

CHAPTER 5 - IMPLEMENTATION

The majority of bicycling will take place on ordinary roads with no dedicated space for bicyclists. Bicyclists can be expected to ride on almost all roadways, as well as separated shared use paths and even sidewalks, where permitted to meet special conditions.

--- AASHTO guide for the development of bicycle facilities

POLICY / PROJECT IMPLEMENTATION

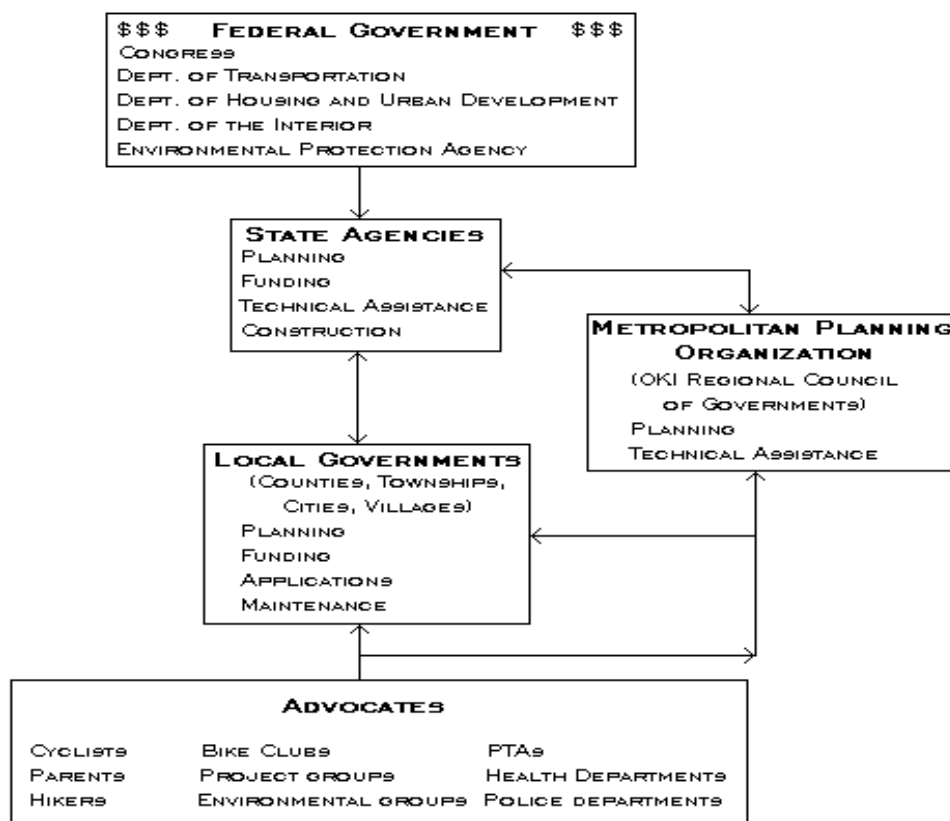
Getting things done requires time, money, motivation and persistence. Both the on-road and trail components of this bicycle plan are a part of the region's surface transportation system and primarily the responsibility of government agencies. The expenditure of public funds involves accountability for their appropriate use and conformance with accepted standards for legal defensibility. One result of this is the evolution of public agencies and procedures to be dealt with to put an idea on the ground.

Bicycle use has gone through several rounds of favor since the 1890s when cyclists instigated paved roads. The current growth in support, represented by the planning requirements in the Transportation Equity Act for the 21st Century (TEA-21), began in the 1970s with popular interest in physical fitness, and, to some extent, bicycle transportation encouraged by hikes in gas prices. This was assisted by the deconstruction of the nation's railroad system which created opportunities to convert unused railroad right-of-ways to trails. Locally, the 45 mile Little Miami Scenic Park was purchased from the Penn Central Railroad in 1979 with the Loveland to Morrow section opening for use as a paved trail in 1984. Such facilities have encouraged bicycle use with the result of greater demand for an expanded trail network and improved conditions on the existing street network. The current federal planning requirements in TEA-21, applicable to state and regional transportation planning agencies, including OKI, address both bicycling and pedestrian needs. These are backed up with flexibility in the use of highway and transit funding, as well as Transportation Enhancement categorical funding, to encourage the implementation of bicycle facility improvements such as recommended in this plan.

Participants in the Surface Transportation System

The relationship of the various governmental entities and private advocates is shown in the following chart. At the bottom, the Advocates include users of the facilities including cyclists, parents and PTAs who want safe cycling facilities for children, and also certain public agencies including health departments concerned with physical conditioning and police departments concerned with cyclist safety. At the top of the chart is the Federal Government which sets policy for transportation planning and facility construction, and allocates the majority of the funding used to implement the planning and construction of the transportation system. The State Agencies are delegated as the agents for conducting the federal planning requirements and building and maintaining the state

BICYCLE FACILITY IMPLEMENTATION



and federal highways. States also generate additional funds for matching the federal share of the costs, and for passing through to local governments to maintain local roads. OKI is represented in the chart as the Metropolitan Planning Organization, to the side and between the State and Local Governments. The MPO is comprised of the local governments within a defined metropolitan area, and provides the means for these local governments to participate in the transportation planning and in the allocation of the federal funding for projects. By following the arrows in the chart, it can be seen that the Local Governments box is its focus. Local governments receive the Advocate input, pass it along as priorities in the transportation planning process, and apply for the project funds to build the facilities. Local Governments are the key to implementation.

USERS

Bicycles are chosen as a mode of travel by a variety of people and for the same trip purposes as other modes. Cyclists may include children too young to operate motor vehicles; persons who have lost their operator's license; persons with an interest in their personal health, environmental concerns or the accomplishment of self-propelled travel; those who can't afford the costs of automobile operation; or those who may have a disability preventing them from operating a motor vehicle. Regardless of motivation or trip purpose, the bicycle is considered a vehicle under Ohio and Kentucky law and entitled to the use of the roads. Bicycles do, however, require some special consideration for incorporation into the flow of traffic.

Given the variety of skills, confidence and preferences among bicyclists, it is necessary to take these differences into consideration when planning bicycle facilities. The Federal Highway Administration has defined three design categories of cyclists to address these differences. These include children; basic, or less confident, adult riders; and experienced riders comfortable riding in traffic. Guidelines have been developed for appropriate road treatments for these three groups which are more completely described in the following section on standards.

Beyond these planning considerations, project implementation also depends upon the needs expressed by cyclists as users of the transportation system. The local governments initially need this input as justification for committing funds to build bicycle facilities and to make the long-term commitment for maintaining them. User input also contributes to defining needs to which the planning criteria are applied.

As stated previously, the Little Miami Scenic Trail has served as a catalyst to encourage bicycling throughout the region and has generated vocal support among users for more such trails and improved cycling conditions within their communities.

OKI has not maintained an ongoing bicycle advisory committee but, instead, created ad hoc committees for plan update assistance and road definition for the Bike Route Guides. Three citizen advocacy organizations exist in the area: the Cincinnati Bicycle / Pedestrian Advisory Committee primarily works with City of Cincinnati issues, including bike-to-work week; and the Ohio Bicycle Federation and Kentucky Bicycle Coalition which are primarily oriented to state level issues of road access, education and legislation. There are also several active bicycle clubs in the region including the 1,000 member Cincinnati Cycle Club. These clubs also do some bike advocacy and promotion in the community, but, more notably, the clubs promote off-road mountain bike facilities. Plan recommendations call for establishing an electronic file for collecting and distributing local and regional bicycle planning information in addition to the OKI website. This will serve the purpose of an ongoing bicycle committee.

PRIVATE SECTOR

Opportunities exist for improving bicycling conditions as land is developed for urban use. Residential subdivisions can be developed using a grid street system rather than the curvilinear cul-de-sac pattern for greater connectivity. Local and collector streets can be built to incorporate sufficient width for motorists and cyclists to share a lane. Trail networks can also be integrated within the street system such as shown here in the Landen development in Warren County. Landen's trail network connects the ends of cul-de-sac streets and provides alternative trail access to neighborhood schools, parks, churches and shopping. It was an integral part of the design and development and is maintained by the neighborhood association.



Commercial and employment activities can be developed on a neighborhood scale to encourage walking and biking for errands. Site planning for shopping and service facilities can be done with thought toward reducing access conflicts between motor vehicles and cyclists as well as pedestrians who may arrive by transit. Secure, covered bicycle parking should be provided.

While the street system is normally the jurisdiction of the public sector, as described in the following section, even trail facilities have been developed with private resources. An example is the Thomas J. Evans Trail in Licking County, Ohio. The Evans Foundation has developed two sections of trail along discontinued rail right-of-way. A 14 mile section connects Newark with Johnstown to the west. A 10 mile section extends from Newark east past Hanover. The Evans Trust paid for trail construction and maintenance.

PUBLIC SECTOR

As mentioned in the beginning of this chapter, the surface transportation system is the responsibility of state and local governments. The delegation of this responsibility is as complex as the types and numbers of state, county, township and municipal governments comprising the region, but is somewhat related to the type of roadway.

Types of Roadways and Governmental Responsibility

An understanding of the basic types of roadways that comprise the regional street network is helpful in determining the proper bicycle facility treatment and the responsible entity for its implementation. The following five categories are used for transportation planning and have a corresponding functional relationship as to their use for either mobility or access to adjacent property.

- Interstate Highways – (I-71, I-74, I-75, I-275, I-471)
Designed exclusively for mobility to move traffic.
Capital improvements and maintenance are the responsibility of the respective state transportation departments: Ohio Department of Transportation (ODOT) and the Kentucky Transportation Cabinet (KYTC).
- Freeway – (SR 562/Norwood Lateral, SR 129/Hamilton Connector)
Designed exclusively for mobility to move traffic.
Capital improvements and maintenance are the responsibility of ODOT (if a federal or state highway outside a municipality) or the city in which it is located. In Kentucky, it may be KYTC if it is a federal or state highway, or the county or city in which it is located.
- Arterial (Primary rural and urban roads) – (Montgomery Road, Breiel Boulevard, Beechmont Avenue, Alexandria Pike)
Designed primarily for mobility and for access to adjacent properties (access management practices are recommended to minimize compromising the mobility functions of arterials).
Capital improvements and maintenance are the responsibility of ODOT (if a federal or state highway outside a municipality) or the city in which it is

located. In Kentucky, it may be KYTC if it is a federal or state highway, or the county or city in which it is located.

- Collector (Secondary rural and urban roads) – (Waycross Avenue, Clough Pike, Dudley Pike, East Bend Road)
Designed primarily for access to adjacent properties and for mobility.
Capital improvements and maintenance in Ohio may be the county, township, city or village in which it is located. In Kentucky, it may be the county or city in which it is located or KYTC if a federal or state highway.
- Local – (subdivision and neighborhood streets and some rural roads)
Designed primarily for access to adjacent properties.
Capital improvements and maintenance in Ohio may be the county, township, city or village in which it is located. In Kentucky, may be the county or city in which it is located.

Arterials, collectors and local streets in urban areas (primary, secondary and local roads in rural areas) are the types of roads most commonly used for bicycling because of their accessibility and generally lower traffic volumes. On the other hand, the collector and local streets are less likely to be reviewed and coordinated through the regional transportation planning process, which focuses on roads of regional, rather than local, importance. This emphasizes the importance of working with local governments in implementing bicycle facilities.

Various plans are prepared by cities, townships and counties (including comprehensive plans, thoroughfare plans and capital improvement budgets). When developed, these plans are generally presented for review and discussion at a public meeting. These plans are excellent sources about proposed local transportation improvements and the meetings are an excellent opportunity for comment on the plan recommendations.

OKI maintains a map of roads eligible for federal funding. Projects funded with federal dollars require some percentage of local matching funds. Under TEA-21, this is usually 80% percent federal and 20 percent local. Projects funded with federal transportation dollars require federal and state approval and, in Ohio, local consent legislation. Such projects are selected and scheduled for implementation through OKI's Transportation Improvement Program. TEA-21 also provides for greater decision making authority for Metropolitan Planning Organizations, like OKI, related to the use of Surface Transportation Program funds. Ohio has further chosen to pass through a portion of its Transportation Enhancement program funds directly to the sixteen MPOs in the state. Thus OKI can now select from applications proposed by local governments in its four Ohio counties for funding Enhancement projects.

Metropolitan Transportation Planning

OKI is designated the Metropolitan Planning Organization (MPO) for the Cincinnati area by the US Department of Transportation and the states of Ohio and Kentucky. As the MPO, OKI is required, under the federal TEA-21 transportation legislation, to develop transportation plans and programs for an intermodal transportation system for the

region. The process for developing these plans and programs shall consider all modes of transportation, including bicycles, and be continuing, cooperative and comprehensive.¹

Two specific products are required: a Long Range Regional Transportation Plan with a minimum twenty year horizon and project list constrained to the expected revenue, and second, the Transportation Improvement Program (TIP), which includes a prioritization committee and process resulting in a list of projects to be implemented for a four year period. Proposed federally funded projects for pedestrian walkways and bicycle transportation facilities, as well as projects funded with federal Transportation Enhancement money, must be included in the TIP. In 2000, the OKI TIP Prioritization Process was updated and includes several project scoring criteria that will favor projects accommodating bicycle and pedestrian travel. These criteria include intermodal integration, multimodal investment, and safety in terms of both accident exposure and project impact.

The Long Range Transportation Plan is updated on a three year cycle and was done concurrently with this bicycle plan update. Because OKI has adopted separate documents for bicycle and pedestrian transportation recommendations, these have been summarized for inclusion in, and referenced by, the 2001 Long Range Transportation Plan Update. The regional plan also contains other sections related to bicycle and pedestrian transportation including transportation measures for attaining air quality standards, tactics for managing travel demand, and accessing bus and rail transit. A requirement for the Long Range Plan is that the cost of the projects recommended for the planning period (2001 to 2030) must be constrained to the expected funding over this time.

Also in the Long Range Transportation Plan are recommendations for more detailed corridor level Major Investment Studies (MIS). It is their purpose to provide continuity between the planning and project development processes. The federal MIS guidelines, adopted in 1993, call for defining problems to be solved within the corridor with the involvement of the local communities, interested individuals, and implementing agencies. It further seeks to identify a broad range of alternatives for solving these problems and comprehensive evaluation to derive the most suitable projects and programs. The resulting locally preferred strategy will likely include large-scale projects.

Major Investment Studies are intended to result in project implementation. Consequently, it is important that the functions of bicycle and pedestrian travel within the corridor are identified in the planning process and appropriate facilities incorporated in the recommended projects. Notable MIS studies underway at this time are those for the Northeast (I-71) and Eastern (SR 32, SR 125 and US 50) Corridors and the I-75 North/South Transportation Initiative. Bicycle / pedestrian issues of typical concern have been access and parking at transit stations, access to transit vehicles and preservation or improvement of safety in using the corridor's street system.

Inherent in the role of the MPO, with its local government composition, is the overriding purpose of coordinating regional needs and resources among the 191 jurisdictions in the region. This requires coordination with the local governments and the ability to provide technical assistance related to planning requirements and federal funding sources, as

well as regional plans that are consistent with the needs of the local communities. OKI, as a planning agency, does not actually construct or maintain roads or bike trails. These responsibilities belong to the various levels of government (state, county, township and municipality) or to state and local park and recreation agencies.

State Transportation Planning

State transportation agencies have an integral role in the partnership for establishing and maintaining a safe and effective multi-modal transportation system. These departments plan and implement the Federal-aid Highway Program at the state level and coordinate projects with local governments and, in the urban areas, with the MPOs. In addition to serving as a conduit for federal highway and transit funds, the states also generate revenue for transportation projects. Like the MPOs, the state planning programs are prescribed by the requirements of TEA-21 and consequently mandated to include consideration of bicycle and pedestrian needs. TEA-21 further requires states to fund a bicycle and pedestrian coordinator to promote and facilitate the increased use of non-motorized modes. State transportation projects are also prioritized and scheduled with a State Transportation Improvement Program.

Ohio Department of Transportation (ODOT)

Ohio's bicycle / pedestrian program was initiated in 1985, well in advance of federal requirements. It is now based in the Office of Local Assistance in ODOT headquarters in Columbus. The statewide long range transportation plan, Access Ohio, was last adopted in 1995 and contains the Ohio bicycle plan.

Of the 12 Ohio district offices, the District 8 ODOT office in Lebanon (Warren County) serves the four OKI Ohio counties. Project administration for the federal and state funded facilities, including Transportation Enhancement projects, is done through the District office.

Kentucky Transportation Cabinet (KYTC)

The Division of Multi-modal Programs, which is responsible for Kentucky state-level bicycle and pedestrian planning, is located at the central offices of the KYTC in Frankfort. A Kentucky Bicycle and Bikeway Commission was formed in 1993 with representatives from around the state to guide the state program. Kentucky's highway capital improvements and maintenance responsibilities include all bridges over the Ohio River. The Statewide Transportation Plan FY 1999 - 2018 was last adopted in December 1999 and the state bicycle plan Kentucky Bicycle and Pedestrian Plan is presently in draft form and under review by the district offices and the recently formed Bicycle and Pedestrian Design Guidance Task Force.

Kentucky also has 12 district offices of which District 6, located in Crescent Park (Kenton County), serves the three OKI Kentucky counties. Transportation Enhancement grant administration is handled out of the central office in Frankfort.

Indiana Department of Transportation (IDOT)

OKI does not have comparable MPO transportation planning responsibilities for Dearborn County, Indiana as for its Ohio and Kentucky counties. These planning functions are carried out by the state central office headquartered in Indianapolis. The bicycle and

pedestrian programs operate within IDOT's Planning and Programming Division. The Indiana statewide long range transportation plan was last updated in 1995 and the state bicycle plan is presently in preparation.

Indiana has seven district offices of which the Seymour office serves Dearborn County. Transportation Enhancement grants are administered at the Indianapolis central office.

Federal Transportation Planning

The US Department of Transportation, including the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), is responsible for maintaining the federal transportation programs authorized by Congress. At the end of the 1980s, federal transportation policies were significantly changed with the completion of the national interstate highway system. These changes were implemented in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) which redirected resources into maintenance of the existing highway system and into a more balanced and integrated intermodal transportation system. The result is greater emphasis for transit and non-motorized modes of travel as alternatives to driving alone, and for conserving existing system capacity. Federal policy now states that "the safe accommodation of pedestrians and bicyclists should be given full consideration during the development of federal-aid highway projects, and during the construction of such projects".²

Federal authority related to bicycle transportation are contained in the following sources:

- Title 23 of the United States Code - Highways
- Part 652 of the Code of Federal Regulations – Pedestrian and Bicycle Accommodations and Projects
- Part 450 of the Code of Federal Regulations – Planning Assistance and Standards
- Public Law 105-550, the Transportation Equity Act for the 21st Century
- The National Bicycling and Walking Study – Transportation Choices for a Changing America, (FHWA-PD-94-023)

These citations contain the requirements for conducting state and metropolitan transportation planning as described in the respective previous sections. They further clarify that bicycle facilities and non-construction projects are eligible expenses under most all highway funding sources as explained in the following section on funding.

In the intervening years, this legislative and financial support, along with the growing public support that initiated the legislative changes, have resulted in the development and implementation of numerous projects improving bicycle mobility. A secondary result has been an improvement in the quality of these facilities and the guidelines for designing and constructing them.

STANDARDS AND GUIDELINES

Design Cyclists

A recent refinement in bicycle facility planning came from the realization that one type of facility does not fit all cyclists as they vary in their experience and capabilities. As a

result, the Federal Highway Administration identified three types of cyclists in its 1994 report *Selecting Roadway Treatments to Accommodate Bicycles*. These classifications have been included in the 1999 update of AASHTO's *Guide for the Development of Bicycle Facilities*. These include the following:

- "Advanced or experienced riders are generally using their bicycles as they would a motor vehicle. They are riding for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with motor vehicle traffic; however, they need sufficient operating space on the traveled way or shoulder to eliminate the need for either themselves or a passing motor vehicle to shift position.
- "Basic or less confident adult riders may also be using their bicycles for transportation purposes, e.g., to get to the store or to visit friends, but prefer to avoid roads with fast and busy motor vehicle traffic unless there is ample roadway width to allow easy overtaking by faster motor vehicles. Thus, basic riders are comfortable riding on neighborhood streets and shared use paths and prefer designated facilities such as bike lanes or wide shoulder lanes on busier streets.
- "Children, riding on their own or with parents, may not travel as fast as their adult counterparts but still require access to key destinations in their community, such as schools, convenience stores and recreational facilities. Residential streets with low motor vehicle speeds, linked with shared use paths and busier streets with well-defined pavement markings between bicycles and motor vehicles, can accommodate children without encouraging them to ride in the travel lane of major arterials."³

These three categories are referred to as Type A (advanced), Type B (basic) and Type C (children). It is important to consider the type of riders likely to be using a particular route and to realize that conditions may not be suitable for accommodating all types of riders. That is, road conditions may be too busy for children, or trail conditions may be too busy or have a variety of other type users to be suitable for advanced riders. Also unmentioned in this typology is the education of the bicyclist. A child can be trained in the rules of the road and be safer in traffic than an advanced cyclist who chooses to disregard the rules of the road.

Types of Bicycle Facilities

The following types of bicycle facilities have not changed in recent years, although the design specifications and guidelines have been refined and need to be adapted to specific conditions. The type of facility used is also guided by the FHWA report *Selecting Roadway Treatments to Accommodate Bicycles* as well as factors such as the type of user, corridor conditions and costs. The following descriptions are derived from the AASHTO *Guide for the Development of Bicycle Facilities* and other sources. Note that the dimensional standards included in the following descriptions are general. As project conditions vary, planners are referred to the FHWA, AASHTO and other documents that

do present these standards as well as the interpretive guidelines necessary to determine specific applicability.

BIKEWAYS

The term “bikeway” is a collective term that may include any of the following techniques for accommodating bicycles in the transportation system. It is useful for referring to a network of bicycle facilities which includes a combination of types of facilities or a proposed facility for which the appropriate treatment has not yet been determined.

SHARED ROADWAY (NO BIKEWAY DESIGNATION)

Most bicycle travel in the United States occurs, and will continue to be, on streets and highways without bikeway designations. For many streets with low speeds and traffic volumes, such as urban and rural local streets, there is no need for specific bikeway treatment. An exception for such streets would be where directional route signing is needed to provide continuity to the rider. Other streets and highways may be unsuitable for cycling and it would be inappropriate to encourage their use with bikeway treatment

SIGNED SHARED ROADWAYS (BIKE ROUTES)

Streets may be signed with bike route signs to indicate to cyclists that there are particular advantages to these routes compared to alternative routes through high demand corridors and to provide continuity between gaps in other facilities such as bike lanes and trails. Such a bike route might identify a series of low-volume local streets to follow as an alternative to cycling on a parallel arterial street. Bike route signing also serves to advise motorists that bicycles are likely to be present. The recommended travel lane width for shared use by motor vehicles and bicycles is 14 feet, however low-volume local streets with lesser width may be signed for bike routes. Estimated costs are \$2,000 / mi. with signs every ¼ mile on both sides, plus two signs for turns or junctions.⁴



WIDE RIGHT TRAVEL LANES

Wide curb lanes are a technique that improves cycling conditions on roads without designated bikeways by providing an outside or curb lane sufficiently wide for motor vehicles to pass bicycles in the same lane without needing to change lanes or crowd the cyclist. For this type of improvement, there is no lane stripe to indicate the space for the respective vehicles. On an existing road, the additional space for a wide right lane may come from restriping the existing lanes or eliminating parking. The recommended travel lane width for shared use by motor vehicles and bicycles is 14 feet.



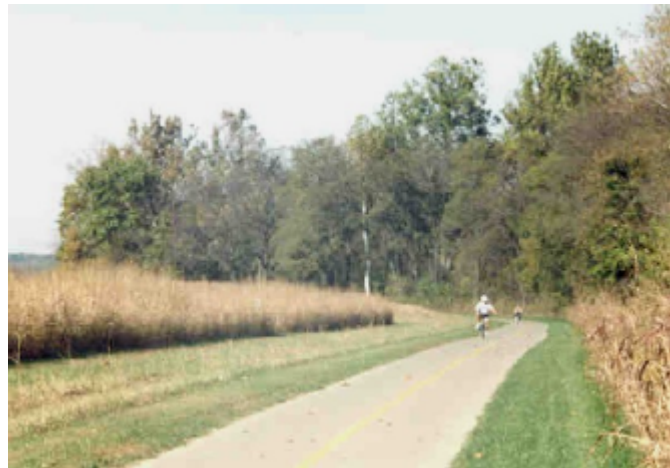
BIKE LANES

Bike lanes are established with appropriate pavement markings and signing along streets particularly suitable for bicycle travel because of demand or destinations served. "Bike lanes are intended to delineate the right-of-way assigned to bicyclists and motorists and to provide for more predictable movements by each. Bike lanes also help to increase the total capacities of highways carrying mixed bicycle and motor vehicle traffic."⁵ On an existing road, the additional space for bike lanes may come from restriping the existing lanes or removing parking. Additional measures needed to ensure the effectiveness of the bike lanes include replacing any parallel storm water inlets that may trap bike wheels and to keep the lanes swept clear of glass, dirt and debris. The minimum recommended width for bike lanes is 4 feet, excluding inlets. Estimated cost on existing pavement is \$13,000 / mi. for a 4 in. stripe and cyclist symbols every 1/8 mi. on both sides of the road. Construction costs for an additional 5 ft. of roadway ranges from \$102,000 / mi. on rural roads to \$189,000 / mi. for urban roads with sufficient right-of-way.⁴



SHARED USE PATH (PREVIOUSLY BIKE PATH OR MULTI-USE TRAIL)

"Generally, shared use paths should be used to serve corridors not served by existing streets and highways or where wide utility or former railroad right-of-way exists, permitting such facilities to be constructed away from the influence of parallel streets."⁶ In addition to unused rail corridors, shared use paths are most often used along water fronts, canals, within college campuses and parks, and to connect cul-de-sacs and circumvent barriers to cyclists. By definition, shared use paths are intended to be used by a variety of users besides cyclists including walkers, runners, roller bladers, and wheelchairs. The design of these facilities should take into account the potential types and volumes of users. The minimum recommended width for shared use paths is 10 feet plus 2 feet clear space on either side. Where a shared use path is provided within a street right-of-way (a sidepath), cyclists should not be prohibited from using the street. Costs for rail-trail conversions are estimated at \$128,000 / mi. for a 12 ft. trail assuming an existing base. New facilities for a 10 ft. trail, 6 in. base and 4 in. bituminous paving is \$290,000 /mi.⁴



Guideline References

There are several sources of information related to bicycle facility development with which local government officials and staff, and bicycle advocates should be aware. These apply not only to the physical facilities, but also to bicycle operation. This, in turn, emphasizes the need for education of motorists and cyclists as to proper roadsharing skills for on-road facilities, and of the variety of users of shared use paths. As mentioned in the previous section, the user of this plan is referred to the source material for dimensional standards and the related guidance for their application. OKI does maintain copies of these resources in the agency library for in-house use.

SELECTING ROADWAY DESIGN TREATMENTS TO ACCOMMODATE BICYCLISTS

This document was published by the Federal Highway Administration in 1994 (FHWA-RD-92-073) and provides a model planning process for identifying a network of routes on which bicycle facilities should be provided to accommodate bicyclists of moderate ability. It includes the descriptions of types of bicyclists and facility design treatments described above. It further brings this information together in a set of tables which suggest the appropriate facility and dimensions taking into account bicyclist type; urban section with and without parking; rural section; average annual daily traffic volume; sight distance; operating speed; and presence of trucks, buses and RVs.

GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES

The 1999 update of the Guide by the American Association of State Highway and Transportation Officials is its third edition. The AASHTO Guide also presents a planning process to determine an appropriate network of facilities for a community. More important, it contains the latest design guidelines for the various types of bicycle facility treatments including widths, grades, clearance, bridges, drainage, pavement structure, intersections and crossings, lighting and pavement markings. While the AASHTO Guide is the most authoritative source for this information, it is likely that the implementation of local projects will encounter situations not specifically covered in the guide. The AASHTO Guide is the recommended reference for bicycle facilities for both the Ohio and Indiana Departments of Transportation. The Kentucky Transportation Cabinet has not adopted official guidelines as yet.

MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES

There are other "standards" documents published by the federal government as guidelines for state and local projects, especially where federal funding is involved. The Federal Highway Administration publishes the MUTCD containing national design, application, and placement standards for traffic control devices such as signs, signals and pavement markings. It is their intent to promote the safe and efficient movement of traffic on the nation's streets through uniform devices throughout the country. State transportation agencies will normally adopt these standards at some point in time as well as updates that take place periodically. Part 9 of the MUTCD pertains to bicycle related control devices.

UNIFORM VEHICLE CODE

Like traffic control devices, a national model ordinance exists for the operation and equipment of vehicles using the public roadway system. The Uniform Vehicle Code is administered by the National Committee for Uniform Traffic Laws and Ordinances. This code is advisory as far as adoption by states. Chapter 11 of the UVC, Rules of the Road, contains the guidelines on which local and state traffic laws are based (Ohio Revised Code section 4511 and Kentucky Revised Statutes chapter 189).

Of significance in the operating statutes regarding bicycle use is the issue of the cyclist's position on the roadway that requires that "Every person operating a bicycle upon a roadway shall ride as near to the right side of the roadway as practicable..."⁷. In defining "practicable", the national Uniform Vehicle Code specifically recommends the following situations:

"Any person operating a bicycle or a moped upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

1. When overtaking and passing another bicycle or vehicle proceeding in the same direction.
2. When preparing for a left turn at an intersection or into a private road or driveway.
3. When reasonably necessary to avoid conditions including, but not limited to, fixed or moving objects, parked or moving vehicles, bicycles, pedestrians, animals, surface hazards, or substandard width lanes that make it unsafe to continue along the right-hand curb or edge. For purposes of this section, a "substandard width lane" is a lane that is too narrow for a bicycle and a vehicle to travel safely side by side within the lane".⁸

At issue is the need to specify under what conditions a cyclist, as the operator of a vehicle, can "take a lane", that is, occupy the center of the lane so that overtaking traffic must change lanes or wait for a break in oncoming traffic to pass. It is important that state vehicle operating statutes incorporate provisions that make it clear that a cyclist can take the lane when passing; turning left; when it is too narrow to share; when hazards (glass, litter, grates) are present along the edge of the road; and that motorists are educated that cyclists taking a lane, under these conditions, is a legal operation.

EFFECTIVE CYCLING (AND BICYCLE TRANSPORTATION)

The importance of education of both cyclists and motorists in roadsharing skills has been carried forward in this report from the previous plan. State driver education courses exist for training motor vehicle operators, and driver's manuals include sections for sharing the road with bicyclists. The most respected education program for cyclists is the Effective Cycling program developed in 1975 by John Forester, in a book of the same name. The book includes chapters on bicycle maintenance, cycling technique, and various types of riding. The principles of vehicular cycling on the roads with traffic are presented in the chapter on "Cycling Environment". The Effective Cycling premise is that "Cyclists fare best when they act and are treated as drivers of vehicles."⁹ This means that cyclists are safest when they take their place in the traffic stream and operate

according to the vehicular rules of the road. (Bicycles are defined as vehicles under the law.) The Effective Cycling program has been targeted primarily toward adults through bike clubs and adult education courses. It is also adaptable for children old enough to physically manage their bicycle and to understand the rules of the road (10 years and older).

Forester has also published a more technical book, *Bicycle Transportation – A Handbook for Cycling Transportation Engineers*¹⁰ that addresses the engineering assumptions of providing for bicyclists in traffic, along with traffic law, cyclist proficiency, cycling accidents, and predicting cycling traffic volumes.

FUNDING

Previous sections of this plan have mentioned the historic growth in cycling over the past thirty years and the significance of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and its 1998 successor, the Transportation Equity Act for the 21st Century of (TEA-21). As a result of this increased federal support and funding for non-motorized travel, new and traditional non-federal funding sources have likewise evolved. These sources are necessary for doing the preparatory planning work for facility construction, providing required matching funds for the federal money, and, for smaller projects, as alternative funds to federal grants for more expeditious project implementation.

The following sections catalog various sources of funds available for developing bicycle facilities and programs. Attention to the funding of facilities and programs is one of the new aspects to this Regional Bicycle Plan update and is represented by the added goal to “Secure adequate funding for bicycle improvements in the region” and the related objective to “Identify available local, state and federal sources of funding for bicycle facilities and programs”.

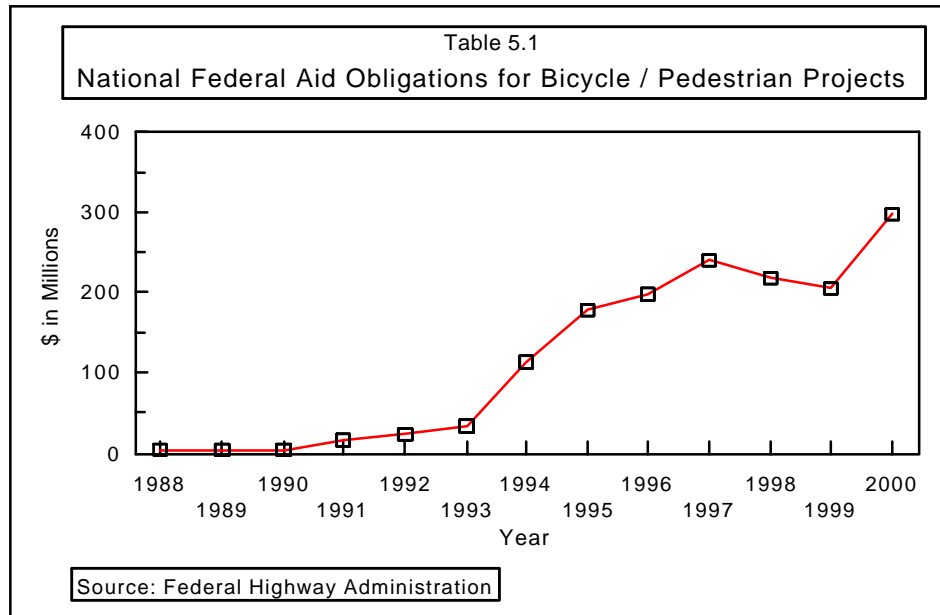
Two points from the beginning of this chapter deserve repeating: first, that most projects and programs are initiated, implemented and maintained through sponsorship of local governments. OKI, as the federally designated Metropolitan Planning Organization, provides a regional framework for maintenance and improvement of the multi-modal transportation system and coordinates the allocation of federal funds among competing local projects.

Second, for many of these programs, proposed bicycle and pedestrian projects are competing for funding with other recommended highway and transit projects. Furthermore, the number of projects that can be funded is constrained to the amount of available funds. For this reason, it is more efficient to incorporate on-street improvements into street maintenance projects and to provide more than the minimum matching share of local funding.

Federal Sources

The role of the US Department of Transportation in implementing national transportation policy through guidelines and funding was presented previously in this chapter. As a

result of new congressional priorities implemented in ISTEA, federal aid for bicycle and pedestrian projects has increased dramatically from the \$4 million annual allocations during the 1980s as shown in Table 5.1. The lag in growth from 1991 to 1994 reflects the time needed to bring to implementation the projects begun with the approval of ISTEA in 1991. The drop in 1998 coincides with the expiration of ISTEA in 1997 and its renewal as TEA-21 in 1998.



TEA-21 is currently half way through its six year authorization and will expire in 2003 at which time it must be renewed. It can be hoped that the current guidelines remain unchanged and that funding will remain the same or increase.

In regard to the federal funds allocated through TEA-21, it is important to understand that they are distributed by formula to state departments of transportation with considerable spending flexibility within the legislative guidelines. Thus local project applications do not go to the federal government, rather they are submitted to the state transportation departments and to the regional Metropolitan Planning Organizations such as OKI. Table 5.2, TEA-21 Bicycle/Pedestrian Funding Opportunities, provides a matrix of TEA-21 programs and the appropriate projects and programs that can be funded through each. Each program is briefly described as follows¹¹:

National Highway System (NHS) – Defined in ISTEA, the NHS includes the Interstate highway system plus other major national and state highways in urban and rural areas that serve major population centers, major travel destinations, international border crossings and intermodal transportation facilities (such as airports). Bicycle improvements may be incorporated into regular maintenance and construction including within Interstate rights-of-way. Match rate: 80 percent federal, 20 percent state or local.

Surface Transportation Program (STP) – Flexible funding is allocated to states for use on any federal-aid highway, any bridges on public roads and transit facilities. Eligible bike and pedestrian facilities include on-road facilities, off-road trails for transportation

purposes, pedestrian sidewalks and crosswalks, and bike parking facilities. STP money can also be used for bicycle and pedestrian facilities on local streets not part of the federal aid system. Match rate: 80% percent federal, 20 percent state or local. Note: funding for the Safety Set-aside and Transportation Enhancement programs, described below, comes from this STP program at the rates of 10% percent of a state's apportionment for each.

Safety Set-aside – This program is also part of the STP and is further comprised of two programs, the Hazard Elimination Program (HEP) and the Railway-Highway Crossing Program (RHC). The HEP involves a state inventory and program to eliminate hazardous conditions, including those to bicyclists and pedestrians that may be deterrents to using these modes. Railroad crossing improvements must also take cyclist safety into consideration which is particularly important for angled crossings. Match rate: 90 percent federal, 10 percent state or local.

Transportation Enhancements Set-aside (TE) – This program is part of the STP program and funded with 10 percent of each state's STP allocation. It is intended for activities that enhance the transportation system in ways not traditionally included in design or construction in the past. TEA-21 lists twelve eligible Enhancement activities:

- Pedestrian and bicycle facilities
- Pedestrian and bicycle safety and education activities
- Acquisition of scenic and historic easements and sites
- Scenic or historic highway programs including tourist and welcome centers
- Landscaping and scenic beautification
- Historic preservation
- Rehabilitation and operation of historic transportation structures or facilities
- Conversion of abandoned railway corridors to trails
- Control and removal of outdoor advertising
- Archaeological planning and research
- Environmental mitigation of runoff pollution
- Establishment of transportation museums

Transportation Enhancement projects must show a direct relationship to the surface transportation system. Eligible bicycle projects include construction of wide travel lanes, bike lanes, bike route marking, storm grate replacement, rail-trails, parking facilities, bike route maps and bike safety education. As most bike facilities are eligible for, and should be funded with, NHS and regular STP project funds, enhancement funds should be used for retrofitting poorly designed pre-ISTEA projects and projects clearly outside of traditional highway design. As TE funds are limited to construction, initial preparations including planning, environmental analysis and preliminary engineering must be completed in advance at local expense. Land acquisition is discouraged as an eligible activity in Ohio, but is accepted in Kentucky and Indiana applications. Match rate: 80 percent federal, 20 percent state or local. TE funds awarded in OKI's Ohio and Kentucky counties are documented in Appendix 3.

Table 5.2 TEA-21 Bicycle / Pedestrian Funding Opportunities

	N H S	S T P	H E P	R H C	T E A	C M A Q	R T P	F T A	T T E	B R I	4 0 2	P L A	J O B S	B Y W
Bike & pedestrian plan		K				K						K		
Bicycle lanes on roadway	K	K	K	K	K	K		K	K	K				K
Paved shoulders	K	K	K	K	K	K				K				K
Signed bike route	K	K			K	K								K
Shared use path / trail	K	K			K	K	K			K				K
Single-track hike / bike trail							K							
Spot improvement program		K	K		K	K								
Maps		K				K					K			
Bike racks on buses		K			K	K		K	K					
Bicycle parking facilities		K			K	K		K	K					K
Trail / highway intersection	K	K	K		K	K	K							K
Bicycle storage / service center		K			K	K		K	K				K	
Sidewalks, new or retrofit	K	K	K	K	K	K		K	K	K				K
Crosswalks, new or retrofit	K	K	K	K	K	K		K	K					K
Signal improvements	K	K	K	K	K	K								
Curb cuts and ramps	K	K	K	K	K	K								
Traffic calming		K	K	K	K	K								
Coordinator position		K				K								
Safety / education position		K				K					K			

Police patrol		K				K					K		
Helmet promotion											K		
Safety brochure / book						K					K		
Safety training						K					K		
Source: FHWA, Transmittal of Guidance on Bicycle and Pedestrian Provisions of the Federal Aid Program, Feb. 24, 1999 (see key for federal programs in text)													

Congestion Mitigation and Air Quality (CMAQ) – This program is to assist areas designated as non-attainment or maintenance under the Clean Air Act (including Cincinnati) to achieve and maintain a healthy level of air quality using transportation projects and programs. Bicycle projects include mapping and signing bikeway networks, facility construction, bike parking, bike racks on buses, bike safety and promotion programs including working with employers. Proposals must quantify their contribution to improving the air quality, including potential for reducing overall vehicle miles of travel. Match rate: 80 percent federal, 20 percent state or local. Local partnerships with private and non-profit organizations are permitted.

Recreational Trails Program (RTP) – The RTP funds are limited to off-road trails for recreational purposes rather than transportation and may not be used for facilities along roads. Thirty percent of the funds must go for trails for motorized users and 30 percent for trails for non-motorized users. The remaining 40 percent is flexible. Eligible activities include development, maintenance and restoration of trails, acquisition of land or easements for trails, and education programs for safe use and environmental protection. This program is administered by the Ohio Department of Natural Resources and the Kentucky Department for Local Government. Match rate: 80 percent federal, 20 percent state or local. Grants may also be made to private organizations.

Urbanized Area Transit Formula Grants (FTA) – This program provides capital and operating funds for transit operators in metropolitan areas. Eligible projects include bike lanes and parking facilities related to transit centers, and bike racks for buses (Metro, in Cincinnati is using CMAQ funds to equip its fleet with bike racks). Match rate: 80 percent federal, 20 percent state or local although bicycle projects may be funded at 90 percent.

Transit Enhancements (TTE) – The Transit Enhancement program was added under TEA-21 and is funded with 1 percent of a transit agency’s Formula Grant. Its purpose is similar to the STP Transportation Enhancement program in that projects should be non-traditional from past transit practices and enhance the appeal and utilization of transit services. Bicycle projects include bicycle access to transit centers and vehicles, including racks on buses and bike storage facilities.

Bridge Program (BRI) – The Highway Bridge Replacement and Rehabilitation Program assists states to replace or rehabilitate bridges on any public road over waterways, major highways and railroads. Such barriers are significant to pedestrian and bicycle trips and can result in trips not being made or being made, instead, by car. Where bicyclists are permitted to operate on the roads at each end of a bridge, federal code requires that bridge improvements be designed to safely accommodate bicyclists if feasible for a reasonable portion of the total cost. Match rate: 80 percent federal, 20 percent state or local.

Section 402 State and Community Highway Safety Grant Program (402) – These funds are administered by the National Highway Traffic Safety Administration and are allocated to states by a formula based on population and road mileage, and the submittal of a State Performance Plan. The program supports activities that reduce deaths, injuries and property damage resulting from traffic crashes. State-funded bicycle projects include bicycle education and enforcement programs, bike safety and “Share the Road” brochures, safety events, helmet promotions, and training courses for traffic engineers. Match rate: 80 percent federal share, 20 percent state or local.

Statewide and Metropolitan Transportation Planning Funds (PLA) – A portion of a state’s allocation of Interstate Maintenance, NHS, STP, CMAQ and Bridge funds are set aside for state and metropolitan area transportation planning (2 percent and 1 percent respectively). These funds are used for the required Long Range Transportation Plans (LRP) and state and regional Transportation Improvement Plans (TIP). The TEA-21 planning guidelines require the inclusion of bicycle and pedestrian transportation elements in these plans. The preparation of this report was financed, in part, with metropolitan planning funds. Match rate: 80 percent federal share, 20 percent state or local.

Access to Jobs Program (JOBS) – This is a competitive grant program for local governments and non-profit organizations for connecting low-income persons and welfare recipients to employment and support services. Such projects may include activities that encourage bicycling and transit. In the Cincinnati area, this program is administered by OKI. Match rate: 50 percent federal, 50 percent local or private.

National Scenic Byways (All-American Roads) Program (BYW) – This program recognizes and designates roads that have outstanding scenic, historic, cultural, natural, recreational or archaeological qualities. It was established under ISTEA, and is administered by FHWA. Such roads are likely to be attractive for bicycle travel and are eligible, through this program, for bicycle improvements such as wide travel lanes, bike lanes or paved shoulders, provided that they do not adversely affect the scenic qualities. Match rate: 80 percent federal share, 20 percent state or local. Within the OKI region, the following National Scenic Byways have been designated: the Ohio River Scenic Route on US 50 and 52 in Dearborn, Hamilton and Clermont Counties; the Big Bone Lick Scenic Byway in Boone County; and the Riverboat Row Scenic Byway in Newport (Campbell County). In addition, the Accommodation Line Ohio Scenic Byway has been designated by the State of Ohio between Waynesville, in Warren County, and Spring Valley in Greene County and generally follows US 42.

Over the duration of the ISTEA and TEA-21 programs, FHWA has made provisions to streamline the processing and implementation of bicycle and pedestrian projects. Prior to these programs, such projects were subject to the same processing as major highway projects. As the bicycle and pedestrian projects inherently comply with the program goals and objectives and, frequently, involve minor pavement widening or re-striping within existing right-of-way, it is logical to relax some of the project requirements. Such streamlining steps have been implemented in regard to environmental impact assessments, matching rates (subject to overall state compliance), in-kind contributions toward local match, combined project funding approval, and exemption from air-quality conformity requirements.

Land and Water Conservation Fund – The US Department of the Interior provides funds for recreation facilities under the 1964 Land and Water Conservation Fund Act. These funds are available to states and local political jurisdictions and are administered by the Ohio Department of Natural Resources and the Kentucky Natural Resources and Environmental Protection Cabinet. Biking and hiking trails are eligible projects for these funds. Funding is provided on a reimbursable basis. Match rate: 50 percent federal share, 50 percent other federal, state or local funds (a minimum of 20 percent local funding is required).

Community Development Block Grants – The US Department of Housing and Urban Development provides grants to local governments for neighborhood revitalization, economic development and community facilities. Such projects need to show a benefit for low and moderate-income communities. These funds are administered by the Ohio Department of Development and the Kentucky Development Cabinet. As a local example, the Village of New Richmond has received a Block Grant to develop trailhead facilities for the Ohio River Trail in their downtown area.

State Sources

The state departments of transportation, ODOT, INDOT and KYTC, are the lead agencies for receiving and distributing funds for which bicycle facilities are eligible. Most federal sources listed above and destined to local governments are distributed through the transportation departments. Likewise, revenues generated through state programs, such as gasoline taxes and motor vehicle registrations, are directed to the state transportation departments and either spent directly on state programmed improvements, or are passed on to local governments as allocations or in response to project applications. For FY 1999, in Ohio, federal and state highway funds totaled \$3.2 billion of which \$1.3 billion went to local governments, \$1.6 billion was used by ODOT and the remainder, \$0.3 billion, was distributed to other state agencies.¹²

Federal transportation programs, administered by the states, have been previously described and will not be repeated here. However, it does bear repeating that most transportation projects are initiated locally, especially those for bicycles and pedestrians. Further, TEA-21 legislation calls for the consideration of bicycle and pedestrian needs in all highway project development. Therefore, road improvements for accommodating bicycles need to be integrated into the project's design as well as the funding. Road

projects funded with National Highway System, Surface Transportation Program and Urban Area Transit funds, need to include the bicycle component costs from these respective sources. Bicycle projects not associated with a road improvement project are more appropriately funded with the Transportation Enhancement, Congestion Mitigation / Air Quality, or Recreational Trails programs.

Area Development Fund – Kentucky funds a local capital improvement grant program administered by its thirteen Area Development Districts. The Area Development Fund allocates funding for economic development to each county on an annual basis considering county population, employment and per capita income. Among the eligible capital improvement projects are parks and recreational trail facilities. Roads and other transportation facilities would not be eligible. Applications are initiated by cities for a minimum grant of \$2,500 and are approved by the respective county. No matching local funds are required. The Northern Kentucky Area Development District serves Boone, Campbell and Kenton Counties in the OKI region.

Nature Works – Local jurisdictions in the state of Ohio are eligible for recreational facility funds through the Ohio Department of Natural Resources. These funds come from the Ohio Parks and Natural Resources Fund bond issue passed in 1993. Bicycle trails and land acquisition are eligible expenditures and funds are provided on a reimbursable basis. Match rate: 75 percent state share, 25 percent other federal, state or local funds (a minimum of 20 percent local funding is required).

Aid to Local Governments Improvement Program (Issue 2) – Local governments in Ohio are eligible for the Aid to Local Government Improvements program administered by the Ohio Public Works Commission. Funding is derived from the sale of bonds, authorized in 1988 as Bond Issue 2, by the State and provided as loans and grants. Eligible projects include roads and bridges (which can include bicycle facilities), water supply, waste water disposal and solid waste facilities. Priority is given to repair and rehabilitation of existing facilities over new facilities and expanded capacity. Funding programs include the State Capital Improvements Program (SCIP), the Local Transportation Improvements Program (LTIP), and the Small Governments Program. Local governments desiring funds must prepare a five-year capital improvements program. Ohio is divided into 19 districts including District 2, comprised of Hamilton County, and District 10, comprised of Butler, Clermont, Clinton and Warren Counties. Local applications are screened by a District Public Works Integrating Committee which receives a District allocation of funds based, in part, on population.

Conservation and Revitalization Fund (Clean Ohio Fund) – In 2000, Ohio Bond Issue 1 was approved by the voters and will provide \$400 million of state bond funds over a four year period for the purpose of urban brownfields redevelopment and farmland and green-space preservation. Of the \$400 million, \$100 million will be allocated for green-space preservation including river corridors, forests and wetlands. An additional \$25 million will be available specifically for recreational trail development. These programs will be administered by the Ohio Department of Natural Resources. At this time, the administering regulations have not been developed for approval by the General Assembly.

Ohio and Kentucky both maintain funds for voluntary contributions to preserve natural habitat. The Kentucky Heritage Land Conservation Fund and the Ohio Nature Preserves, Scenic Rivers and Endangered Species Protection Fund are supported through contributions, donations from income tax refunds and sales of special license plates. Lands thus acquired for public use may be suitable for trail development.

Local Sources

The primary sources for local general operating funds are sales, occupational and property taxes. While local governments have the flexibility to use these revenues for bicycle improvements, they must compete with the full range of necessary public services including public safety and administration. Local general fund revenues are partially allocated through capital improvements budgets for recreational programs and facilities which may include bike facilities directly or as matching funds for federal grants.

Municipalities and townships may also pass special purpose property tax levies to fund a variety of needs including roadway improvements, and land acquisition for parks and green space. The enabling legislation for Ohio's townships to pass such levies was recently initiated by Anderson Township which has used this authority for a levy funding road and trail improvements.

Local governments, including counties, cities and townships, have a variety of funding sources for transportation facilities along with varying responsibilities for portions of the roadway system. The largest sources of such funds are gasoline sales taxes and motor vehicle licensing fees described under the state funding sources. In Ohio, these funds may only be used for road and bridge construction and maintenance and not for specific bicycle or pedestrian improvements, although construction of shoulders along rural highways serve both motor vehicle and bicycling needs. These funds are paid locally, but collected by the states and returned to local governments as rural, county and municipal aid road funds. In Ohio, These funds serve as the operating funds for the county engineering departments.

Park districts in Butler, Clermont and Hamilton Counties operate independently from the county governments with separate operating levies. While these districts have a primary responsibility for preserving green space, they also develop and operate recreational facilities including shared use trails. Hamilton County Park District has loop trails in Miami Whitewater Forest, Winton Woods and Sharon Woods. Butler Metroparks is a principal participant in developing the Great Miami River Trail. Both the Clermont and Hamilton County Districts are partners on the Ohio River Trail project. These park districts are also eligible applicants for federal funding programs.

Private Sources

NON-PROFIT ORGANIZATIONS

Many shared use paths are being built with encouragement and funding from non-profit tax-exempt (501(C)(3)) organizations created for these projects. The Rails-to-Trails Conservancy is a national organization promoting the development of trails along both

unused and active railroad corridors. Rails-to-Trails has state chapters in both Ohio and Kentucky. In Ohio, the Ohio to Erie Trail Fund is creating an off-road trail from Cincinnati to Cleveland by building links connecting other existing facilities. The South Western Ohio Trails Association is a local group, but does not sponsor a specific trail at this time. Such groups serve to raise public awareness and support for a project, provide volunteer labor for clearing and construction (which may possibly qualify as local match for grants), and as a repository for tax-free individual and corporate donations for their projects.

FOUNDATIONS

Thousands of foundations exist to provide funding for as many specific purposes. Foundation money is generally constrained by the guidelines of the foundation, but may be used to fund the operation of a non-profit organization or the development of a trail. Such funds may be used instead of government grant money, or as a portion of local matching funds. The Conservation Fund supports trail development through its American Greenways Awards program funded by the Kodak Corporation. Grants of up to \$2,500 are available. An example in Ohio is the Thomas J. Evans Foundation which was created to develop and maintain the 24 mile Evans Trail in Licking County, a rail-trail conversion. Locally, the Cinergy Foundation makes financial and volunteer support available for education, economic development, health, arts and cultural activities. Information on foundations is available from the National Foundation Center (www.fndcenter.org) with a database on 53,000 grant makers. The Public Library of Cincinnati and Hamilton County is affiliated with the Foundation Center and offers access to foundation information and general technical assistance.

FUND-RAISING EVENTS

Organizations often undertake their own fund-raising events to cover operating expenses, preliminary planning work not eligible for grants, or for actual trail construction and maintenance activity. Examples of fund drives include purchases of land acreage needed for a park and trail in Ashtabula, OH; a "yard sale" of symbolic yards of trail in Jackson County, OR; and trail improvements paid for by an adjacent property owners association in Colorado Springs.¹³

OTHER RESOURCES

Businesses selling merchandise such as bicycles, camping equipment and outdoor apparel often will provide funds for trail development as a good will gesture and to attract new users and potential customers. The Bikes Belong Coalition, Ltd. is such an organization sponsored by the American Bicycle Industry. In addition to assisting public bicycle advocacy, Bikes Belong also operates its own grants program providing grants of up to \$10,000 to local non-profit organizations for development of trail facilities. These funds are often used towards matching Transportation Enhancement funds, as Bikes Belong is an active supporter of the TEA-21 legislation. Another company that financially supports local trail and conservation projects with seed grants of \$200 to \$2,000 is Recreational Equipment, Inc. (REI). PowerBar also provides grants of \$2,000 to \$5,000 to protect and restore recreational lands through its Direct Impact on Rivers and Trails (D.I.R.T.) Program.

Trail construction and maintenance is often accomplished through the volunteer efforts of users clubs, such as the Queen City Wheels and Cincinnati Off Road Alliance bicycle clubs, which build and maintain mountain bike trails in public parks. Local Boy Scouts of America troops have undertaken trail construction and maintenance as community service activities. Local service clubs, such as the Lions and Rotary may provide financial or volunteer services for such community projects. In Connecticut, the National Guard has been used to assist in trail construction as a public works project. The Corporation for National Service operates several service organizations nationwide including AmeriCorps, a domestic Peace Corps, and the National Senior Service Corps. Full time paid workers can be assigned to work with state commissions, non-profits, and civic organizations for up to a year.

¹ Transportation Equity Act for the 21st Century (TEA-21), June 1998, Sections 1203 and 1204

² Chapter 23, Code of Federal Regulations, Section 652.5

³ American Association of State Highway and Transportation Officials, Guide for the Development of Bicycle Facilities, 1999, page 6.

⁴ Facility costs based on estimates from T.Y. Lin International BASCOR, Inc., and the Florida Dept. of Transportation. Cost estimates are as of 1999.

⁵ Ibid., page 8.

⁶ Ibid., page 8.

⁷ Ohio Revised Code 4511.55; corresponding Kentucky Revised Statute is 189.300

⁸ National Committee for Uniform Traffic Laws and Ordinances, Uniform Vehicle Code, Section 11-1205

⁹ Forester, John; Effective Cycling, The MIT Press, Cambridge, MA, 1992

¹⁰ Forester, John; Bicycle Transportation – A Handbook for Cycling Transportation Engineers, 2nd Edition; The MIT Press, Cambridge, MA; 1994

¹¹ Federal Highway Administration; Kenneth R. Wykle, Federal Highway Administrator; Transmittal of Guidance on Bicycle and Pedestrian Provisions of the Federal-aid Program; Feb. 24, 1999

¹² Ohio Department of Transportation, Program Resource Guide, Feb. 2000

¹³ Pedestrian and Bicycle Information Center (bicyclinginfo.org), Policy and Planning, Funding Revenue Sources.

"You should know that bicycling improvement construction costs run about \$70,000 a mile; for 12-foot shared paths about \$128,000 a mile; 5-foot bicycle lanes about \$189,000 a mile; 5-foot paved shoulders on rural roads about \$102,000 a mile.

You should also know that one mile of urban freeway costs on average \$46 million a mile. Don't let anyone tell you we can't afford bicycle lanes! You know better."

--Congressman James Oberstar, (D-MN),
in a speech describing the \$4 billion dollars
made available in TEA-21 for bicycle facilities.