

GREEN TOWNSHIP BICYCLE PLAN



PREPARED BY THE
GREEN TOWNSHIP
BIKEWAY COMMITTEE

TECHNICAL ASSISTANCE PROVIDED BY
OHIO - KENTUCKY - INDIANA REGIONAL COUNCIL OF GOVERNMENTS
426 EAST FOURTH STREET CINCINNATI, OHIO 45202



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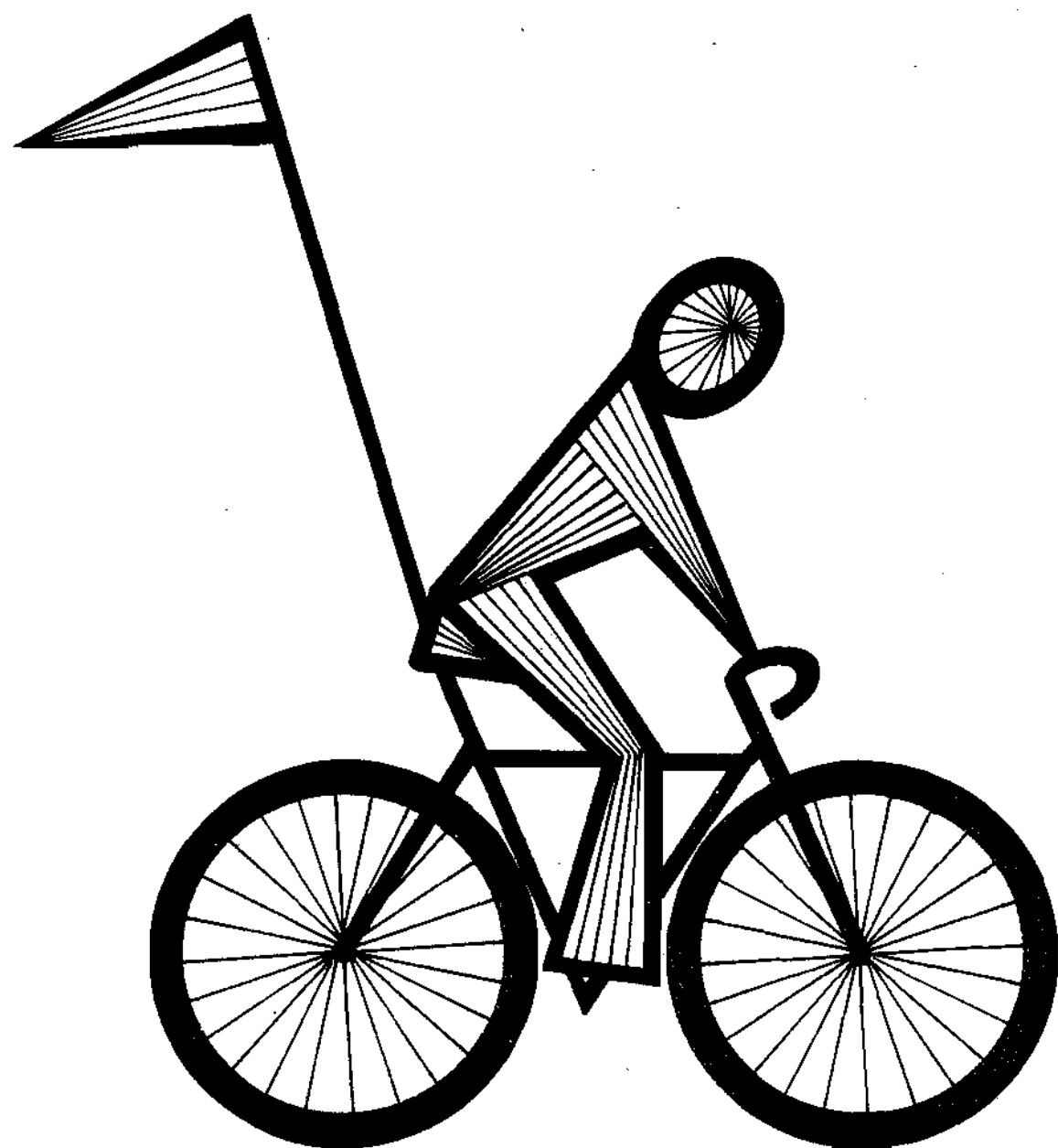
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CHAPTER 1
INTRODUCTION





CHAPTER 1 INTRODUCTION

The Green Township Bicycle Plan is the result of citizen interest and action. The purpose of the introductory information is to outline the history of that citizen involvement, to describe the regional planning agency's relationship to bicycle planning, and to describe the roles and responsibilities of the Green Township Bikeway Committee.

HISTORY OF BIKEWAY PLANNING IN GREEN TOWNSHIP

The creation of the Green Township Bikeway Committee (GTBC) and the development of the Green Township Bicycle Plan is the result of a continuing interest by Green Township residents to enhance bicycle safety and access for Green Township residents. In 1976, the Green Township Trustees asked the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) to assist them in applying for federal funding from the Bikeway Demonstration Program. The Trustees were interested in developing a bikepath at Kuliga Park. Funding was not obtained for this project.

In 1977, the Northwest School District experienced financial problems. As a result, the Board of Education said that children who lived less than two miles from school could not ride school buses. Parents in the Monfort Heights and White Oak areas of Green Township were concerned for the safety of their children who would have to walk or ride their bikes to school each day along roads with few sidewalks.

The Monfort Heights PTA Board decided to circulate a petition at school teas at the beginning of the 1977-1978 school year. The petition urged the construction of bikeways along thoroughfares in the Monfort Heights area of Green Township

for reasons of safety and energy conservation. In October, 1977, the petitions were given to Representative Thomas Luken, Second Ohio District, in the hopes that he would investigate potential funding for bikeways in Green Township. Since requests for federal funding for bikeways must come from the local government, Congressman Luken first forwarded the petitions to the Township Trustees for their consideration.

In 1978, both the Monfort Heights Civic Association and the Green Township Trustees asked OKI to study the possibility of bikeways along Boomer Road, West Fork Road, Jessup Road, and Race Road. The township was advised that OKI could provide technical assistance to a local citizen's committee which would develop a bikeway plan for the township.

The Green Township Trustees officially established the Green Township Bikeway Committee at their meeting on June 11, 1979. Emily Rettig was appointed as chairperson. The trustees also sent a letter to the Executive Director of OKI which requested technical assistance for the bikeway committee and committed their support to the planning process. OKI responded by assigning a staff person to work with the Green Township Bikeway Committee.

THE OHIO-KENTUCKY-INDIANA REGIONAL COUNCIL OF GOVERNMENTS

The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) is a regional planning agency for nine counties in the Cincinnati Metropolitan Area. The agency does regional planning in the functional areas of transportation, environment, and housing. This planning provides direction for the allocation of federal funds for those activities in the region.

In 1976, the OKI Technical Coordinating Committee's Subcommittee on Bikeways prepared and distributed a document entitled OKI Regional Bikeway Policy. The purpose of this document was to encourage the use of the bicycle as a mode of transportation. The OKI Bikeway Policy emphasized the following three activities:

- 1) Development of routes within communities to service areas such as parks, schools, and stores.

- 2) Development of routes between various communities.
- 3) Development of a bicycle safety and education program for cyclists and drivers of motor vehicles.

The policy also summarized design standards for the construction of bikeways and identified existing and suggested bikeways in the OKI Region.

The focus of the OKI Bikeway Policy of 1976 was on local communities. Leadership for the development and construction of bikeways was assumed to come from the local communities. OKI was available as a resource to assist local communities if requested. This approach to bikeway planning within the OKI Region continues today.

THE GREEN TOWNSHIP BIKEWAY COMMITTEE: MEMBERSHIP AND RESPONSIBILITIES

The Green Township Bikeway Committee was organized for the purpose of developing a bikeway plan for Green Township. Letters were sent to the following organizations inviting them to send a representative to the Bikeway Committee: Monfort Heights Civic Association, Bridgetown and Green Township Civic Associations, Mack Civic Association, White Oak Improvement Association, White Oak and Monfort Heights Kiwanis, Northwest Exclusive Club, Oak Hills Kiwanis, Parent Teacher Associations at all public and private schools in Green Township, and Hamilton County PTA.

Monfort Heights Civic Association, Dulles PTA, and the St. Ignatius Ladies Society designated representatives to the Bikeway Committee. The committee includes individuals who are also members of the following groups: Bridgetown Civic Association, Green Township Civic Association, Monfort Heights PTA, St. Aloysius PTA, Delhi Junior High PTA, White Oak Junior High PTA, Oak Hills High School PTA, and the Colerain Corridor Advisory Committee.

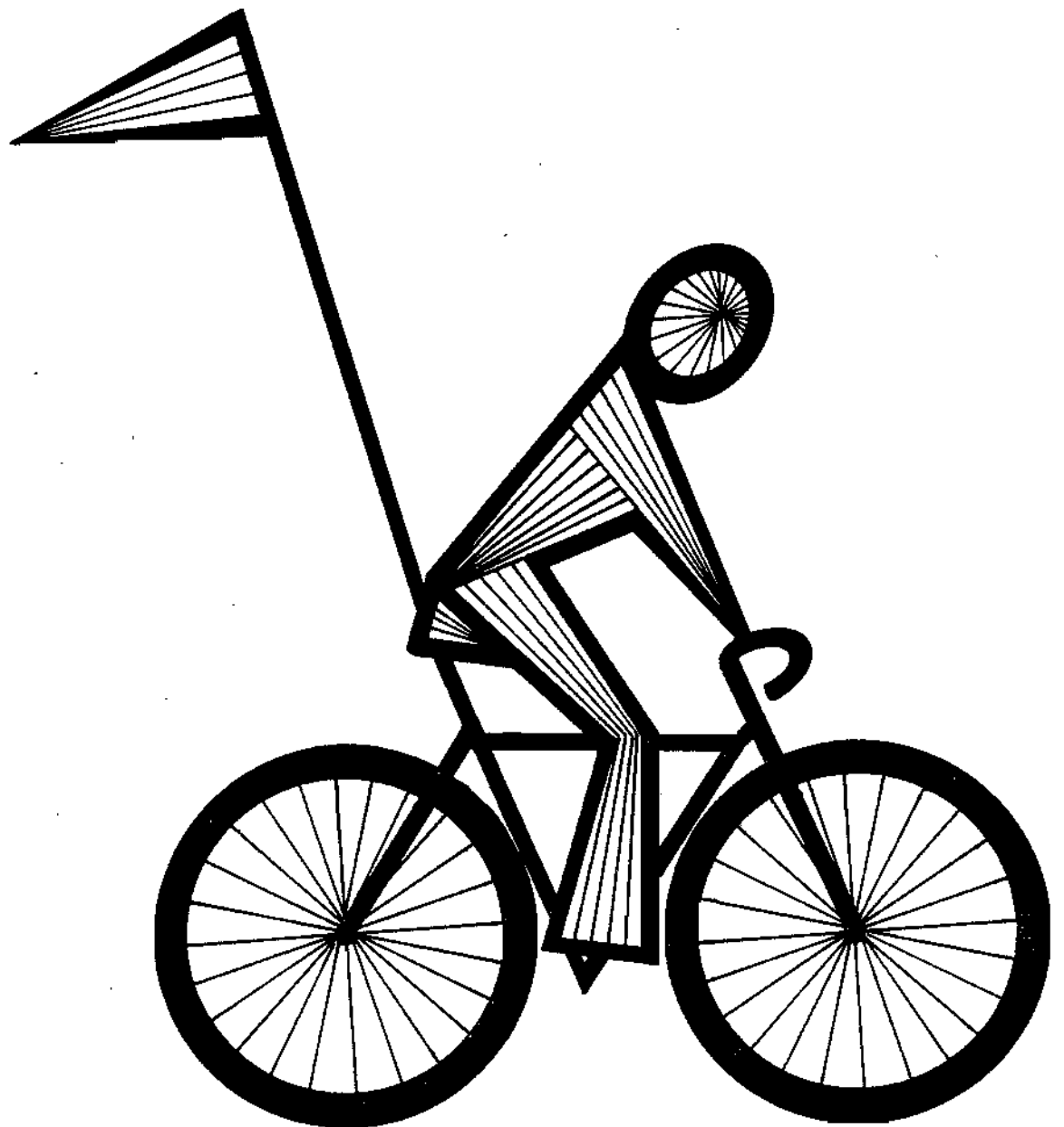
Geographic representation on the Bikeway Committee is as follows:

- North (Monfort Heights and White Oak) 9
- Central (Bridgetown, Mack and Dent) 5
- South (Covedale) 1

Most of the impetus and concern about bikeways has come from the north and this is reflected in the committee's composition. The committee also includes a representative of the Green Township Trustees and the Hamilton County Engineer's Office. Three members of the committee are regular recreation or commuter cyclists.

The first meeting of the Green Township Bikeway Committee was held on July 31, 1979. The citizens' committee researched existing conditions information and prepared the preliminary draft of their findings. This information is incorporated in the final version of the Green Township Bicycle Plan. It should be noted that, although the committee was initially established to develop a bikeway system for Green Township, the findings led in the direction of a broader program. As a result, the final version is titled "A Bicycle Plan" rather than just "A Bikeway Plan." The draft of the plan was prepared by OKI and was reviewed and revised by the GTBC prior to distribution to the trustees and other community organizations.

CHAPTER 2
BACKGROUND INFORMATION





CHAPTER 2

BACKGROUND INFORMATION

The purpose of Chapter 2 is to present the reader with some background information which is important to the understanding of the Green Township Bicycle Program. It includes a discussion of general characteristics of the township, the transportation system, the Federal-Aid Highway Program, the Colerain Corridor Transportation Study, and existing programs of bicycle safety education. Those readers already familiar with this material may skip directly to Chapter 3.

CHARACTERISTICS OF GREEN TOWNSHIP

Green Township is located in Hamilton County west of the City of Cincinnati. It is primarily a residential area. Many of the people who live there do so because of the country suburban atmosphere.

Green Township is one of the most populous townships in Ohio. In 1970 it had a population of 49,917. Preliminary census figures show a 1980 population of 50,632. Although population has increased only 1.4%, the number of households has increased 19.3% from 13,430 in 1970 to 16,640 in 1980. These figures are consistent with the trend in the Midwest toward fewer persons per household.

Population statistics for Green Township in 1970 demonstrated that approximately 26% of the people were between the ages of 30 and 49; approximately 43% were under the age of 19. Males and females were represented in relatively equal proportions. One can assume from this that there were a large number of families with children in 1970. The 1980 Census data by age is not yet available for Green Township.

Green Township is the second largest township in Hamilton County and has an area of 28.7 square miles.¹ Most of Green Township is zoned residential. Retail, office, and industrial zoning occurs along Harrison Avenue and Cheviot Road and adjacent to the eastern township boundary with the Cities of Cheviot and Cincinnati.

Green Township is one of 12 operating townships in Hamilton County. Townships in Ohio have limited powers that were originally granted by the state legislature to provide services to a rural population. Three Township Trustees are elected to provide road maintenance, fire protection, and law enforcement.

Township Trustees may exercise zoning powers with voter approval. In Green Township, the Trustees have zoning powers in the area north of West Fork Road from Sheed to Cheviot Road and north of North Bend Road between Cheviot Road and Vogel Road. The Hamilton County Rural Zoning Commission has zoning powers in the balance of Green Township.

Townships have limited sources of funds. Green Township's operating expenses are paid for with the township's share of real estate taxes and federal revenue sharing monies. Specific projects, such as the Senior Citizens' Center, have been financed through the Community Development Block Grant Program. Green Township also has a motel tax of 3% on motel bills and a cable TV franchise tax of 3% on gross receipts. These latter two sources of income are limited at the present and are designated for operating costs for the Senior Citizens' Center.

Road maintenance is financed with the township's share of real estate taxes, state motor vehicle registration fees, and state motor fuel taxes. Ohio recently increased its motor vehicle registration fee, but, income from motor fuel taxes has been decreasing. The Ohio Department of Transportation reported on January 8, 1980, that Ohio had experienced five consecutive months of lost gasoline tax revenue which amounts to \$9.9 million. This is 5.32% less than the previous year's total for those five months. The effect of this lost revenue will be a reduction in the township's share of the gasoline tax. A one-mill road fund levy was passed by Green Township voters in the November general election. This money will be used for maintenance of township roads.

GREEN TOWNSHIP TRANSPORTATION SYSTEM

EXISTING HIGHWAY SYSTEM

The existing highway and street system in Green Township is made up of four different systems -- Federal, State, County, and Township (see Green Township Proposed Bikeway System Map at back of report, hereafter referred to as the Bikeway Map). The Ohio Department of Transportation is responsible for maintenance of the Federal and State Highway System which includes I-74 and SR 264 (Bridgetown Road).

Hamilton County is responsible for the County Highway System. (The County System is easily identified in this report by referring to the small base map such as the one on page 12. All the streets on this map, with the exception of I-71 and SR 264, are country roads.) The Hamilton County Engineer works with the county commissioners and the Township Trustees to discharge responsibilities for maintenance, repair, widening, resurfacing, reconstruction, and construction of pavement and bridges. Construction activities are limited to undeveloped or virgin areas. This means that the Hamilton County Engineer is not likely to construct new roads in Green Township.

A majority of the County Highway System consists of narrow, two-lane roads without curbs, gutters, or sidewalks. Figure 1 lists the right-of-way on selected county roads; however, the right-of-way is not known in some cases. In addition, the County Engineer explained that the existing pavement is not always within the right-of-way. Sometimes the county roads were built at the edge of a farmer's field rather than in the designated right-of-way.

The Green Township Trustees are responsible for the Township Highway and Street System. This system includes all roads which are not part of the Federal, State or County Systems. The County Engineer serves as an advisor to the Trustees for maintenance, repair, widening, resurfacing, and reconstruction of township roads. The Trustees do not have the authority to build roads.

FIGURE 1
EXISTING RIGHT-OF-WAY ON SELECTED COUNTY ROADS IN GREEN TOWNSHIP

<u>COUNTY ROAD *</u>	<u>COUNTY ROAD NUMBER</u>	<u>EXISTING RIGHT-OF-WAY</u>
Anderson Ferry	195	60'
Blue Rock	71	60'
Bridgetown	114	60+
Cheviot	73	60'
Cleves-Warsaw	209	60'
Devils Backbone	127	60'
Ebenezer	128	40' & 60'
Gaines	79	60'
Jessup	131	60'
Julmar	26	?
Lawrence	458	60'
Linneman	139	?
Muddy Creek	141	60'
North Bend	142	40' - 60'
Sidney	140	40' - 60'
South	153	60'
Sylved	27	?
Vogel	157	50'
Werk	158	60'
Westbourne	460	60'
West Fork	159	60'

**These county roads are included in the Bikeway System described in Chapter 4.*

Source: Hamilton County Engineer

According to Hamilton County Subdivision Regulations, new subdivision streets today are required to have a 50-foot right-of-way. This means that the area which includes the street and sidewalks must be 50 feet wide. The minimum pavement width of streets constructed since 1978 is required to be 28 feet. Between 1951 and 1978, the minimum pavement width was required to be 25 feet. Prior to 1951, there were no standards for right-of-way and street widths. As a result, township roads in Green Township vary from 18 feet to 28 feet in width.

In addition to these four major systems, it should be noted that there are several private streets in Green Township. In 1975, the State Legislature passed a law requiring the township to assume responsibility for 47 private roads. The township was required to upgrade these streets for safety reasons. The township anticipates that residents will be assessed for these safety upgrading projects beginning in 1980.

NEW ROAD CONSTRUCTION

Most new road construction in Green Township is performed by private contractors. New streets are developed when subdivisions are built. Developers submit their plans to the Hamilton County Regional Planning Commission for approval.

Effective January, 1980, the Hamilton County Regional Planning Commission is required to notify Township Trustees by registered mail when a subdivision plan has been submitted for review. The Township Trustees are also provided with an opportunity to review and comment on the plan. Prior to this year, there was no assurance that the Township had an opportunity to review and comment upon proposed subdivisions in their township.

SIDEWALKS

Sidewalks exist in a limited and haphazard arrangement in Green Township. Some subdivisions have been developed with sidewalks and others have not. In some areas, sidewalks between adjoining subdivisions are not connected. Many homes on large lots of a half acre and more do not have sidewalks. The Hamilton

County Subdivision Regulations require developers to build sidewalks on lots which are 80 feet wide or less. Sidewalks can be constructed by the Hamilton County Engineer at the request of adjacent property owners. Property owners adjacent to county roads are assessed \$5.90 per front foot. The County pays the balance. Property owners adjacent to township roads can be assessed up to 100% of the cost of the sidewalks. The amount of the assessment along township roads is determined by the Township Trustees.

The State of Ohio only builds sidewalks in conjunction with a road improvement. This means that along a state route, such as Bridgetown Road, the County could construct sidewalks but would need approval from the Ohio Department of Transportation. Property owners would be assessed for the costs.

Sidewalks are included as part of the Transportation System in Green Township because they are an alternative for bicycle travel. In response to a request for information by the GTBC, the Ohio Legislative Service Commission stated that the Ohio Revised Code permits bicycles to be operated on sidewalks. (See Appendix 1 for full text of the letter.)

BIKEWAYS

At the present time, there are no designated bikeways in Green Township. Private developers could construct bikeways when they build subdivisions. It may be possible for the County Engineer, at the request of the Township Trustees, to construct bikeways. There is some lack of clarity regarding this because there presently are no county-accepted standards for constructing bikeways as there are with roads and sidewalks.

CONCLUSIONS

At the present time, the transportation system in Green Township is designed primarily to serve motor vehicles. Pedestrian and bicycle transportation systems do not exist in any continuous, coordinated, or comprehensive manner. Most new road construction in Green Township is dependent upon private devel-

opers. Until this year, the Township Trustees were not necessarily given an opportunity to review or comment on new subdivisions. Coordination of the transportation system for vehicles, pedestrians, and bicycles could be improved, in part, through the review of subdivision plans by the Township.

FEDERAL-AID HIGHWAY PROGRAM

The Federal-Aid Highway Program is a reimbursement program. The federal government provides a designated percent of the cost of highway projects. Generally, the federal share is 75% and the state or local share is 25%. Local governments include counties, townships and cities.

Federal monies are available for planning, design, right-of-way acquisition, and actual project construction. State or local governments select the projects, but the Federal Highway Administration (FHWA) is responsible for review and approval at key stages.

In order to be eligible for federal funds, a project must be part of a continuing, comprehensive and coordinated transportation planning process that is carried on cooperatively by the states and local jurisdictions. Transportation planning, including the programming of federal funds, is performed in this region by the Ohio-Kentucky-Indiana Regional Council of Governments.

A highway project generally is not eligible for federal transportation funds unless it is included as a part of the federal-aid system. State and local governments, working through OKI, have designated certain highways as federal-aid system roads. The map in Figure 2 shows the roads in Green Township that are designated as federal-aid urban roads. All of the roads on the federal-aid system are county roads rather than township roads.

The current level of federal funding does not satisfy the demand for roadway improvements. For example, existing programmed projects for federal-aid urban funds make use of all funds expected to be available through 1990.

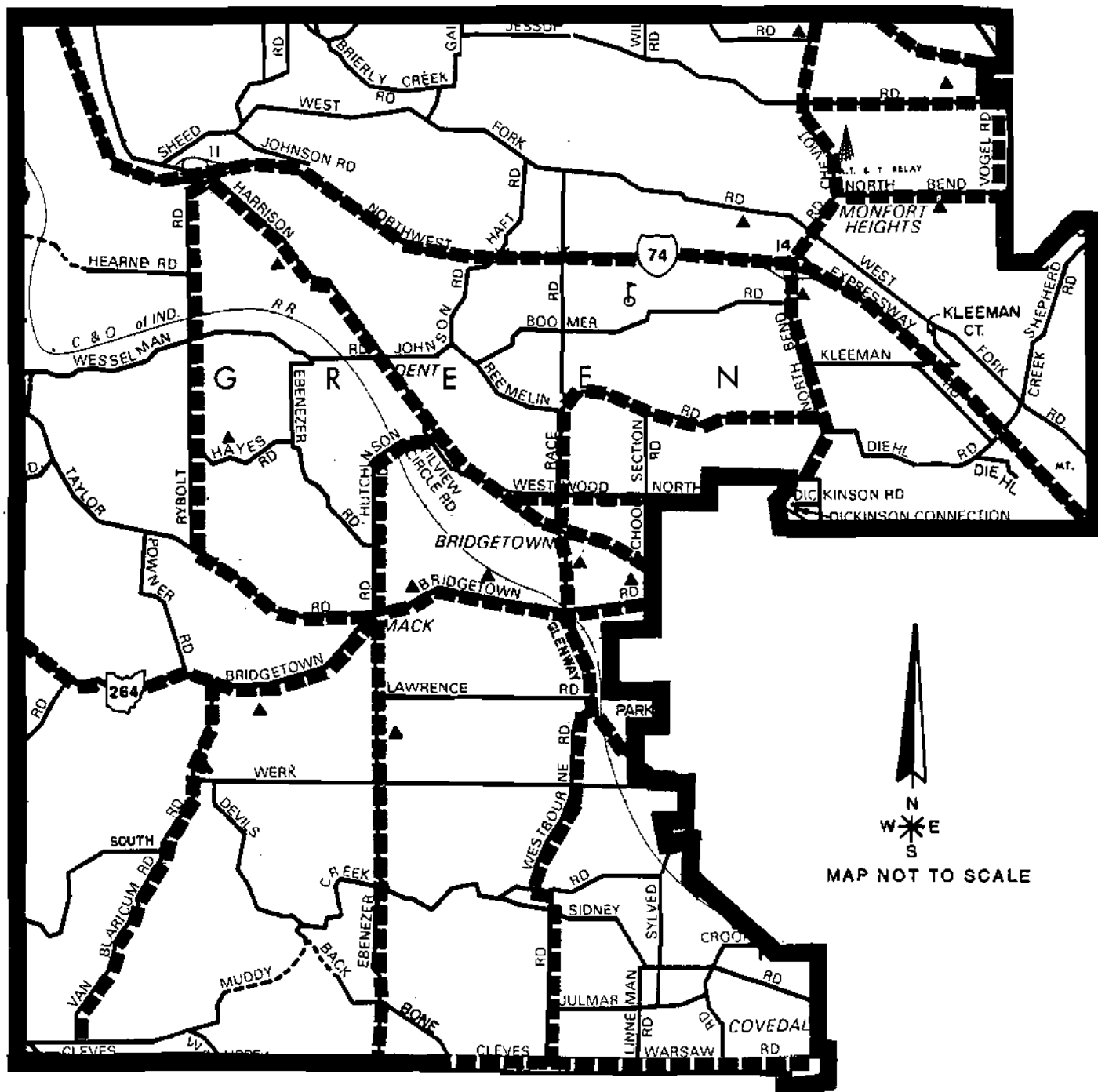


FIGURE 2
GREEN TOWNSHIP
FEDERAL AID SYSTEM

ROADS ELIGIBLE FOR FEDERAL FUNDS 

SOURCES: OHIO-KENTUCKY-INDIANA REGIONAL COUNCIL OF GOVERNMENTS AND
1980 HAMILTON COUNTY HIGHWAY MAP



Federal assistance for roads not on any federal system is allocated to the County Engineer. These funds are limited in amount and are used for spot improvements rather than major projects.

COLERAIN CORRIDOR TRANSPORTATION STUDY

A portion of northeastern Green Township is included in the study area for the Colerain Corridor Transportation Study. (See Figure 3.) The study process for Colerain Corridor was begun in the fall of 1978. The initial stages included the selection of a consulting team to assist in evaluating the transportation needs of the Colerain Corridor between I-74 and Struble Road. The process included participation by the Coordinating Committee (a technical committee) and the Communities' Advisory Committee (a citizen committee).

Due to lack of funding for the project, the Colerain Corridor Transportation Study is presently inactive. It is expected that such a study is likely to occur at some later date. Since it is the intent of such a study to review a variety of alternatives for improving transportation in the corridor, bicycle transportation could be one of those alternatives.

BICYCLE SAFETY EDUCATION -- EXISTING PROGRAMS

Adequate bicycle facilities are important, but equally important is a safety program. The major sources of bicycle safety education in Green Township are the school systems and the Hamilton County Sheriff's Department. In general, major emphasis on bicycle safety education occurs at the elementary school level. Little, if any, bicycle education occurs at the junior high school level. At the high school level, some safety education about bicycles, mopeds, and motorcycles is taught in driver education courses.

The following provides more specific information about the three public school districts in Green Township. Resource people in the three districts were

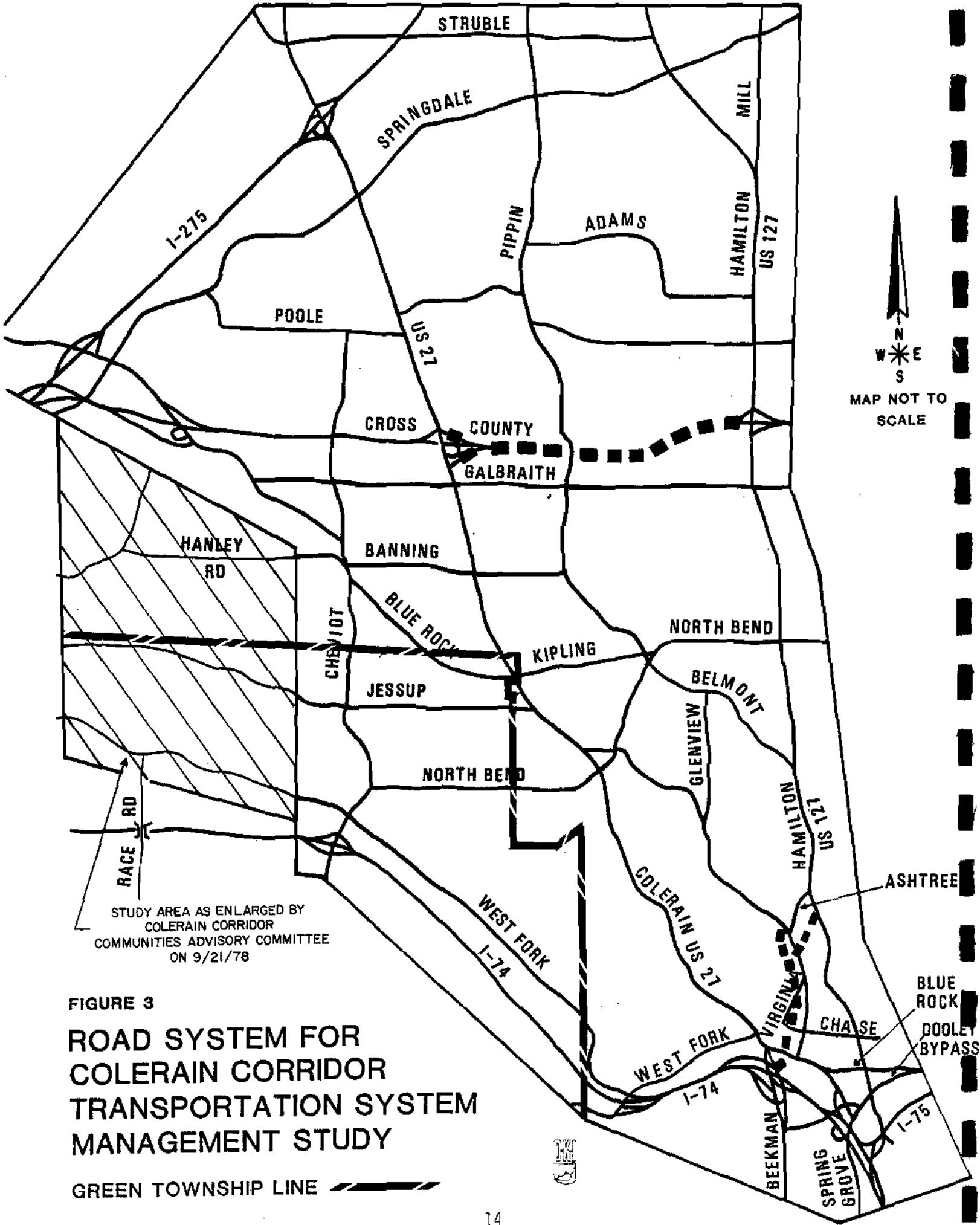


FIGURE 3
ROAD SYSTEM FOR
COLERAIN CORRIDOR
TRANSPORTATION SYSTEM
MANAGEMENT STUDY

GREEN TOWNSHIP LINE

surveyed by telephone. At the elementary and junior high school level, resource persons included primary and intermediate supervisors and school principals. The usual contact at the high school was the driver education instructor. Due to time constraints, the private schools were not surveyed.

NORTHWEST LOCAL SCHOOL DISTRICT

The Northwest Local School District places minimum emphasis on bicycle safety. As a result of passage of a tax levy, most of the children are transported to school by bus. In kindergarten through second grade, a week is devoted to safety every year. This includes bicycle safety. In grades three through six, teachers are encouraged to include bicycle education but it is not a regular course of study. Grades three through six have an assembly once a year or once every other year on bicycle safety. The scheduling of this assembly is decided by local schools.

Bicycle education is not included at the junior high school level unless an individual teacher does so. At the senior high school level, bicycle education is included as part of the driver education course. The high school cannot accommodate everyone who wants to take driver education. One of the difficulties of teaching bicycle education at all grade levels in the Northwest School District is the limited availability of financial resources for bicycle safety materials.

OAK HILLS LOCAL SCHOOL DISTRICT

The Oak Hills Local School District has a health curriculum for grades one through eight. Two health books have been adopted for use and serve as a resource for classroom teachers. One week every year is devoted to safety education including bicycle safety. Bicycle safety is, therefore, taught and reinforced every year. The focus is basic and general but individual teachers may do more. In the fifth grade, special emphasis is placed on bicycle safety. This includes distribution of pamphlets from the Ohio Department of Education.

At the junior high school level, bicycle safety would be the responsibility of the science or physical education teachers. It is not required to be taught but could be included if the teachers so desired. Safety education for bicycles, mopeds, and motorcycles is included in the driver education course at the high school. Eighty to ninety percent of 15 and 16 year olds enroll in driver education at Oak Hills Senior High.

CINCINNATI CITY SCHOOL DISTRICT

The Cincinnati City Schools teach a health and safety course in kindergarten through third grade. Included in this course is a section on accident prevention which includes rules for the use of bicycles. The health and safety courses in grades four through six review and reinforce what is taught in grades kindergarten through third but there is no special emphasis on bicycle safety. Safety education for bicycles, mopeds and motorcycles is included as a part of driver's education at the high school level.

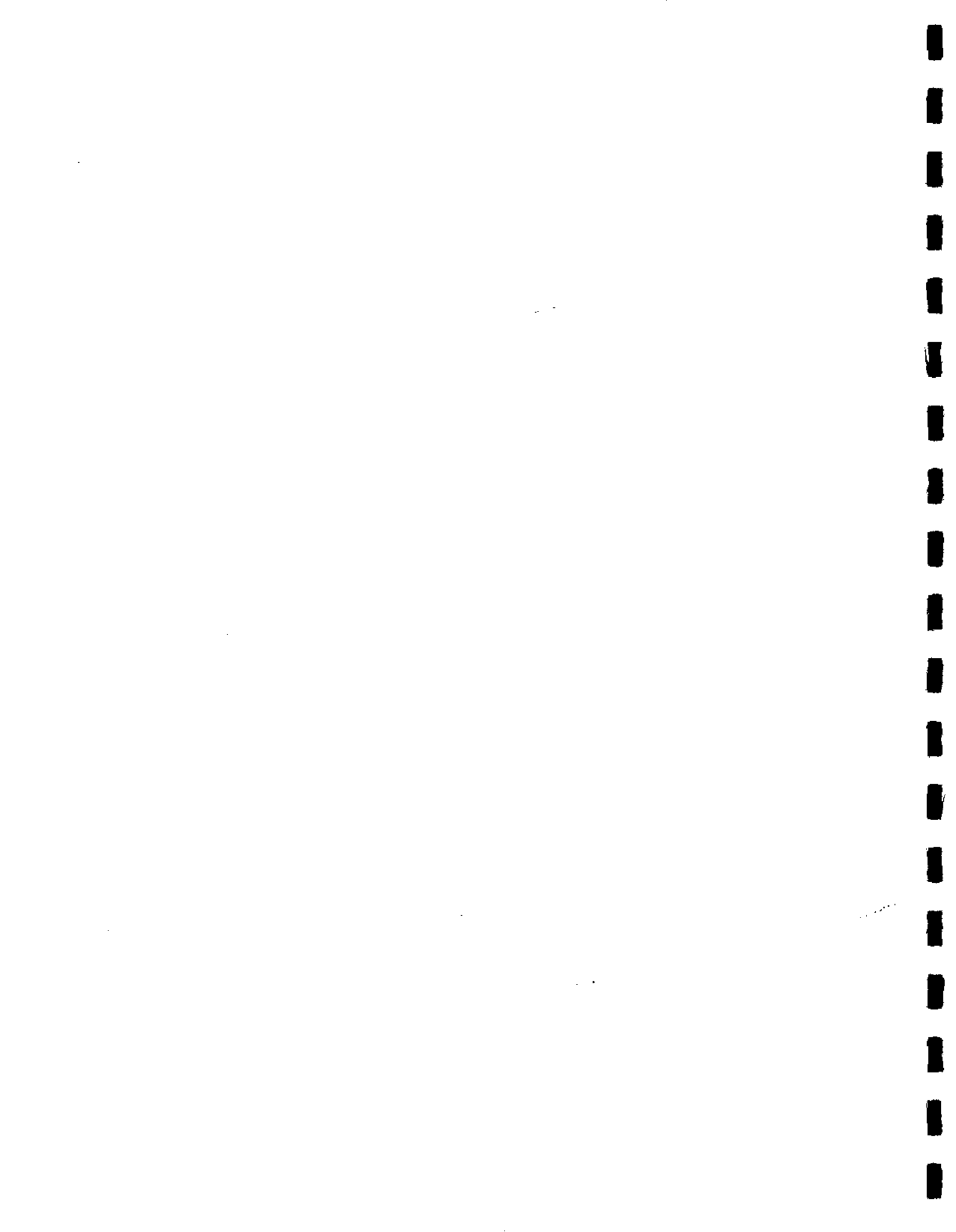
HAMILTON COUNTY SHERIFF'S DEPARTMENT

The Hamilton County Sheriff's Department conducts a safety program for elementary school children. The program is conducted on request and includes films and pamphlets on bicycle safety.

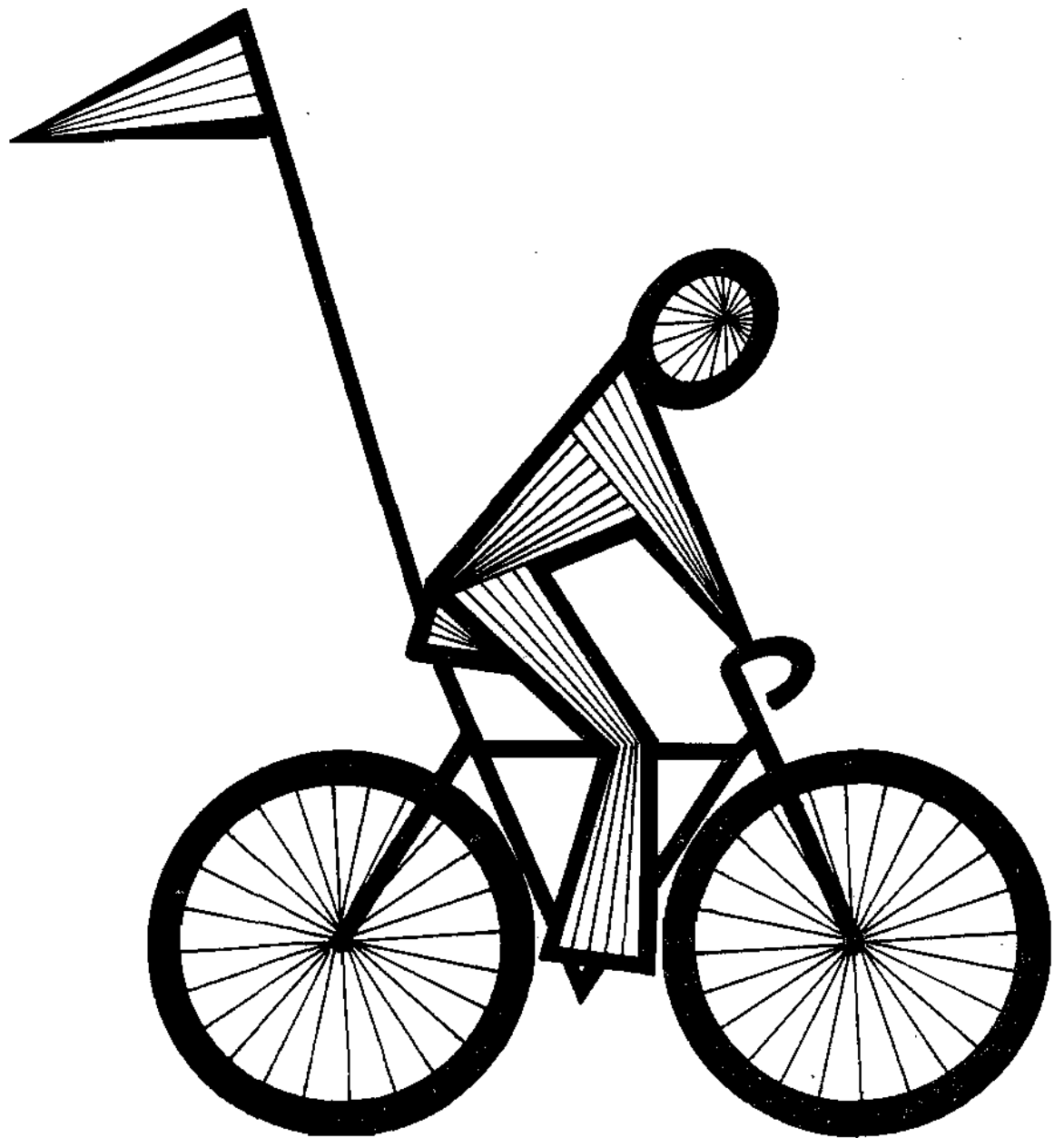
During the spring and summer months, the Sheriff's Department, in cooperation with the Coca-Cola Bottling Company, also conducts a Bicycle Rodeo and Registration Program. People bring their bicycles to designated locations to have them safety-checked and registered. Children and youth also test their riding skills on a designated route. The Bicycle Rodeos are held at public locations such as schools, recreation centers and shopping centers. In Green Township, they have been held at Western Bowl and Oak Hills Junior High School.

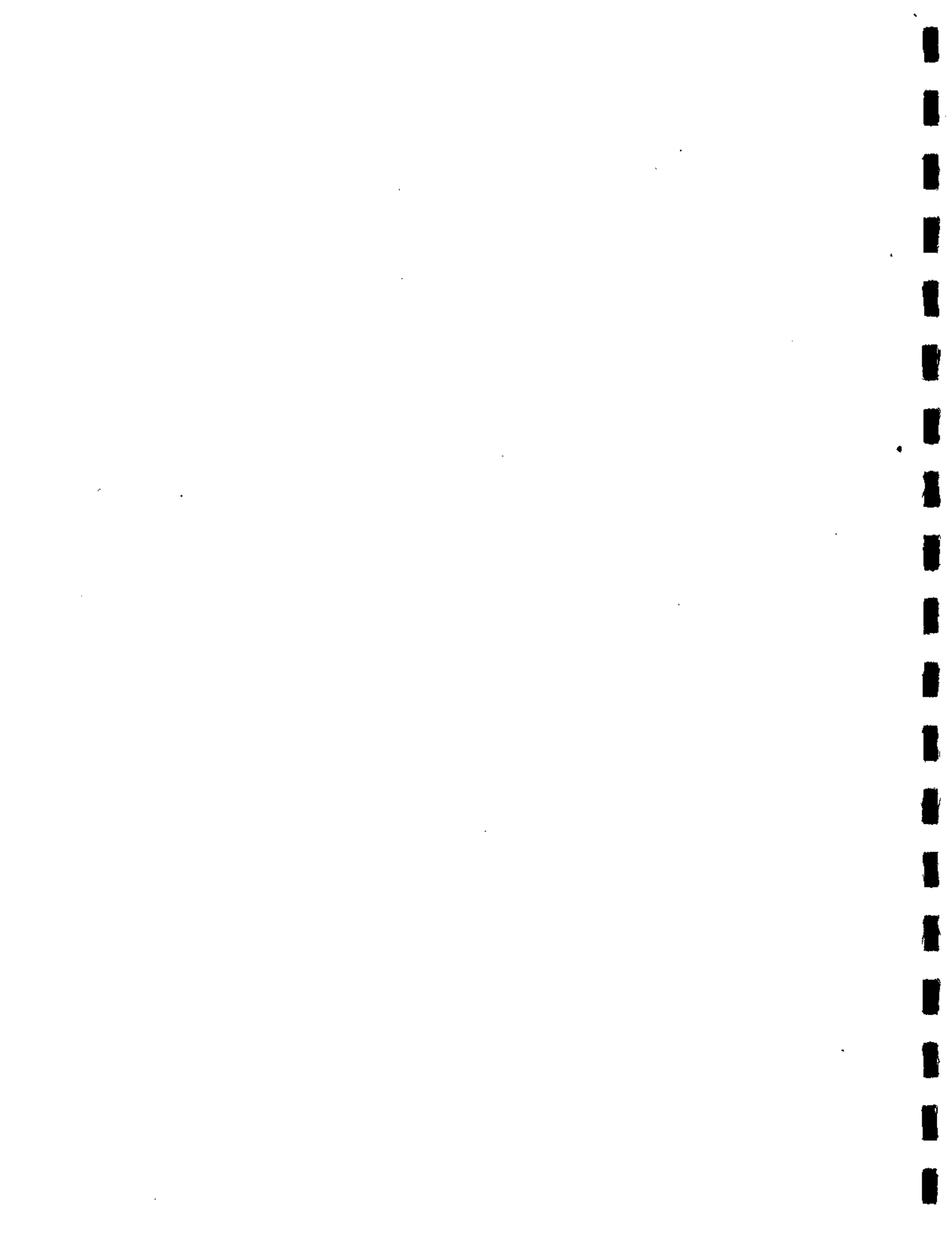
SUMMARY

Bicycle education in Green Township is directed primarily at elementary school age children and senior high school youth. It is included as part of other general courses such as health and driver education. Bicycle education often depends upon individual teacher interest and initiative. Although licensing is required at age 14 for moped drivers, little safety education is included at the junior high school level.



CHAPTER 3
BIKEWAYS AND THE
BICYCLE PLANNING PROCESS





CHAPTER 3

BIKEWAYS AND THE BICYCLE PLANNING PROCESS

The purpose of this chapter is to present some general information about bikeways and the bicycle planning models used by the Green Township Bikeway Committee. This chapter outlines the committee's concerns and goals. It also describes and discusses the Green Township planning areas, service areas, bicycle survey results, and bicycle accidents in Green Township.

INTRODUCTION TO BIKEWAYS

Following the "bicycle boom" of 1969, a variety of private and public agencies prepared bikeway plans and instructional documents about bikeways. Bicycle planning in the early 70's was directed toward the development of specialized routes for bicycles or bikeways.

Two classifications of bikeways were developed then which continue in use today. In 1974, the American Association of State Highway and Transportation Officials (AASHTO) prepared a Guide for Bicycle Routes. AASHTO defined four categories of bicycle routes. They include the following:

- Bicycle Route, Bicycle Way, or Bikeway -- Any road, street, 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.
- Bicycle Trail -- A separate trail or path which is for the exclusive use of bicycles. Where such trail or path forms a part of a highway, it is separated from the roadways for motor vehicular traffic by an open space or barrier.

- Bicycle Lane -- A portion of a roadway which has been designated for preferential or exclusive use by bicycles. It is distinguished from the portion of the roadway for motor vehicular traffic by a paint stripe, curb or other similar device.
- Shared Roadway -- A roadway which is officially designated and marked as a bicycle route but which is open to motor vehicular travel and upon which no bicycle lane is designated.²

The first category, or bicycle route, is a more general term which includes bicycle trails, bicycle lanes, and shared roadway.

The Federal Highway Administration prepared two manuals on bikeway location and design planning. These manuals define bikeways as follows:

- Class I - Bicycle Trail.
- Class II - Bicycle Lane.
- Class III - Shared Roadway or Bicycle Route.³

Recent bicycle planning literature encourages people planning for bikeways to consider these as well as other alternatives which improve bicycling. EPA's Bicycling and Air Quality Information Document defines bikeways as:

...routes used by bicyclists, including streets, highways, sidewalks, lanes and paths. Bikeways include routes shared with other transportation modes and exclusive routes.⁴

The following examples demonstrate the many types of bikeways:

1. Use of best existing roads by means of a bikeway map.
2. Wide curb lane (14-16 feet).
3. Wide roadway shoulder which is paved.
4. Sidewalks.
5. Bikeway signing.
6. Special use signs (i.e., bike use during specified times).

7. Bike lanes shared with parked cars.
8. Exclusive bike lanes on the roadway.
9. Separate bike path shared with pedestrians.
10. Exclusive bike path.⁵

A recent report about on-road improvements for bicycles concludes that wide outside lanes are best suited for roads with curbs and gutters. On roads without curbs, bicyclists would be removed farther from motor vehicle traffic by providing smooth and adequate shoulders. AASHTO recommends a minimum shoulder width of 3.5 feet, however, this is not always practical nor economically feasible. A smooth shoulder surface can benefit bicyclists even though it may not meet AASHTO minimum standards.⁶

THE BICYCLE PLANNING PROCESS

TWO PLANNING MODELS

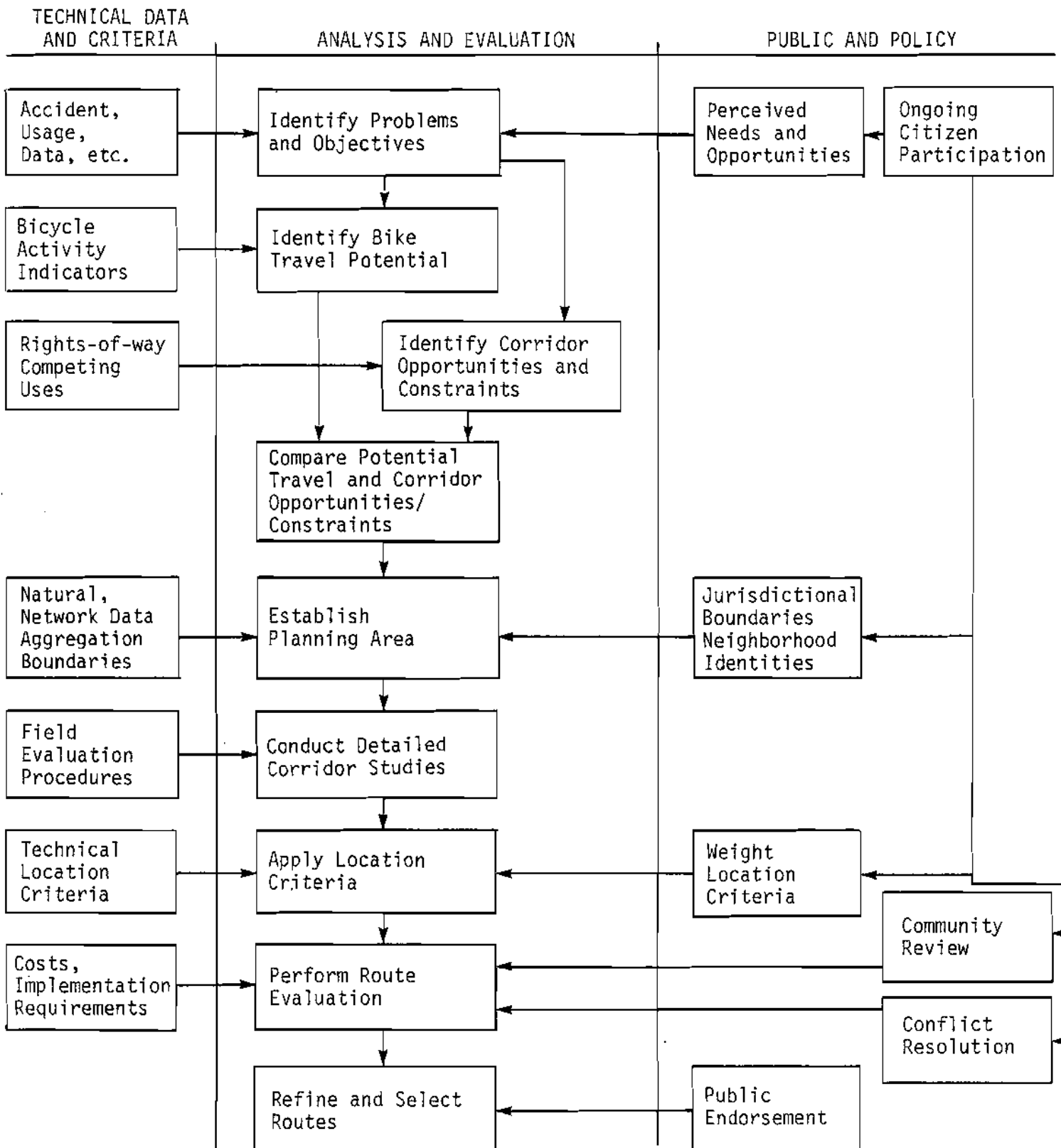
The GTBC originally came together to develop a plan for bikeways in Green Township. This intent is reflected in the name of the group. During the process of working together, other concerns such as those related to safety were expressed. There seemed to be a need for educational programs as well as facility improvements and construction.

In an effort to provide a framework for working together and to respond to related but diverse concerns, two planning models were utilized. These models served as maps to guide the committee in its work. Figure 4 diagrams the Bicycle Facility Planning Process as described by the Federal Highway Administration. This model was used by the committee to guide them in the planning and location of the proposed bikeway system in Green Township. Figure 5 is a program planning model used to develop the overall bicycle program for Green Township. This model aided in the consideration of issues such as education, coordination and additional public involvement.

COMMITTEE CONCERNS ABOUT BICYCLE TRAVEL IN GREEN TOWNSHIP

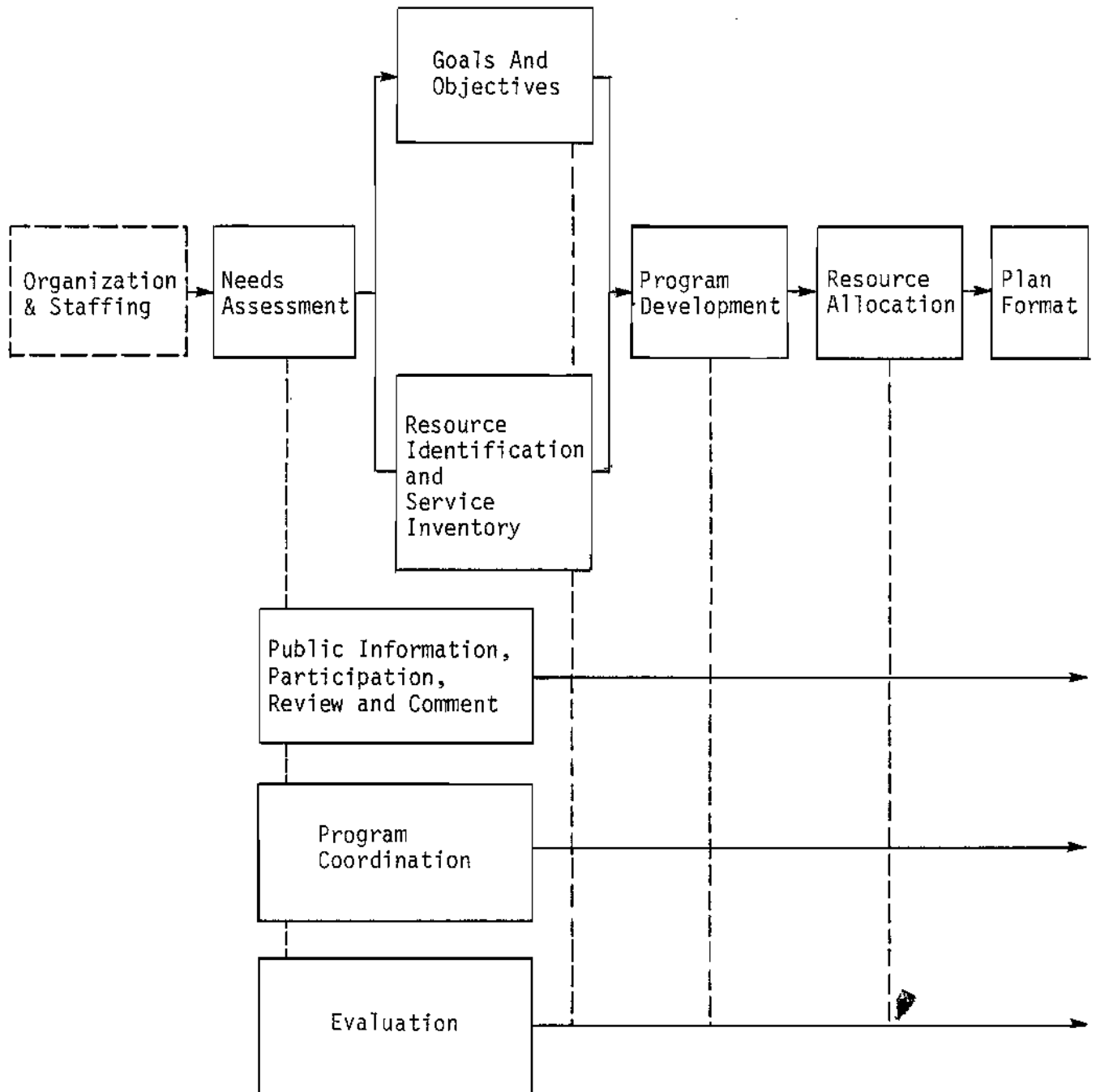
One of the common errors in planning is to begin developing solutions before

**FIGURE 4
BICYCLE FACILITY PLANNING PROCESS**



Source: U.S. Department of Transportation, Federal Highway Administration, *Safety and Location Criteria for Bicycle Facilities*, February 1977, p. 157.

FIGURE 5
 DIAGRAM OF A PLANNING PROCESS



Adapted from The Research Group, Inc., Preparation and Format for State Social Service Program Plans in Social Services Planning (Atlanta, Georgia: The Research Group, Inc., September 1976), p. 2.

the problems have been identified. At the third meeting of the GTBC, the members developed a list about bicycling in Green Township. The following process was used:

- 1) Each individual was given several small cards and was asked to silently record their concerns about bicycle travel in Green Township. One concern was written on each card.
- 2) Each person was given an opportunity to express a concern which was recorded on newsprint. If others shared this concern, it was so noted on the newsprint. The concerns were recorded and numbered in a round-robin fashion until all of them were recorded on the newsprint.
- 3) After the concerns were all recorded on newsprint, there was an opportunity for clarification.
- 4) Individuals were then asked to select their top five concerns and concern number and record them on cards -- one problem or concern per card.
- 5) Individuals were asked to rank their five concerns in the following way:
 - Select your top priority and write #5 on that card;
 - Select the card which is your least concern and write #1 on that card;
 - Of those you have left, select the one most important to you and write #4 on it;
 - Of those remaining, select the one least important to you and write #2 on it; and
 - The one remaining is assigned #3.
- 6) The results were tallied on newsprint.
- 7) An opportunity was provided to add anything missing.⁷

Figure 6 summarizes the concerns of the GTBC members developed by this process. Additional problems have been identified as the committee progressed with its work, but these were often more specific statements of problems identified at this meeting.

FIGURE 6
GREEN TOWNSHIP BIKEWAY COMMITTEE
PROBLEM IDENTIFICATION

<u>PROBLEMS/CONCERNS/NEEDS</u>	<u>TOTAL SCORE</u>	<u>INDIVIDUAL POINTS</u>
A. Limited financing from township and county because of tight budget.	24	2,5,5,6,6
B. Children travel roads; parents worry because roads are dangerous	14	3,5,6
C. Existing roadways are narrow even for present uses.	13	3,4,6
D. Standard design plans for county do not include bikeways.	13	2,2,4,5
E. Physical characteristics of existing rights-of-way make construction expensive and limit use.	11	5,6
F. Limited public right-of-way. No room for bikeway.	9	1,4,4
G. Biking is good fun and exercise. I wish it could be done safely. Safety concern for all bikers—especially children.	6	6
H. Would like to get to playgrounds, shopping centers, and work by bike.	5	5
I. Condition of side of road where bicyclist rides is safety hazard (e.g., glass, gravel).	5	2,3
J. Heavy traffic and speed of traffic present hazardous situation.	5	1,1,3
K. As energy crunch goes on, there will be more bikes; therefore, it would be nice to have a place to ride.	5	1,4
L. Berm and culvert problems on existing roads (narrow headwalls).	4	1,3
M. Children are not taught how to ride bikes on roads.	4	4
N. As bicycle travel increases, children's safety habits decrease (e.g., large groups of children tend to be careless).	3	3

FIGURE 6
(CONTINUED)

<u>PROBLEMS/CONCERNS/NEEDS</u>	<u>TOTAL SCORE</u>	<u>INDIVIDUAL POINTS</u>
O. State restrictions on use of sidewalks for bikeways.	2	2
P. No throughway plan for bikes in community; connections between roads are lacking.	2	2
Q. No facilities for parking bikes at shopping centers.	1	1

PROBLEMS RECEIVING NO POINTS

- A. Bikeways which don't connect interest points serve a limited purpose. It may be a problem to do this.
- B. West Fork - creek and hill slide (\$250,000 to repair). Difficult access to Mt. Airy Forest west of Shepherd Road.
- C. Hills.
- D. Limited north/south travel routes.
- E. Concern for motorists who share roads with bikes.
- F. Trouble with children riding on road and blocking traffic.
- G. Traveling from sidewalk to road is difficult (e.g., curbs).
- H. Grates that trap bike wheels.
- I. No signing to warn motorists that an area is used by many cyclists.
- J. Drop-off at edge of road between pavement and ground (e.g., Jessup, West Fork).
- K. Low spots in roadways where water collects; becomes icy in cold weather.

GOALS AND OBJECTIVES OF THE GREEN TOWNSHIP BIKEWAY COMMITTEE

Based on the list of concerns developed by the committee, an initial draft of goals and objectives was outlined by one of the committee members. Following a review by the GTBC, the following set of goals and objectives was agreed to by the committee.

GOAL ONE

To reduce the use of scarce energy resources for transportation by encouraging the use of bicycles as a transportation alternative.

- Objective 1 -- Encourage the use of bicycles as a means of transportation to recreation, social, school, and other community activities.
- Objective 2 -- Encourage the use of bicycles as a means of transportation to places of work.
- Objective 3 -- Encourage the use of bicycles as a means of transportation for shopping, visits to doctors, etc.

GOAL TWO

To encourage the use of bicycles by reducing potential safety hazards for cyclists.

- Objective 1 -- Reduce potential conflict between bicycles, automobiles, and pedestrians where possible.
- Objective 2 -- Develop a bicycle safety education program.
- Objective 3 -- Provide secure bicycle parking facilities in the community.
- Objective 4 -- Replace old design drainage grates with new grates that do not "trap" bicycle tires.

- Objective 5 -- Keep streets clean of loose gravel and other debris which cause accidents.
- Objective 6 -- Provide sidewalks along new and improved roads.
- Objective 7 -- Provide bicycle lanes on all major new or reconstructed roads.
- Objective 8 -- Separate motorized and non-motorized vehicles where possible.
- Objective 9 -- Sign roads with appropriate bikeway signs in order to alert motorists and to guide bicyclists, especially on recreational routes.
- Objective 10 -- Widen streets that are particularly narrow.

GOAL 3

To encourage public health and fitness through the use of bicycles.

- Objective 1 -- Develop a program to educate the public about the physical fitness advantages of bicycling.

GOAL 4

To promote cycling as a means of recreation.

- Objective 1 -- Develop a program to educate the public about cycling as a means of recreation.
- Objective 2 -- Clearly mark recreation bicycle routes.

IS THERE A NEED FOR BICYCLE FACILITIES IN GREEN TOWNSHIP?

Statistics are not routinely kept for bicycle travel in the detail that they are for automobile and bus travel. As a result, it is difficult to document the need for improved bicycle facilities or programs. The members of the GTBC were aware

that people in Green Township rode bicycles frequently. In order to be more specific about the need for improved bicycle travel, two sources of information are being presented. First, national trends about bicycles and bicycle users are introduced. Second, the results of the committee's bicycle survey are presented.

BICYCLES AND BICYCLE USERS -- NATIONAL FOCUS

For 35 years prior to 1970, bicycle sales were fairly constant. Bicycle sales increased from about three million in 1955 to seven million in 1970. Sales increased dramatically after 1969 to a peak of 15 million in 1973.⁸

The "bike boom" of the early seventies was due primarily to the increase in the use of bicycles by teenage and adult populations. Use of bicycles by juveniles has customarily been high. Survey information indicates that 80% to 95% of persons between six and 15 are bicyclists. The increased use by adults and older teens is attributed to a need for convenient and economical recreation, a need for enjoyable physical exercise, and a desire to curtail their use of motor vehicles. These needs were met by the lightweight multi-gear bicycles which became available in the U. S. in the early 1970s.⁹

There was a dramatic drop in bicycle sales in 1975 due in part to market saturation. However, the trend since then has been upward. The Bicycle Manufacturer's Association (BMA) anticipated sales of ten million in 1978.¹⁰

Both the BMA and the National Safety Council (NSC) have estimated the numbers of bicycles in use. Both agencies show a steady increase in bicycle use from 1935 to 1960. After 1960, bicycle usage increases at an accelerated rate. In 1975, BMA estimates show 83 million bicycles in use; NSC estimates show 95 million in use. Judging from expected trends, over 115 million bicycles may be in use nationally by 1980.¹¹

The number of bicycles in use corresponds closely to the estimated number of bicycle riders. Based on surveys, it is estimated that 40% of the population, or 90 million people in the U. S., ride a bicycle at least once a year.¹²

GREEN TOWNSHIP BICYCLE SURVEY

The members of the GTBC were committed to working on this project because they were aware that people in Green Township rode bicycles frequently. In order to develop an indicator of actual bicycle usage, the members of the GTBC conducted a bicycle survey. The purpose of the survey was to count the number of bicycles at a variety of service areas. A secondary objective was to count available bicycle racks at each location.

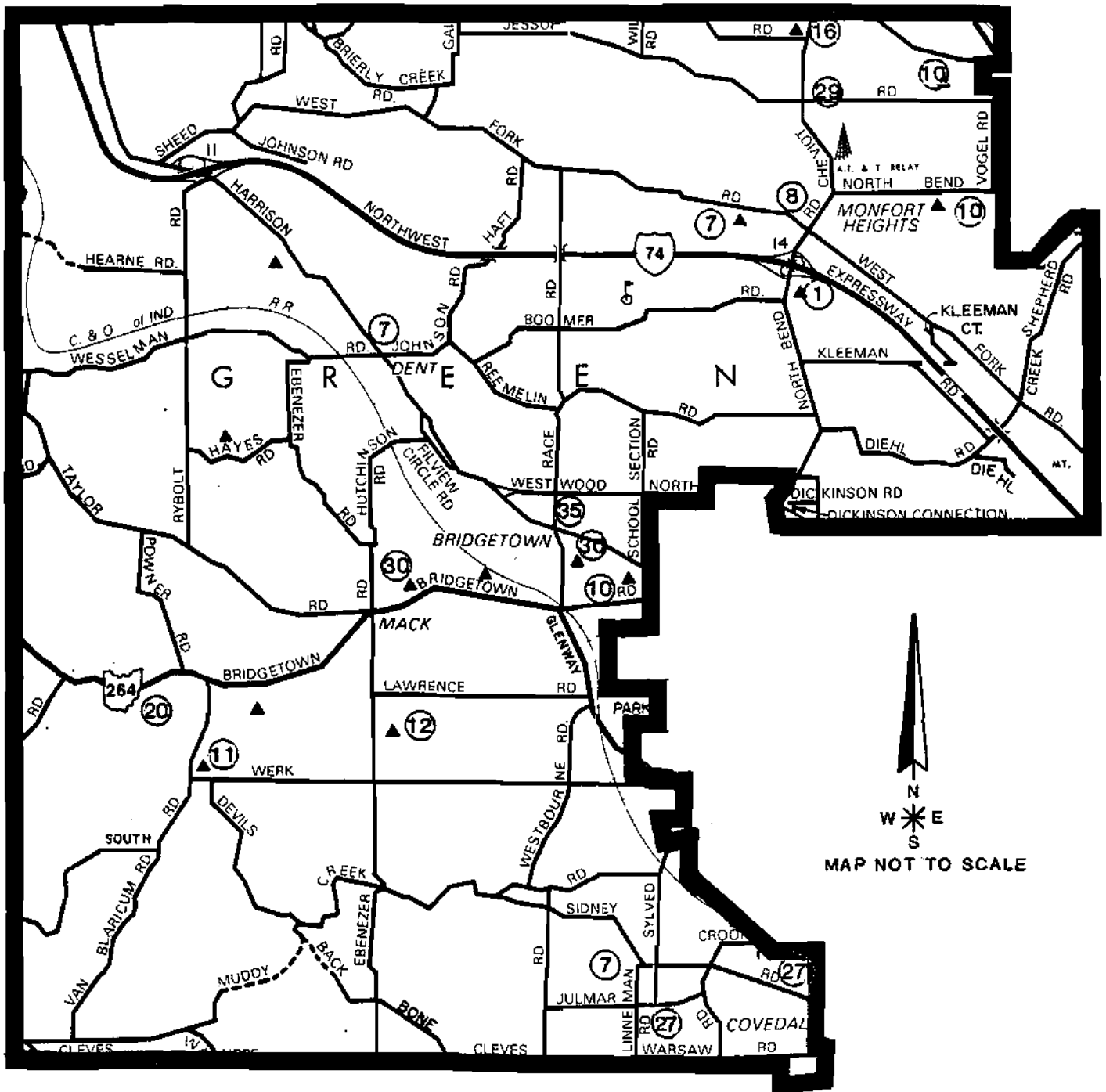
Counts were taken at schools, recreation areas, and shopping areas. Efforts were made to obtain two counts at different times of the day for shopping and recreation areas. The assumption was that this would increase the likelihood of including bicyclists of varying ages in the sample count. The survey forms and instruction sheet are included as Appendix 2.

Figures 7 and 8 summarize and display the results of the survey. As a general rule, service areas which the committee expected to generate bicycle travel did. The major exceptions to this statement are the three public elementary schools in the Central Area -- Dulles, Oakdale, and Springmeyer. It was later learned that school policy does not permit students at these schools to ride their bicycles. There are dual concerns by school officials for student safety and bicycle security.

The survey results also show that there are bicycle racks at the schools but not at Kuliga Park or in shopping areas.

CONCLUSIONS

It is difficult to be precise about the numbers of bicycles in Green Township and the amount of bicycle usage. The bicycle survey demonstrated that there is bicycle travel in Green Township to most of the locations surveyed. The only exceptions are three schools which do not allow children to ride their bikes.



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MAP NOT TO SCALE

**FIGURE 7
GREEN TOWNSHIP
BICYCLE SURVEY**

• MAP NUMBERS REFER TO THE ACTUAL NUMBER OF BICYCLES COUNTED AT EACH LOCATION . FOR ADDITIONAL DETAILS, SEE FIGURE 8.

SOURCES: GREEN TOWNSHIP BIKEWAY COMMITTEE, FALL 1979
1980 HAMILTON COUNTY HIGHWAY MAP



FIGURE 8
GREEN TOWNSHIP BICYCLE SURVEY

<u>LOCATION</u>	<u>DATE</u>	<u>DAY OF THE WEEK</u>	<u>TIME</u>	<u>WEATHER</u>	<u>NUMBER OF BICYCLES</u>	<u>BICYCLE RACKS</u>
<u>SHOPPING AREAS</u>						
1. Cheviot and Jessup (White Oak Shopping Center)	9/ 6/79	Thursday	4:10 p.m.-5:10 p.m.	Sunny 84 ⁰	19	None
	9/ 8/79	Saturday	12:30 a.m.-1:30 p.m.	Cloudy 65 ⁰	29	
2. West Fork and North Bend (Van Leunen's)	8/27/79	Monday	1:45 p.m.	Sunny 78 ⁰	8	None
	8/27/79	Monday	5:45 p.m.	Sunny 78 ⁰	3	
3. Harrison and Race (Dairy Queen)	8/23/79	Thursday	7:45 p.m.-8:00 p.m.	-	12	None
	8/25/79	Saturday	2:45 p.m.-3:00 p.m.	Cloudy 77 ⁰	4	
	8/27/79	Monday	3:00 p.m.-4:00 p.m.	Cloudy 80 ⁰	20 going past	
	8/27/79	Monday	7:00 p.m.-8:00 p.m.	Cloudy 80 ⁰	35 going past	
4. Harrison and Wesselman	8/24/79	Friday	1:00 p.m.	Cloudy 75 ⁰	7	None
	8/24/79	Friday	5:15 p.m.	Cloudy 75 ⁰	2	
5. Crookshank and Sidney	8/24/79	Friday	2:00 p.m.	Cloudy 75 ⁰	7	None
	8/24/79	Friday	5:00 p.m.	Cloudy 75 ⁰	3	
<u>RECREATION AREAS*</u>						
1. St. James School - Cheviot and Hubble	8/27/79	Monday	4:15 p.m.	Cloudy 79 ⁰	4	20
2. Kuliga Park - Bridgetown	8/25/79	Saturday	1:00 p.m.	Cloudy 77 ⁰	20	None
3. Our Lady of Visitation School-South	9/ 6/79	Thursday	6:30 p.m.	Sunny 82 ⁰	2	56
4. Bridgetown Junior High School	8/23/79	Thursday	7:30 p.m.	-	13	62
	8/24/79	Friday	6:00 p.m.	Cloudy 75 ⁰	5	
	8/27/79	Monday	4:00 p.m.	Cloudy 80 ⁰	30	

*Schools are included as recreation areas if school was not in session.

FIGURE 8 (CONTINUED)
GREEN TOWNSHIP BICYCLE SURVEY

<u>LOCATION</u>	<u>DATE</u>	<u>DAY OF THE WEEK</u>	<u>TIME</u>	<u>WEATHER</u>	<u>NUMBER OF BICYCLES</u>	<u>BICYCLE RACKS</u>
<u>SCHOOLS**</u>						
1. White Oak Junior High	9/19/79	Wednesday	10:30 a.m.	Sunny 60 ⁰	10	18
2. LaSalle Senior High	9/12/79	Wednesday	1:00 p.m.	Sunny 85 ⁰	10	15
3. St. James	9/25/79	Tuesday	2:10 p.m.	Sunny 75 ⁰	16	20
4. Monfort Heights Elementary	9/19/79	Wednesday	10:00 a.m.	Sunny 60 ⁰	7	15
5. Oak Hills Senior High	9/12/79	Wednesday	-	Sunny 80 ⁰	6 Bicycles; 6 Mopeds	Available
6. Bridgetown Junior High	9/19/79	Wednesday	9:30 a.m.	Sunny 60 ⁰	20 Bicycles; 3 Mopeds	62
	9/20/79	Thursday	10:30 a.m.	-	16 Bicycles; 3 Mopeds	
7. St. Jude	9/17/79	Monday	9:45 a.m.	Sunny	30	120
8. Our Lady of Visitation	9/17/79	Monday	10:20 a.m.	Sunny	11	56
9. St. Ignatius	9/19/79	Wednesday	10:00 a.m.	Sunny 60 ⁰	1	15
10. St. Aloysius	9/17/79	Monday	10:00 a.m.	Sunny	10	90
11. Covedale Elementary	9/19/79	Wednesday	10:00 a.m.	Sunny 60 ⁰	27	138
	9/20/79	Thursday	9:30 a.m.	-	24	
12. St. Antoninus	9/19/79	Wednesday	10:15 a.m.	Sunny 60 ⁰	24	186
	9/20/79	Thursday	9:45 a.m.	-	27	

**Schools opened 8/28/79.

Source: Green Township Bikeway Committee, August-September, 1979.

The national trend is in the direction of increased bicycle usage. National figures show that 40% of the population are bicycle users. If that percent was applied to Green Township, there would be 20,252 cyclists based on the 1980 population of 50,632. Even a more conservative estimate of 30% would mean a total of 15,189 cyclists.

It is reasonable to conclude that bicycle ownership and use in Green Township will increase during the next five to ten years. The population is increasing due to the new development which is attracting families with children. Ninety percent of children are bike riders. In addition, more teenagers and adults are riding bikes for exercise and to reduce their gasoline consumption. It is the conclusion of the GTBC that there is a need in Green Township for bicycle programming including the development of bicycle facilities.

GREEN TOWNSHIP PLANNING AREAS

Because of the large size of Green Township and the committee members' lack of familiarity with the township as a whole, the GTBC subdivided the township into three planning areas (see Figure 9). The North Area includes the neighborhoods of Monfort Heights and White Oak. The Central Area includes the neighborhoods of Bridgetown, Dent and Mack. The South Area includes the Covedale neighborhood.

The neighborhoods do not have clearly-defined boundaries, however, they do have identities as specific places in the township. Within each planning area, there are portions of the township which are not included in the various neighborhoods.

The locations of the planning area boundaries were based on the following factors: topography, school district boundaries, parish boundaries, historic relationships, and commercial service areas. Other township people might draw the lines differently, however, the GTBC agreed to these particular lines for planning purposes.

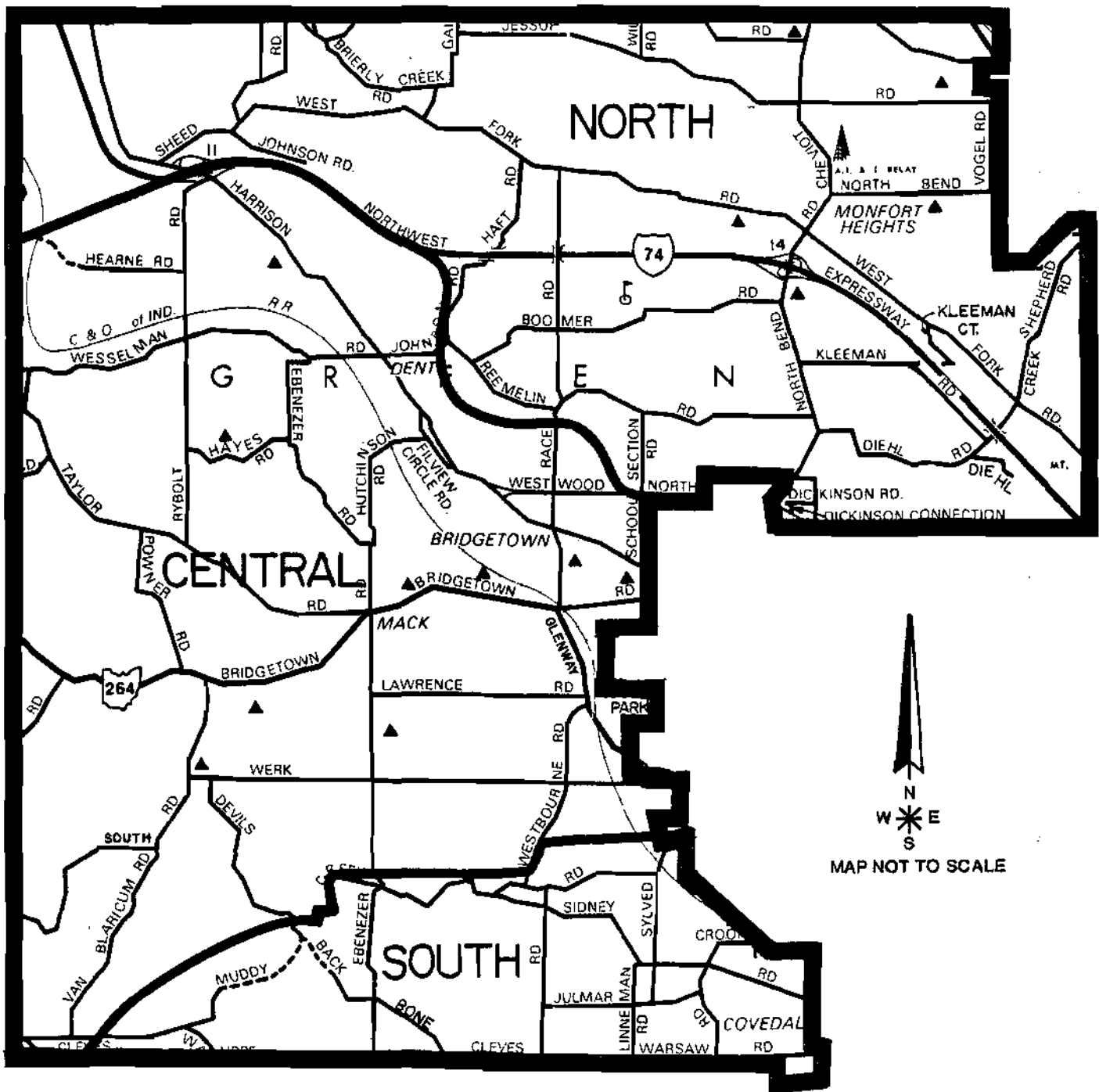


FIGURE 9

GREEN TOWNSHIP BICYCLE PLANNING AREAS

- NORTH (MONFORT HEIGHTS AND WHITE OAK)
- CENTRAL (BRIDGETOWN, MACK AND DENT)
- SOUTH (COVEDALE)

SOURCES: GREEN TOWNSHIP BIKEWAY COMMITTEE AND
1980 HAMILTON COUNTY HIGHWAY MAP



The North and Central portions are separated by a steep valley running north of and parallel to Harrison Pike. This valley is "bridged" by only three roads: Race Road, Johnson Road, and Sheed Road. Interstate 74 also bridges this valley, but bicycles are not permitted along I-74. This valley, with its rugged terrain, operates as a natural barrier between these two parts of Green Township. Although there are hills all over Green Township, only the most energetic biker would cross between these two sections of the township via Race, Johnson or Sheed Roads.

Similarly, the Central and South portions of the township are separated by a valley which roughly parallels Muddy Creek Road. This valley is "bridged" by only two roads: Westbourne-Neeb and Ebenezer. The Ebenezer Road hills near Muddy Creek Road are virtually impossible to bike. Even cars have trouble on the hill. The Neeb Road hill, though less severe, is also steep.

Three public school districts serve different portions of Green Township. In general, the Northwest School District serves the North Area, Oak Hills serves the Central Area, and Cincinnati serves the South Area. There are some areas of the township where these generalizations do not hold true as can be noted in Figure 10.

For everyday needs, the three planning areas are served by three commercial strips. People in the North generally shop in the North Bend/Cheviot Road area. Residents in the Central Area frequent stores along Glenway Avenue and Bridgetown Road. People in the South shop at stores along Glenway Avenue between Cleves-Warsaw Road and Boudinot Avenue. Most of this southern shopping area is actually outside the Green Township boundaries in Cincinnati. Western Hills and Western Woods Shopping Centers, located in the Central Area and in Cincinnati, are regional shopping areas which attract shoppers from all parts of the township.

GREEN TOWNSHIP SERVICE AREAS

One of the first tasks performed by the GTBC was to identify service areas in

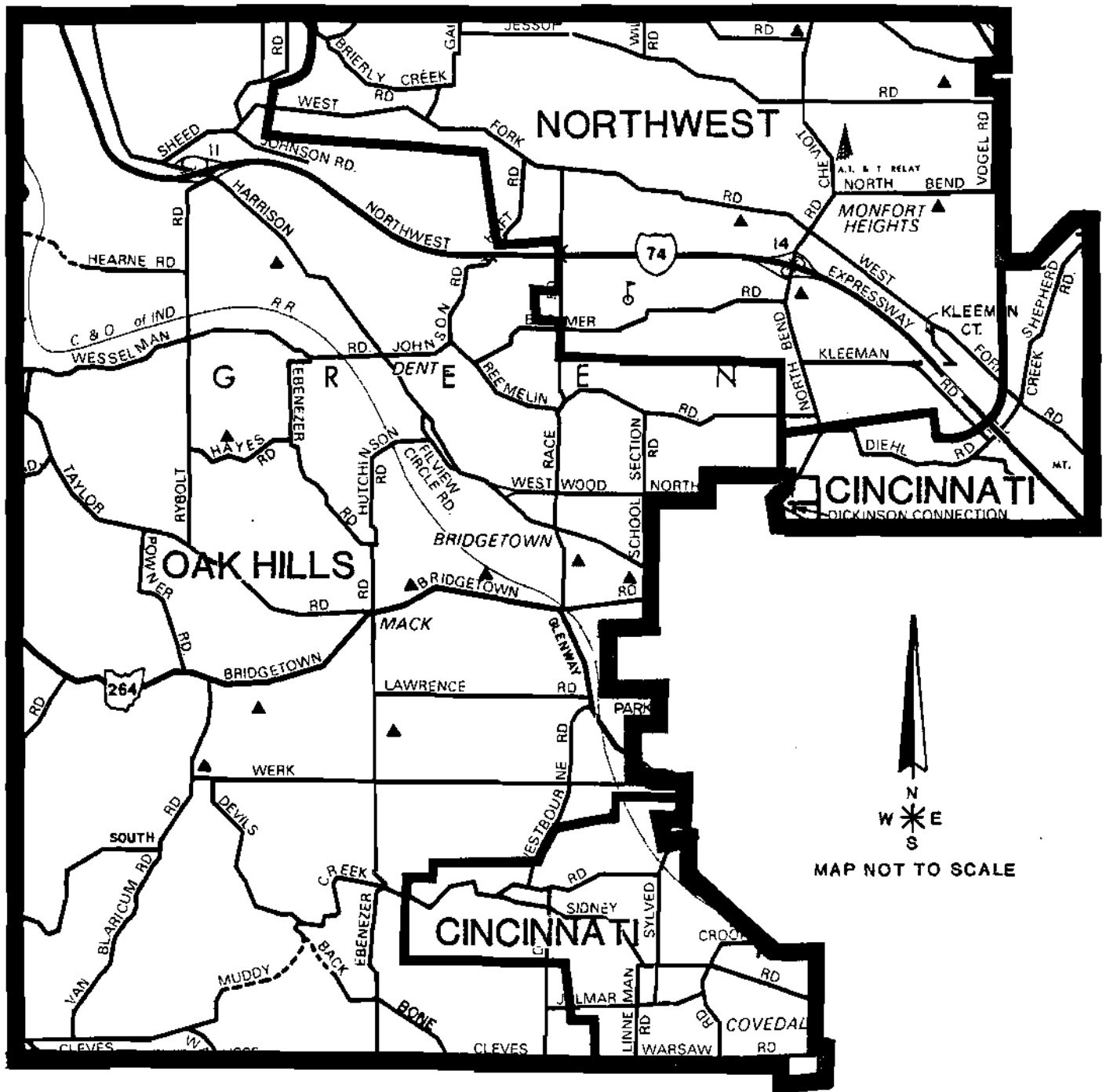


FIGURE 10
GREEN TOWNSHIP
PUBLIC SCHOOL DISTRICTS

- NORTHWEST
- OAK HILLS
- CINCINNATI

SOURCES: GREEN TOWNSHIP BIKEWAY COMMITTEE AND
 1980 HAMILTON COUNTY HIGHWAY MAP



Green Township. Service areas include centers of activity such as schools, recreation sites, shopping areas, churches and libraries. They are places to which people could travel by bicycle (see Bikeway Map for the locations of service areas).

Survey data in the U. S. indicates that over half (62%) of U. S. trips were five miles or less. Most bicycle trips in the U. S. are under five miles regardless of trip purpose.¹³ Within each of the three Green Township planning areas, service areas are generally destinations of less than five miles.

SCHOOLS

There are 16 schools in Green Township. Nine of these schools are public schools and six are parochial schools. The public schools represent four different school districts -- Northwest, Oak Hills, Cincinnati, and Great Oaks Joint Vocational. For a complete listing, see Figure 11.

In the Northwest School District, students who live over a mile from school are transported by bus. Other students travel by car, bicycle, or on foot. The same is true for those attending parochial schools in the North Area of the township. Most students attending the Diamond Oaks Career Development Center travel by car or bus.

In the Oak Hills School District, students in kindergarten through eighth grade, who live over two miles from the school, are transported by bus. Other children walk or ride on bikes or in cars. Elementary school children attending Dulles and Oakdale are not permitted to ride bikes to school. Children attending other public schools or parochial schools are permitted to ride bikes.

In the Cincinnati School District, some children ride Queen City Metro to school. Others travel by car, bike, or on foot. The same is true for those attending parochial schools in the South Area.

RECREATION

There is a variety of recreational sites in Green Township although most of the

FIGURE 11
GREEN TOWNSHIP SCHOOLS

<u>SCHOOL</u>	<u>GRADES INCLUDED</u>	<u>PUBLIC SCHOOL DISTRICT OR PAROCHIAL</u>
<u>North</u>		
Monfort Heights Elementary	K-6	Northwest
White Oak Junior High	7-9	Northwest
St. James Elementary	2-8	Parochial
St. Ignatius	1-8	Parochial
LaSalle Senior High	9-12	Parochial
Diamond Oaks Career Development Center		Great Oaks Joint Vocational
<u>Central</u>		
Dulles Elementary	K-6	Oak Hills
Oakdale Elementary	K-6	Oak Hills
Springmyer Elementary	K-6	Oak Hills
Bridgetown Junior High	7-9	Oak Hills
Oak Hills Senior High	10-12	Oak Hills
St. Aloysius	1-8	Parochial
St. Jude	1-8	Parochial
<u>South</u>		
Covedale Elementary	K-6	Cincinnati
St. Antoninus	1-8	Parochial
Our Lady of Visitation	1-8	Parochial

areas are not public parks. Figure 12 lists the recreational sites by planning areas. Many of the recreational facilities are located on school grounds. Kuliga Park and Bosken Park are the only two existing township parks. Mt. Airy Forest is a public facility. Although partially located in Green Township, it is the responsibility of the Cincinnati Park Board. The remainder of the recreational areas in Green Township are privately owned and operated.

Gutzwiller's Grove is expected to be a township park but, at present, is undeveloped. The Hamilton County Public Works Director explained that this area is being developed by Hamilton County as a retention reservoir for flood control purposes. The retention reservoir is expected to be completed during the 1980 construction season. The area would then be available for the township to develop as a park. Although the land may be flooded during periods of heavy rain, it could be used for recreational purposes the rest of the year.

SHOPPING

White Oak Shopping Center is located in the North Area at the intersection of Cheviot and Jessup Roads. Bakeries, dry cleaners, eating places and other small businesses are located along Cheviot and North Bend Roads.

Local shopping in the Central Area is concentrated along Harrison Avenue, Bridgetown Road, and Glenway Avenue. A new shopping complex opened in the fall of 1980 at Harrison and Filview Circle.

A regional shopping mall, Western Woods Shopping Center, is located in the Central Area of Green Township on Glenway Avenue. It is adjacent to Western Hills Shopping Center in Cincinnati.

There is a small shopping area in the South Area at the intersection of Crookshank and Sidney Roads. Residents in the South also shop in Cincinnati along Glenway Avenue between Cleves-Warsaw Road and Boudinot Avenue.

FIGURE 12
GREEN TOWNSHIP RECREATION AREAS

<u>NAME</u>	<u>TYPE OF FACILITIES</u>
<u>North</u>	
Monfort Heights Elementary	Ballfields
White Oak Junior High	Ballfields, Tennis Courts
St. James	Ballfield, Playground
St. Ignatius	Ballfields, Tennis Courts
St. Joseph's Orphanage	Ballfields
Haubner Field	Ballfields
Mt. Airy Forest	Hiking Trails, Picnic Tables
*Gutzwieler's Grove	Undeveloped
<u>Central</u>	
*Kuliga Park	Ballfields, Tennis Courts
Dulles Elementary	Playground
Oakdale Elementary	Playground
Springmyer Elementary	Playground
Bridgetown Junior High	Ballfields
Oak Hills High School	Ballfields
St. Aloysius	Ballfields
St. Jude	Ballfields
Westhaven Swim Club	Swim Pool
<u>South</u>	
*Bosken Park	Ballfield, Picnic Tables, Play- ground
Covedale Elementary	Playground
St. Antoninus	Playground
Our Lady of Visitation	Playground
Western Hills Country Club	Golf
Woodland Golf Course & Swim Club	Golf, Swim Pool
**Phillips Swim Club	Swim Pool

**Township parks.*

***Located in Cincinnati just outside Green Township boundary.*

CHURCHES

There are 25 churches in Green Township representing many different denominations. There are seven churches in the North, 14 in the Central Area, and four in the South. Churches are the center of many activities in Green Township and, as noted earlier, seven have schools and grounds used by the community.

LIBRARIES

Green Township is served by three branches of the Public Library of Hamilton County. The West Fork Branch at 3825 West Fork Road serves the Northern portions of the township. It is the only branch located in Green Township.

The Central Area is served by the Cheviot Branch at 3711 Robb Avenue, just outside the township line. The South is served by Overlook Branch at 4908 Heuwerth Avenue in Cincinnati near Covedale School.

GREEN TOWNSHIP BICYCLE ACCIDENTS

Members of the GTBC were concerned about improving the safety of bicycle travel in Green Township. The Hamilton County Sheriff's Department records show that there were 23 reported bicycle/motor-vehicle accidents in Green Township during a recent two-year period. The actual number of bicycle/motor-vehicle accidents is probably much larger. National studies indicate that approximately two-thirds of such accidents go unreported.¹⁴ Figures 13 and 14 provide information about accident locations and descriptions in Green Township. Fifteen of the accidents (65%) occurred in the Northern planning area; seven (30%) occurred in the Central planning area; and one (4%) occurred in the Southern planning area.

Figure 15 shows the relationship between the number of bicycle/motor-vehicle accidents and the age of the bicyclist. Although based on a limited number of accidents, the trend is toward increased accidents until age 14. Following age 14, bicycle accidents decrease until the early 20's.

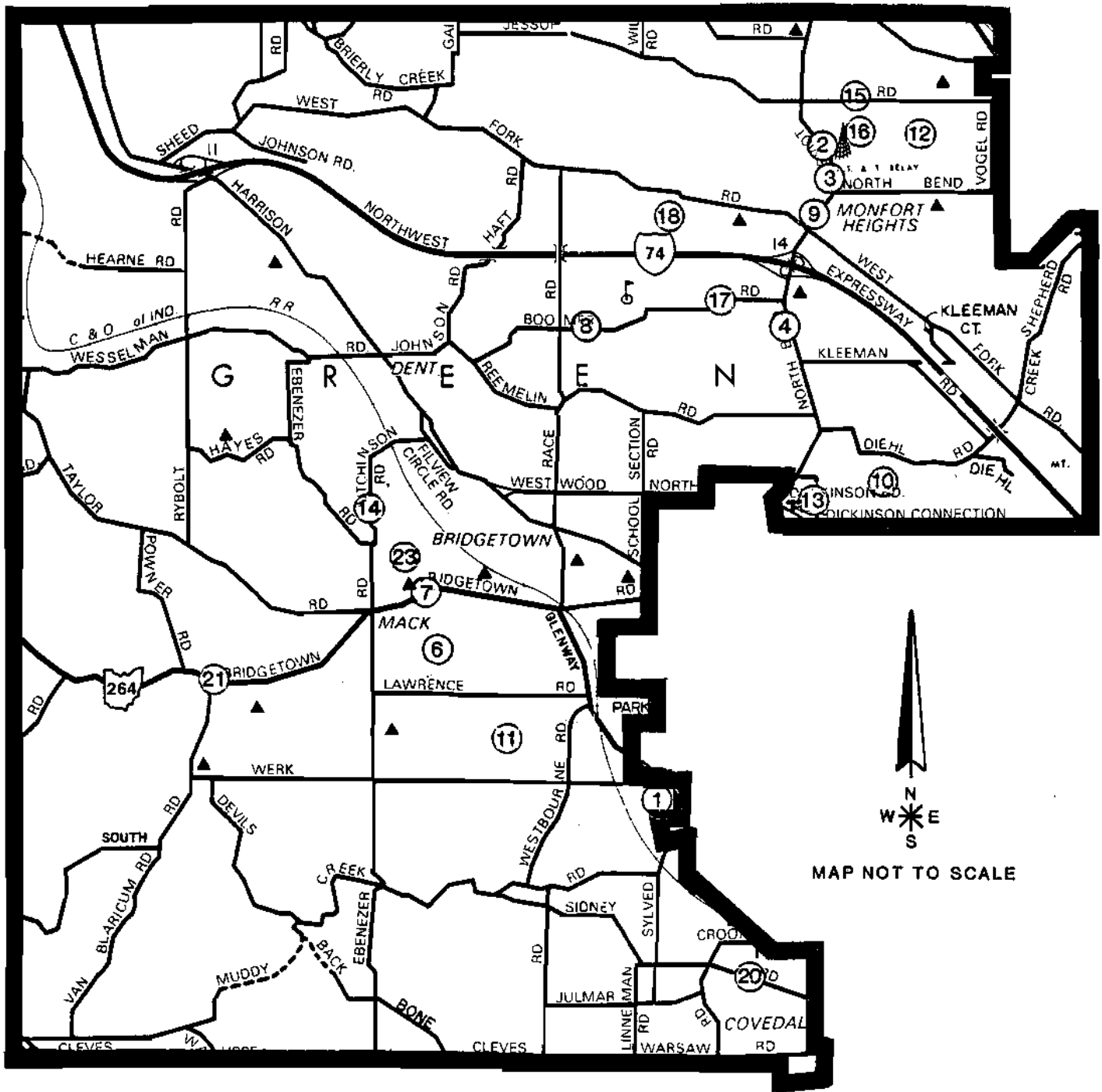


FIGURE 13
GREEN TOWNSHIP
BICYCLE/MOTOR-VEHICLE ACCIDENTS

JANUARY 1, 1979 TO DECEMBER 31, 1978

MAP NUMBERS REFER TO LOCATION OF INDIVIDUAL BICYCLE ACCIDENTS,
 USE MAP NUMBER TO REFER TO ACCIDENT DESCRIPTION IN FIGURE 14.

SOURCES: HAMILTON COUNTY SHERIFF'S DEPARTMENT AND
 1980 HAMILTON COUNTY HIGHWAY MAP



FIGURE 14

GREEN TOWNSHIP BICYCLE/MOTOR-VEHICLE ACCIDENTS JANUARY 1, 1977 TO DECEMBER 31, 1978

<u>MAP NUMBER</u>	<u>DATE</u>	<u>LOCATION</u>	<u>AGE</u>	<u>ACCIDENT DESCRIPTION</u>
* 1	3/11/77	Brookview west of Locust	6	Turned left into path of car
2	3/15/77	5655 Cheviot Road	15	Car failed to see bike rider on sidewalk
3	3/23/77	5566 Cheviot Road	13	Driving on sidewalk and car exited from private drive
* 4	4/17/77	North Bend south of Boomer	47	Turned into side of van as van attempted to pass
* 5	5/14/77	Thriftway at 5445 North Bend	14	Failed to yield right-of-way and struck side of car
* 6	5/15/77	Northglen at Neiheisel	6	Disregarded stop sign and rode into side of car
* 7	5/25/77	Neiheisel south of Bridgetown	6	Rode into path of car from between parked cars
* 8	6/7/77	Boomer east of Race	11	Rider turned left from behind a Coke truck into path of car
9	7/22/77	North Bend east of Cheviot	11	Riding on sidewalk when struck by car exiting private drive
*10	7/31/77	Goda at Airymont	14	Operator ran into side of stopped vehicle
*11	8/10/77	Harmony at Woodhaven	?	Operator rode bike into front of vehicle
*12	8/11/77	Sprucewood north of Basswood	14	Rode bike across street in front of passing vehicle
*13	8/28/77	Boudinot at Dickinson	14	Operator rode bike into path of vehicle
*14	9/7/77	Hutchinson north of Benken	13	Operator made left turn, no signal, into front of vehicle passing him
*15	9/8/77	Jessup at Lauderdale	13	Operator pulled from side road into path of vehicle

FIGURE 14
(CONTINUED)

<u>MAP NUMBER</u>	<u>DATE</u>	<u>LOCATION</u>	<u>AGE</u>	<u>ACCIDENT DESCRIPTION</u>
*16	5/18/78	Lauderdale at Greenvalley	11	Disregarded stop sign
17	7/16/78	Boomer at Oak Hills	?	Van turned left in front of bike without lights
*18	7/16/78	Hickory Bark at Running Fawn	10	Slid in loose gravel on turn, went left of center, hit car
19	8/1/78	5581 Cheviot	15	Truck exiting private drive struck boy on bicycle
*20	8/24/78	Sidney west of ReIluk	?	Bike being pushed got away and into road
21	9/21/78	Bridgetown at South	15	Car failed to yield right-of-way from stop sign
22	9/29/78	Shephards Creek at 5226	14	No description
*23	10/8/78	Chatwood at Danielson	13	Turned left into path of car from stop sign

**Accidents which appear to be caused by cyclist error or not obeying traffic rules.*

Source of Data: *Hamilton County Sheriff's Department; October, 1979.*

FIGURE 15
GREEN TOWNSHIP BICYCLE/MOTOR-VEHICLE ACCIDENTS BY AGE
January 1, 1977 to December 31, 1978



(NOTE: The graph includes 20 accidents; there were actually 23 accidents during this period but the age of 3 bicyclists was not recorded.)

Source: Hamilton County Sheriff's Department, October, 1979.

The accident trend by age in Green Township is similar to national statistics. Nationally, the accident rate rises steadily to age 12 and stays at a high level until age 15. It then declines dramatically and stays at a low level for ages beyond 30.¹⁵ The drop in bicycle accidents following age 15 corresponds to the age at which teenagers learn to drive. It is worthy to note that approximately 70% of the bicycle/motor-vehicle accidents reported are due to cyclist error or to not obeying traffic rules.

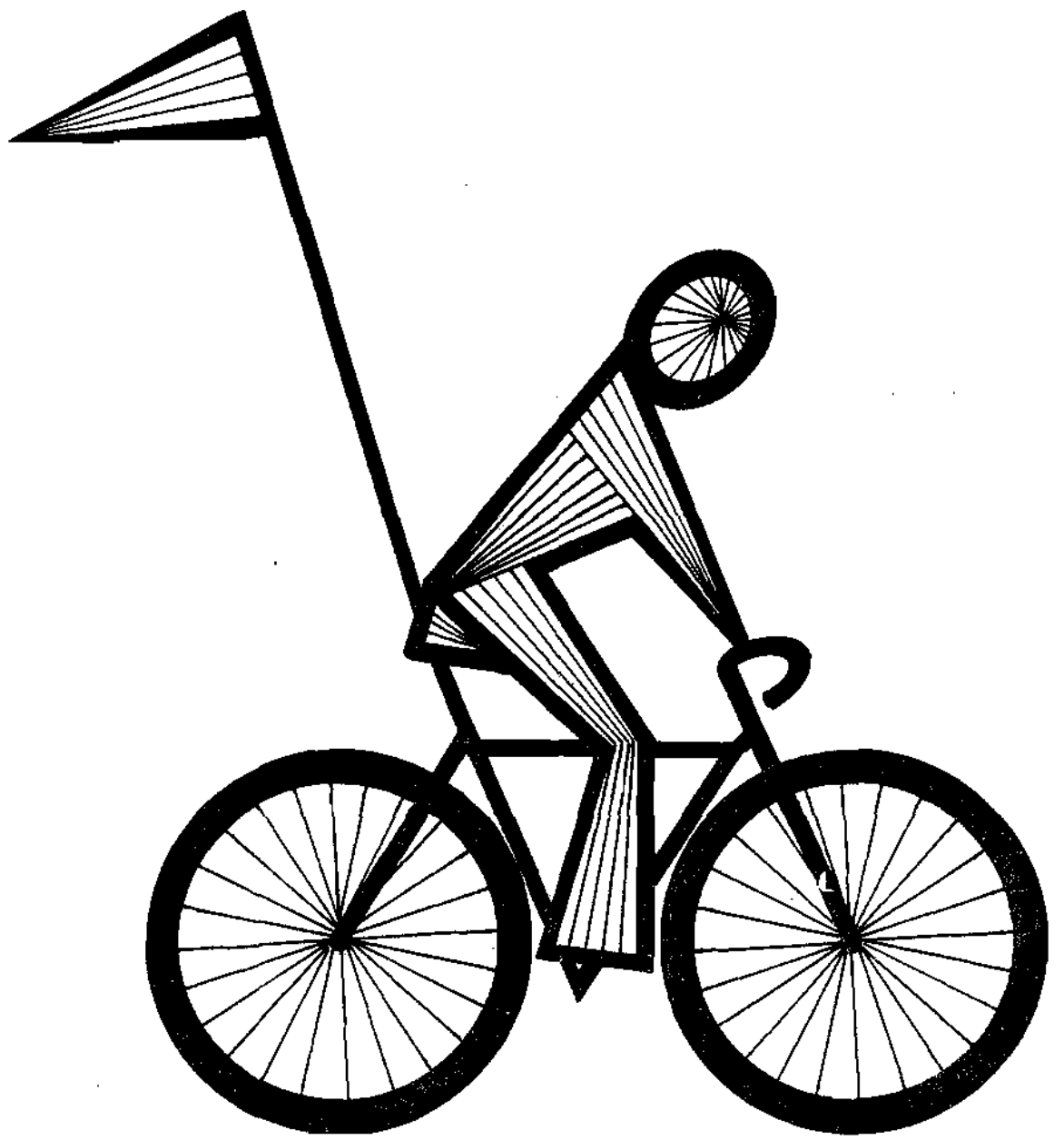
Kenneth Cross in Bicycle-Safety Education: Facts and Issues cautions that educational efforts should not be targeted only at the 12-15 year old age group. If safety education did not begin until age 12, one-fourth of all fatal accidents and one-third of all non-fatal accidents would already have occurred.¹⁶

Many bicycle accidents do not involve a motor-vehicle. Non-motor vehicle accidents (or NMV accidents) are considered a severe problem in the United States. One study of college students shows 20.4 NMV accidents per 1,000 students.¹⁷ NMV accidents include bicycle-bicycle accidents, bicycle-pedestrian accidents, and collision with a fixed object or falling. Not much data is available about the incidence, causes and consequences of NMV accidents.

The data that is available shows that 88% to 90% of NMV accidents result from a bicycle colliding with a fixed object or falling.¹⁸



CHAPTER 4
GREEN TOWNSHIP
BICYCLE PROGRAM





CHAPTER 4

GREEN TOWNSHIP BICYCLE PROGRAM

INTRODUCTION

The Green Township Bicycle Plan has been developed to include recommendations for four bicycle programming areas including engineering, safety education, enforcement, and encouragement. It should be noted that coordination will be a key element in the successful implementation of the Green Township Bicycle Program. It is recognized that all those agencies potentially involved in the program implementation have not been involved in the planning process. For instance, the GTBC did not have a representative of the Green Township Police Department although there was a representative of the Green Township Trustees. No teachers or school administrators were officially represented on the committee although there were members of several PTAs, and one citizen member was also a teacher.

This caution about the representativeness of the committee is presented here because it is intended that various public and private groups, including schools and community organizations, will be asked to review and comment on the plan. In the interest of seeking support for the plan, the GTBC realizes that everyone potentially involved with the plan implementation will not be contacted prior to distribution of the plan. It is expected that changes may be made during plan review and implementation when and where appropriate.

FACILITY ENGINEERING

Facility engineering includes physical improvements such as the development of bikeways, provision of supporting facilities, and maintenance. The Proposed Green Township Bikeway System is presented in Figure 16. A more detailed version can be seen on the Bikeway Map.

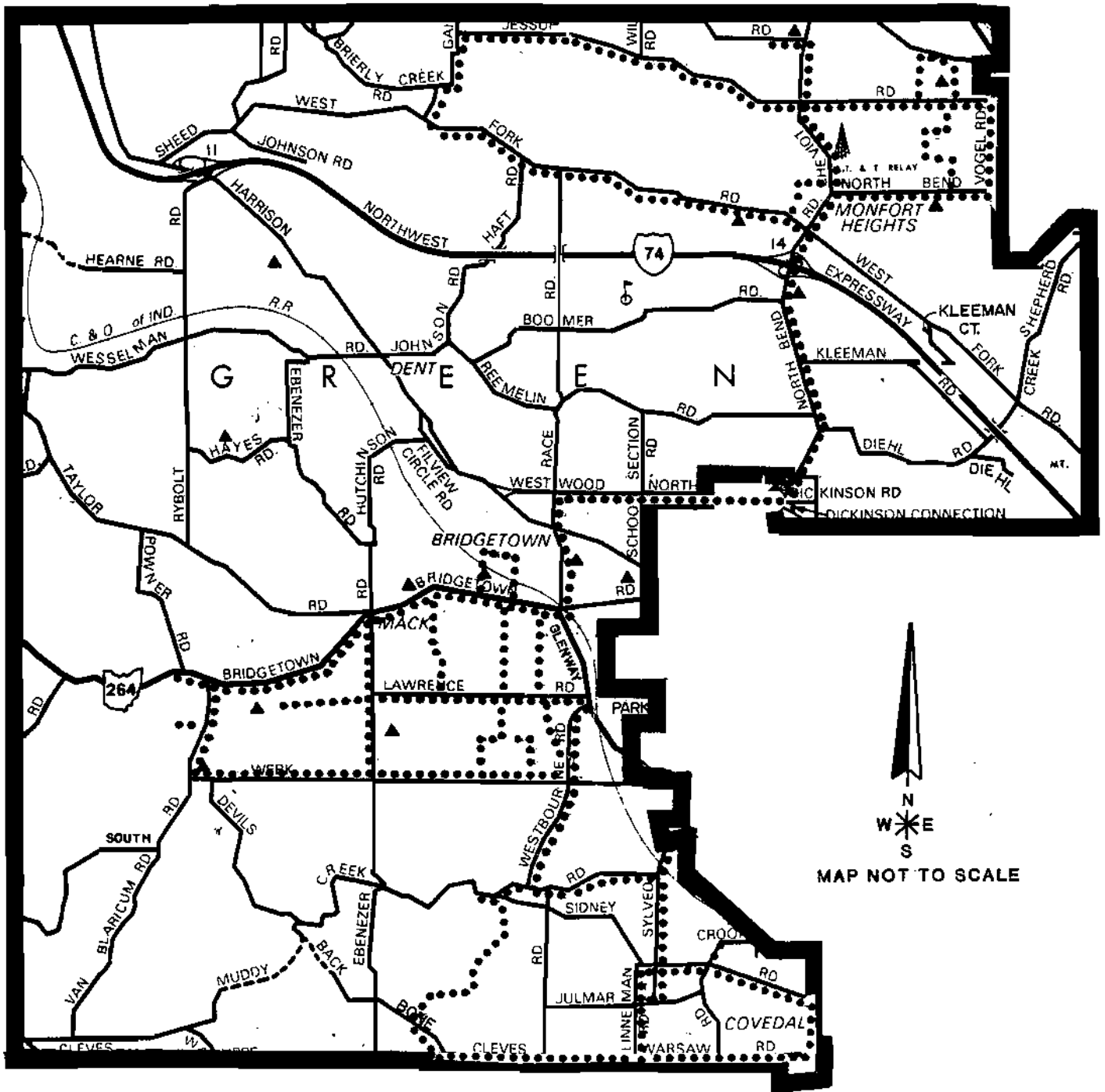


FIGURE 16
GREEN TOWNSHIP
PROPOSED BIKEWAY SYSTEM

PROPOSED BIKEWAYS

SOURCES: GREEN TOWNSHIP BIKEWAY COMMITTEE AND
 1980 HAMILTON COUNTY HIGHWAY MAP



The proposed bikeway system was developed by the GTBC. Initially, the following corridors were selected for further study: North Bend, Cheviot, Jessup, West Fork, and Boomer. These corridors were field checked by members of the committee using the instructions in Appendices 3 and 4. The following corridors were also field checked by the GTBC: Haft, Glenway, Harrison, Ebenezer, Rybolt, Taylor, Race, Muddy Creek, Cleves-Warsaw, Devil's Backbone, Julmar, Sidney, Beech Grove, Neeb, Anderson Ferry, and Linneman.

Members of the committee noted that Rybolt, Taylor, Race, Sheed, Johnson, Neeb and Ebenezer have steep grades and may not be suitable for bikeway development. The Hamilton County Engineer's representative indicated that Boomer Road did not have a legal right-of-way and, therefore, would be difficult and/or expensive to widen.

Following initial field checks and committee suggestions about possible routes, additional field checks were conducted by the GTBC chairperson and OKI staff. The proposed bikeway system was developed to meet the following criteria:

- 1) Each area of the township -- north, central and south -- should have an identifiable bikeway system.
- 2) The bikeway system in an area should connect with the bikeway system in adjacent areas.
- 3) The bikeway system in each area should be designed to provide access to local service areas.

NORTH AREA BIKEWAY SYSTEM

The North Area Bikeway System generally follows existing roads. With the exception of the proposed bike path to Gutzwiller's Grove, it is possible to ride a bicycle along this route although a number of improvements are being recommended for safety reasons. The GTBC does not recommend signing the Northern Route until such time that these improvements are completed.

The North Area Bikeway System includes the following township roads: Ranlyn Avenue, Sprucewood Drive, Epley, and Audro Drive. The remainder are county roads.

- West Fork Road (North Bend Road to Gaines Road)

This is a narrow, two-lane road with no curbs and gutters west of Running Fawn. The only sidewalk is on the south side of West Fork Road from North Bend to a point west of Running Fawn. The 1978 A.D.T. (average daily traffic) on West Fork Road was 4,700 between North Bend Road and Race Road. According to the Hamilton County Engineer, the A.D.T. on West Fork Road is now over 5,000. West Fork Road is a residential road lined by both single-family homes and access streets to new subdivisions. There are approximately 102 driveways and mailboxes between Audro Street and Race Road.

Cyclists from the University of Cincinnati area use West Fork Road as a main route out of the city to the more rural points of the county. Cyclists in the Monfort Heights area use West Fork Road as a transportation route to various subdivisions, the library, the school, and shopping areas. It also provides access from Green Township to Mt. Airy Forest.

Recommendations

Alternative 1: *Improve the shoulders by paving on each side of the road.*

Alternative 2: *Improve West Fork Road by widening each traffic lane to 15'.*

Alternative 3: *Construct sidewalks or bicycle paths along each side of the road.*

Any one of these alternatives would be feasible, however, the funding implications are different. Alternatives 1 and 2 could utilize federal and/or county funds. Hamilton County and adjacent property owners would share the cost of Alternative 3.

- Gaines Road (West Fork Road to Jessup Road)

Gaines Road is not ideally suited as a bikeway because it is a narrow

two-lane road on a steep hill in this area. It is, however, the only connecting link to Jessup Road at the west end of West Fork Road. The GTBC considered a Wilmer extension as a possible alternative but eliminated it due to the terrain and location of existing houses. The 1978 traffic count on Gaines Road was 1,700 A.D.T.

Recommendations

The terrain does not lend itself to construction of sidewalks. Recommended improvements include widening the road or paving the shoulders. The type and extent of improvements will depend in large part on what is feasible from an engineering standpoint. Since it is a county road, improvements will depend upon the availability of county funding.

- Jessup Road (Gaines Road to Cheviot Road)

Jessup Road between Gaines Road and Cheviot Road is a narrow, two-lane road with no curbs, gutters, or sidewalks. The 1978 traffic count was 5,500 A.D.T. Traffic is especially heavy during rush hours. Between Gaines and Wilmer, there is a drop-off at each edge of the pavement. It is difficult to get off the road if the need arises. Jessup is a residential road lined by single-family homes and access streets to new subdivisions. The houses are closer to the street than on West Fork. There are many large shade trees, driveways, and mailboxes.

Recommendations

The three alternatives listed for West Fork Road would be possible for improving Jessup, however, widening the road or improving the shoulder would probably require the removal of several large trees. If residents along this street would support construction of sidewalks or bike paths, this would be the recommended alternative.

- Jessup Road (Cheviot Road to Vogel Road)

Jessup Road east of Cheviot is also a narrow two-lane road. The pavement is in good condition, but the shoulder is narrow. There is a blacktop

sidewalk along both sides of Jessup in this area which allows cyclists to ride adjacent to the road. The surface of these sidewalks is uneven. The traffic is approximately 5,000 A.D.T.

Recommendations

Alternative 1: Improve the shoulders by paving on both sides.

Alternative 2: Improve Jessup Road by widening each traffic lane to 15'.

Alternative 3: Provide a level surface on the existing sidewalks.

Alternatives 1 and 3 may be able to be combined with regular maintenance activities performed by the county.

● Gutzwiller's Grove Bikeway

At the present time, a cyclist can travel from Jessup to Ranlyn to Blue Rock to Gutzwiller's Grove. Ranlyn is a residential street with low traffic volumes. Blue Rock Road is a major street and 1978 traffic counts in this area were 8,400 A.D.T. Blue Rock Road is a narrow two-lane road with no sidewalks. Since this park is not yet developed, the current need for bicycle access to Gutzwiller's Grove is minimal. When developed as a park, the need for bicycle access is expected to increase.

Recommendations

Planning for the township park in Gutzwiller's Grove should include the development of bicycle access to the park from the Green Township area on the south side of Blue Rock Road.

Alternative 1: Sign a bicycle path through the White Oak Junior High School parking lot. Preliminary approval of the idea has been received from the principal of White Oak Junior High School. This route could connect to a bicycle path in the undeveloped area north of the school. The right-of-way for the bicycle path north of the school property would have to be donated or acquired by the Green Township Trustees. This could be accomplished as part of the park development and funded in the same way as the park. A bicycle crossing should be provided at the intersection of the bicycle path and Blue Rock Road. Green

Township Trustees should research the availability of right-of-way to the park as soon as possible. It may be necessary to acquire right-of-way now so that it is reserved for future use as a bike path.

Alternative 2: Sign a bicycle route along Ranlyn Avenue. Widen the travel lanes on Blue Rock Road to 15 feet, pave the shoulders on each side, or provide a sidewalk/bicycle path adjacent to Blue Rock Road. The intersection of Ranlyn Avenue and Blue Rock Road should be improved to provide safer access across the road.

The Hamilton County Engineer indicated that the shoulders of Blue Rock Road have been improved in the past and could be again. There is more available right-of-way north of Blue Rock Road rather than south of the road.

These recommendations for access to Gutzwiller's Grove have only considered Green Township residents. It may be appropriate for planning efforts for bicycle access along Blue Rock Road to Gutzwiller's Grove to be coordinated with the concerns and interests of residents in Colerain Township. Coordination efforts could be defined at some later date when park development begins.

- Sprucewood (Jessup Road to North Bend Road)

Sprucewood is a residential street which provides access between Jessup Road and North Bend Road. It is satisfactory for bicycle travel at present without additional improvements.

- Vogel Road (Jessup Road to North Bend Road)

Vogel Road is an alternate route between Jessup and North Bend Roads. The west side of the road is in Green Township and the east side of the road is in the City of Cincinnati. It is a residential road but is narrow and does not have sidewalks. Vogel Road was resurfaced in August 1980, but the shoulders are not in good condition. People park along the sides of the road.

Recommendations

This road could be improved for bicycling by widening the traffic lanes,

paving the shoulders, or constructing sidewalks. Any improvements to the road would have to be coordinated with the City of Cincinnati. Since Sprucewood provides a satisfactory alternative, the GTBC is not recommending any specific actions at this time. If future improvements are planned for this road by the Hamilton County Engineer and the City of Cincinnati, the GTBC recommends that improved bicycle travel be considered in the planning.

- North Bend Road (Vogel Road to Cheviot Road)

This section of North Bend Road is one of the main east-west access roads to I-74, Colerain Avenue, and I-75. In 1978, traffic counts ranged from 17,900 A.D.T. near LaSalle High School to 14,300 A.D.T. near Cheviot Road. In addition to the heavy traffic, there are drainage grates in the road which are a safety hazard for cyclists. This section is included as part of the bikeway system because there are sidewalks along both sides of the road. The sidewalks enable the cyclist to ride parallel to the street where traffic is too heavy.

Recommendations

When improvements are made to other portions of the Northern Area Bikeway System, this section should be signed to alert drivers to the presence of cyclists.

Future road improvements to this section of road should consider the needs of cyclists. Drainage grates should be modified or replaced. As a minimum, an edge stripe should be painted around the grates to direct cyclists around them.

- Cheviot Road (North Bend Road to Hubble Road)

This portion of Cheviot Road is a major north-south access road to North Bend Road and I-74. The traffic in 1978 varied between 21,000 A.D.T. near North Bend Road to 18,000 A.D.T. near Hubble Road. There are sidewalks along both sides of Cheviot Road, however, there are numerous businesses in this area. The driveways for the businesses frequently cross the sidewalk so that both the street and sidewalk routes are hazardous.

Recommendations

The GTBC recommends this section of the bikeway system for experienced cyclists. It provides access to the shopping areas along Cheviot Road. Future road improvements should consider the needs of cyclists. Consideration should be given to providing a bicycle lane and bicycle signs along this route.

- Epley and Audro (Cheviot Road to West Fork Road)

Epley and Audro are narrow two-lane roads. They connect to each other and provide an alternate route between Cheviot and West Fork Roads. This enables cyclists to avoid the two intersections of Cheviot Road/North Bend Road and North Bend Road/West Fork Road. The new Senior Citizens Center is being constructed at the intersection of Epley and Audro.

Recommendations

Epley and Audro should be resurfaced to provide for improved bicycle travel. The shoulders should be paved to provide a wider travel surface. At such time as the bicycle route is signed, these two streets should also be signed.

- Connecting Corridor between the Northern Area and the Central Area

There is an existing connecting corridor between the Northern Area and the Central Area. It travels south on North Bend Road, west on Westwood-Northern Boulevard, and south on Race Road to Harrison Avenue. Although the travel lanes are relatively wide, the route is recommended only to the most experienced cyclists because of the high traffic volumes. In 1978, traffic along North Bend Road ranged from 32,700 A.D.T. to 20,500 A.D.T. Westwood-Northern Boulevard had 9,000 A.D.T. Race Road had 15,500 A.D.T. south of Harrison.

When funding becomes available, the Hamilton County Engineer plans to widen North Bend Road between I-74 and Westwood-Northern Boulevard. This section of road presently has three lanes with curbs and gutters.

This section of road also has parallel drainage grates which can trap bicycle wheels.

There are sidewalks on both sides of Race Road between Bridgetown Road and Harrison. The intersections of Race and Bridgetown and Race and Harrison are very busy although there are traffic lights at these locations. During school hours, a right turn on red is not permitted going north on Race Road in this area.

Recommendations

When plans are developed to widen North Bend Road, the GTBC recommends that bicycle travel be considered. Wide outside lanes and bicycle-safe grates are recommended. Bicycle crossing signs should be installed at the intersections of North Bend Road and I-74 to alert drivers entering and exiting from the freeway.

CENTRAL AREA BIKEWAY SYSTEM

The Central Area Bikeway System follows the existing road system. With the exception of the Kuliga Park Bike Path, it is possible to ride a bicycle along this route. Various recommendations are included to improve the safety and continuity of bicycle travel. Two specific barriers to bicycle travel are also discussed. The Central Area Bikeway is located in an area that is primarily residential. There are some businesses along Bridgetown Road.

The Central Area Bikeway System includes the following township roads: Chatwood Court, Biehl, Pina, Virginia Court, Charity, Erlich, Northgate, Woodhaven Drive, Moonridge Drive, Aurora Drive, Andres, and Harmony Lane. The other roads are county roads.

● Bridgetown Road

Bridgetown Road is also State Route 264. The 1978 traffic count near the east township boundary was 12,000 A.D.T. Bridgetown Road between

Glenway and Ebenezer is four lanes with curbs and gutters and sidewalks. Bridgetown Road between Ebenezer and Kuliga Park is two lanes with no curbs and gutters and sidewalks. West of Ebenezer, Bridgetown Road is marked with reflectors along the edge of the pavement. There are hazardous for bicycle travel. There is a traffic light at the intersection of Bridgetown Road and Ebenezer. Bridgetown provides access to two schools and is the main access to Kuliga Park.

Recommendations

Future road improvements to Bridgetown Road between Glenway and Ebenezer should take into account bicycle travel. Wide outside lanes should be provided for bicycle travel.

Several improvements could be made to Bridgetown Road between Ebenezer and Kuliga Park. These include paved shoulders, wide outside lanes, or construction of sidewalks or bike paths. It would also be desirable to replace the reflectors with a white edge stripe.

● Chatwood, Biehl, Pina, and Virginia

These four streets are local residential streets which provide access to St. Jude and Oakdale Schools from Bridgetown Road. The GTBC has no specific recommendations for these streets at the present time.

● South Road

South Road is a narrow two-lane road with no curbs and gutters or sidewalks. The 1978 traffic count was 4,800 A.D.T.

Recommendations

Bicycle travel would be improved by paving the shoulders of this road. Any future plans to widen this road should take into consideration bicycle travel and include wide outside lanes. Sidewalks or a bicycle path could be built on both sides of the road.

- Kuliga Park Bikepath

At the present time, the only access to Kuliga Park is from Bridgetown Road. Several houses are located west of South Road and adjacent to long gravel driveways which extend west from South Road.

Recommendations

The GTBC recommends that the township research the possibility of purchasing right-of-way to construct a bicycle path from South Road to Kuliga Park. If possible, right-of-way for a bicycle path should be reserved now so that it is available for future construction.

- Werk Road

Werk Road is a two-lane road with no curbs and gutters or sidewalks. It is a major east-west arterial in this residential area of Green Township. The 1978 average daily traffic west of Ebenezer was 6,900; east of Ebenezer it was 8,400. The average daily traffic east of Westbourne was 10,800; west of Westbourne it was 11,200. There are long rolling hills the length of Werk Road.

Recommendations

Werk Road could be improved for bicycle travel by paving the shoulders on both sides. Consideration should be given to constructing sidewalks or a bicycle path along both sides of Werk Road. Any future major improvements to Werk Road should take into account bicycle travel and the provision of wide outside lanes.

- Lawrence Road

Lawrence Road is a collector for the subdivision streets in this area. The 1978 traffic count was 5,800 A.D.T. Lawrence Road has curbs and gutters. There are sidewalks on the north side. There are sidewalks along the south side of the road except for that section from Tolland Court to west of Eyrich. Lawrence Road has long rolling hills.

Recommendations

The sidewalk should be completed along the south side of Lawrence Road.

- Charity Drive

Charity Drive is a local subdivision street. There is a sidewalk access from the end of the cul-de-sac which provides pedestrian access to Dulles Elementary School. Where the sidewalk enters the school property, two heavy metal poles have been installed vertically. They form a barrier which makes it difficult to ride a bicycle to the school. It is possible for a rider to get off his or her bicycle and lift the bicycle over and between the two poles. The poles were installed by the school to prevent motorcyclists from using the sidewalk access to the school grounds during off school hours. Since students are not allowed to ride bicycles to school, the school administration does not want them removed.

Recommendations

If school policy changes so that bicycles are permitted at school, the GTBC encourages the school to consider modifying or removing the barrier so that bicycles can have better access.

- Ebenezer Road (Bridgetown to Werk)

Ebenezer from Bridgetown to Werk is a two-lane road with turn lanes, curbs and gutters, and sidewalks. There are parallel drainage grates which can trap bicycle wheels. This section of Ebenezer is level enough to bicycle on although other areas of Ebenezer have severe hills.

Recommendations

The GTBC recommends that the drainage grates be modified or replaced with bicycle safe grates. As a minimum, an edge stripe should be painted around the grates to direct cyclists around them.

- Eyrich

Eyrich is a residential street with sidewalks along the southern two-thirds. The road surface has many potholes.

Recommendations

Eyrich should be resurfaced to provide a safer riding surface. The sidewalk system should be completed to Bridgetown Road.

● Northgate/Woodhaven/Moonridge

Northgate to Woodhaven to Moonridge provides a bicycle route between Werk Road and Bridgetown. These are subdivision streets with sidewalks and are generally satisfactory.

● Aurora

Aurora is a two-lane residential street. There are sidewalks along the west side of the road. There are sidewalks on the east side of the road except between Biscayne and North Glen.

Recommendations

Sidewalks should be completed along the east side of Aurora between Biscayne and North Glen.

● Andres/Harmony

Andres was built before Harmony and was originally a private street. When the subdivision along Harmony was constructed, the two streets were not joined. There is presently a large metal fence which serves as a barricade between the two streets. According to the township, public right-of-way exists so that Harmony and Andres could become a through street. Since there are other routes, such as Northgate, which serve the same function as a through street on Harmony and Andres, the GTBC is not recommending that this option be pursued unless citizens in the area favor such an approach.

Recommendations

The GTBC recommends that consideration be given to constructing a bike path along the public right-of-way between Harmony and Andres.

- Greenway/Westbourne (Lawrence to Werk)

Greenway and Westbourne are two-lane streets with curbs, gutters, and sidewalks. The 1978 traffic count at the southern merge of these two roads was 8,800 A.D.T. Both streets have curbs and gutters and sidewalks. Although the traffic count is high, no specific recommendations are being considered for these two sections of road. Cyclists are able to ride parallel to the traffic on existing sidewalks.

- Connecting Corridor Between the Central Area and the Southern Area

Westbourne Road provides a connecting route between the Central Area and the Southern Area. The 1978 traffic count on this road was 10,300 A.D.T. Westbourne Road is two lanes and has curbs and gutters. There are sidewalks on the east side of Westbourne between Werk Road and Muddy Creek where new residential construction is occurring. There are no sidewalks on the west side of the road where the land is not developed.

Recommendations

The GTBC recommends that sidewalks be completed along the west side of Westbourne between Werk Road and Muddy Creek. This would provide a safer route for inexperienced cyclists and would provide a route for other cyclists to use when traffic is especially heavy.

SOUTH AREA BIKEWAY SYSTEM

The South Area Bikeway System follows existing roads. It is possible to ride a bicycle along this route although various recommendations are included in order to improve the safety and continuity of bicycle travel. The South Area Bikeway is located in a residential area. Beech Grove Lane, Beech Grove Drive, and Beechtop Lane are township roads. The others are county roads.

- Muddy Creek Road

Muddy Creek is a narrow two-lane road with no curbs or gutters or sidewalks. Immediately east of the entrance to the swim club is a blind curve. Most of

the traffic along Muddy Creek Road is concentrated between the intersections of Westbourne and Neeb. 1978 traffic counts were 9400 A.D.T. Traffic counts at Muddy Creek and Sylved were 4600 A.D.T. West of Westbourne, traffic counts were 2000 A.D.T.

Recommendations

The GTBC recommends that the shoulders of Muddy Creek Road be paved on both sides between the east township line and the swim club. The terrain probably does not permit construction of sidewalks or a bicycle path. If more extensive reconstruction of this road is planned in the future, it would be desirable to consider wide outside lanes. A sign should be installed to alert drivers to the entrance to the swim club.

● Beech Grove Lane/Beech Grove Drive/Beechtop Lane/Devil's Backbone

Beech Grove Lane to Beech Grove Drive to Beechtop Lane to Devil's Backbone provides a route to Cleves-Warsaw. These are residential streets with low traffic volumes. They are two lanes wide with no curbs or gutters or sidewalks. This route is best traveled from north to south because it is a long hill.

Recommendations

The GTBC recommends that the shoulders of the route along Beech Grove Lane, Beech Grove Drive, Beechtop Lane, and Devil's Backbone to Cleves-Warsaw be paved to provide for safer bicycle travel.

● Cleves-Warsaw

Cleves-Warsaw is a major east-west arterial located between Green Township and Delhi Township. East of Devil's Backbone it has curbs and gutters but no sidewalks; west of Devil's Backbone it has no curbs, gutters, or sidewalks. This road provides direct access to Addyston and the Ohio River. Traffic volumes increase as you travel east. The 1978 traffic count at Devil's Backbone was 4800 A.D.T.; at Linneman, the traffic count was 6600 A.D.T.; at the East Township Line, the traffic count was 9700 A.D.T. The posted speed limit along Cleves-Warsaw is 35 m.p.h. Between

Devil's Backbone and the East Township Line, Cleves-Warsaw is a two-lane road approximately 35 feet wide. West of Devil's Backbone, Cleves-Warsaw narrows to 21 feet. Although the section of Cleves-Warsaw included on the bikeway system is wide, cyclists are hampered by 41 drainage grates. Twenty-two of these grates are along the north side of the road in Green Township. Nineteen are along the south side of the road in Delhi Township.

Recommendations

The GTBC recommends that drainage grates be modified or replaced in order to provide for safer bicycle travel. As a minimum, an edge strip should be painted around the grates to direct cyclists around them. These efforts would need to be coordinated with the Delhi Township Trustees and the Hamilton County Engineer. Another alternative is to provide sidewalks or a bicycle path along both sides of the road. Because of the width of the road, this is not the preferred alternative. If property owners adjacent to the road supported sidewalks, this approach might be a safer way of accommodating both pedestrian and bicycle travel.

● Linneman/Julmar/Sylved/Muddy Creek

This linkage of residential streets provides a north-south route for cyclists. Traffic increases as you go north along this route from 1800 A.D.T. along Linneman to 6400 A.D.T. along Sylved to 10,100 A.D.T. along Muddy Creek north of Sylved. These streets are generally narrow, two-lane streets. Linneman, Julmar and Sylved to Faycrest have sidewalks in most places. There are two exceptions to this. There is no sidewalk along the property on the west side of Linneman near the intersection with Cleves-Warsaw. This land is occupied by a Cincinnati Bell substation. There is also no sidewalk along one residence on the east side of Sylved just north of Sidney. Curbs and gutters are located in the same areas as sidewalks. An elevated rail line crosses Muddy Creek north of Sylved.

Recommendations

The GTBC recommends that the sidewalk on the west side of Linneman be

completed. *Sylved (north of Sidney) and Muddy Creek should have paved shoulders. Consideration should also be given to completing the sidewalk system along Sylved and Muddy Creek north of Sylved.*

- Anderson Ferry (Sidney to Crookshank)

Anderson Ferry is generally a narrow two-lane road with no curbs, gutters, or sidewalks. The 1978 traffic count between Sidney and Crookshank was 8500 A.D.T. This section of Anderson Ferry provides access to Bosken Park.

Recommendations

The GTBC recommends that the shoulders of this section of Anderson Ferry be paved. Consideration should also be given to providing a bicycle path along this section of road.

- Sidney

Sidney is a relatively wide (approximately 30 feet) two-lane street. It has curbs and gutters and sidewalks. The GTBC has no specific recommendations at this time for Sidney.

- Covedale (City of Cincinnati)

Covedale is a two-lane residential street with curbs and gutters and sidewalks. It is located within the City of Cincinnati so it cannot officially be included as part of the Green Township Bikeway System. It does, however, provide an existing connection between Sidney and Cleves-Warsaw. It is a safer and easier route for cyclists than Anderson Ferry.

ESTIMATED BIKEWAY COSTS

The purpose of this section is to outline some of the major costs of improving bicycle travel in Green Township. An estimate has not been prepared for each section of the proposed bicycle system. A detailed estimate for West Fork Road between Audro and Race is included in Appendix 5. Some general cost considerations are presented which could serve as guidelines for a particular section of the route. The intent is to provide implementors with some ideas of the costs involved. The GTBC has assumed that some recommendations for

improving bicycle travel can be combined with various improvements to the existing roadway network.

- Bikeway Construction

The cost of bikeway construction is estimated to be \$15 to \$18 per lineal foot for a bikeway eight feet wide and six inches deep. A Class I Bikepath that was eight feet wide would accommodate two-way bicycle traffic. The estimates in Figure 17 would also apply to the construction of a four-foot shoulder on each side of the road.

In addition to construction costs, other items will affect the cost of construction. For instance, it costs approximately \$50 to move a mailbox. If a driveway needs to be modified, it costs from \$100 to \$500; the average cost for a driveway modification would be \$300.

- Sidewalks

The cost of constructing a four-foot wide sidewalk is approximately \$15 to \$18 per lineal foot. Total cost is, therefore, similar to the cost of other bikeway construction. In Green Township, the Hamilton County Engineer can construct sidewalks along existing roads if the right-of-way exists. The county cannot purchase land for construction of sidewalks.

Along existing county roads (see Bikeway Map), property owners are assessed \$5.90 per lineal foot for sidewalk construction. Along existing township roads, the township trustees can assess property owners up to 100% of the total cost of sidewalk construction. Figure 18 outlines potential sidewalk costs for three different sized lots along county roads.

FIGURE 17
 COST PER MILE FOR CONSTRUCTION OF A BIKEWAY
 MEASURING EIGHT FEET WIDE BY SIX INCHES DEEP

Estimate No. 1 (Low)

Construction and Materials (\$15 x 5280')	\$79,200
Engineering (10% of construction and materials)	<u>7,920</u>
Total	\$87,120/mile

Estimate No. 2 (High)

Construction and Materials (\$18 x 5280')	\$ 95,040
Engineering (10% of construction and materials)	<u>9,540</u>
Total	\$104,544/mile

Note: The above estimates do not include the cost of purchasing land, moving mailboxes, or modifying driveways.

FIGURE 18
SIDEWALK COSTS ALONG COUNTY ROADS

	<u>Lot Frontage</u>	<u>Property Owner's Share</u>	<u>County Share</u>	<u>Total</u>
<u>Estimate No. 1</u>	50 feet	\$295	\$ 445	\$ 750
<u>(\$15/foot)</u>	100 feet	\$590	\$ 910	\$1500
	150 feet	\$885	\$1365	\$2250
 <u>Estimate No. 2</u>	50 feet	\$295	\$ 605	\$ 900
<u>(\$18/foot)</u>	100 feet	\$590	\$1210	\$1800
	150 feet	\$885	\$1815	\$2700

The cost of construction of sidewalks when building a road are the responsibility of the developer. These costs are generally added onto the cost of the house or structure being built. As noted earlier, sidewalks are not required on residential lots with an 80-foot frontage or larger.

- Drainage Grates

When drainage grates are replaced or installed, the Hamilton County Engineer used the new style with cross bars which are bicycle safe. Single grates cost \$211 and double grates cost \$362. This does not include the cost of installation.

SAFETY EDUCATION

GOALS

The GTBC developed the following bicycle safety education goals for Green Township. The goals reflect committee concern for the rights and responsibilities of both bicyclists and motorists. They also reflect the committee's awareness that bicycling in Green Township often means sharing the road with motorists.

The goals of a Green Township bicycle safety education program are:

- 1) To teach children, youth and adults the rules of bicycle safety including traffic laws;
- 2) To educate motorists about their responsibilities in traffic as they relate to bicyclists;

- 3) To encourage school administrators and teachers to include bicycle safety programs in their plans for the year;
- 4) To encourage civic associations to promote civic awareness of the rights and responsibilities of both cyclists and motorists;
- 5) To encourage programs of bicycle safety checks and bicycle maintenance in Green Township;
- 6) To sign roadways to alert motorists to the use of the road by bicyclists; and
- 7) To encourage media (TV, newspapers, radio) to include public service bike safety spots in their programming.

LOCAL RESOURCES

A variety of resources are available locally to educators, civic groups, and others interested in promoting bicycle safety. The following list describes resources the GTBC has used.

- 1) AAA Cincinnati Automobile Club
Safety Department
Central Parkway and Race
Cincinnati, Ohio 45202
Phone: 762-3438

The Cincinnati Automobile Club has a variety of films available about bicycle safety education. The films are available on loan free of charge. A telephone call can reserve them for the date

needed. You are responsible for picking films up and returning them within three days. A list of available films can be obtained by calling 762-3438.

Of special interest to the GTBC is a film for youth and adults titled "Only One Road--The Bike/Car Traffic Mix" (1975; 26 minutes). This film points out that auto drivers and bicyclists have similar rights and responsibilities in traffic; it illustrates skills necessary for both vehicles to safely share the road.

- 2) Lt. Ray Hoffbauer
Hamilton County Sheriff's Office
Traffic Safety Division
11021 Hamilton Avenue
Cincinnati, Ohio 45231

The Hamilton County Sheriff's Department presents bicycle safety programs at local elementary schools. The program can be scheduled upon request by calling 825-1500. The number of programs conducted depends upon the availability of staff.

The Sheriff's Department, in cooperation with the Coca-Cola Bottling Works Company, also sponsors a Bicycle Safety Inspection Program in Hamilton County. For more information, call 825-1500.

- 3) Ralph Williams
5608 Samver
Cincinnati, Ohio 45230
Phone: 541-0278

Mr. Williams is a local cyclist and resident of Green Township. He has a slide presentation on bicycle safety suitable for elementary school children.

- 4) Ohio-Kentucky-Indiana Regional Council of Governments
426 East Fourth Street
Cincinnati, Ohio 45202
Phone: 621-7060

OKI is a regional planning agency which does transportation planning including bicycle planning. The OKI Transportation Library has a variety of books on bicycle safety available for review at the agency office.

- 5) Cincinnati Cycle Club
Glenn Weist, President
8476 Forest Road
Cincinnati, Ohio 45230
Phone: 474-4317

The Cincinnati Cycle Club is a group of local bicyclists who promote and encourage recreational bicycling in the area. They plan a variety of rides for their members. The Cycle Club publishes a monthly newsletter for their members.

- 7) The Public Library of Cincinnati and Hamilton County
Main Library
800 Vine Street
Cincinnati, Ohio 45202
Phone: 369-6940 (Education Department)

The Public Library and its various branch libraries in and near Green Township (West Fork, Cheviot, and Overlook) have books on bicycling and bicycle safety. Of special interest at the Main Library are The New Complete Book of Bicycling by Eugene Sloane and The Bike Book by Bibs McIntyre.

OTHER RESOURCES

In addition to the local resources, a variety of other books and films and organizations are available. The GTBC would like to call attention to the following other resources.

- 1) AAA Foundation for Traffic Safety
8111 Gatehouse Road - Room 328,
Falls Church, Virginia 22042
Phone: (703) 222-6891

By calling or writing to AAA Foundation for Traffic Safety, you can get a catalogue of books and films available for purchase from the national office. AAA also has TV and radio spots.

- 2) Driver Education Section
Ohio Department of Education
65 South Front Street
Columbus, Ohio 43215
Phone: (614) 466-4230

The Ohio Department of Education published a manual called Bicycle/Pedestrian Safety Education -- A Curriculum Guide. This manual has a variety of information especially geared to elementary age children. Lesson plans and sample materials are included. The manual was distributed to all Ohio public elementary schools in 1978. Copies can be obtained by writing or calling the Driver Education Section of the Department of Education. One copy is generally available free of charge to a school; however, there is only a limited supply remaining. The OKI Transportation Library has a copy for review.

- 3) The League of American Wheelman
P. O. Box 988
Baltimore, Maryland 21203

The LAW is a national organization of cyclists. They publish a magazine, sponsor bicycle rides and rallies, and generally promote the interests of bicyclists.

- 4) William Wilkinson
Bicycle Manufacturers Association
1101 15th Street, N.W.
Washington, D. C. 20005
Phone: (202) 452-1166

This organization is made up of bicycle manufacturers. The organization publishes a variety of material about bicycle safety. A list of available material can be obtained by writing to the above address.

- 5) Ohio Bicycle Federation
Peggy Skonecki, Chairperson
Miami Valley Regional Bicycle Committee
1980 Winters Tower Bank Building
Dayton, Ohio 45423
Phone: (513) 226-1444

The OBF is a newly formed organization. Its objectives are 1) to encourage all Ohioans interested in cycling and 2) to provide opportunities for the betterment of bicycle program-

ming including education, encouragement, enforcement, engineering and enactment of appropriate legislation at state and local levels. Membership is open to both individuals and organizations interested in identifying, planning and promoting the needs of bicyclists in Ohio. OKI is a member of this organization.

This list of resources--both local and other--is not intended to be comprehensive but to give the reader some idea of the diversity of materials and sources available. Two books are recommended for those wishing more detailed information about bicycling and bicycle safety. They are:

- 1) U. S. Environmental Protection Agency. Office of Transportation and Land Use Policy. Bicycling and Air Quality Information Document. Washington, D. C., 1979.
- 2) K. O. Cross. Bicycle Safety Education--Facts and Issues. Falls Church, Virginia: AAA Foundation for Traffic Safety, August, 1978.

SAFETY EDUCATION RECOMMENDATIONS

Bicycle safety education in Green Township is taught in the elementary and senior high schools. There is variations in the type and extent of program between public school districts. The committee did not collect information about private schools. Bicycle safety education is also taught in the elementary schools and in some communities by the Hamilton County Sheriff's Department.

At this time, it is beyond the scope of the GTBC to develop a comprehensive bicycle safety education program for the township. The committee would like to present the following suggestions for future action:

- 1) Green Township schools should be encouraged to use the various books and films and programs available.
- 2) The branch libraries could be contacted to show bicycle safety films during the summer months.

- 3) Civic and service organizations could sponsor a Bicycle Safety Poster Contest. Winning posters could be displayed in shopping centers, libraries, and schools.
- 4) There are existing safety towns that teach young children traffic rules. A bicycle safety town could be developed for older children to learn bicycling skills and rules of the road.

ENFORCEMENT AND REGISTRATION

The enforcement element of the bicycle program can include enforcement and education by police, a bicycle court for bicyclists who disobey traffic rules, and bicycle registration. Aggressive enforcement programs combined with education programs are about as effective as well-designed bikeways in reducing accidents. Bicycle registration can serve two main purposes: 1) recovery and return of stolen bicycles, and 2) identification of cyclists involved in accidents. This latter aspect is important because many cyclists are juveniles who are not carrying identification.

This aspect of bicycle programming has not been developed in any comprehensive way by the GTBC. It is noted here with the recommendation that future planning should be directed toward registration and enforcement.

The Hamilton County Sheriff's Department registers some bicycles in Green Township as part of their program. One suggestion is to develop an ongoing bicycle registration program with the assistance of both the sheriff and the township police department.

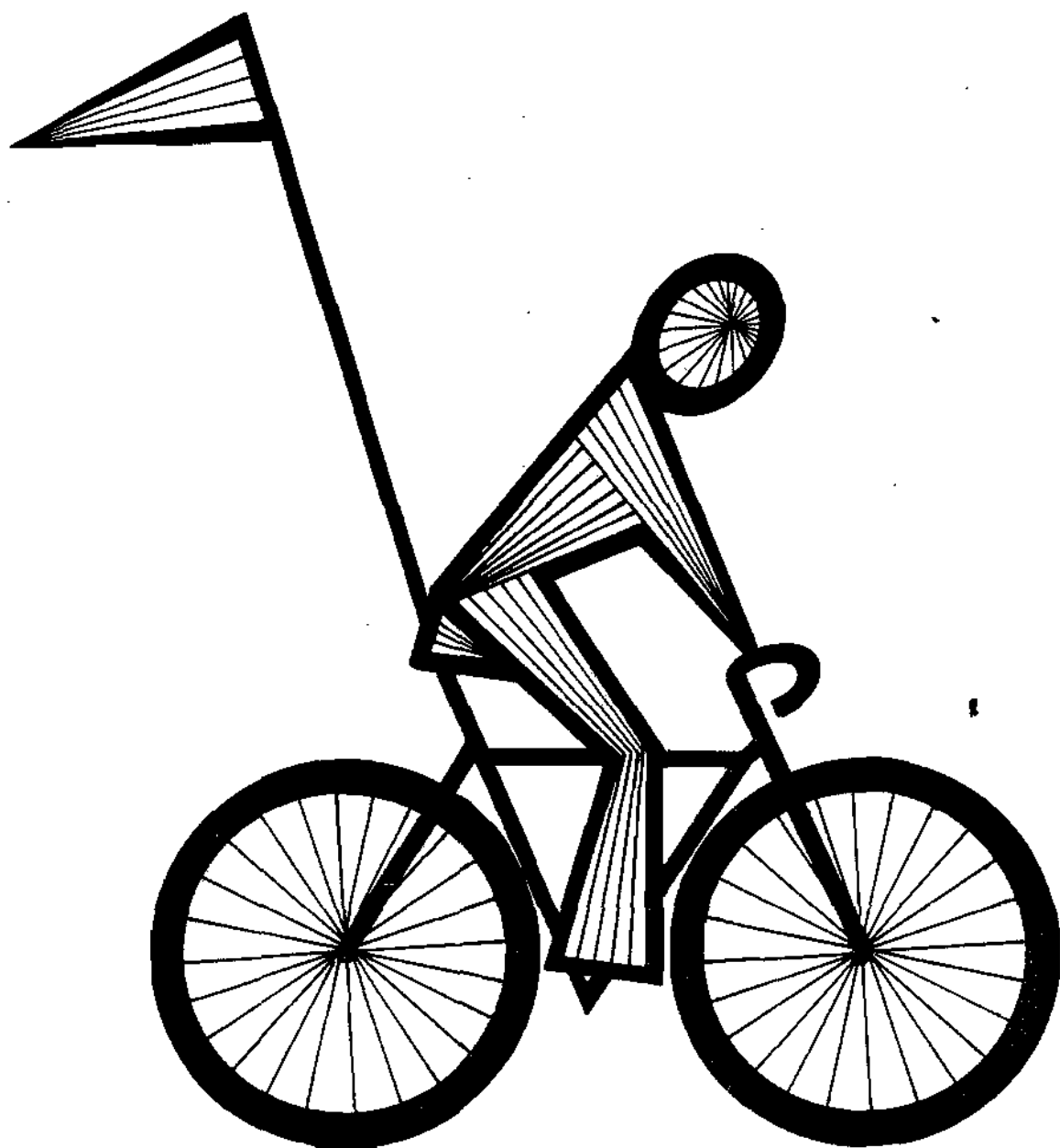
Enforcement suggests that bicycle riders should be expected to know and obey traffic rules. This would require involvement by both the county sheriff and the township police.

ENCOURAGEMENT

An important aspect of any bicycling program is public encouragement for the program. Some of the educational suggestions, such as the poster contest, are also forms of encouragement. Promotion of bicycling activities was built into the 1980 Memorial Day Parade in Monfort Heights. Young people decorated their bicycles and rode them in the parade. They also carried signs saying "Support Green Township Bikeways." The GTBC has suggested making buttons to sell or give away which say "Support Green Township Bikeways." A bicycle logo could be developed for Green Township. Another form of encouragement is to develop bicycle maps for cyclists to carry with them when they travel.



CHAPTER 5
IMPLEMENTATION OF THE
GREEN TOWNSHIP
BICYCLE PROGRAM





CHAPTER 5

IMPLEMENTATION OF THE GREEN TOWNSHIP BICYCLE PROGRAM

Successful implementation of bicycling programs, including the development of bikeways, depends upon four elements:

- 1) Political support and enabling legislation for bicycling;
- 2) An organization or person with lead responsibility for bicycle activities;
- 3) Available funding sources for bicycling activities; and
- 4) Coordination and cooperation among and between involved agencies and organizations.¹⁹

POLITICAL SUPPORT AND ENABLING LEGISLATION

The appointment of the Green Township Bikeway Committee and the continuing participation and cooperation of the Township Trustees demonstrates their interest and commitment to bicycling in Green Township.

The legislative aspect of constructive bicycle facilities could be strengthened by providing for bikeway construction in the county and township zoning and subdivision regulations. Even without this regulatory provision, developers could be encouraged to provide for bicycle travel. The following developer guidelines are from the EPA's Bicycling and Air Quality Information Document.

General Recommendations

- New development plans to coordinate road and recreation plans with any existing or proposed bikeway plan.

- Bikeways within new developments designed and constructed according to accepted standards of width, curve radius, grades, stopping sight distances, drainage, vertical clearance, signing, pavement materials, etc.
- Specifically designed bicycle parking facilities located at all public bicycle destinations within new developments.

Street Design Recommendations

- Transportation corridors within new developments to allow the necessary right-of-way to permit the construction of bikeways.
- Streets related to the topography of the area so as to reduce unreasonable grades for bicycles.
- Where appropriate, developer allowance of necessary width and grading to construct bicycle/pedestrian underpasses beneath major bicycle/pedestrian access barriers.
- Where appropriate, connections from on-street bikeways provided at cul-de-sac locations.
- Where on or off-street bikeways intersect a major street, intersection design utilizing the best available data on safe design accident and engineering.
- Clear sight triangles provided at all intersections of two or more streets.
- Approved bikeway signing provided at all decision points and warning locations along a bikeway for bicyclists.

Recreation/Open Space Area Design Recommendations

- Existing waterways or drainage courses as well as other recreation corridors designed to allow the construction of continuous bikeway facilities.
- Recreation facilities within new developments as well as recreation areas adjacent to the development connected by bikeways.
- Specifically designed and approved bicycle parking facilities provided at park, recreation and open space areas.²⁰

LEAD RESPONSIBILITY

The GTBC recommends that the Green Township Bikeway Committee become a standing committee. It may be renamed (e.g., Green Township Bicycling Committee) to reflect expanding responsibilities including coordination of a total bicycling program of facilities, education, encouragement, and enforcement. The membership of this committee may change as the focus of its responsibilities does. An alternative to this approach is for the trustees to assign responsibilities for bicycle facilities to the committee responsible for township roads. Because of the emphasis on utilizing the existing road system, this would be preferable to assigning responsibility to the recreation committee.

FUNDING

Funding for bicycle facilities and programming is likely to continue to be a problem for Green Township. The GTBC recommends that bicycle facility construction be closely coordinated with anticipated road improvements by both the township and the county. Since federal funding is available through such programs as the Bicycle Grant Program, the GTBC recommends that plans be developed to provide the necessary local share. For example, as revenues become available from the cable TV franchise, a portion may be designated for bikeways.

Funding for bicycle programs needs to be coordinated with the township budgeting process. The township budget is for a calendar year and the general process of development is as follows:

May 1981 ----- Township Department Heads submit proposed department budgets for 1982 to the Township Trustees.

June or July 1981 --- A public hearing is held at the Trustees' last meeting in June or first meeting in July, 1981; following the public hearing, the Trustees adopt the budget.

- July 1981 ----- The adopted township budget is submitted to Hamilton County.
- January 1982 ----- The Trustees pass an appropriations bill which authorizes the Township Clerk to spend money for specific line items.
- March 15, 1982 ----- Final deadline for passage of an appropriations bill if not completed in January.

COOPERATION AND COORDINATION

The GTBC represents the beginning of cooperation and coordination activities for bicycling in Green Township. Citizens, township trustees, the Hamilton County Engineer, Hamilton County Sheriff's Department, PTA representatives, OKI, Hamilton County Regional Planning Commission, and bicyclists have all been involved. Additional cooperation and coordination is needed for successful implementation of the program. This could be accomplished through the Green Township Bicycle Committee.

Coordination is of special importance in Green Township because of the number and diversity of agencies and organizations responsible for planning, constructing and maintaining roads and sidewalks and future bikeways.

FOOTNOTES

¹Colerain Corridor is the largest with 44.5 square miles.

²American Association of State Highway and Transportation Officials, Guide for Bicycle Routes (Washington, D.C., 1974), p. 2.

³U.S. Department of Transportation, Federal Highway Administration, Safety and Locational Criteria for Bicycle Facilities, User Manual Volume II: Design and Safety Criteria (Washington, D.C., February 1976), pp. 3-4.

⁴U.S. Environmental Protection Agency, Bicycling and Air Quality Information Document (Washington, D.C., September 1979), p. 29.

⁵Ibid., pp. 31-33.

⁶Gregory M. Jones, "On-Road Improvements for Bicyclists in Maryland," Transportation Research Record 739: Driver Performance, Passenger Safety Devices, and the Bicyclist, 1979, p. 39.

⁷This process is modeled after the Nominal Group Process described by Andre L. Delbecq in Nominal Group Processes for Program Planning, Center for the Study of Program Administration Reprint Series, 1808 Waunona Way, Madison, Wisconsin 53713.

⁸Kenneth D. Cross, Bicycle-Safety Education -- Facts and Issues (Falls Church, Virginia: AAA Foundation for Traffic Safety, August 1978), pp. 1 and 7.

⁹Ibid., pp. 1, 2, and 11.

¹⁰Ibid., pp. 7-8.

¹¹Ibid., p. 9.

¹²Ibid., p. 10.

¹³EPA, p. 15.

¹⁴Cross, p. 16.

¹⁵Ibid., p. 27.

¹⁶Ibid., p. 29.

¹⁷Ibid., p. 24.

¹⁸Ibid., p. 23.

¹⁹EPA, p. 93.

²⁰Ibid., pp. 96-97.

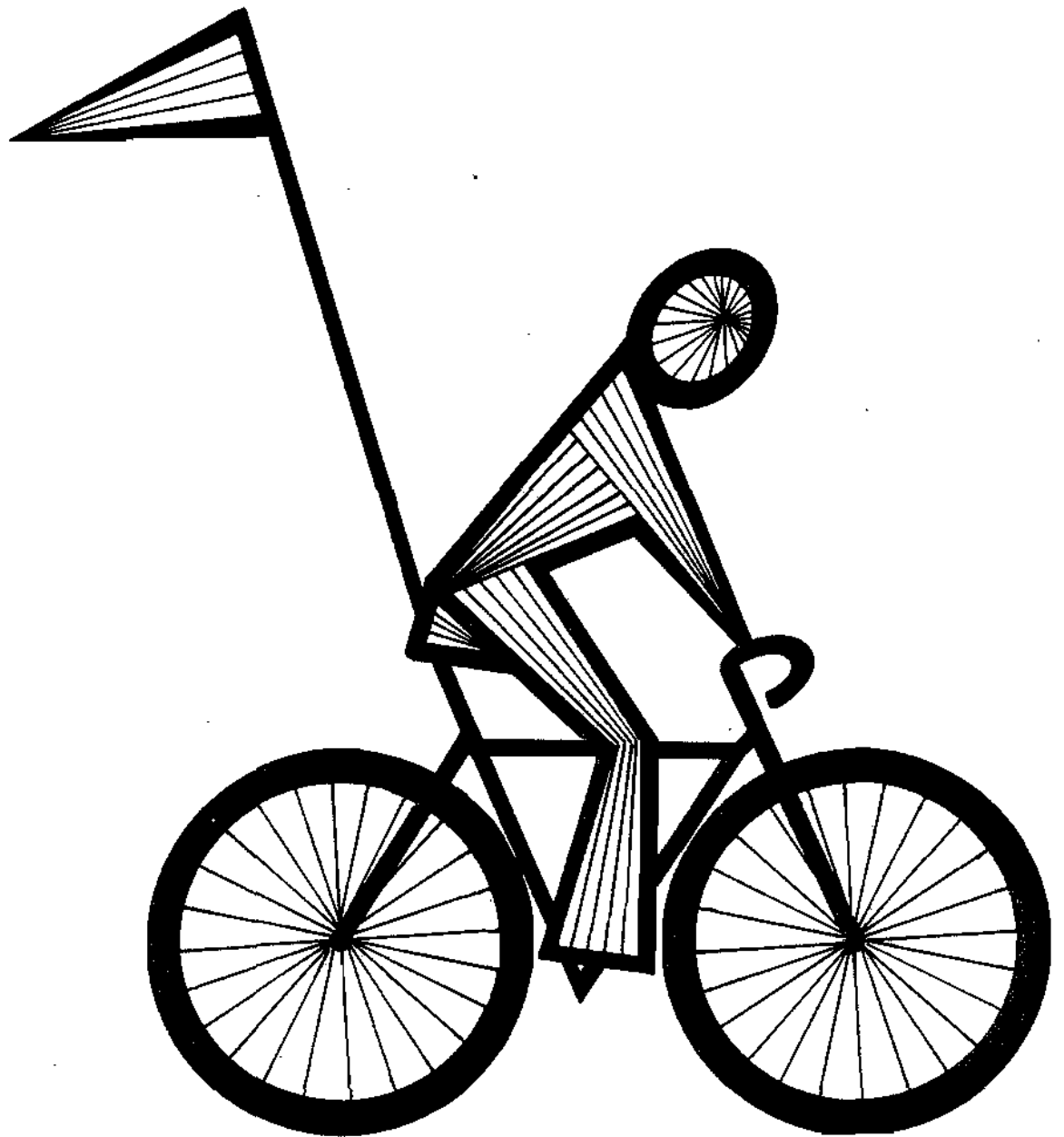


REFERENCES

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- U.S. Environmental Protection Agency. Bicycling and Air Quality Information Document. Washington, D.C., September 1979.



APPENDICES





APPENDIX 1



OHIO LEGISLATIVE SERVICE COMMISSION

HOUSE MEMBERS

Vern Riffe
Chairman

William L. Mallory
C. J. McLin, Jr.
Corwin M. Nixon

Donna Pope
Barney Quilter
Patrick A. Sweeney

David A. Johnston
Director

October 10, 1979

SENATE MEMBERS

Paul E. Gilimor
Vice-Chairman

Stanley J. Aronoff
Theodore M. Gray
M. Morris Jackson

Harry Mesnel
Oliver Ocasek
Marigene Valiquette

Mrs. Emily Rettig
5708 West Fork Road
Cincinnati, Ohio 45239

Dear Mrs. Rettig:

Representative Thomas Pottenger recently asked us to research the legality of allowing bicycles to be operated on sidewalks, and send our findings to you.

Present Ohio law contained in section 4511.07 of the Revised Code permits local authorities to, among other things, regulate the operation of bicycles on streets and highways under the authorities' jurisdiction and to require bicycles to be registered for a registration fee. Section 4511.711 of the Revised Code (copy enclosed) excepts bicycles from the prohibition that a vehicle not be driven on a sidewalk or sidewalk area other than on a permanent or temporary driveway. Thus, under section 4511.711, bicycles can be operated on sidewalks. However, the section also expressly states that its provisions do not prevent local authorities from regulating the operation of bicycles within their respective jurisdictions. Consequently, a municipal corporation, for example, could validly prohibit the operation of bicycles on sidewalks within municipal limits.

We do not have access to the traffic regulations of all municipal corporations in the state, but a check of Columbus and Cleveland ordinances revealed the following variations from state bicycle law.

1. Section 2163.13 of the Columbus Traffic Code makes it unlawful for "any person to operate a bicycle upon the sidewalks of any street."
2. Section 9.2314 of the Cleveland Traffic Code prohibits riding a bicycle on a sidewalk in a business district or on any sidewalk posted with signs prohibiting bicycle riding thereon. The section also requires a bicyclist on a sidewalk to yield the right-of-way to any pedestrian and give an audible signal before attempting to overtake and pass a pedestrian.

It is probable that many municipal corporations now have ordinances controlling bicycle operation that differ from section 4511.711 in ways similar to those

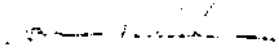
continued ...

Mrs. Emily Rettig
October 10, 1979

Page Two

of Columbus and Cleveland. If it were thought undesirable to allow local authorities to prohibit the operation of bicycles on sidewalks, it probably would be necessary to change state law.

Sincerely,


Anne Renick
Principal Research Associate

osh

Enc: Section 4511.711
cc: The Honorable Thomas Pottenger .

for the handicapped shall be provided and designated by all political subdivisions and by the state and all agencies and instrumentalities thereof at all offices and facilities, where parking is provided, whether owned, rented, or leased, and at all publicly owned parking garages. Such locations shall be reasonably close to exits, entrances, elevators, and ramps.

(F) No person who is not handicapped or operating a motor vehicle to transport a handicapped person shall stop, stand, or park any motor vehicle at special parking locations provided for the handicapped under this section.

(G) When a motor vehicle bearing the special handicapped license plate provided in section 4503.105 [4503.10.5] of the Revised Code is being operated by or for the transport of a handicapped person, the motor vehicle shall be permitted to park for a period of two hours in excess of the legal parking period permitted by local authorities, except where local ordinances or police regulations provide otherwise or where the vehicle is parked in such a manner as to be clearly a traffic hazard.

(H) As used in this section, "handicapped" means having lost the use of one or both legs, one or both arms, or any combination thereof, or being blind or deaf or so severely disabled as to be unable to move about without the aid of crutches or a wheelchair.

*HISTORY: 136 v S 182 (EF 7-23-76); 137 v H 652. EF 3-13-75.

* Inadvertently omitted in H 652.

Cross-References to Related Sections
Penalty, RC § 4511.99(D), (F).

§ 4511.70 Obstruction and interference affecting view and control of driver.

(A) No person shall drive a vehicle or trackless trolley when it is so loaded, or when there are in the front seat such number of persons, as to obstruct the view of the driver to the front or sides of the vehicle or to interfere with the driver's control over the driving mechanism of the vehicle.

(B) No passenger in a vehicle or trackless trolley shall ride in such position as to interfere with the driver's view ahead or to the sides, or to interfere with his control over the driving mechanism of the vehicle.

(C) No person shall open the door of a vehicle on the side available to moving traffic unless and until it is reasonably safe to do so, and can be done without interfering with the movement of other traffic, nor shall any person leave a door open on the side of a vehicle available to moving

traffic for a period of time longer than necessary to load or unload passengers.

*HISTORY: 135 v H 995. EF 1-1-75.

The effective date of H 995 is set by section 3 of the act.

§ 4511.71.1 § 4511.711 [Driving upon sidewalk area.]

No person shall drive any vehicle, other than a bicycle, upon a sidewalk or sidewalk area except upon a permanent or duly authorized temporary driveway.

Nothing in this section shall be construed as prohibiting local authorities from regulating the operation of bicycles within their respective jurisdictions.

HISTORY: 135 v H 995 (EF 1-1-75); 136 v S 56. EF 5-25-76.

Law Review

A Survey of Ohio Bicycle Law. Comment. 2 Ohio NorthLR 324.

§ 4511.71.2 § 4511.712 [Obstructing passage of other vehicles.]

No driver shall enter an intersection or marked crosswalk or drive onto any railroad grade crossing unless there is sufficient space on the other side of the intersection, crosswalk, or grade crossing to accommodate the vehicle, streetcar, or trackless trolley he is operating without obstructing the passage of other vehicles, streetcars, trackless trolleys, pedestrians, or railroad trains, notwithstanding any traffic control signal indication to proceed.

HISTORY: 135 v H 995. EF 1-1-75.

The effective date of H 995 is set by section 3 of the act.

§ 4511.75 Regulations concerning school busses.

(A) The driver of a vehicle, streetcar, or trackless trolley upon meeting or overtaking from either direction any school bus stopped for the purpose of receiving or discharging any school child shall stop at least ten feet from the front or rear of the school bus and shall not proceed until such school bus resumes motion, or until signaled by the school bus driver to proceed.

(B) Every school bus shall be equipped with red visual signals meeting the requirements of section 4511.771 [4511.77.1] of the Revised Code, which shall be actuated by the driver of the bus whenever but only whenever the bus is stopped or stopping for the purpose of receiving



APPENDIX 2
GREEN TOWNSHIP BICYCLE SURVEY

INSTRUCTIONS

1. Please try to complete the survey before school opens on August 28, 1979. Do not count if it's raining!
2. It is recommended that the survey be conducted in pairs. One member of the pair should be a member of the Green Township Bikeway Committee. The second member could be a teenager.
3. In selecting service areas, try to have two different types of areas for each geographic section of the township (north, central, and south).
4. In identifying the service area by type, try to convey the reason bicyclists are there. For example, if school has not opened and children are using the ball field for soccer practice, check "Recreation." The address will tell us where it is.
5. Each location should be counted twice -- once during the daytime (before 4:00 p.m.) and once in the evening (after 6:00 p.m.) or on a Saturday. This will increase the likelihood of including bicyclists of varying ages in the sample count.
6. Count all bicycles at the service area whether or not they have a rider.

Here's Wishing You Lots of Bikes and Sunny Weather!

APPENDIX 3

GREEN TOWNSHIP BIKEWAY COMMITTEE

Initial Corridor Identification

Do the following on a map:

1. Identify reasonable candidates for a bicycle facility.
2. Identify absolute barriers to bicycle travel such as elevated rail embankments, rivers, streams, and freeways.
3. Identify bicycle impediments such as busy streets without traffic signals, steep grades, freeway interchanges.

...then fieldcheck the corridors.



APPENDIX 4

GREEN TOWNSHIP BIKEWAY COMMITTEE FIELD CHECK OF BICYCLE CORRIDORS

The purpose of the field check is to collect information about the specifics of the proposed corridors. This will help the committee to evaluate the various corridors being considered.

Each proposed corridor should be investigated first-hand. Preferably these routes should be inspected on a bicycle. If this is not possible, routes can be checked by walking or by riding in a car. If using a car, work in pairs so one person can drive and one can take notes. You will probably need to travel the corridor more than once.

The following are some of the things you should be looking for.

Potential Use

- Utilitarian or recreational

Basic Width

- Number of travel lanes
- Parking lanes
- Curb and gutter or drainage ditch
- Location of utility poles
(estimate by pacing)
- Location of mailboxes; number.

Continuity

- Logical connections to other parts of the bikeway system

Directness to Destination

Access to Destination

- Can you get there?

Safety

- Problem intersections (explain)
- Location of traffic lights, stop signs, and right-turn on red prohibited.
- Location of sidewalks
- Road grates

Grades

- Level
- Rolling hills
- Steep hills

Barriers and Impediments

- River or stream
- Freeways
- Elevated rail lines
- Freeway interchange
- Busy street
- Steep grade

Attractiveness

- View
- Sound
- Smell

Pavement Surface Quality

- Condition of pavement
- Condition of shoulder (gravel or paved)

Traffic

- In your opinion, is the traffic light, medium or heavy?
- Are there trucks?

APPENDIX 5 BICYCLE GRANT PROGRAM

Section 141(c) of the Surface Transportation Act of 1978 authorized grants to states and local governments for bikeway construction and non-construction projects to enhance the safety and use of bicycles. In January, 1980, \$4,000,000 was appropriated to this program for the fiscal year ending September 30, 1980.

Although the time allowed to prepare the application was very short, the GTBC, with the support of the Trustees, decided to prepare an application for funds. The plan concept was sufficiently developed so that the committee could consider several alternative projects for funding. After some discussion, the GTBC decided to prepare an application for West Fork Road between Audro Street and Race Road. The proposed project was to pave the shoulders on both sides of West Fork Road.

Following a review and field check by the Hamilton County Engineer, it was determined that it was not possible to meet the various deadlines. The scope of the project was larger than anticipated, because adjustments would have to be made to a number of driveways. Based on the Engineer's recommendations, the project was not submitted for funding for Fiscal Year 1980. If future funding becomes available, the application may be submitted at that time. A copy of the proposal and related documentation follows.

APPENDIX 5 (CONTINUED)

GREEN TOWNSHIP BIKEWAY PROPOSAL FOR WEST FORK ROAD

FEBRUARY 1980

INTRODUCTION

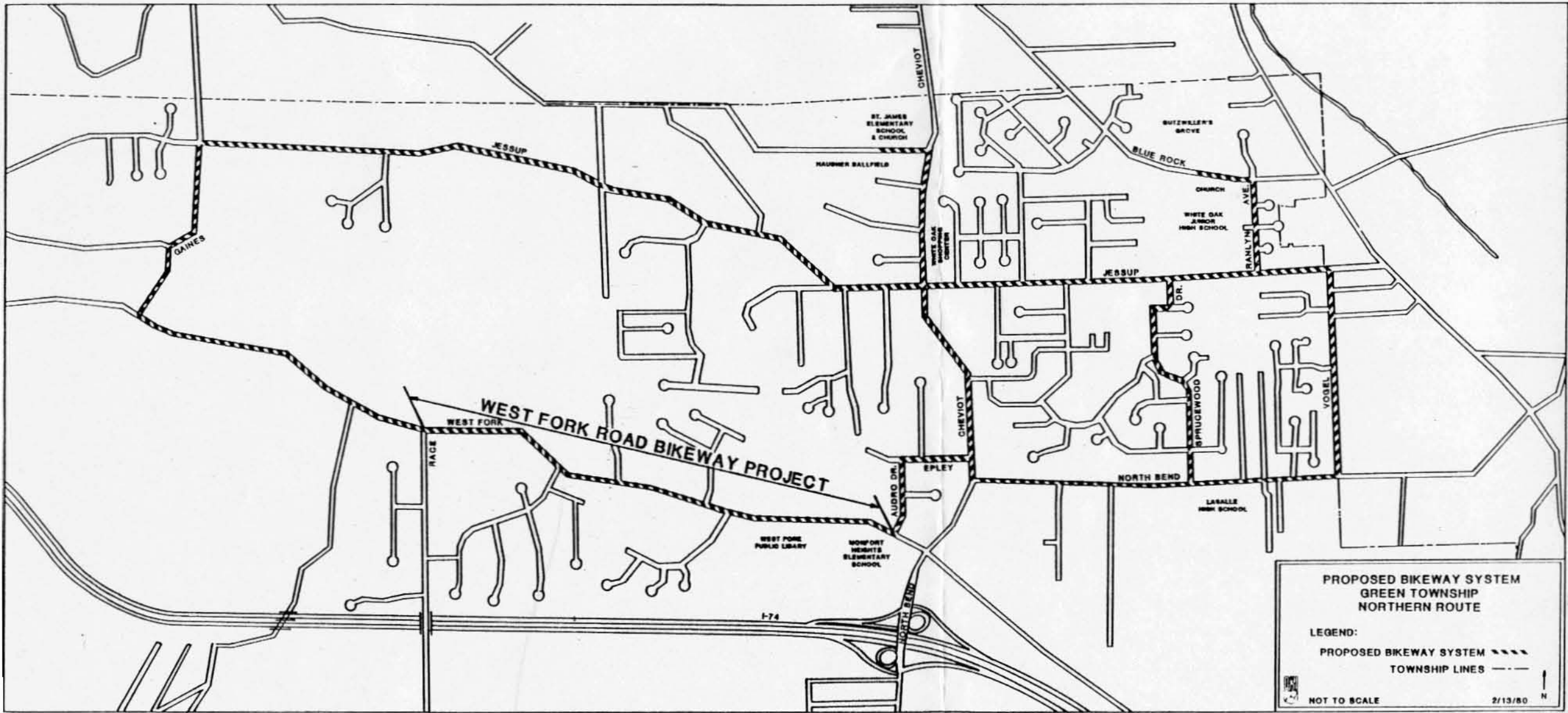
The following proposal is for construction of a bikeway along West Fork Road. The purpose of the bikeway is to enhance the safety and use of bicycles along this route. The proposed project is located in Green Township in Hamilton County. This area is part of the Cincinnati Metropolitan Area. The proposed project is the result of the energy and enthusiasm of an existing citizens' committee - The Green Township Bikeway Committee. The project applicant is Green Township.

PROJECT DESCRIPTION

The proposed project is to pave the shoulders on both sides of West Fork Road from Race Road to Audro Street, just west of North Bend Road. (See map on page 2).

The length of the project is 1.5 miles. The width of the shoulders would be four (4) feet on each side where conditions permit. A cross section of the improved shoulder would have 2" of base and 6" of asphalt. There is no parking along this section of West Fork Road. It is officially a county road.

The proposed West Fork Bikeway project is being coordinated with the regional transportation planning process. It is anticipated that the OKI Fiscal Years 1981-1985 Transportation Improvement Program will contain a line item for bikeway projects under this bicycle grant program. The project will also be added to the OKI Regional Bikeway Policy. The West Fork Road Bikeway is expected to contribute to energy savings through conservation of gasoline. Youth and adults will be able to more safely ride their bicycles to the adjacent subdivisions, the library, the school and shopping areas. Because of the existing narrow road, many local trips are made by automobile which could be made by bicycle.



DISCUSSION OF NEED

West Fork Road is located in a semi-rural residential area. The existing road is a narrow, two-lane road with no curb and gutter. Most of the project area does not have sidewalks, although there are sidewalks on the south side of West Fork from Audro to the library.

Residential growth is occurring as new subdivisions are being built. As a result, the traffic is increasing. Between 1973 and 1976, the number of vehicles between Race Road and Audro Street increased 30% from 3,300 to 4,700 vehicles per day. Traffic counts west of Race Road are approximately one-third less than traffic counts east of Race Road.

Present traffic along West Fork Road is considered moderate traffic according to the Hamilton County Engineer's Department. Under 1,000 vehicles per day is considered light; over 6,000 vehicles per day is considered heavy. West Fork Road is presently serving as an unofficial Class III Bike Route for both recreational and utilitarian uses. Advanced cyclists use West Fork Road as a route from the University of Cincinnati area in Cincinnati to the rural areas of Hamilton County. Cyclists in the Monfort Heights area of Green Township use West Fork Road as a transportation route to various subdivisions, the library, the school and shopping areas.

If the shoulders along West Fork Road were paved, cyclists could pull to the right to allow cars to pass. Presently, cyclists run the risk of driving off the edge of the road if they pull to the right. As a result, cars often queue up behind cyclists. In addition to creating safer riding conditions, the improved bikeway is expected to enhance bicycle use along the route.

The proposed Northern Route of the Green Township Bikeway Plan includes West Fork Road from Gaines Road to Audro Street - a distance of 2.2 miles. The grant application is for that section between Race Road and Audro Street because that is the area of greatest need in terms of existing bicycle and automobile traffic.

New subdivisions are nearing completion adjacent to Race Road. Land is being prepared for development north of West Fork Road between Gaines Road and Race Road. Future traffic to this area is expected to increase but the increase between Race Road and Audro is expected to be greater than between Gaines Road and Race Road. The main access to these residential areas is from I-74, North Bend Road and Cheviot Road to West Fork Road.

COMMUNITY INVOLVEMENT AND EFFORTS TO IMPROVE BICYCLE TRANSPORTATION

Green Township residents initiated contact with OKI regarding bikeways in 1976. Due to a lack of funding for bikeways from local, state and federal sources, no bikeways have been implemented in Green Township.

Because of citizen leadership and a renewed interest in enhancing bicycle safety and access for residents of Green Township, the Township Trustees officially created the Green Township Bikeway Committee. They appointed a chairperson for this committee at their meeting on June 11, 1979. The Trustees also requested technical assistance from OKI to assist the committee in the preparation of a Green Township Bikeway Plan. The first meeting of the Green Township Bikeway Committee was held on July 31, 1979.

A seventeen member citizens' committee researched existing conditions information. A preliminary draft of their work has been prepared and a recommended bikeway system is almost complete. The system as proposed utilizes existing roads wherever possible. The plan recommends safety improvements to enable bicycles and motor vehicles to share the roadways. It is anticipated that the final plan will be completed by the spring of 1980.

ALTERNATIVES

Several other location alternatives were considered and eliminated by the Green Township Bikeway Committee. The committee views West Fork Road as an important bicycle transportation route which serves more people than the other routes.

Two design alternatives were also included: 1) widen the road and 2) construct sidewalks. The first alternative is not feasible because there is no funding to do this. West Fork Road is not on the federal aid system and all future

federal off-systems monies for Hamilton County have been allocated to other projects. Sidewalks remain a possibility but would be second in priority given the nature of the route and its use by older cyclists.

COORDINATION

Successful completion of the proposed project depends upon the continuing coordination between Green Township, Hamilton County and OKI. This coordination is presently formalized through the Green Township Bikeway Committee. In addition to the fourteen (14) citizens, the committee includes a Township Trustee, a representative from the Hamilton County Engineer's Department and an OKI staff person. All of the planning efforts to date have involved coordination with these three agencies. In addition, more informal coordination has been initiated between the committee and the Township Administrator and the Hamilton County Regional Planning Department.

TIME TO COMPLETE PROJECT

The final sale date for this project is October 21, 1980. Construction time is estimated to be sixty (60) days. The time to complete the project may be affected by the cold weather. It is not possible to lay asphalt in the Cincinnati area during December, January and February. Sometimes, it is not possible to lay asphalt during November and March. The earliest this project could be completed is November, 1980; the latest it would be completed is May, 1981.

MAINTENANCE

The Hamilton County Engineer's Department will maintain the bikeway as a part of their normal maintenance program. This includes striping the road following construction.

ESTIMATED PROJECT COSTS

Two estimates are being provided -- one for minimum costs of \$15 per lineal foot and one for maximum costs of \$18 per lineal foot. By comparison the Hamilton County Park District had a golf cart path constructed this year at \$16 per lineal foot. The construction standards for the golf cart path were comparable to this proposal. The costs for asphalt per lineal foot assume a width of 8' (for both sides of the road) and a thickness of 6". The minimum and maximum estimates are shown on page 6.

ESTIMATED PROJECT COSTS

MINIMUM ESTIMATE

Asphalt (\$15 per lineal foot)	\$122,400
Base (Existing)	0
Engineering (10% of materials)	12,240
Relocate 109 mailboxes @ \$50/mailbox	<u>5,450</u>
TOTAL	\$140,090
75% Federal Share	\$105,068
25% Local Share	\$ 35,022

MAXIMUM ESTIMATE

Asphalt (\$18 per lineal foot)	\$146,880
Base (Existing)	0
Engineering (10% of materials)	14,688
Relocate 109 mailboxes @ \$50/mailbox	<u>5,450</u>
TOTAL	\$167,018
75% Federal Share	\$125,264
25% Local Share	\$ 41,754

SCHEDULE OF ACTIVITIES
TO COMPLETE WEST FORK BIKEWAY PLANS FOR SALE

<u>ACTIVITY</u>	<u>1980 DATES</u>	<u>RESPONSIBILITY</u>
1. Prepare design plans.	March-April	
2. Set date for April review.	March	
3. Review plans.	April	
4. Revise plans if necessary.	May	
5. Approval of plans.	June 2	
*6. Plan file date.	June 3	
7. Plans to estimator.	July 14	
8. Signature of plans.	July 29	
9. Plans and estimate complete.	August 5	
*10. PS & E to FHWA. (<u>Note</u> : FHWA review takes minimum of two weeks; funds can be obligated following FHWA review)	August 12	
11. Executed final legislation. (<u>Note</u> : Local share must be available at this time)	August 19	
12. Final date for signed plan and estimates.	August 26	
13. Pamphlet to printer.	September 4	
14. First legal advertising.	September 24	
*15. Sale date.	October 21	

* Key dates.

SCHEDULE OF ACTIVITIES
TO COMPLETE WEST FORK ROAD BIKEWAY PROPOSAL

<u>ACTIVITY</u>	<u>1980 DATES</u>	<u>RESPONSIBILITY</u>
1. Draft of proposal to Green Township Trustees, Green Township Bikeway Committee (GTBC) and Hamilton County Engineer for review and comment.	February 25	OKI
*2. Approval from Green Township Trustees to proceed with application.	March 10	Trustees
3. Presentation of proposal to Hamilton County Commissioners by Hamilton County Engineer and GTBC for approval of concept.	March 12	Hamilton County Engineer and GTBC
4. Make necessary revisions to proposal.	March 13-28	OKI
*5. Proposal submitted to the Ohio Department of Transportation (District 8) for review.	April 7	Trustees
6. Proposals forwarded to ODOT, Bureau of Project Planning, Columbus, Ohio.	April 15	ODOT/District 8
7. Proposals forwarded to the Federal Highway Administration Division Office.	May 1	ODOT
8. Recommended proposals forwarded to the FHWA Region Office for selection.	May 15	FHWA District Office
9. Project selection announced.	June 1	FHWA Region Office
10. Any funds not obligated are subject to being redesignated to other projects.	August 1	
11. All funds must be obligated.	September 30	

* Key dates.