasing the accident and fatality trend is the implementation of bikeway systems in our local communities. Given that bikeways are one definite means for promoting the bicyclist's safety and personal enjoyment, the question then becomes: who will plan and build them? State agencies such as the Department of Natural Resources and the Michigan Department of State Highways and Transportation are incorporating bikeways in recreation areas and along new highways.

Planning for the bicyclist, however, is otherwise essentially the responsibility of the local units of government. Individual communities will be providing the majority of bicycling opportunities and in turn encountering the majority of bicycling problems. The following information has been prepared for their benefit.



WHAT ARE BIKEWAYS

One person may envision a bikeway as a narrow dirt path within a park. To another it may represent a section of pavement in a city alongside parked cars and separated from automobile traffic by a green stripe on the road surface. Yet to another it may be merely a series of posted bike route signs directing bicyclists along certain prescribed streets in a residential neighborhood. The individual's experiences will directly influence his expectations.

In recent years there has been confusion regarding bikeway terminology. It is therefore necessary to clarify the different types of bikeways so that during the planning process a common language, free of ambiguity, may be used. In this effort, the Bicycling Institute of America has established standardized bikeway classifications, consisting of three distinct classes with variations for each:

CLASS I BIKEWAY

An independent riding surface for the use of bicyclists exclusively. When paralleling an automobile roadway, the bike path is physically separated from the hazards of automobile traffic by distance or by three-dimensional barriers. This is the most expensive system to construct, but the safest. Conflicts between the cyclist and the motorist are virtually eliminated as well as those between the cyclist and the pedestrian. In effect a narrow, limited-access "road" is provided and clearly marked with appropriate signs. The Class I bikeway frequently offers the bicyclist the most pleasurable and varied riding experience. Having the greatest potential for landscaping, these routes are usually the most scenic and are often allowed to flow with the natural topography. The only real danger here is where breaks occur in the system at roadway and railroad crossings.



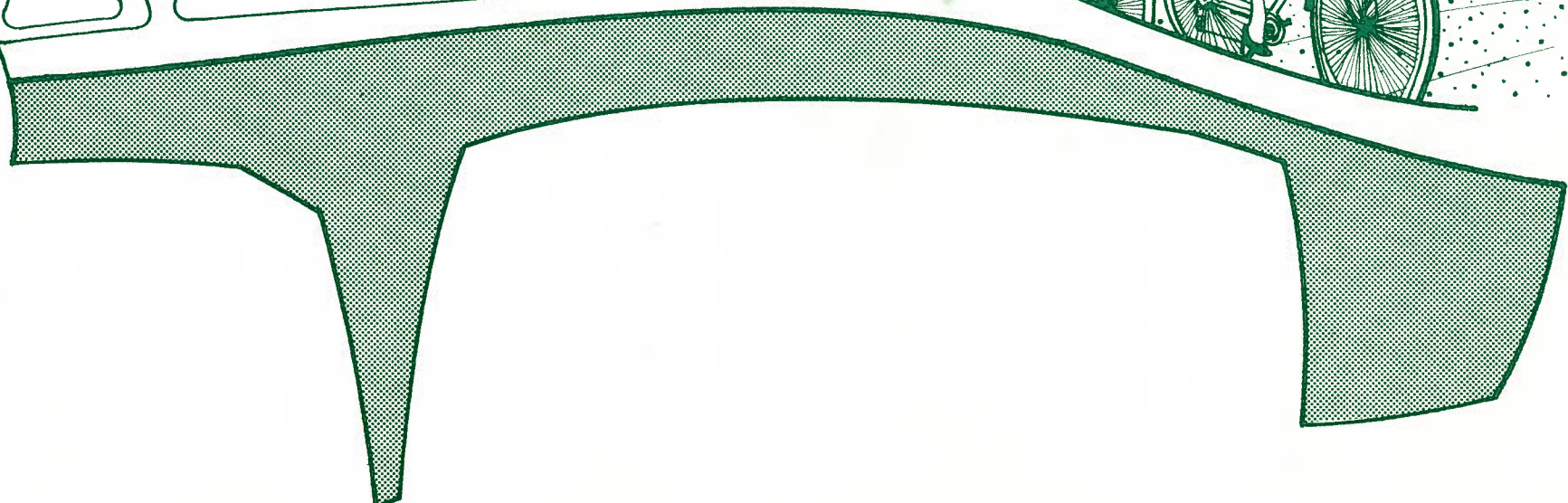


CLASS II BIKEWAY

Narrow lanes within an existing street right-of-way which are dedicated for the exclusive or semi-exclusive use of the bicyclist. This system is designed to accommodate and "protect" the bicyclist by means of road surface lane-markings and appropriate signs. The presence of two systems (roadway and bikeway) within one undivided right-of-way, however, is not the best solution, and some conflict can be anticipated.

Danger points occur along the route where either the bicyclist must cross over a driving lane in order to turn left or where drivers must turn across a bikelane in order to turn right. This system can break down completely if a road is already too heavily used by motor vehicles.





CLASS III BIKEWAY

A street right-of-way which is also designated for bicycle use and so indicated by appropriate signs and curb markings. This system does not further structure the movement of either motor vehicles or bicycles, and is most appropriate for those streets carrying low volume traffic. Obviously, this system relies totally on the attention and judgment of both motorist and bicyclist.

Although standard bikeway classifications have been established, it would be difficult, if not impossible, to predetermine when any one class should be used. In the decision-making process, the most important criterion is to establish the most **appropriate** system for the particular situation- appropriate, in terms of **human safety, utility, personal enjoyment** and **economic feasibility**. A Class I bikeway, for example, would seemingly be as inappropriate in a traffic congested central business district as it would be in a remote, rural, farmland area etched with gravel roads and picket fences. Likewise, a Class III bikeway might be considered inappropriate on a heavily travelled four-lane highway.





Kent
Smith

WHERE TO BUILD BIKEWAYS

A well-planned bikeway should provide a kaleidoscope of images and a varied pattern of sensations for the bicyclist. As he peddles along at his own pace, the route should have a distinct feel to him and a perceived tempo. The topography could be flat or rolling, and the variation it offers might be augmented by subtle directional changes and imaginative pavement variations in the path. As the bicyclist moves along, landmarks should reveal themselves. A low-lying body of water may emerge and serve as a point of orientation. Fine points of the landscape or of the city appear, become prominent, and then fade into the background as the cyclist continues on. Stopping at places having special visual or socio-cultural significance punctuates the journey and enriches its meaning.

The bicycle does more than simply replace the automobile for certain trips. The bikeway user will feel many levels of personal involvement with his community, which is made more convenient and more accessible to him. One might imagine that people seventy-five years ago had a similar grasp of their immediate surroundings. They simply did not have the technological ability to speed through it on roadways which obscured their landmarks and dulled their senses. Given that this past close relationship is largely missing in our automobile-dominated society, bicycling - encouraged by appropriate facilities - would seem to offer the general public a solution to an apparent cultural and social need.

Modern, more sophisticated skills are required in order for us to design for the kinds of bicycling experiences described. Regardless of the type of trip to be served by a bikeway, a comprehensive inventory must be made along proposed routes. Such an inventory would identify all the essential components of the surrounding environment which might affect bikeway quality, and would include: **natural resources, vacant lands, utility easements, road and railroad rights-of-way, street intersections, general and peak-hour traffic volumes, traffic signals, bicycle accident rates, prominent landmarks, etc.**

Bikeway locations are determined by first and foremost identifying the type or types of uses they are intended to serve. The following classifications describe the principal activities which are becoming more frequently dependent on the bicycle:

Michigan Road Book: 1890

ROUTE FIVE.

Detroit to East Saginaw.

103 Miles.

REFERENCE.—Figures in first column denote number of miles from preceding station. Figures on right connecting routes. † Local Consul here (see list). * L. A. W. Hotel here (see list). S. P., side path; T. R., turn right; T. L., turn left. Material and Condition *up to* point written opposite. Gravel roads will average, as shown during entire riding season, clay ones only in dry season.

Miles.	Stations.	Material.	Condition.	
	DETROIT			† * Route 1 { to 13 inc.
18	BIRMINGHAM ...	Gravel	Good	†
8	PONTIAC	"	V. Good	† * 41, 75, 52
20	HOLLY	Sand	Poor	† * 74
6	FENTON	Gravel-Sand.	Fair	67
16	FLINT	"	Good	† * } 35, 36, { 37, 38.
7	MT. MORRIS ...	"	"	
5	PINE RUN	Clay-Sand ...	Fair	
5	BIRCH RUN ...	" "	"	
13	BRIDGEPORT ...	Plank-Sand .	"	
103-5	EAST SAGINAW.	Plank	"	† * } 22, 23, { 24, 73.

Leave Detroit *via* Woodward Ave. direct to Pontiac. From Pontiac to Holly very sandy. Advise take train; fare, 60 cents. From Holly main road direct to Fenton. From Fenton direct north 16 miles to Flint. Leave Flint *via* Saginaw street, and follow telephone poles to East Saginaw. Enter city *via* Genesee street.

Detroit to Pontiac gravel, very good with fine coasts last 8 miles. Pontiac to Holly heavy sand; bad. Holly to Fenton, good. Fenton to Flint, gravel, good except 2 miles near Fenton. Flint to East Saginaw fair to good, during dry seasons. Bad stretch of sand (5½ miles) 2 miles out of Birch Run.

Points of Interest: Pontiac, Lakes and Summer Resorts of Oakland County. Long Lake, 3 miles north of Fenton, "Farmer Woodhill's Inn" and Woodhill's Landing. East Saginaw, Salt and Lumber Interests, Fine, Cedar pavements and East Saginaw Bicycle Club Rooms, No. 620 Genesee Ave.

COMMUTER TRIP

Commuter paths provide for the individual a means of bicycling to school or to his place of work. Route locations should be along well-defined transportation paths linking residential areas with centers of employment, shopping, and education. For long-distance commuting, routes should be located near facilities such as bus and train stations so as to line-up with other modes of transportation.

Locating commuter bikeways requires extensive analysis. Origins and destinations are the most essential considerations when locating a bikeway, since the objective is to maximize the use of the system. It is reasonable to assume, then, that those areas generating or attracting the greatest number of people will likewise generate or attract the greatest number of bicyclists. Additional considerations in the planning of commuter bikeways are: length of trip, time of trip, directness of route, steepness of grade, etc.



RECREATIONAL TRIP

Peddling through the woods or along a stream is an enjoyable experience sought by bicyclists using a recreational bikeway. These routes should ideally cover long distances through woodlands, hills, marshlands, and flood plains - all of which contribute to a unique riding experience.

Bikeways planned for new or existing recreational sites should also be given intermittent access to other varied activities, such as swimming, picnicking, boating, hiking, etc. Together with scenic vistas and natural wildlife areas, these recreational settings are important as pathway location considerations, and further contribute to the individual's relaxation and exercise.

Recreational bikeways should, if possible, link-up with high density residential routes in order that leisure-time bicycling can be made available to the greatest number of people. Furthermore, car parking facilities should be planned for the beginning and end points of recreational routes. If great distances are involved, mid-point parking facilities should also be located along the system. Parking areas would enable individuals without direct access by bicycle to transport their bikes by automobile.



NEIGHBORHOOD TRIP

In most communities, the greatest number of bicycling trips are local, with such destinations as a neighborhood park or school, corner store, or nearby home. Due to the low volume of automobile traffic and the scattered pattern of origins and destinations, any bike route other than the most economical, Class III, would not normally be necessary.

To supplement the neighborhood system, short recreational-type routes for children could be designated in neighborhood parks or school yards to allow for hazard-free cycling.

Very often, bicycle trips have destinations in other communities. Bike route planning between neighboring governments is essential if the residents of Oakland County are to have a well coordinated and meaningful bicycle system. This planning cannot be initiated soon enough, as many communities are already implementing their local routes - too often without knowledge of or regard for their neighbor's present or planned bicycling facilities. Local communities should also familiarize themselves with and take into account the State of Michigan's plans for expressway M-275 and the Huron Clinton Metropolitan Authority's plans for Kensington Metropolitan Park.

Even when a bikeway is appropriately planned, designed and built, it is never really possible to foresee all its implications, in particular the effects which the facility will have on present circulation patterns. One motorist may fear the danger associated with bicyclists sharing the same road surface with a Class II or Class III bikeway and select to use an alternative road. Another motorist, however, may often enjoy the presence of the additional, and sometimes colorful activity, thereby choosing to use the route more frequently than before. Automobile volumes on particular roads are bound to be somewhat influenced by bikeways, and communities must always be conscious of this when designating routes for this purpose.



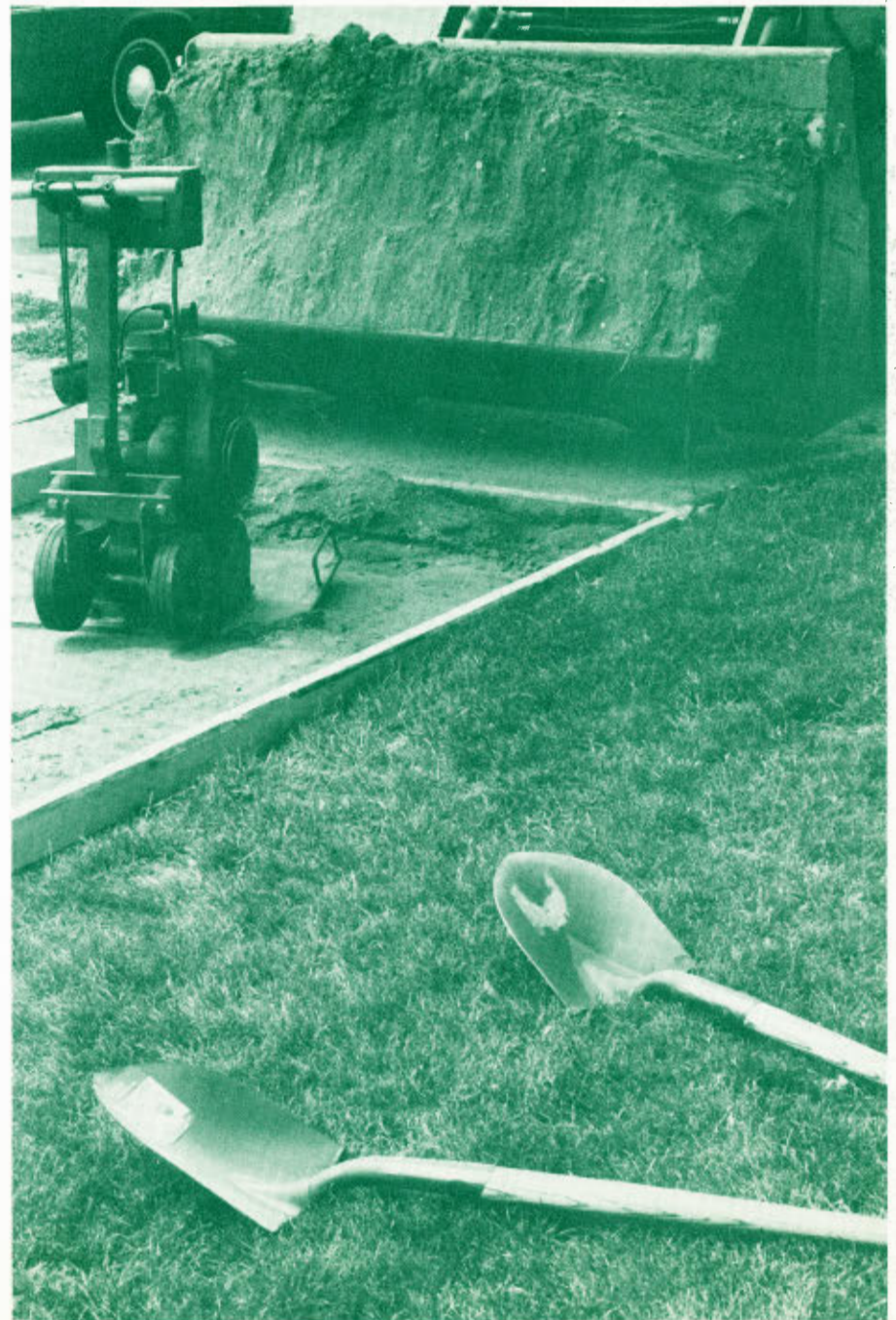
HOW TO BUILD BIKEWAYS

Once a community has formulated its comprehensive bikeway plan, has specified bikeway class and trip types, and has established phasing for implementation, its next step is to undertake a cost/benefit analysis of design alternatives. Appropriate design decisions are important since they will directly affect the labor and material costs as well as the overall aesthetic quality of the facility.

A complex system will obviously be more expensive to install than a simple one. What should be constantly kept in mind, though, along with economic considerations, is the human element. It is of utmost importance to make the bicycling experience as safe, as utilitarian, and as refreshingly varied as possible. The choice of design elements is crucial in meeting this people-oriented goal.

There are many areas of consideration in bikeway design which allow for flexibility in the decision-making process. Although some elements may require greater attention and study than others, all the following elements must be dealt with and synthesized: **right-of-way dimensions, riding surface construction, horizontal and vertical clearances, pavement markings, sign location, bicycle storage, and landscaping.**

Bikeway construction can represent a major expenditure. If, however, communities can use their own personnel and equipment for bikeway construction, they can realize considerable cost savings.



DESIGN AND SIGNAGE STANDARDS

GRADES

The maximum grade on a bicycle path is a relative matter as evidenced by the range of one to 20 percent now existing on bicycle paths. The length of the grades should also be considered when determining the percent of grade. It is the long climb that tires the unconditioned cyclist, even though the climb may be a very gradual one.

The average of all the maximum grades reported is 8.5 percent, while the median maximum grade is five percent. The maximum grade reported most often is three percent. Another guide that will be helpful in determining maximum grades is the fact that a 10 percent grade is the maximum recommended for a comfortable walking trail.

For bicycles with gear-change mechanisms, more severe grades can be climbed with less effort. Pedaling the light-weight bicycle with the gear-change mechanisms requires from one-fourth to one-third the energy needed to propel the middleweight bicycle. With the gear-change type bicycle, especially with the derailleur, longer grades can be used. The cyclist merely continues pedaling at a given rate of revolutions per minute and down shifts the bicycle until he reaches a gear which enables him to easily ascend the grade.

If the middleweight bicycle without gears is to be used, long uphill grades need to be held at a minimum, preferably four or five percent. This means that for every one hundred feet of forward movement the rider would be required to climb between four and five feet in height. When long grades at even five percent are unavoidable, provide a level area on the grade where the less-than-average cyclist can dismount without difficulty.

For shorter distances, grades exceeding five percent can be used if it is necessary to make a steep climb. These are best handled if they are kept to short runs and if the rider has a chance to pick up a little speed before starting to make the ascent. Even with this, it is recommended that grades on bicycle paths in park and recreation areas not exceed nine to 10 percent. At the top of any grade that may be a sizable undertaking by the less-than-average cyclist, provide a 3 or 4-foot-wide level spot for pull off. This could also be a strategic location for a bench.¹

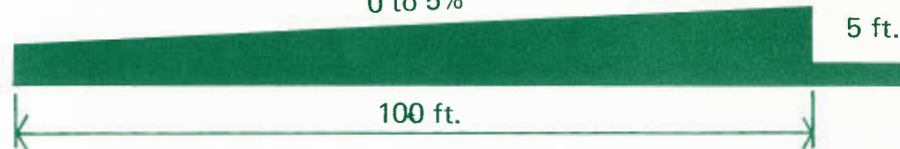
1. *Bike Trails and Facilities*, American Institute of Park Executives, June, 1971.

Flat 0%



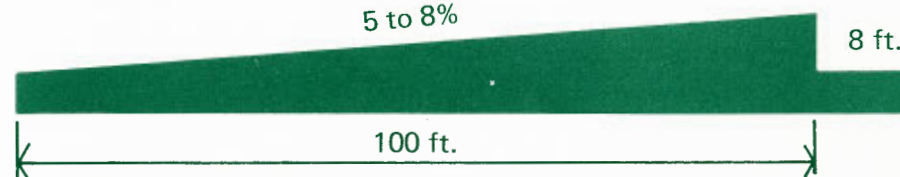
Flat 0% slope; Easily negotiated.

0 to 5%



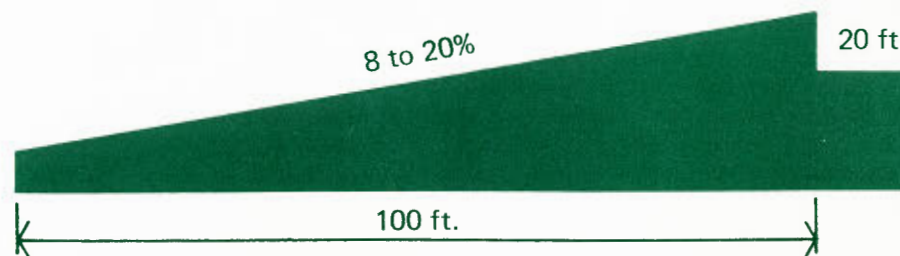
0 to 5% slope; Relatively flat and can be travelled with little difficulty for up to ½ mile.

5 to 8%



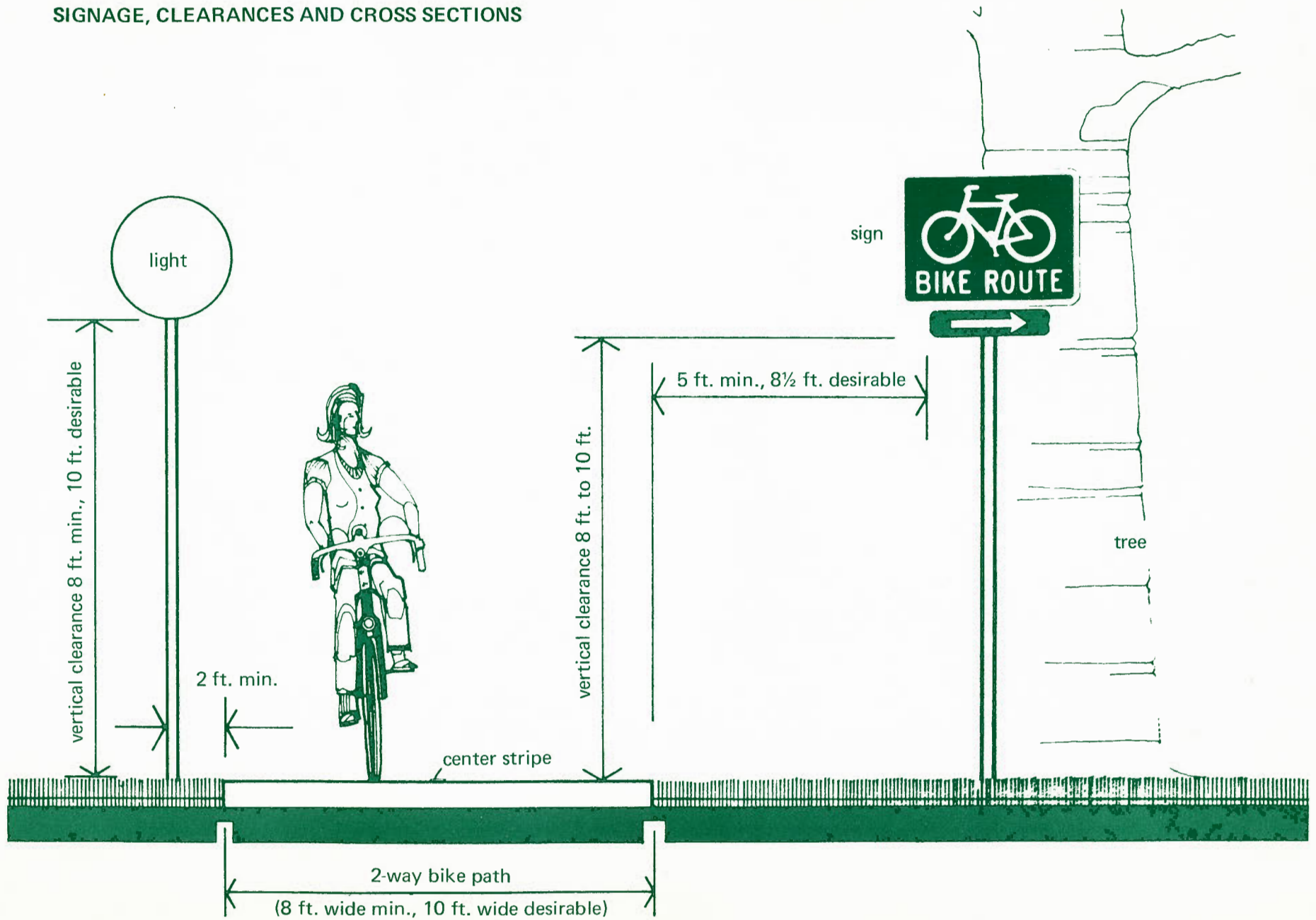
5 to 8% slope; Difficult to negotiate while sitting but can be travelled for up to 150 yards in a standing position.

8 to 20%



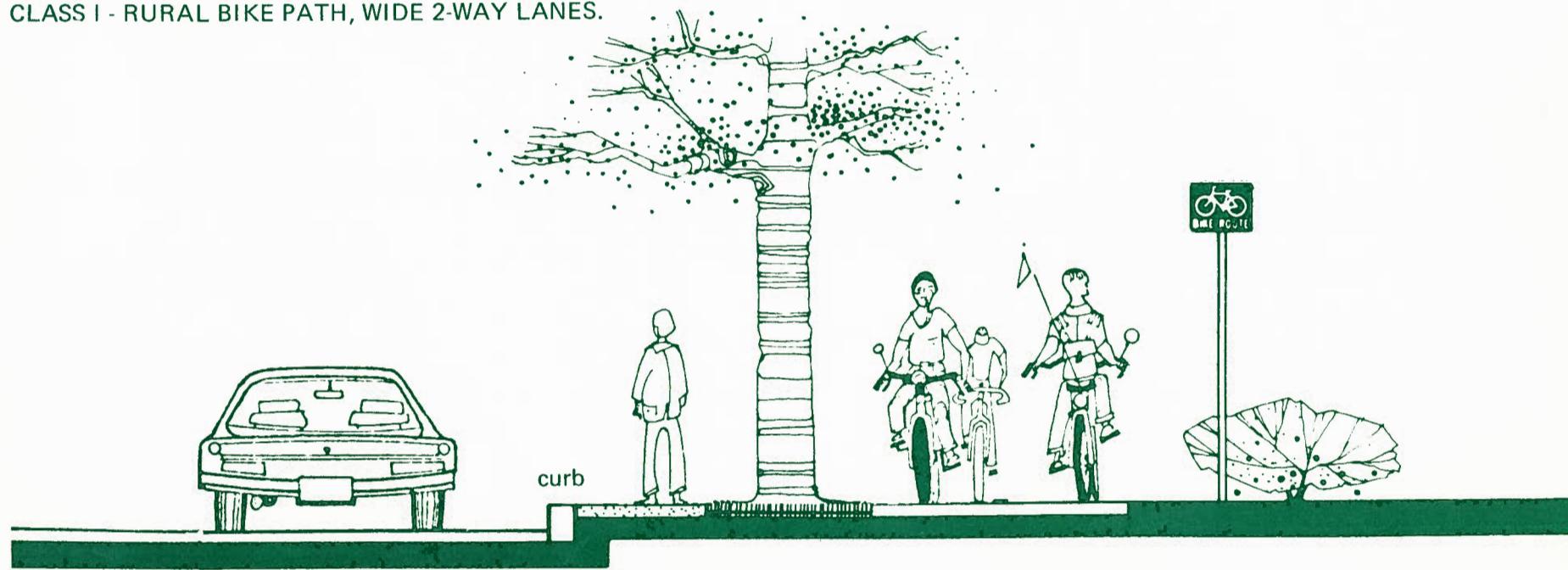
8 to 20% slope; Extremely difficult to negotiate and will usually require dismounting and walking the extent of grade.

SIGNAGE, CLEARANCES AND CROSS SECTIONS

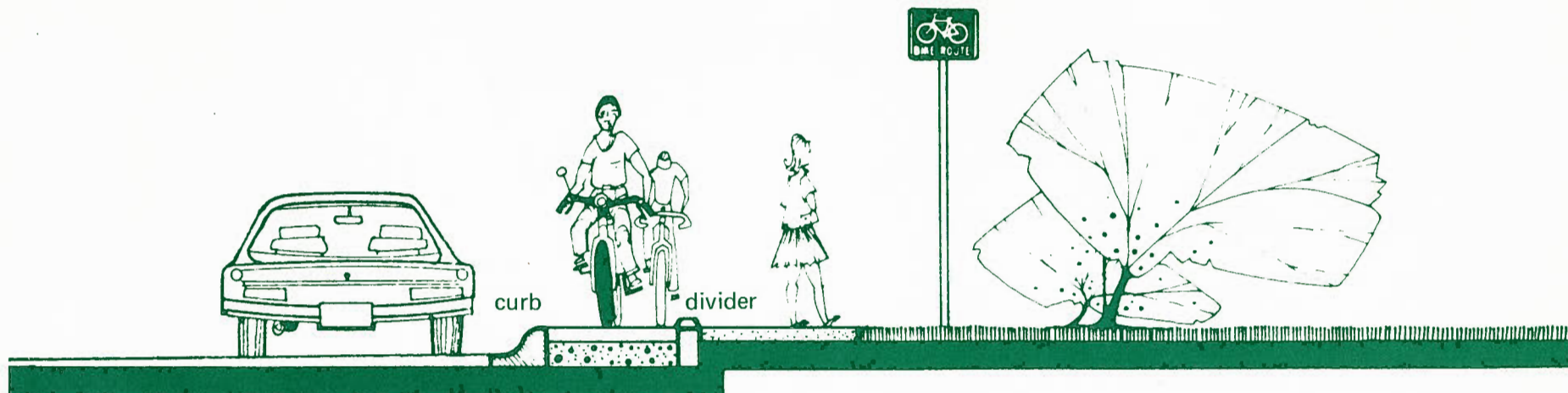




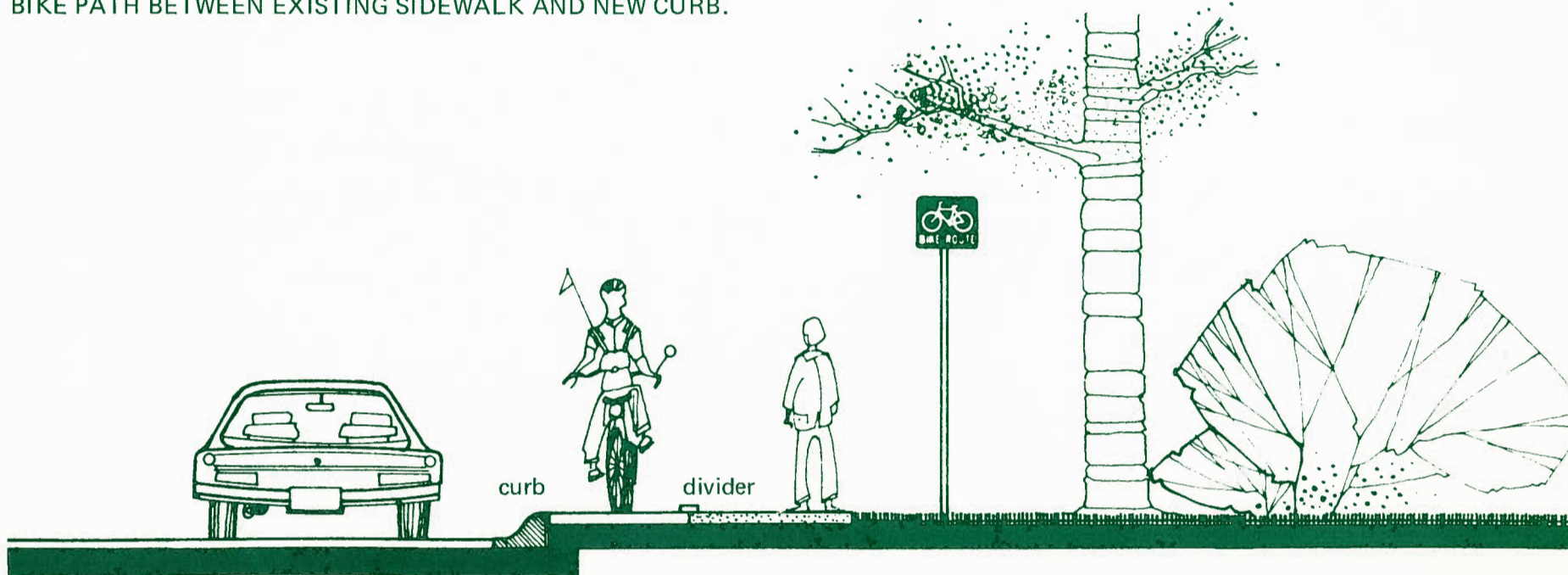
CLASS I - RURAL BIKE PATH, WIDE 2-WAY LANES.



CLASS I - WIDE 10 FT. 2-WAY BIKE PATH, SEPARATED FROM ROADWAY, OUTSIDE OF CURB WALK.



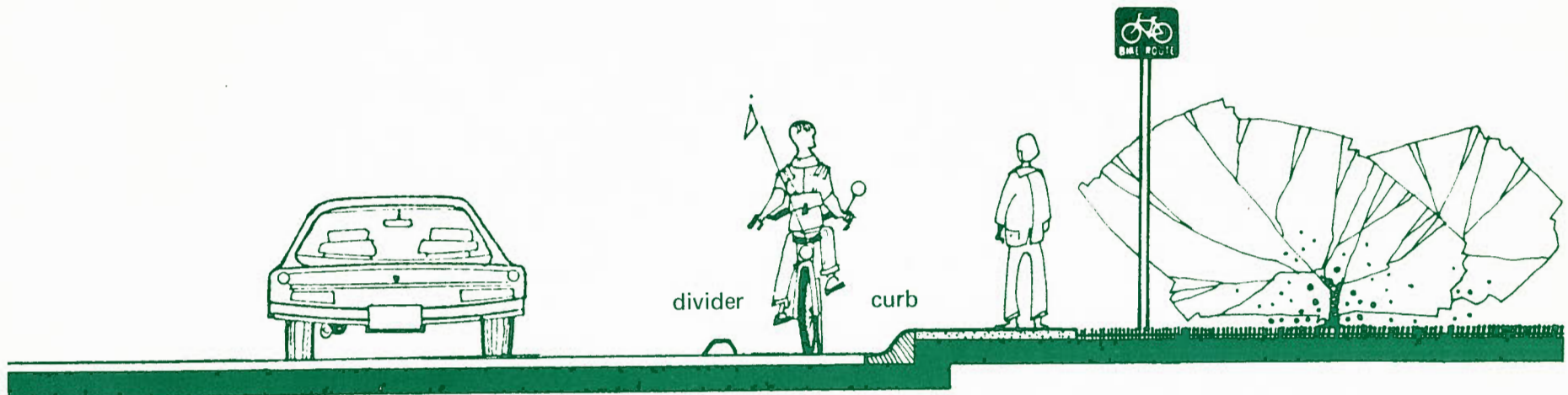
CLASS I - CURB RELOCATED ALLOWING CONSTRUCTION OF BIKE PATH BETWEEN EXISTING SIDEWALK AND NEW CURB.



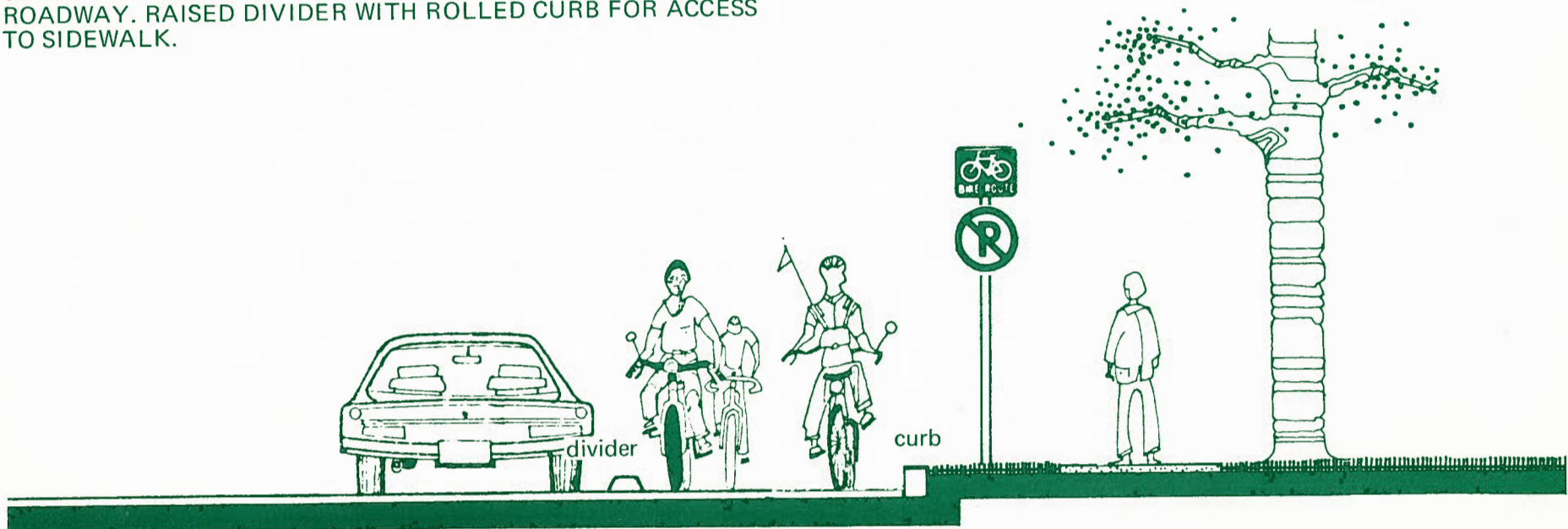
CLASS I - BIKE PATH LOCATED BETWEEN CURB AND SIDEWALK WITH DIVIDER.



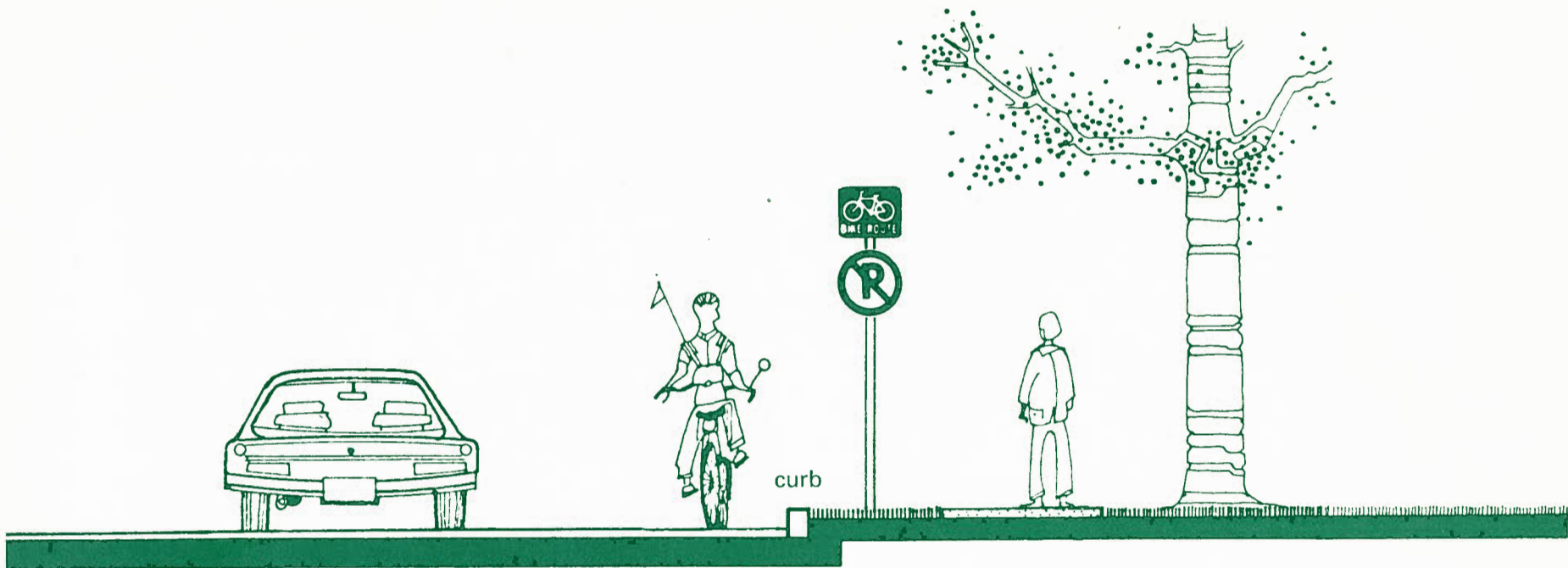
CLASS 1 - SHARED PEDESTRIAN/BIKE PATH SURFACE; WIDE PAVEMENT 10 FT. - 12 FT., WITH PAINTED DIVIDER OR CHANGE IN SURFACE MATERIAL.



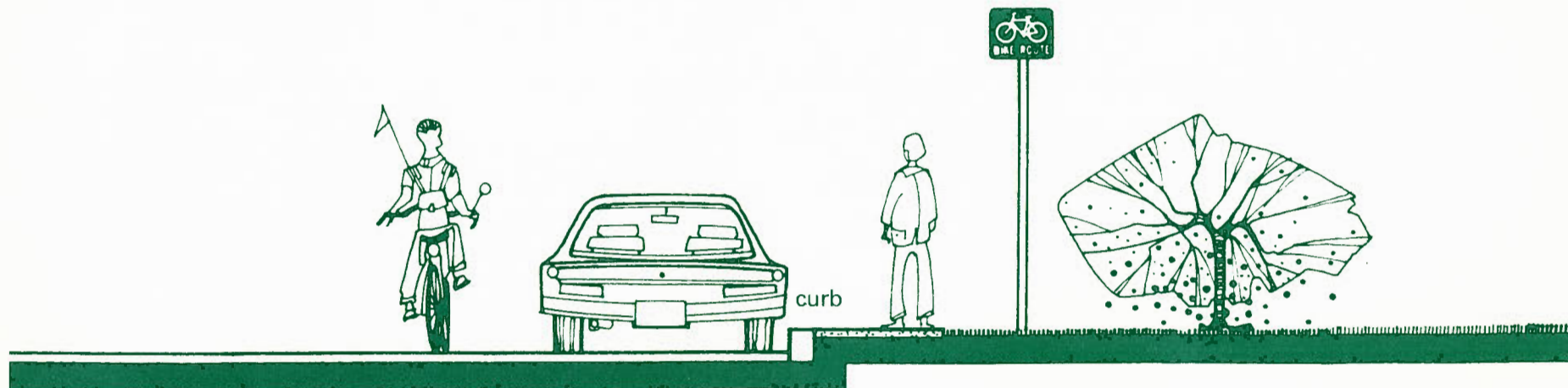
CLASS II - 1-WAY SYSTEM; 4 FT. DEDICATED WIDTH OF ROADWAY. RAISED DIVIDER WITH ROLLED CURB FOR ACCESS TO SIDEWALK.



CLASS II - 2-WAY SYSTEM; 8 FT. - 10 FT. DEDICATED WIDTH OF ROADWAY. RAISED DIVIDER WITH PARKING PROHIBITED IN LANEWAY.



CLASS III - USE OF RIGHT SIDE OF ROADWAY. PARKING PROHIBITED.



CLASS III - USE OF RIGHT SIDE OF ROADWAY WITH CURB WALK AND PARKING ALLOWED.

IDENTIFICATION AND DIRECTIONAL SIGNS

BIKE ROUTE SIGN

Uses - A nationally-approved sign for marking an officially designated bicycle trail, appropriate both where a trail is separate from a street or highway and where a trail may be routed on selected roads and streets.

Design - A bicycle symbol; the words "BIKE ROUTE" in 3" series "C" letters. Recommended by the Bicycle Institute of America.

Material - Alloy aluminum or other suitable metal, plastic, or high-density plywood.

Finish - Reflectorized if to be used at night by bicycles and automobiles, but otherwise not required.

Colors - Standard Interstate Green and White. Green is sometimes referred to as PR No. 4 June, 1965.

Dimensions - 24" x 18" mounted as horizontal rectangle.

Gauge of Metal - Suggested: .065"

Category - "Guide" or "Trail Blazer".

Cost - Approximately \$10. each.



INTERNATIONAL BIKE ROUTE SIGNS

Use - Same as nationally-approved "BIKE ROUTE" sign above. Where bicycles are prohibited a red circle and diagonal "slash" through the bicycle symbol is used.

Specifications - Similar to nationally-approved "BIKE ROUTE" sign above.

Dimensions - 24" x 24"

XING SIGN (Crossing Reflectorized with Scotch Lite)

Use - A nationally-approved sign for placement on a street or highway just in advance of a point where an officially designated bicycle trail crosses the street or highway.

Design - A bicycle symbol, the term "XING" in 6" Series "D" letters. "X" substitutes for "cross", shortening the word "crossing". Recommended by the Bicycle Institute of America.

Material - Alloy aluminum or any other suitable metal, plastic, or high density plywood.

Finish - Reflectorized material as in warning signs if it must be effective at night.

Colors - Standard Hi-Way Warning Yellow and Black; Yellow is sometimes referred to as PR No. 1 June, 1965.

Dimensions - 30" x 30" mounted as a diamond.

Gauge of Material - Suggested: .080"

Category - "Warning"

Cost - Approximately \$20. each.



ALLOWED



PROHIBITED

DIRECTIONAL SIGNS

Colors - Standard Interstate Green and White. Green is sometimes referred to as PR No. 4 June, 1965.

Dimensions - 12" x 18" mounted as horizontal rectangle.

Weight - Approximately 1.33 lbs.

Cost - Approximately \$2.75 each.



STRAIGHT



INTERSECTION



TURN



45 DEGREE LEFT



45 DEGREE RIGHT

CONSTRUCTION DATA COSTS

Approximate pavement cost per lineal mile per 4 ft. width

Approximate landscape improvement costs (grading, seeding, planting and signage) - \$3,000. per lineal mile.

Note - All costs are based on commercial estimates, May, 1975

PAVEMENT SECTIONS

Asphaltic Concrete (full depth)

Compacted Subgrade



\$1.25 per sq. ft. (\$26,400. per mile)

Asphaltic Concrete Surface

Aggregate or Stabilized Base

Compacted Subgrade

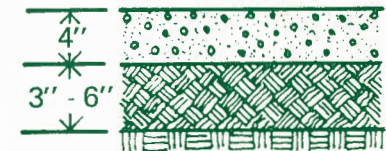


\$1.00 per sq. ft. (\$21,120. per mile)

Portland Cement Concrete Surface

Aggregate or Stabilized Base

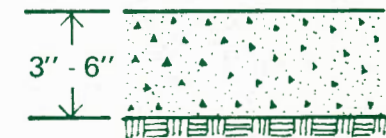
Compacted Subgrade



\$1.35 per sq. ft. (\$28,512 per mile)

Soil Cement or Stabilized Aggregate
(soil and aggregate mixed and compacted)

Subgrade

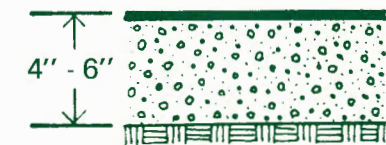


Costs not available

Seal Coat

Crushed Slag, Stone Chip, or other
Rolled Aggregate

Subgrade



\$0.75 per sq. ft. (\$15,840. per mile)

MEANS OF IMPLEMENTATION

In order to implement a bikeway system, a community must first be able to provide funds. Most of this money will likely have to be raised at the local level, with supplemental funds potentially made available through several State and Federal programs.

Local financing, if not possible through the general fund, could be accomplished through **property taxation, bonding, special millage, and special assessment** methods. To reduce this burden of taxation, local communities may wish to acquire desired rights-of-way by one or more of these legal means: **lease arrangements, zoning, easements, and installment purchasing.**

FUNDING SOURCES

The following are available public funding sources for bikeway implementation:

1) LAND AND WATER CONSERVATION ACT OF 1965 (P.L. 88-578); (P.A. 1965); (P.A. 201-1966). Communities may use these funds for planning, acquiring and developing recreational facilities and areas. Matching requirements are: Local 50%, Federal 50% (administered through State Department of Natural Resources). Local communities assume the responsibility for operating and maintaining the bikeway. Bikeway projects must conform to the Statewide Comprehensive Outdoor Recreation Plan (Department of Natural Resources, State of Michigan).

2) FEDERAL AID HIGHWAY ACT OF 1973 (P.L. 93-87). Bicycle and pedestrian facilities may be built under this program, but only as part of highway construction projects. Bike path facilities must be within the normal right-of-way and may be constructed independently on completed sections of Federal Highways. \$40,000,000 is available nationally per fiscal year. Matching requirements are: Local 28%, Federal 72%. Application is made through the Michigan Department of State Highways and Transportation and through the Urban Areas Task Force.

3) HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974 (P.L. 93-383). This new act consolidates the former grant programs of: urban renewal and neighborhood development; model cities; water and sewer facilities; neighborhood facilities; public facility loans; open space; and rehabilitation loans into one comprehensive block-grant program. Bicycle paths qualify under this program and communities can apply for these funds through one of three options outlined in the act.



4) THE FEDERAL-AID HIGHWAY AMENDMENTS OF 1974 (P.L. 93-643). Ten million dollars (from general funds) for fiscal year 1976 are authorized for demonstration projects dealing with bikeway construction. (These funds are not yet available.)

5) MICHIGAN PUBLIC ACT 327 of 1972, an Amendment of Act 51 of 1951 - Road Classification - Motor Vehicle Highway Fund - Local Road Levies. State law permits establishment of nonmotorized transportation along highway rights-of-way. The Michigan Department of State Highways and Transportation, County Road Commissions, Cities and Villages shall expend reasonable amounts of the Motor Vehicle Highway Funds for the establishment and maintenance of lanes, paths, and roads for nonmotorized transportation. The construction and maintenance of these facilities may be established in conjunction with already existing roadways and shall be established when a roadway is being constructed unless:

- a. The cost of establishing the facilities would be disproportionate to the need or probable use.
- b. The establishment of the facilities would be contrary to public safety.
- c. Adequate facilities for nonmotorized transportation already exist in the area.
- d. Matching funds are not available through the Department of Natural Resources or other state, local or federal government sources.
- e. The previous expenditures and projected expenditures for non-motorized transportation facilities for the fiscal year exceed 1/2 of 1% of that unit's share of the motor vehicle highway fund in which case additional expenditures shall be discretionary.

LOCAL OPTIONS

Listed below are means by which communities may wish to obtain local funding:

PROPERTY TAXATION

A method for generating money is through increased taxation on all real and taxable personal property in the community. If the local unit is taxing below its voted operating millage, an increase in taxation would not require a ballot proposal. Otherwise, such a request must be submitted to the voters. By law, funds raised in this manner must be allocated to the general fund. This money, added to the fund, could then be appropriated to construct a bikeway or used as matching money if Federal funds were secured.

SPECIAL MILLAGE

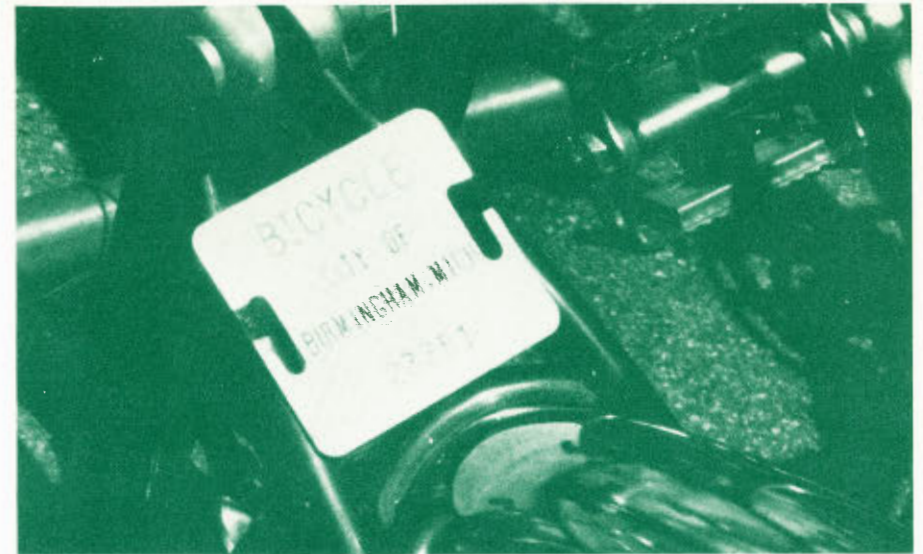
This form of property taxation always requires a vote of the electorate and is an expression of community sentiment for or against public funding of a particular project. Voters in the Township of Avon and the City of Rochester so expressed themselves, approving a 1/4 mill levy for the construction of bikeways to be amortized over a ten year period.

BONDING

Promissory notes, backed by the community's financial assets, are bonds - the two basic types being special assessment and general obligation bonds. The former need not be voted upon, whereas the latter must be. Money raised from bonds is earmarked for particular projects. Ann Arbor passed on the April, 1973 ballot a bond issue which will raise an estimated \$800,000 exclusively for the construction of bikeways.

SPECIAL ASSESSMENT DISTRICT

Assessing an increased tax on property owners abutting on and directly benefitting from a particular public project is another means of raising funds. This method is most acceptable when a project is for the exclusive benefit of certain property owners. A specific example would be a bikeway constructed within a subdivision for the residents' advantage. This might be done in conjunction with general road improvements. Another example would be a bikeway which facilitates customer access to stores within a central business district. Merchants benefitting from increased business would bear some of the project cost.



REVENUE SHARING

A program implemented by the Federal Government in 1970, Revenue Sharing re-distributes Federal Income Tax money to local units of government on the basis of their population size. These are discretionary funds and can be used for whatever the local governments deem proper. A portion of the money received by a community can be dedicated to bikeways with no matching funds being required.

LICENSING and REGISTRATION

A nominal fee can be collected by a community when new bicycles are registered or when registrations are renewed. These funds, acquired directly from bicycle owners, can defray some bikeway costs. Furthermore, registration information makes an excellent data base for the planning of future bicycling facilities and, in the event of bicycle theft, can facilitate recovery of the vehicle.

GIFTS and DEDICATIONS

As bikeway systems gain more and more popular support, gifts by private individuals or foundations could become a large part of the financing picture. Also, local communities are beginning to be more successful in persuading developers to dedicate land (or cash equivalents) for "essential public facilities," one of which, it could be argued, is a bikeway system. Oakland Township, for example, is currently studying the levying of "impact fees" on developers to assure that such facilities are provided.

LEGAL TOOLS

Because of the rapidly inflating prices of real estate, local communities must constantly be cognizant of those means by which they can acquire land for public use and, in turn, invest their taxpayers' money most economically. Legal resources for obtaining land for bikeways, other than outright purchase, are: **lease arrangements, easement purchasing, installment purchasing and zoning.**

LESS THAN FEE ARRANGEMENTS

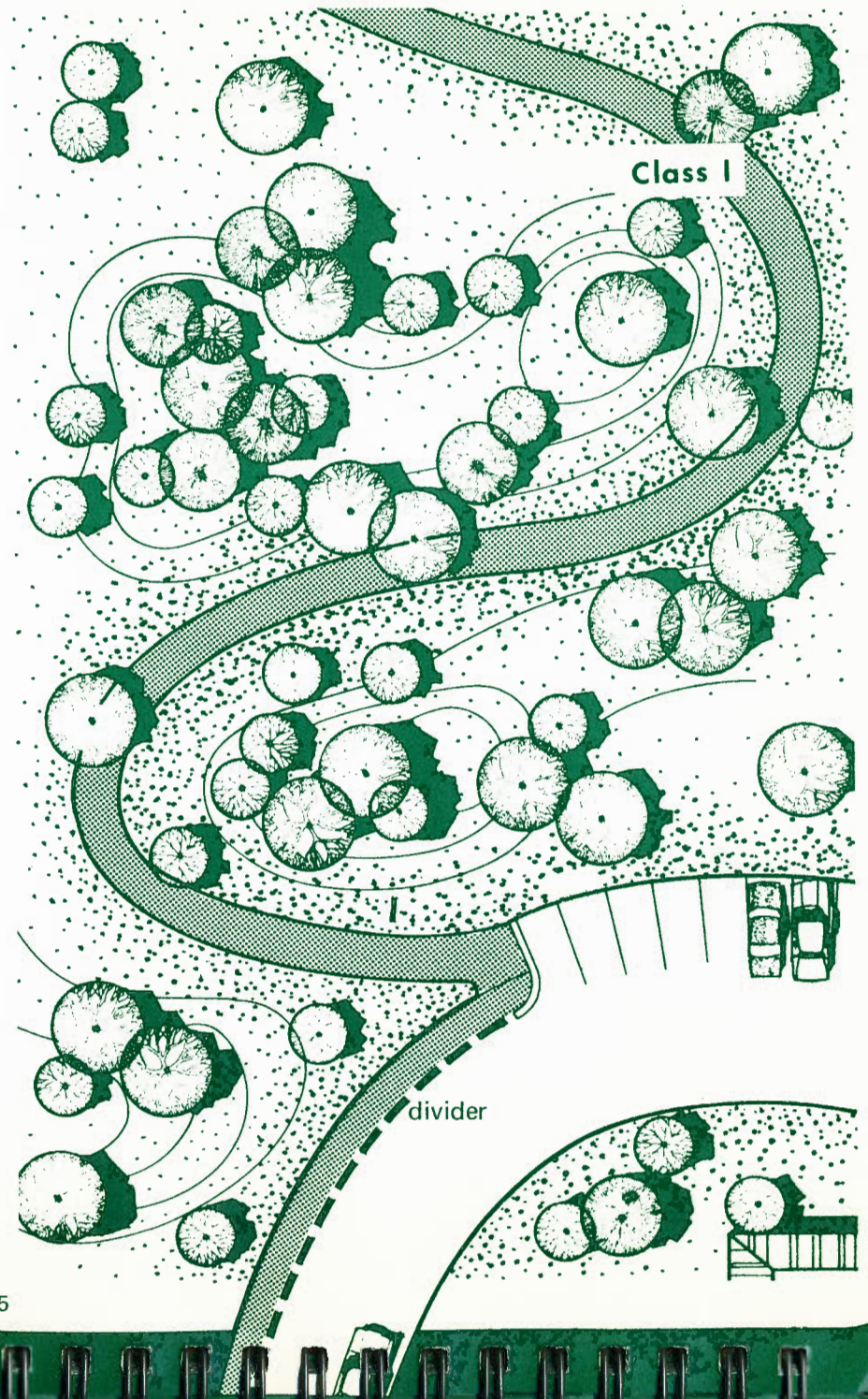
Easements and leases are well-known arrangements for acquiring less than "full and marketable" title to land. Since full title to a bikeway right-of-way is not essential, there is no reason why these methods cannot be used for this purpose.

Obtainable by gift, purchase, or condemnation, an easement is used to procure certain specific rights over land which is owned by another person. An example of an easement is the right of a utility company to place its lines under or over a portion of a homeowner's property. Easement agreements should set forth the rights of both parties, the amount of land over which the agreement is applicable, the time limit, the cost (if any), liability coverage, and the preservation of other rights (on or about the property).

Leases are sometimes also used for public projects, and often involve only nominal fees. Uses made of leased land are usually less restricted than in the case of an easement. Most leases require that the person (or governmental institution) using the property pay an annual "rent" and take care of taxes, insurance, upkeep, and maintenance. A lease conveys the right of possession but without transferring ownership. A time limit is always specified, and renewal is not automatic.

INSTALLMENT PURCHASING

This legal agreement allows individuals or communities to buy property at current market value but to pay in installments spread over a period of ten, twenty, or even thirty years. This technique is particularly effective in purchasing land adjacent to low intensity developments which possess distinct agricultural or natural resource value. In the case of agricultural properties, the "farmer" can continue to work his land while the community will benefit by the area being retained as open space. Other unique and attractive lands abundant with natural amenities could also be allowed to remain relatively undisturbed if purchased in this manner.



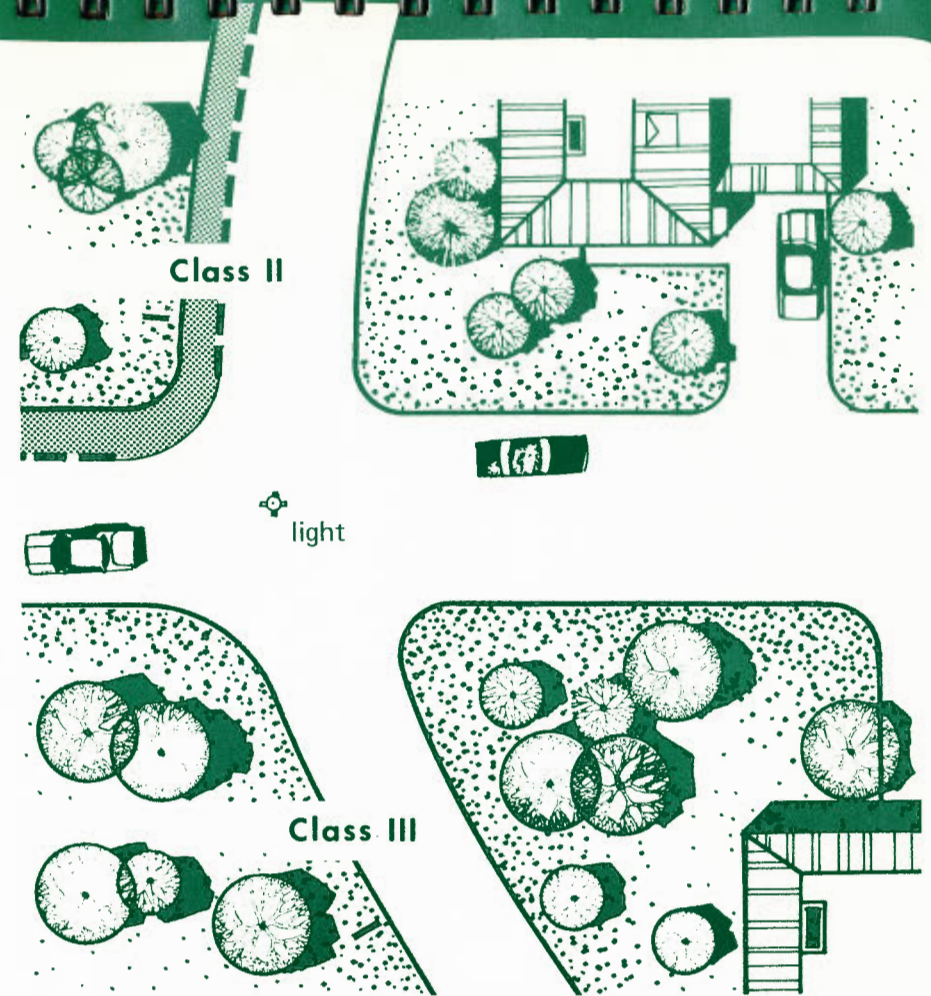
Land slated for high intensity development can be purchased in this same manner. A small percentage of the land (usually 10%) is sold each year, but the title for the whole is transferred with the signing of the purchase agreement. This way, the seller is able to terminate his property tax payments and spread his capital gains over extended periods of time. The public benefits the most, however, since yearly payments cannot increase in the event of real estate inflation. Additional savings to the public can be realized by providing in the agreement a clause which stipulates that maintenance of the land be the tenant's responsibility.

ZONING TECHNIQUES

Zoning, a provision of community police power, offers opportunities for local units of government to plan for bicycling activities and to determine in advance those areas conducive to the building of bikeways. Specific zoning classifications can allow for and provide the open space necessary for the incorporation of community bike routes. An example of the types of opportunities created by zoning can be seen in a local government's exercising its responsibility to protect public health, safety, and welfare by forbidding certain types of development on lands which are frequently flooded by rivers and tributaries. Here, a bikeway would seem to be an appropriate low-intensity use and would relate to other activities permitted in flood plain areas. Early planning is obviously required.

Planned Unit Development (PUD) zoning is a relatively new classification and allows for the development of large parcels of land with mixed land uses. When communities approve a PUD, open space is often required to 'knit' together and to 'buffer' single-family, multiple-family, and commercial land-uses. In some cases, open-space should be arranged so as to allow for and to encourage the incorporation of bikeways.

These are only two of the many zoning opportunities open to communities for the "creation" of open space necessary for bikeways. Each zoning situation will suggest different planning responsibilities. It is important, though, to make early use of these planning opportunities.



BIKEWAYS AND THE MASTER PLAN

Bikeways can be planned as much as twenty to thirty years in advance by means of a community's Comprehensive Master Plan, which projects future land uses and anticipates related transportation requirements. Bikeways can be incorporated into these future land uses by means of general policy statements specifying that bike routes be a part of new or redeveloped roads, subdivisions, apartment complexes, planned unit developments, commercial centers, etc.

These policies can be part of the guide lines in the Site Plan Review process. One criterion for local government approval of a developer's site proposal might be the consideration he has given to a bikeway. If a community's Master Plan calls for a bikeway for this new land use, it should be part of the site plan before the latter can be approved and the building permit issued.

USER RESPONSIBILITIES

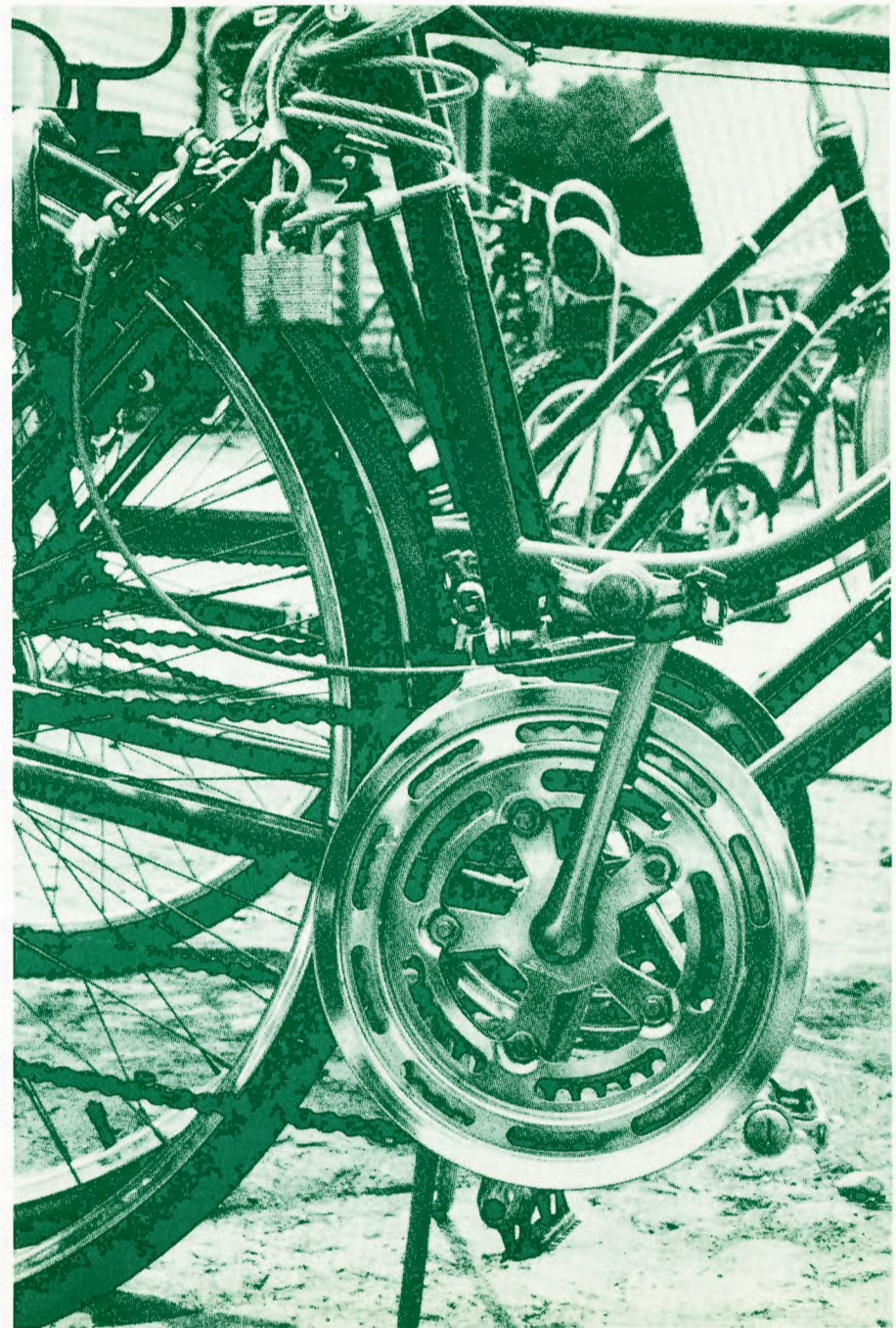
Fatalities and accidents will not disappear with the advent of bikeways. However, it is reasonable to believe that, with adequate facilities, mishaps will noticeably decrease. A bicyclist, like his automobile-driving counterpart, is only human and is subject to making mistakes and to using bad judgment. In addition to this "human" error, the mechanical condition of the bicycle is a primary safety concern. As bicycling becomes accepted as a more serious form of transportation (just as it was around the turn-of-the-century) additional attention should be paid to the bicycling-related aspects of: **traffic laws and codes, safety and education.**

Some traffic codes and ordinances pertaining to bicycling differ from community to community, but the bicyclist must familiarize himself with them and follow them. Applying to all communities, though, are the State of Michigan Motor Vehicle Codes which are specified in "What You Should Know About Bicycling" prepared by the Michigan State Safety Commission.

Realizing that a familiarity with bicycling traffic laws, codes, and operating procedures is essential, some local and state agencies have organized, or are now organizing, public bicycling safety classes. The Michigan Department of Education, for example, has developed a curriculum guide for the State's elementary school system (grades K through 6) and anticipates the completion of a similar guide for the State's junior high school system (grades 7 through 9) by July, 1975. Furthermore, it has volunteered to set up bicycle safety and education workshops for the State's school teachers and administrators.

Bicycle safety education is not now mandatory in the State of Michigan. Many school districts in the southeastern portion of the State have, however, adopted such programs - particularly those districts having many students who walk or bicycle to school.

Adults, too, should be offered this training. In some communities the local police department sponsors programs which cover topics such as: night riding, hand signaling, theft prevention, bicycle licensing, and bicycle-law enforcement procedures. At this adult education level the Michigan Secretary of State might also want to become more officially involved. Individuals who are issued an automobile driver's license should have knowledge of traffic laws and codes concerning the relationship between bicycles and automobiles. Drivers who are also bicyclists could derive further benefit, as they would (hopefully) become better bicyclists as well as more responsible drivers.



GENERAL INFORMATION

BICYCLING ORGANIZATIONS

Carrying on the spirit of the early League of American Wheelmen are a number of contemporary Oakland County bicycling organizations. Dating back as far as thirty-eight years, these groups have done much to promote bicycling, both as an exhilarating sport and as an important form of transportation. These groups presently serve the full range of adult bicycling activity - from the needs of the ardent amateur racing enthusiast, to the recreational desires of the "weekend" rider. They have also been instrumental in promoting safe riding practices and conditions within the County.

AMATEUR BICYCLE LEAGUE OF AMERICA

Doug Croft, 15 Elm Park, Pleasant Ridge, Michigan 48069

The governing body of amateur bicycle racing in the United States. Membership is composed of all national bicycle racing clubs. The A.B.L. of A. sanctions all recognized bicycle races in the country. Competitors must be licensed and residents of the United States.

BIKE TO BRUNCH

Chuck Herrington, 4141 - 12 Mile Road, Berkley, Michigan 48072
A weekly touring group.

MICHIGAN BICYCLE FEDERATION

Mike Waldon, 2303 Beechwood, Royal Oak, Michigan 48073

A non-profit organization dedicated to promoting bicycling in all phases. It built Dorais Veledrome at Mound & Outer Drive and laid out and purchased signs for Michigan's first bike route, from 7 Mile Road & Woodward Avenue to Bloomer State Park. It helps to run the world's largest bicycle event, the Wolverine-Pepsi "200" Mile Marathon and conducts basic bicycling courses to dealers, schools, Girl Scouts of America, etc.

OLD BOYS

Jim Smith, 716 Lloyd, Royal Oak, Michigan 48073

A touring club with regular Wednesday night rides, operating out of Detroit and Royal Oak. Many past bicycle racers are in this organization, which aids in racing officiating.



ROCHESTER WHEELMEN

Bill Prall, 309 Parkedale, Rochester, Michigan 48063
A weekly touring club.

THE OAKLANDERS (Chapter of the American Youth Hostel)

Ruth Doerr, 5151 Daron Lane, Orchard Lake, Michigan

A new affiliate club of the Metropolitan Detroit Council of the A.Y.H. Meeting monthly in Pontiac, it sponsors day, weekend, and extended trips: bicycling, hiking, backpacking, skiing, sailing, and canoeing. Members, acting as individuals, seek to influence bicycling legislation and to aid in the implementation of bikeways.

WOLVERINE SPORTS CLUB, INC.

Pat Nielsen, P.O. Box 63, Royal Oak, Michigan 48068

A touring and racing club. Originating in 1937, it presently has a complete training program and sponsors racing events on a year-round basis. Membership includes many National and World Champions and Olympic Team members.

PLANNING EXAMPLES

NEW ENTHUSIASM FOR "ROUTE" IMPROVEMENT

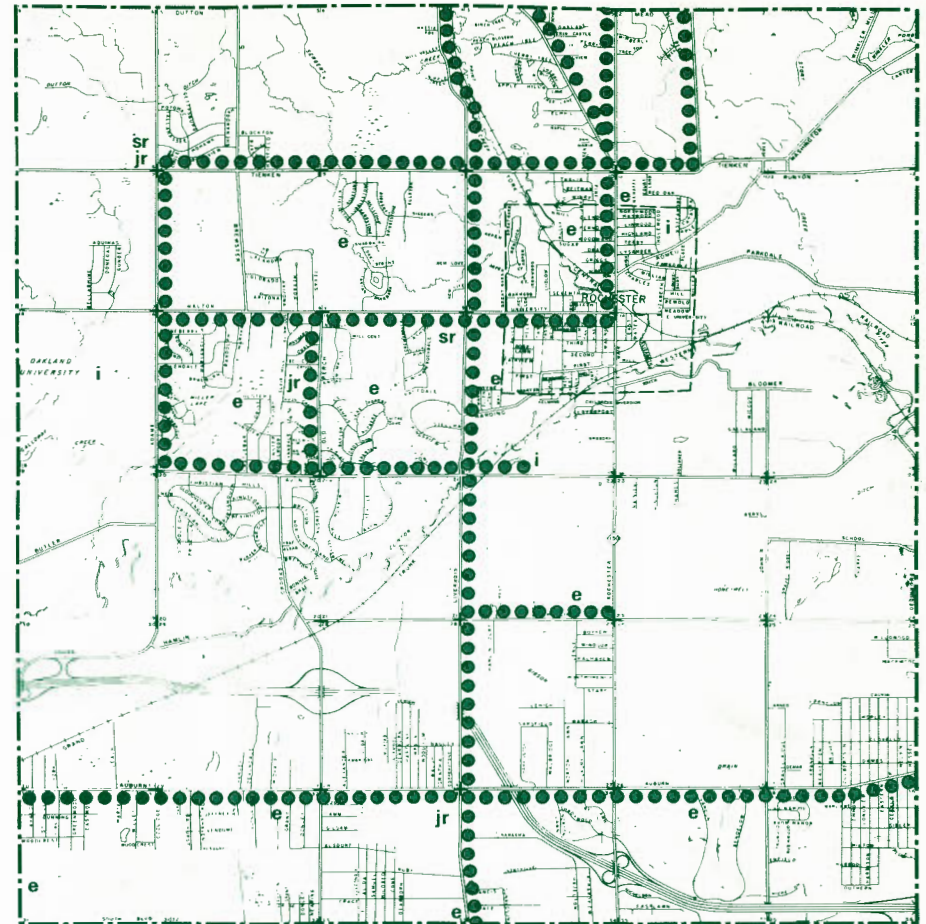
A typical bikeway project will pay for itself many times over if one takes into account the automobile miles and family "chauffeur" time saved. Due to this high return on investment, one might imagine that bikeways would be almost automatically accepted by communities having enough bicyclists to create a "market" for this "product." Bikeway construction, though, has lagged years behind the potential market.

Improved communication is the first prerequisite for eliminating this time-lag. As shown in the following planning examples, broadly-based bicycling organizations can be very effective in promoting bikeways at the local level. These organizations have the dual role of educating and expressing public opinion as it relates to bicycling demands.

The League of American Wheelmen, it might be recalled, lobbied enthusiastically for the general benefits of better roads. Today, bicyclists are also in a position to "inform" the public, but without the same pitfall witnessed in the past, for bicycle enthusiasts can legitimately point out the virtues of having their own roads.

ROCHESTER/AVON TOWNSHIP

The Bikes for Youth Employment (BYE) Committee worked for over a year to develop plans for a 30+ mile bikeway in the Rochester/Avon Township area. This broadly-based organization consisted of representatives from: the Avon Area Youth Guidance Committee, the Avon Township Planning Commission, the P.T.A. Council, the Avon Township Board of Trustees, the Rochester Planning Commission, and the Rochester City Council. These local citizens and community officials established a series of goals: 1) to reduce cyclists' exposure to traffic hazards, 2) to eliminate roughly 600,000 short automobile trips per year, 3) to provide a transportation alternative for secondary labor force members and youths aged 12 to 18 who do not own cars or are too young to drive, 4) to provide a transportation alternative to adults, and 5) to provide potential bicycle access to recreation sites in the Clinton River recreation corridor and linkages to multi-use trails now being planned for that area. Approximately \$580,000 was expected to be the cost of achieving these goals. The 30 mile route was devised by the committee only after an in-depth survey of 660 local families' transportation needs and preferences. Approved by voters in August, 1974, it will be financed by a 1/4 mill levy to be dispersed over 10 years.



AVON TOWNSHIP PROPOSED BIKE PATHS



e elementary school
jr junior high

sr senior high
i institutional

The final planning and building phase of this project is being undertaken by the Bicycle Path Advisory Committee, which was formed in February, 1975. Taking over for the B.Y.E., this committee of representatives from the City of Rochester, Avon Township, Oakland Township, and the Auburn Hills Campus of Oakland Community College will choose priority paths and will oversee their construction. David W. Rickabus, its current chairman, is hopeful of constructing 8' wide bike lanes physically separated from vehicular traffic.

ANN ARBOR

Action for bikeways in Ann Arbor had a spontaneous beginning in the fall of 1970. As in the rest of the country, an interest in urban bicycling was on the rise - as well as an awareness of the hazards posed to cyclists by motor traffic. During November of that year, a series of informal information-exchange meetings was held which helped to unify this growing interest. Out of these meetings a citizens' group emerged: The Ann Arbor Bicycle League. First assisting the City in saving money for badly-needed bicycle racks, the organization then went on (with its creditability now more established) to convince the City Council to finance a modest number of bikeways leading away from the Central Business District and from the University of Michigan campus.

This momentum now started, the Ann Arbor City Government established a public committee with community-wide representation to "review and coordinate public matters relating to the use and operation of bicycles" within the City. The Bicycle Coordinating Committee (BCC) represented the interests of the: City Planning Department, Department of Public Works, Department of Traffic Engineering and Transportation, Department of Parks and Recreation, the Ann Arbor Transportation Authority, the University of Michigan Planner, the Ann Arbor Public Schools, Citizens for Ann Arbor, and other government bodies. The official function of the BCC was to: 1) regularly review updates to the Bicycle Path Plan, 2) interpret standards relating to the public use and operation of bicycles in the City, 3) recommend changes in these standards and ordinances relating to bicycles, and 4) represent the City in coordinating the development of bicycle paths outside the City and in seeking outside assistance for the development of bikeways within the City.

Due in part to the effective organization of bicycle planning, Ann Arbor voters were willing to pass a 1973 bond issue raising \$800,000 exclusively for the construction of bikeways.

Having already completed Phase I, consisting of 6 miles, the Bicycle Coordinating Committee is today in the process of planning Phase II, consisting of 6.9 additional miles. The cost of these first two phases will be less than \$300,000 - leaving more than \$500,000 to be spent on bikeways. When completed, Ann Arbor will have an extensive system covering the main commuter routes within the City.

There has also recently been some inter-community cooperation in linking Ann Arbor's system with that of surrounding communities. There are plans to link the City's south-east route to Ypsilanti, through Pittsfield and Ypsilanti Townships. The City of Ypsilanti is helping to coordinate the effort, with funding coming from: Pittsfield Township, Ypsilanti Township, the Washtenaw County Board of Commissioners, and the Washtenaw County Road Commission.



Broad County-wide interest and involvement has been enthusiastically shown by many local units of government in the bikeway planning process. The following communities have demonstrated, to varying degrees, positive action in bikeway planning, and in some instances, their implementation: the Village of Wolverine Lake; the Cities of Berkley, Beverly Hills, Birmingham, Farmington, Farmington Hills, Ferndale, Hazel Park, Huntington Woods, Lathrup Village, Madison Heights, Novi, Oak Park, Orchard Lake, Pleasant Ridge, Pontiac, Rochester, Royal Oak, Southfield, Troy and Walled Lake; and the Townships of Avon, Oakland, Waterford and West Bloomfield.

In addition to these local efforts, other agencies have contributed greatly as the result of their local and regional plan coordination. Among these are the Michigan Department of Natural Resources, the Huron-Clinton Metropolitan Authority, the Oakland County Road Commission, the Oakland County Department of Parks and Recreation, and the Oakland County Division of Planning.

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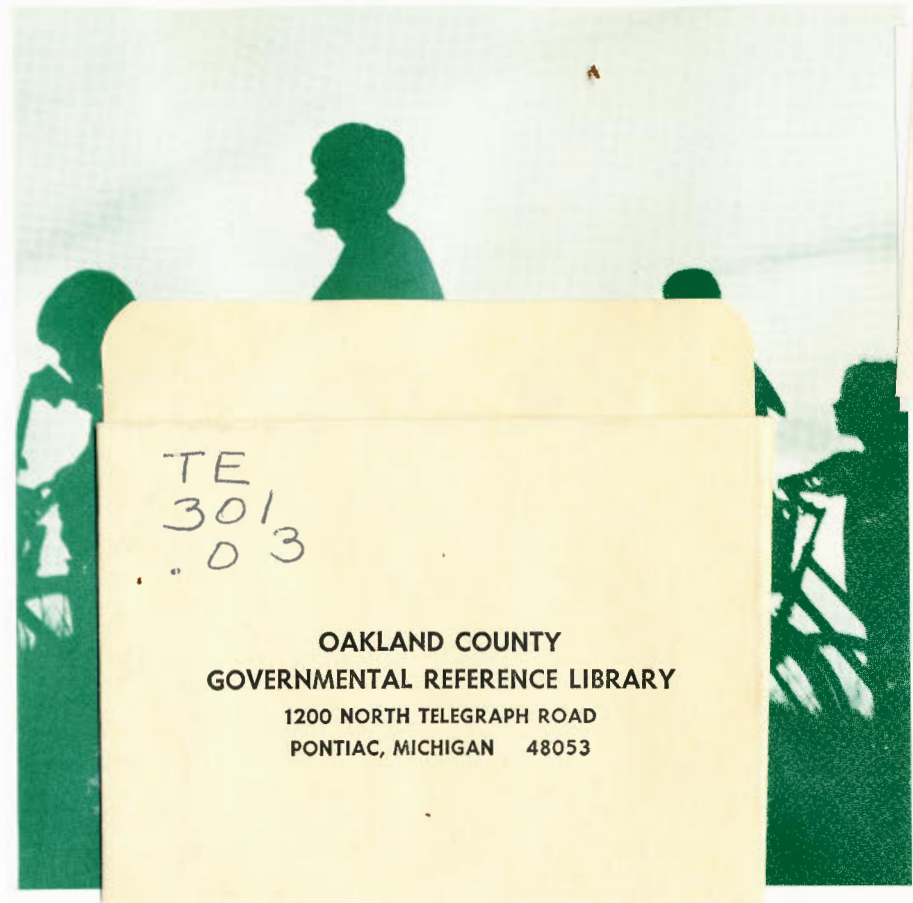
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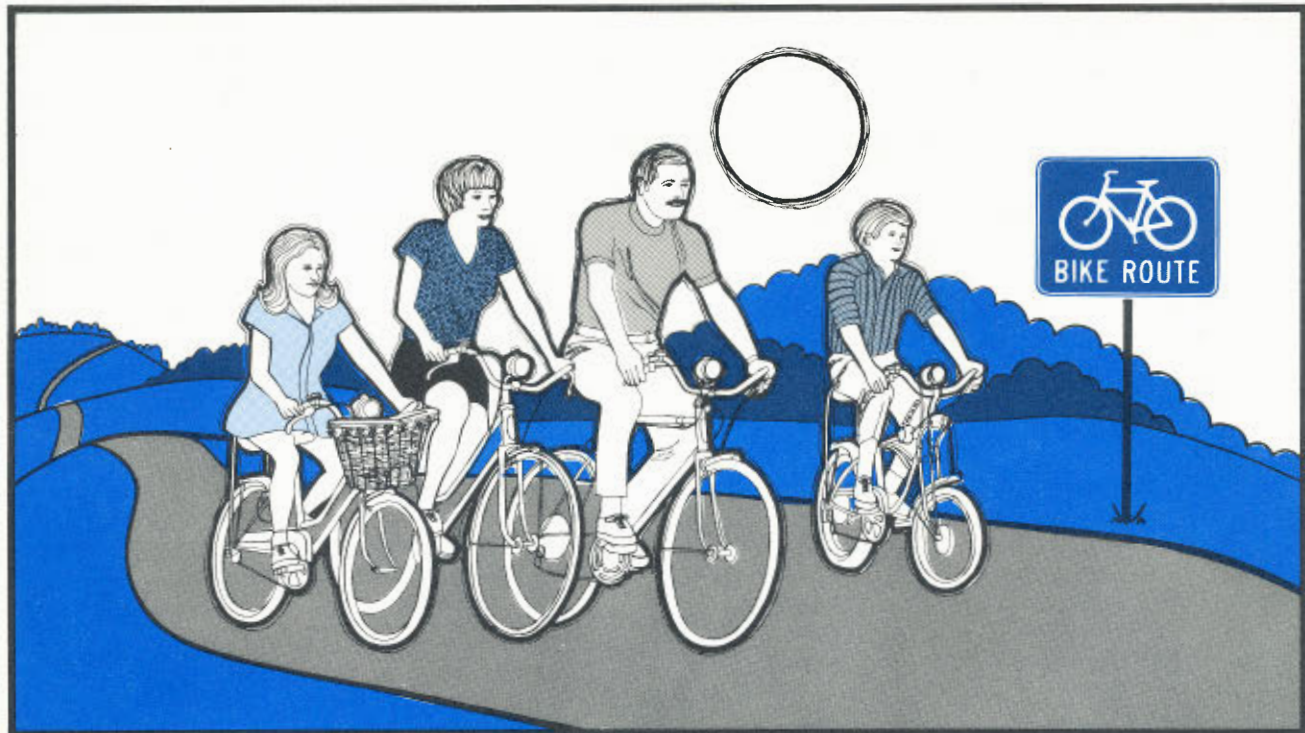
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what you should know about BICYCLING

INTRODUCTION

Bicycling used to be called "kids's stuff." Not any more. Now it's about a 50-50 proposition, with about as many adults riding bicycles as youngsters.

In Michigan, as in the rest of the country, there will soon be as many bicycles as there are motor vehicles . . . some 6-million.

Bicycling is a great way to travel. It's cheap, clean transportation. It's good exercise. And it's fun.

It does take skill, attention, and knowing the rules of the road. And it can be dangerous, especially on today's busy streets and highways. Every year, scores of persons are killed while operating bicycles. Many others suffer injuries, often crippling ones.

This manual, "What You Should Know About Bicycling," covers Michigan's most important laws

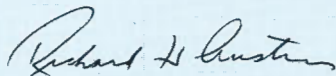
about bicycle use — laws which should be understood by motorists, as well as bicyclists — and by all parents and teachers who should help teach bicycle safety.

While not a "complete" bicycle manual, it does give basic information about bicycle equipment, safe driving practices, and bicycle care.

It does not try to give all the motor vehicle laws of Michigan. A useful digest of these may be found in "What Every Driver Must Know," Michigan's official driver manual.

I suggest that each bicyclist look over a copy of "What Every Driver Must Know." Copies are free at any Secretary of State driver licensing office. You'll find they will help you be a safe and sensible bike operator.

Safe bicycling!



Richard H. Austin
Secretary of State



Every eight-sided sign means STOP!



Diamond-shaped signs are warning signs. Slow down; obey them.



A round sign warns of a railroad crossing. Slow down; stop; look both ways before crossing.



Triangular signs mean yield or give the right-of-way to all traffic in the cross street.



A rectangular or square sign always tells of rules and regulations which you must obey.

BICYCLE LAWS

(References in brackets are to the Michigan Vehicle Code.)

Many vehicle laws also apply to bicycles. Bicyclists have the same responsibilities as the drivers of other vehicles. [257.657]

Some Michigan communities do have local licenses for bicycles. It's a good idea to check with your local police. [257.606(a)-8.]

The law says bicyclists must drive **with the flow of traffic** . . . on the right side of the road. [257.660.]

Bicyclists must not drive more than two side by side at any time on any public street. [257.660(b).]

The law also says bicyclists must drive as close to the right edge of the road as possible. This would not normally allow side-by-side cycling, anyway. And it's much safer to drive single file on public streets, especially in traffic. [257.660(a).]

Bicyclists must signal when they plan to turn or stop, just like motorists. There is only one hand signal in Michigan. You hold your left hand and arm straight out to your left, from the shoulder.

This warns other traffic that you are about to change directions or put on your brakes. [257.657.]

You should know the meaning of traffic lights, signs, and all other traffic control devices. [257.657] They tell you what you should know and what to expect from the traffic around you.

Stop at all stop signs and red or yellow traffic lights. Slow down at **flashing** yellow lights and “yield” signs —be ready to stop for any other traffic. [257.657.]

Whenever there are usable bicycle paths, the law requires bicyclists to use them instead of the streets. [257.660(c).] Bicyclists are not allowed on limited access highways, such as interstate expressways. [257.646.]

Sidewalk riding is against the law in some communities but legal in others. [750.419, 257.606(a)-8.] Parents should check the law in their community and make sure it lets small children ride on sidewalks until they are big enough to handle their bikes in traffic.

Bicyclists on sidewalks must stop or get out of the way for pedestrians (people walking). When coming near a pedestrian, you must signal, using your bike’s horn or bell. Pedestrians have the “right-of-way” over bicycles, just as they do over motor vehicles. [257.657.]

Never try to “hitch” a tow by holding on to a

moving vehicle. It’s against the law, for your own good. [257.659.]

Don’t ride between lines of traffic, not even to pass slow-moving cars. It’s dangerous as well as against the law. On two way streets, the law does say you **may** pass on the left of vehicles moving in the same direction . . . and on one way streets, you **may** use either a right or left lane — whichever is clear of traffic. But whatever you do, remember, anytime you are not driving on the right edge of the road, you are in a tricky position. And driving between traffic lines *is* illegal. [257.660(d).]

When riding your bike, *sit* on the attached seat (saddle). [257.658(a).]

A bike should carry only the number of persons it was built for . . . usually **the bike operator alone**. A banana seat is **not** for two riders; it is a single-seater even though it is an extra long style. And never ride anyone on the handlebars or cross bar. This is illegal, because it is unsafe. [257.658(b).]

Don’t drive a bike when carrying packages which keep you from having both hands on the handlebars at all times. [257.661.] For packages, you need a carrier or basket.

When you get off your bike to “walk” it, you become a pedestrian. Then you must obey

pedestrian laws. If you “walk” your bike on a public road where there is no sidewalk, you must walk **facing traffic**. [257.39, 257.655.]

It is a misdemeanor to break any of the state’s traffic laws or bicycle safety laws. [257.656-657.]

Parents must not let children drive improperly equipped or unsafe bikes nor to let them disobey any of the traffic and safety laws about bicycling. It is the parents’ or guardians’ responsibility to protect their children and oversee their behavior. Failure to do so is a misdemeanor. [257.656(a)(b).]

SAFE DRIVING

Safety rules tell you what you should do so not to have an accident or get hurt.

Getting Safe Size and Proper Fit

Be sure your bike fits you. You can’t control a bike that’s too big — or too small — for you. And it will be uncomfortable, to boot.

It’s easy to measure for proper fit. First, make sure the bike is in the right size range. Bikes are measured by the size of the wheel, and by the

length of the frame from the saddle (seat) to crank hanger (where the pedal comes out from the frame). The bicycle industry has a guide. To help you start out with the right size bike, use this guide. Measure leg length from crotch to floor (wearing flat heels). Then check the guide.

For small children, go by age rather than leg length.

GUIDE FOR BIKE SIZE

AGES AND LEG LENGTH	WHEEL (AND FRAME) SIZES
2-4 year olds	12 inch wheels
3-5 year olds	16 inch wheels
22½ inches	20"
24-26"	24"
28-29"	26" (17" frame)
30-31"	26" (19" frame)
33"	26" (21" frame)
34"	26" (23" frame)
31½"	27" (19" frame)
32½"	27" (21" frame)
33½"	27" (22" frame)
34½"	27" (23" frame)
35½"	27" (24" frame)
36½"	27" (25" frame)

Good Driving Sense

Laws alone can't protect you in traffic. Never forget you are on a vehicle that is hard for motor vehicle drivers to see. Drive defensively. Be alert for any dangerous situations. Always try to leave yourself a life-saving out. **Alert is alive!**

Always be ready to give the right-of-way to motor vehicles. Many motorists drive as though they always have the right-of-way, even when they don't — and it's wise to keep this in mind.

Learn to drive your bike always in a straight line. Stay close to the right side of the street. Don't bob and weave in and out of traffic. Be careful not to get caught between two lanes of moving traffic.

Drive at speeds you can control, especially when coasting down hill. Use your coaster brake . . . or a touch of your rear-wheel hand brake . . . to keep speed down.

When you come out of an alley or driveway into a street, always stop and check the traffic.

At busy cross-streets, get off your bike and walk it across with pedestrian traffic.

Look both ways before turning or changing direction.

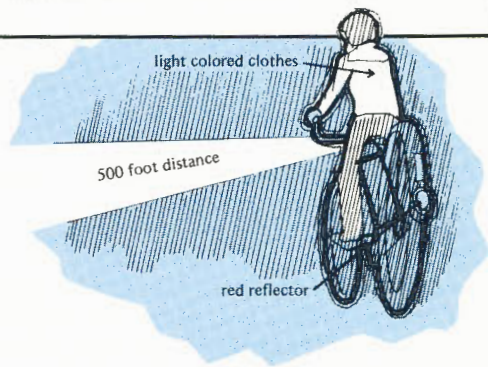
Watch for cars making right turns. Remember, they may not see you.

Watch out for parked cars pulling out or opening doors.

Don't try to be a "stunt" driver. This means don't ride with no hands on the grips. Don't ride

Night Driving

It is not a good idea to drive at night unless you have to. If you must drive at night, be sure to check your lights and reflectors before starting out. And wear light colored clothes. Stay away from streets where traffic may be heavy.



one-handed. Don't "pop wheelies;" they can be dangerous and many who have tried them have ended up with scrapes and bruises — or broken bones.

If you want to do any "fooling around" or "stunting" on your bike, get away from all traffic, including people on foot. Find a vacant spot in a park or empty lot, where you won't bother others. And don't try anything that could hurt you, other people, or property.

Drive your bike like a "pro." Use good riding form. Play it safe.

Road Hazards

Don't ride over sewer gratings or manhole covers. They can throw you out of control or flip you over. And they're hard on your tires.

Cross railroad tracks at a right angle . . . or walk your bike across.

Don't jump curbs, and stay off rough streets and alleys as much as you can.

Watch for dogs, and try to steer clear of them. Some dogs like to chase bikes. They can get in your way and make you spill. And they will often snap at your feet or legs, as well as at your wheels.

BICYCLE EQUIPMENT

(References in brackets are to the Vehicle Code.)

Required [257.662(b),(c).]

Brakes — good enough to skid the tire and stop the bike in fifteen feet on dry pavement.

Horn/Bell — which can be heard at 100 feet. No sirens or whistles.

Required for Night Riding [257.662(a)]

Front light — An attached head lamp which will shine at least 500 feet ahead.

Rear reflector — a red reflector attached to the rear of the bike.

Recommended

Reflectorized pedals — On both front and rear surfaces of each pedal; should be colorless or yellow.

Front reflector — a colorless reflector, solidly mounted on the front fender.

Side reflectors — on both sides of each wheel, as close to the rims or tires as possible: yellow or white on the front wheel, red or white on the back wheel.

Optional

Red tail lights — some of which can be seen for up to 500 feet; excellent extras but not a substitute for red reflectors.

Leg and arm lights — which outline the bicyclist, rather than his bicycle.

Reflective tape — also excellent added equipment; should be red on the back of the bike, amber or colorless on the front.



Chain guards — usually on most bikes... and very important for safety. Getting a pant leg or other piece of clothing snagged in the drive chain can cause a spill and injury.

Rearview mirror — so you can check the traffic behind you without having to turn around.

Turn signals — which attach to your bike and let you signal the way you plan to turn without taking your hand off your handlebars.

Training wheels — small wheels to attach to the rear wheel, one on each side, and make it “three-wheeled,” for protection against tipping

over — for the youngster while learning to ride.
Rear carrier — for packages, books, and the like.

The safest way to haul things on your bike. Wire saddle baskets can be set on rear fenders or carriers for even more carrying space.

Front carriers — good for small shopping bags or light travel baggage.

Bike locks — with all the bicycle stealing going on, a good bike lock is practically a necessity. Your bicycle dealer has several kinds you can choose from.

Baby seats — are available which can be attached to provide safe and legal seating for small children to enjoy bike riding along with the parents.

Kick stand — if your bike didn't come with one, a good thing to get. They don't cost much. Never lay a bike down on its side.

BIKE CARE (See picture on page 9)

Keep your bike in top shape. It needs check-ups and possible repairs now and then. If you don't know how to fix your bike, take it to a good bike dealer. He can make your bike safe and sound... and can give you tips about doing some of the work yourself.

It's a good idea to lock your bike whenever you

leave it — attached to a fixed object if possible — like a pole, fence, or bike rack. At home, put it away out of sight in your garage, shed, basement or hallway.

Brakes: Your bike should brake evenly. When you apply the brakes hard, while moving at normal speed, you should be able to skid your wheels on dry pavement. If not, have the brakes fixed by a bicycle serviceman.

Saddle (seat): Adjust to body size — so your leg is comfortably straight with the instep of the foot firmly on the pedal, when the pedal is at its lowest point. Keep saddle nut tight.

Handlebars: Tighten often. Keep stem well down in fork. Saddle and handlebars should be set so that when you hold your elbows straight you are leaning slightly forward — as though holding up your upper body by your arms on the bars. The ends of the handlebars should be no more than 28 inches apart — and no less than 14 inches apart.

Wheels: Keep wheel nuts tight to stop wobble or sway. Tight wheels, saddles, and handlebars cut chances for slipping. One slip could throw you out of control and maybe get you hurt.

Tires: Watch pressure. The right amount of air makes tires ride easier and last longer. Check valves for possible leaks. Keep the valve stem straight. Remove from the treads any cinders, pebbles, metal, or glass.

Spokes: Keep them tight. If broken or badly rusted, replace promptly.

Chain: Check for damage and wear. Make sure it fits snugly; adjust for slack by loosening rear wheel, drawing it back, and retightening nuts. If it comes off, put it on the rear sprockets first, pull it forward and slip it back on the front sprockets while turning it slowly. Oil it often, then wipe clean.

Pedals: When treads get worn or fall off, replace the pedal.

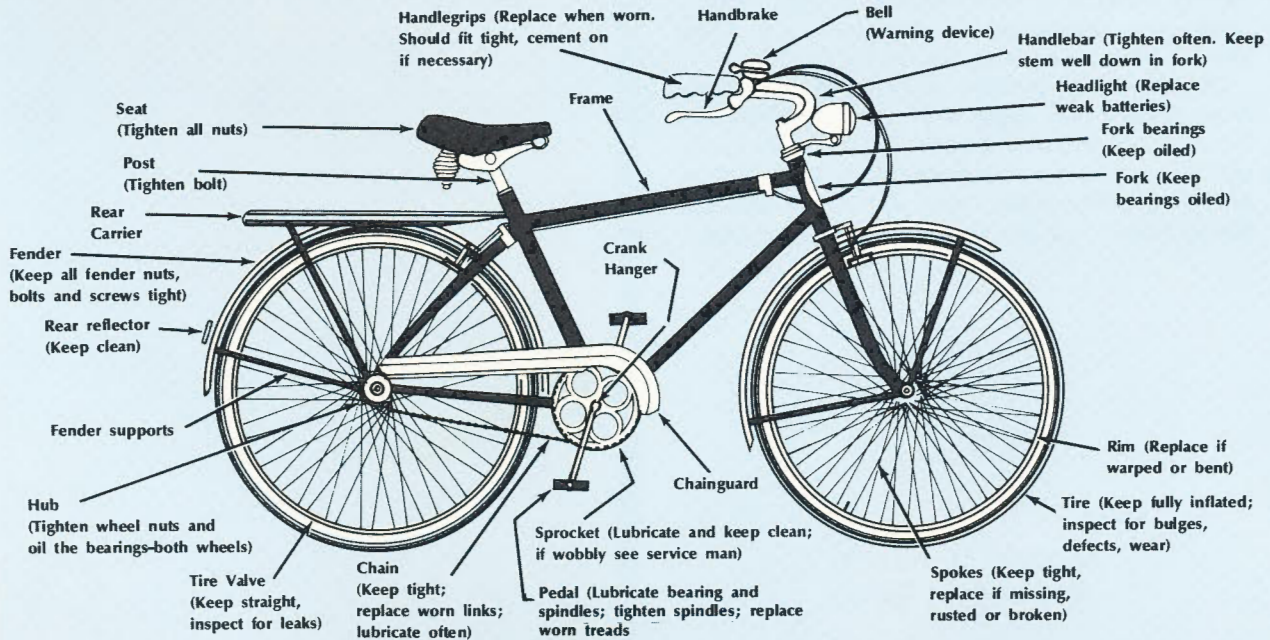
Fenders: Make sure they fit solidly, without rubbing tires. Rubbing may be corrected by either adjusting the fender, or the wheel.

Lights and reflectors: Check often. If broken or lost, replace right away.

Horn or bell: Test before you go anywhere. Make sure it is firmly mounted and easy to ring.

BIKE CARE

Keep your bicycle in good condition:



Have your bicycle safety-checked twice a year by a reliable bicycle service dealer.



MODEL BICYCLE ORDINANCE

This information is furnished as a public service of the
American Automobile Association and affiliated Clubs.





MODEL BICYCLE ORDINANCE

The following standard bicycling regulations, excerpted verbatim from the Uniform Vehicle Code and the Model Traffic Ordinance, are presented as a guide for bicycling ordinances. The Uniform Vehicle Code and the Model Traffic Ordinance are companion pieces suggesting traffic regulations for states and municipalities.

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Sec. 1-105—Bicycle

Every device propelled by human power upon which any person may ride, having two tandem wheels either of which is more than 14 inches in diameter. (REVISED AND RENUMBERED, 1968.)

Sec. 1-184—Vehicle (bicycle not a)

Every device in, upon or by which any person or property is or may be transported or drawn upon a highway, excepting devices moved by human power or used exclusively upon stationary rails or tracks.

Article XII—Operation of Bicycles and Play Vehicles

Sec. 11-1203—Riding on bicycles

(a) A person propelling a bicycle shall not ride other than upon or astride a permanent and regular seat attached thereto.

(b) No bicycle shall be used to carry more persons at one time than the number for which it is designed and equipped.

Sec. 11-1204—Clinging to vehicles

No person riding upon any bicycle, coaster, roller skates, sled or toy vehicle shall attach same or himself to any (streetcar or) vehicle upon a roadway.

Sec. 11-1205—Riding on roadways and bicycle paths

(a) Every person operating a bicycle upon a roadway shall 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.

(b) 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.

(c) 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. 11-1206—Carrying articles

No person operating a bicycle shall carry any package, bundle or article which prevents the driver from keeping at least one hand upon the handlebars.

Sec. 11-1207—Lamps and other equipment on bicycles

(a) Every bicycle when in use at nighttime shall be equipped with a lamp on the front which shall emit a white light visible from a distance of at least 500 feet to the front and with a red reflector on the rear of a type approved by the department which shall be visible from all distances from 100 feet to 600 feet to the rear when directly in front of lawful lower beams of head lamps on a motor vehicle. A lamp emitting a red light visible from a distance of 500 feet to the rear may be used in addition to the red reflector.

(b) No person shall 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 that a bicycle shall not be equipped with nor shall any person use upon a bicycle any siren or whistle.

(c) Every bicycle shall be equipped with a brake which will enable the operator to make the braked wheel skid on dry, level, clean pavement.

MODEL TRAFFIC ORDINANCE

Article XII—Regulations for Bicycles*

Sec. 12-1—Effect of regulations

(a) It is a misdemeanor for any person to do any act forbidden or fail to perform any act required in this article.

(b) The parent of any child and the guardian of any ward shall not authorize or knowingly permit any such child or ward to violate any of the provisions of this ordinance.

(c) These regulations applicable to bicycles shall apply whenever a bicycle is operated upon any highway or upon any path set aside for the exclusive use of bicycles subject to those exceptions stated herein.

Sec. 12-2—License required

No person shall ride or propel a bicycle on any street or upon any public path set aside for the exclusive use of bicycles unless such bicycle has been licensed and a license plate is attached thereto as provided herein.

Sec. 12-3—License application

Application for a bicycle license and license plate shall be made upon a form provided by the city and shall be made to the (chief of police). An annual license fee of _____ shall be paid to the city before each license or renewal thereof is granted.

Sec. 12-4—Issuance of license

(a) The (chief of police) upon receiving proper application therefor is authorized to issue a bicycle license which shall be effective until (the next succeeding first day of July).

***Sec. 15-102—Powers of local authorities**

(a) The provisions of this act shall not be deemed to prevent local authorities with respect to streets and highways under their jurisdiction and within the reasonable exercise of the police power from:

8. Regulating the operation of bicycles and requiring the registration and inspection of same, including the requirement of a registration fee. (U.V.C.)

(b) The (chief of police) shall not issue a license for any bicycle when he knows or has reasonable ground to believe that the applicant is not the owner of or entitled to the possession of such bicycle.

(c) The (chief of police) shall keep a record of the number of each license, the date issued, the name and address of the person to whom issued, and the number on the frame of the bicycle for which issued, and a record of all bicycle license fees collected by him.

Sec. 12-5—Attachment of license plate

(a) The (chief of police) upon issuing a bicycle license shall also issue a license plate bearing the license number assigned to the bicycle, the name of the city, and (the calendar year for which issued) (the expiration date thereof).

(b) The (chief of police) shall cause such license plate to be firmly attached to the rear mudguard or frame of the bicycle for which issued in such position as to be plainly visible from the rear.

(c) No person shall remove a license plate from a bicycle during the period for which issued except upon a transfer of ownership or in the event the bicycle is dismantled and no longer operated upon any street in this city.

Sec. 12-6—Inspection of bicycles

The chief of police, or an officer assigned such responsibility, shall inspect each bicycle before licensing the same and shall refuse a license for any bicycle which he determines is in unsafe mechanical condition.

Sec. 12-7—Renewal of license

Upon the expiration of any bicycle license the same may be renewed upon application

and payment of the same fee as upon an original application.

Sec. 12-8—Transfer of ownership

Upon the sale or other transfer of a licensed bicycle the licensee shall remove the license plate and shall either surrender the same to the (chief of police) or may upon proper application but without payment of additional fee have said plate assigned to another bicycle owned by the applicant.

Sec. 12-9—Rental agencies

A rental agency shall not rent or offer any bicycle for rent unless the bicycle is licensed and a license plate is attached thereto as provided herein and such bicycle is equipped with the lamps and other equipment required by the state vehicle code.

Sec. 12-10—Bicycle dealers

Every person engaged in the business of buying or selling new or second-hand bicycles shall make a report to the (chief of police) of every bicycle purchased or sold by such dealer, giving the name and address of the person from whom purchased or to whom sold, a description of such bicycle by name or make, the frame number thereof, and the number of license plate, if any, found thereon.

Sec. 12-11—Traffic ordinances apply to persons riding bicycles

Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this ordinance, except as to the special regulations in this article and except as to those provisions of this ordinance which by their nature can have no application.

Sec. 12-12—Obedience to traffic-control devices

(a) Any person operating a bicycle shall obey the instructions of official traffic-control devices applicable to vehicles, unless otherwise directed by a police officer.

(b) Whenever authorized signs are erected indicating that no right or left or U turn is permitted, no person operating a bicycle shall disobey the direction of any such sign, except where such person dismounts from the bicycle to make any such turn, in which event such person shall then obey the regulations applicable to pedestrians.

Sec. 12-13—Parking

No person shall park a bicycle upon a street other than upon the roadway against the curb or upon the sidewalk in a rack to support the bicycle or against a building or at the curb, in such manner as to afford the least obstruction to pedestrian traffic.

Sec. 12-14—Riding on sidewalks

(a) No person shall ride a bicycle upon a sidewalk within a business district.



(b) The (chief of police) is authorized to erect signs on any sidewalk or roadway prohibiting the riding of bicycles thereon by any person and when such signs are in place no person shall disobey the same.

ALTERNATE (b) No person (15) or more years of age shall ride a bicycle upon any sidewalk in any district.

(c) Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right of way to any pedestrian and shall give audible signal before overtaking and passing such pedestrian.

Sec. 12-15—Penalties

Every person convicted of a violation of any provision of this article shall be punished by a fine of not more than _____ dollars or by imprisonment for not more than _____ days or by removal and detention of the license plate from such person's bicycle for a period not to exceed _____ days or by impounding of such person's bicycle for a period not to exceed _____ days or by any combination thereof.*

Sec. 17-4—Restrictions upon use of streets by certain vehicles

(a) The city traffic engineer is hereby authorized to determine and designate those heavily traveled streets upon which shall be prohibited the use of the roadway by motor-driven cycles, bicycles, horsedrawn vehicles or other non-motorized traffic and shall erect appropriate signs giving notice thereof.

(b) When signs are so erected giving notice thereof, no person shall disobey the restrictions stated on such signs.

* It is suggested that each city attorney determine whether this section, imposing penalties, is inapplicable to juveniles by reason of state statutes establishing juvenile courts and special methods of dealing with juvenile offenders.



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