

---

## Table of Contents

<b>SUMMARY.....</b>	<b>1</b>
<b>SECTION ONE—INTRODUCTION.....</b>	<b>3</b>
<b>Introduction.....</b>	<b>4</b>
<b>Prevailing Conditions.....</b>	<b>5</b>
<b>Bicycle Planning: Historical Context.....</b>	<b>7</b>
<b>Concurrent Bicycle Planning Efforts.....</b>	<b>8</b>
<b>What Type of Bicyclists Will Use the Bicycle System? .....</b>	<b>10</b>
<b>SECTION TWO—IMPROVING BICYCLING CONDITIONS IN PITTSBURGH.....</b>	<b>12</b>
<b>A Vision for Bicycling in Pittsburgh.....</b>	<b>13</b>
<b>Statewide Bicycle and Pedestrian Master Plan Targets and Goals.....</b>	<b>14</b>
<b>Bicycle Program Objectives.....</b>	<b>17</b>
<b>Bicycle Program Objectives, Action Items, and Performance Measures.....</b>	<b>18</b>
<b>SECTION THREE—CITY OF PITTSBURGH PROPOSED BICYCLE ROUTES.....</b>	<b>29</b>
<b>Types of Bicycle Facilities.....</b>	<b>30</b>
<b>Existing Facilities.....</b>	<b>31</b>
<b>Bicycle Route Design Principles.....</b>	<b>31</b>
<i>Map 1—Proposed Bicycle Route System.....</i>	<i>31</i>
<b>Connectivity Objectives.....</b>	<b>32</b>
<b>Signage.....</b>	<b>33</b>
<b>REFERENCES.....</b>	<b>34</b>
<b>APPENDICIES.....</b>	<b>35</b>
<b>APPENDIX A—High-Need Bicycle Capital Improvements.....</b>	<b>35</b>
<b>APPENDIX B—Statewide Bicycle Plan Goals and Objectives.....</b>	<b>36</b>
<b>APPENDIX C—Proposed Bicycle Rack and Maintenance Request Programs.....</b>	<b>39</b>
<b>APPENDIX D—International Mountain Biking Association “Rules of the Trail”..</b>	<b>42</b>
<b>APPENDIX E—Bicycle Planning Contacts.....</b>	<b>45</b>

## Summary

This Plan outlines a strategy for improving bicycling conditions in Pittsburgh, while raising the profile of bicycling as a mode of transportation. Bicycling is a healthful, non-polluting, and low-cost mode of transportation, and is increasingly popular as a form of recreation. Through strategic capital improvements, programming, and better internal coordination of bicycling projects, bicycling will become safer, more convenient, and more accessible to Pittsburghers in all reaches of the City.

Currently, cycling conditions in the City are poor. A combination of topography, climate, urbanization patterns, and policy decisions has contributed to this situation. Fortunately, a conscientious bicycle planning effort can reverse many of the negative factors affecting bicycling.

Bicyclists are a heterogeneous group, with widely varying skills, needs, and travel purposes. The City must work to accommodate all types of cyclists through a diverse and comprehensive Bicycle Program. The Bicycle Program should include a Bicycle Route Network (on-street and trails), Bicycle Support Facilities (like parking and maintenance), and User Information.

In 1996, PennDOT produced a *Statewide Bicycle and Pedestrian Master Plan*, identifying usage and safety targets for the Commonwealth's large cities, including Pittsburgh. **The City of Pittsburgh should evaluate any infrastructure or traffic flow improvement with the prescribed PennDOT targets in mind:**

### **Statewide:**

- *Double the percentage of trips by foot and bicycle, from a national average of 7.9 percent to 15.8 percent of all trips;*
- *Reduce the number of injuries and fatalities suffered by bicyclists and pedestrians by 10 percent.*

### **For Large Cities/Metropolitan Areas in Pennsylvania:**

- ***Target (a)** Bicycle use should account for 5 to 10 percent of trips within the Central Business District*
- ***Target (b)** For trips less than 4.8 km (3 miles), 5 percent of trips should be made by bicycle.*
- ***Target (c)** Double the percentage of persons accessing transit on foot or by bicycle.*

This Plan includes ten Bicycling Objectives to help the City meet the PennDOT goals and respond to the City’s cycling needs. Those objectives are:

- Objective #1**            The City shall assimilate bicycle considerations and needs into all comprehensive planning activities, policy decisions, legislation, and capital improvement programs.
  
- Objective #2**            The City shall designate a “Bicycle Coordinator” responsible for implementing and managing the City’s Bicycle Program, for the purpose of increasing bicycle usage and safety.
  
- Objective #3**            The City shall regard the comments and concerns of the cycling community and the general public when making decisions affecting bicycling in Pittsburgh.
  
- Objective #4**            The City shall implement a recommended network of bicycle routes and corresponding roadway improvements, providing City-wide access for bicyclists of all skill levels, and all types of recreational and utilitarian travel.
  
- Objective #5**            The City shall improve the safety and accessibility of bridge crossings for bicyclists.
  
- Objective #6**            The City shall increase the quantity and quality of end-of-trip bicycle facilities, such as parking and commuter facilities.
  
- Objective #7**            The City shall encourage programs integrating bicycles and transit.
  
- Objective #8**            The City shall increase the visibility and utility of the Bicycle Program, as well as the safety of cyclists, through informational literature and programming.
  
- Objective #9**            The City shall provide adequate maintenance to ensure the safety and functionality of the Bicycle System.
  
- Objective #10**           The City shall mitigate conflicts between off-road cyclists and other trail users, and also protect park ecology, through a clearly-defined and enforced policy for off-road cycling on City lands.

The plan included specific action items and performance measures to help the City fulfill these Objectives.

A proposed network of Bicycle Routes, including the riverfront trail system and other proposed recreation trails, was also developed (See Map 1, next page). These routes

provide bicycle access across the City, and connect key destinations such as Downtown, Oakland, the four regional parks, and neighborhood business districts.

**Introduction**

**Section One**

## Introduction

Bicycling has long been recognized as a low-cost, healthful, and non-polluting mode of transportation. Bicycling is also an increasingly popular form of recreation. Unfortunately, Pittsburgh, while renowned for its pedestrian-friendliness and overall livability, it is not widely considered a bicycle-friendly city.

Many factors have contributed to Pittsburgh's poor suitability for bicycling. Topography and climate are enough to dissuade many Pittsburghers from cycling. In addition, the City's long process of urbanization began over 200 years ago, leaving a legacy of narrow, winding, and steep streets. Traffic volumes are high, and there is precious little roadway space left for bicyclists. Policy decisions of the past, including the historical exclusion of bicycles from comprehensive transportation planning, have further degraded the prospects for cycling.

However, times are changing. Pittsburgh is reinventing its relationship with the formerly industrial riverfronts, and pleasant, level bicycling are emerging where blast furnaces once stood. Perennial traffic congestion has spawned a search for alternatives to automobile travel. Americans are becoming increasingly health conscious, and participation in active, outdoor recreation like bicycling has increased dramatically in recent years. These changes call for a reevaluation of the role of the bicycle in Pittsburgh.

Because of Pittsburgh's notoriously hilly topography, many observers overlook the fact that Pittsburgh still has many pleasant areas for cycling along its rivers and rolling plateaus. However, the current transportation system in these areas was not designed for bicycles—it was designed over generations for pedestrians, horsecarts, streetcars, and automobiles. Thus some strategic capital investments will be required to fully realize the promising cycling potential of this City.

Though Pittsburgh currently presents formidable challenges for cycling, conditions will improve dramatically if a conscientious bicycle planning effort is undertaken. Both the State and Federal governments have set high expectations for urban bicycling programs, and the Federal Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21) has allocated an unprecedented level of funding for bicycle projects.

This Bicycle Plan outlines a strategy for improving bicycling conditions in Pittsburgh, and raising interest in bicycling as a form of transportation and recreation. The intent is to make bicycling safer, more convenient, and more accessible to Pittsburghers in all reaches of the City. A commitment to bicycling is a commitment to sustainable transportation, congestion reduction, safer streets, healthful recreation, and a heightened quality of life.

## Prevailing Conditions

Pittsburgh is not widely regarded as a bicycle-friendly city. A 1990 article in *Bicycling Magazine* ranked Pittsburgh among the three worst North American cities for bicycling, along with New York City and Orlando.<sup>1</sup> A variety of natural conditions, development patterns, and policy decisions account for this unfavorable ranking. Local cyclists cite the following factors as major impediments to cycling in Pittsburgh:<sup>2</sup>

- **Topography**—Pittsburgh is built along river and stream valleys. As a result, neighborhoods are hilly, and trips between sections of the city often require steep climbs along narrow, winding roads.
- **Bridge Crossings**—Topographic obstacles are often complicated by the poor bicycling conditions on the City’s bridges. Most bridges carry high volumes of automobile traffic, lack roadway shoulders, and have narrow sidewalks and surface hazards. Often, the roadway approaches to these bridges are also difficult for cyclists to navigate.
- **Climate**—Most cyclists avoid riding in cold weather; thus reducing Pittsburgh’s cycling season to approximately March through November. Even in these months, frequent rainfall and high humidity dissuade many from bicycling.
- **Narrow Streets**—Many of the City’s streets were laid out more than a century ago, and are narrow, winding, and steep. Existing travel lanes are narrow, and buildings, trees, and utility poles prohibit street widening. This results in poor sight distances and high levels of conflict with pedestrians and motorists. Unfortunately, many modern facilities were not designed with bicyclists taken into account, either.
- **High Levels of Road User Conflict**—Cyclists complain about motorists who feel bicycles “don’t belong on the road,” and thereby cut off bicycles at intersections, pass at unsafe speeds and clearances, and startle bicyclists with their horns. Other motorists are unskilled in sharing the road with bicycles. At the same time, many cyclists ignore traffic signals and controls, because they believe that the roadway system was not designed with the needs of cyclists in mind. There is also an historic reluctance to cite even the most blatant traffic violations by cyclists. This only increases the animosity felt by drivers and pedestrians toward cyclists.
- **Roadway Surface Hazards**—Many of the City’s street pavements are in poor condition for cycling, because of potholes, cracks, deformations, sunken sewer and utility covers, streetcar tracks, bricks and Belgian blocks. Often pavement patches from utility repairs fail after a short periods, creating roadway depressions and potholes. Roadway debris, such as glass, gravel and litter, are particularly troublesome for bicyclists because it accumulates on the shoulders where cyclists ride and is seldom removed via street cleaning.

---

<sup>1</sup> “The 10 Best Cities for Cycling (Plus a Few Others You Should Only Drive Through).” *Bicycling Magazine*, April 1990, pp. 60-103.

<sup>2</sup> Compiled from Department of City Planning bicyclist surveys and local media.

---

- **Insensitivity of Local Agencies to the Needs of Cyclists**—Cyclists have expressed concern that local government agencies, including the City, do not do enough to accommodate the needs of cyclists. They cite the lack of bicycle facilities and programs, inadequate roadway clearances (even on newly constructed segments), scant bicycle parking, and a history of laws and policies insensitive to bicycling.
- **Inadequacies of Existing Bike Routes**—The current bike route system is that in name only; apart from signage, there are few roadway improvements, bike lanes, or ancillary facilities to support this designation. Another major drawback is the lack of directness and connectivity—the system does not provide straight-line connectors to major travel destinations. In addition, the bike route signage is not informative or easy to pick out of visually busy streetscapes, and there is a lack of public information about the existence of these bicycle routes or the destinations they serve.
- **Scarcity of Bicycle Parking**—Even in the City’s high-use bicycle corridors, bicycle parking is nonexistent or substandard. For cyclists to ride for utilitarian purposes, they must have a place to store their bicycles at their destinations. Some older-style bike racks cannot accommodate modern “U” locks nor support the bicycle frame, which can cause wheel damage. Furthermore, parking is often placed in low-visibility, theft-prone areas. Bicycle parking downtown and at Port Authority transit stops is poorly-marked and not visible from nearby roadways, and thus most cyclists are unaware that it is available.
- **Lack of Bicycle Commuter Facilities**—While commuter routes servicing downtown and Oakland are being implemented, long-term bicycle parking, changing facilities, and showers catering to the users of these facilities are scarce. Few employers offer bicycle commuter amenities, and no fitness clubs or gymnasiums allow bicycle commuters the use of their showers or lockers. Commuter cyclists demand a high level of parking security for all-day bicycle storage, such as lockers or attended parking, to feel assured that their bicycles will still be there at the end of the day.
- **Need for Greater Transit Access**—Many cities now permit bicycles on board transit vehicles, which increases the utility of both modes of transportation. In Pittsburgh, bikes-on-transit programs could help to overcome topographic and traffic obstacles which currently hinder bicycling in many parts of the City. Currently, the Port Authority of Allegheny County offers only limited LRT access on weekends.
- **Lack of Off-Road Mountain Biking Facilities**—For all of its hilly green spaces, the City does not provide recreational trails for off-road mountain bicycling, an increasingly popular form of outdoor recreation. The City’s four regional parks feature scenic wooded trails, but ordinances prohibit their use by bicycles due to safety and environmental concerns. Nonetheless, off-road cyclists frequently ride these park trails, creating conflicts and animosity with other trail users.

Effective planning, policy, and bicycle system design can mitigate each of these deterrents to a greater or lesser degree. Some factors, like the availability of bicycle

---

parking, are highly responsive to planning and policy choices. Even seemingly insurmountable obstacles, such as topography, can be lessened through bike-on-transit programs and bicycle paths built along gently-sloping railroad corridors.

## **Bicycle Planning: Historical Context**

Bicycle planning is a comparatively new concept in Pittsburgh’s centuries of urbanization and growth, with the first bicycle planning occurring in the 1970s. Attempts to improve bicycling efforts in the City are best described as sporadic—many enthusiastic efforts have been undertaken, only to lose momentum before significant physical and programmatic headway has been achieved. Some of the more notable bicycle planning efforts in Pittsburgh are described below:

### **“Bikeways for Pittsburgh”**

Pittsburgh American Youth Hostels and  
Western Pennsylvania Wheelmen, 1972

A formative document for much of Pittsburgh’s existing bicycle infrastructure is the September 1972 report “Bikeways for Pittsburgh,” issued by the Pittsburgh Council of American Youth Hostels, Inc. and the Western Pennsylvania Wheelmen. At that time, bicycling as a mode of transportation was almost unheard of, and the City had significantly more streetcar tracks and cobblestone streets obstructing bicycle travel than today. The report identifies eight potential “bikeway” projects in the East End, North Side, and Downtown; educational programs for cyclists and motorists; bicycle parking improvements; and potential funding sources for bikeways. A conceptual legacy of this plan is the Beechwood Boulevard bikeway, a 5-mile Class II bike lane constructed in the 1980s.

### **“CBD-Oriented Bikeways”**

Southwestern Pennsylvania Regional Planning Commission, 1975

The Pittsburgh-area MPO, the Southwestern Pennsylvania Regional Planning Commission, submitted a document entitled “CBD-Oriented Bikeways: Southwestern Pennsylvania Air Quality Control Region” on February 28, 1975. While the AYH/Wheelmen document promoted bicycles for recreation and limited utilitarian purposes, this EPA-mandated study explored bicycle usage as a way to combat urban air pollution. It took a more rigorous approach to demand analysis and route selection, and included suburban Allegheny County as well as the City of Pittsburgh. This study was not intended to be a comprehensive bicycle plan, as it only addressed commuter routes into the region’s Central Business Districts. Most of the plan’s recommendations were never implemented.

### **Bicycling in Pittsburgh Committee**

City of Pittsburgh, 1990

This committee developed a four-pronged comprehensive bicycle program for the City, featuring bicycle routes (with “Share the Road” signage), promotional activities (Thrift Drug Classic International Bike Race, bike-to-work day), parking and storage (including 300 spaces downtown), and bike trail development. The program also produced the **City of Pittsburgh Bicycling Map** (1992, out of print), a compilation of recommended (but not officially designated) bicycle routes through the city, as well as parking, safety, and topographic information. This program is no longer active, though the signed and striped bicycle routes remain.

### **Oakland Bikeways/Bike Oakland Projects**

Oakland Transportation Management Association and  
City of Pittsburgh, 1993-1996

The university district of Oakland has one of the highest levels of bicycle usage in the City. In 1993, an origin-destination user survey was undertaken, and soon after commuter routes from surrounding neighborhoods were developed. A signage and striping plan was devised, but has not yet been implemented. The Bike Oakland Program installed 740 bicycle rack and locker parking spaces in Oakland, greatly improving bicycle parking security and availability within the University of Pittsburgh and Carnegie Mellon University campuses.

## **Concurrent Bicycle Planning Efforts**

The activities of several other governments, agencies, and organizations affect bicycle planning within the City of Pittsburgh, as described below:

### **Statewide Bicycle and Pedestrian Master Plan**

Commonwealth of Pennsylvania, Department of Transportation, 1996

The statewide plan is a blueprint for improving bicycle and pedestrian conditions throughout Pennsylvania. This plan and its objectives are described in detail in the section entitled, “Commonwealth of Pennsylvania, Statewide Pedestrian and Bicycle Master Plan,” Section Two.

### **The Riverfront Development Plan**

City of Pittsburgh, 1998

This document is a comprehensive plan for the Riverfront Overlay Zoning District, applicable to all 36 miles of riverfront land in the City. It profiles land use, zoning, urban design, and recreational aspects of the Riverfront District. The plan includes a prioritized, budgeted list plan for development of the City’s multi-use, riverfront trail system.

### **Southwestern Pennsylvania Regional Planning Commission (MPO)** Bicycle and Pedestrian Advisory Group, 1995-96

SPRPC, the regional Metropolitan Planning Organization, has established a Bicycle and Pedestrian Advisory Group (currently inactive) to address bicycle issues and long-range bicycle planning for the six-county metropolitan Pittsburgh Area. The eventual goal of this group is to develop the bicycle and pedestrian element of the Southwestern Pennsylvania long-range growth plan. The B&PAG is currently inactive and no official documents or programs have been produced.

### **Allegheny County** Greenways Plan, 1995

The County of Allegheny Planning Department issued a Greenways Plan for preserving and managing the County's open spaces. This document features a trail and bikeway element, outlining proposals for rail-trails and 160 miles of commuter bikeways, many radiating from the City of Pittsburgh. The plan assumes a multifunctional role for the bicycle: a recreational asset, a tool for economic development, and a non-polluting form of alternative transportation. With the dissolution of the County's Planning Department, the future of the Greenways Program is uncertain. Nonetheless, other agencies and organizations are pursuing individual pieces of the plan, such as the Riverfront Trails and numerous rail-trails.

### **Allegheny Trail Alliance** Master Implementation Plan, 1997

The Allegheny Trail Alliance (ATA) is a 7-organization coalition working to build the 110-mile Pittsburgh to Cumberland, MD rail-trail. This regional trail will eventually lead to Washington, D.C. via the B&O Canal Trail, a total of 253 miles. The 5.3-mile Three Rivers Heritage Trail is the portion of this facility running through the City of Pittsburgh, following the Monogahela River from the Homestead border to Station Square. A portion of the trail will run on street via Ninth and Bingham Streets. The trail will be well-integrated with the City's other riverfront trails and on-street bicycle routes, making Pittsburgh a hub of regional bicycle touring activity. The estimated cost to complete the Three Rivers Heritage Trail is \$1.7 million. Friends of the Riverfront is the ATA organization responsible for the Three Rivers Heritage Trail, as well as other riverfront trails in the City.

### **Pittsburgh Universities**

The University of Pittsburgh is the only university in the City with an official bicycle program. Through the Department of Parking and Transportation, the University provides bicycle parking and registration, as well as information and

advocacy. Registration is encouraged both to facilitate bicycle planning and to assist in the identification and return of stolen or lost bicycles. The Pitt Police Department is also responsible for bicycle parking enforcement on University property, impounding and/or fining bicycles locked to handicapped railing, trees, or other unauthorized locations.

## What Types of Bicyclists Will Use the Bicycle System?

Cyclists are a heterogeneous group with widely varying skills and perceptions of safety and risk, because these things depend on a cyclist’s experience in city traffic and overall physical health. Furthermore, all cyclists are not travelling for the same reasons: some are travelling for pure recreation, others are commuting to work or school, others are running errands, and still others are cycling for fitness or competition. Some bicyclists ride year round, every day, while others only ride occasionally.

Since the behavior and needs of cyclists is so diverse, it would be a mistake to for the City’s Bicycle Program to treat all cyclists alike. Unfortunately, this means there is no one “design cyclist,” representative of an average user, around which the system may be planned. **The Bicycle Program must account for the diversity of skill levels, risk tolerances, and travel purposes observed among cyclists.**

The Federal Highway Administration’s *National Bicycling and Walking Study* identifies three broad categories of cyclists: *Advanced Bicyclists* (Type A), who are experienced adult comfortable riding in most traffic conditions. *Basic Bicyclists* (Type B) represent novice adults or adolescent riders, who are more wary of busy or high-speed streets. *Child Bicyclists* (Type C) consists of young children, who require substantial or total protection from vehicular traffic.<sup>3</sup>

The three groups of cyclists are described below:

### **Type A: Advanced Bicyclists**

This group is comfortable in most traffic situations, even arterial streets with high traffic volume. In selecting a route, Type A cyclists will choose the most direct route with minimal stop signs and delays. They will not typically utilize a lower-traffic bike route or trail alternative when a more direct, undesignated route exists.

Type A cyclists are best served by adopting minimal “bicycle-friendly” design standards for *all streets*, and wide curb lanes along arterial streets. Roadway shoulders or curb lanes should be of sufficient width that motorists may pass cyclists without having to shift lane position.

---

<sup>3</sup> *National Bicycling and Walking Study*, FHWA, Vol. 23, p. 9.

### **Type B: Basic Bicyclists**

Type B riders include adolescent cyclists, and adults who ride only on occasion. This group is less comfortable operating a bicycle in the midst of heavy vehicle traffic, and instead desires greater protection from vehicular traffic than Type A. These riders may lack the skills necessary to ride in city traffic, or they perceive a safety risk in doing so. Type B riders will often ride on sidewalks in high-traffic locations, which can actually place them at greater risk, especially at intersections.

Type B cyclists benefit most from bicycle routes with low traffic volume, bike lanes on arterial streets, or completely separated bicycle trails. While directness of route is still a critical factor, Type B cyclists are willing to detour slightly to avoid vehicle traffic or significant grades.

### **Type C: Child Bicyclists**

Child cyclists require substantial protection other than from motor vehicles, and often ride only with adult supervision. Children cyclists have the least amount of bicycling skill, and they often are unaware of the danger that their unpredictable behavior poses. This unpredictability can pose safety risks for other cyclists as well, especially on trails. For children, bicycling is a form of play as well as basic transportation, and usually confined to neighborhood streets, parks, or trails.

Type C cyclists are best served through bicycle safety and skill-building education, traffic calming in neighborhoods, improved access to neighborhood destinations and schools, and recreational trails conducive to family outings.

**Improving Bicycling Conditions in Pittsburgh**

**Section Two**

## Improving Bicycling Conditions in Pittsburgh

### A Vision for Bicycling in Pittsburgh

To improve cycling conditions in the City of Pittsburgh, there must be a vision for a high-quality bicycling environment in the future. The following statement is a description of what a bicycle-friendly Pittsburgh might look like:

*Pittsburgh is a city where bicycling is a routine, convenient, and environmentally-sound mode of transportation. For many short trips, like neighborhood errands and many work and school commutes, it is faster and easier than driving. A comprehensive network of well-signed bicycle routes facilitates bicycle travel throughout the City, even for novice cyclists. Every street and bridge is designed to minimum “bicycle-friendly” standards: bike lanes, wide curb lanes, or paved shoulders are provided, and all streets are free of dangerous roadway defects and intimidating intersection designs.*

*Information about Pittsburgh’s bicycle system is readily available in public places across the City. Bicycle parking is conveniently located in every neighborhood, just steps from businesses, institutions, and offices.*

*In Pittsburgh, all street users--automobiles, trucks, buses, pedestrians, and bicycles--respect the rights of others on the road. All vehicle operators and pedestrians understand that the street network is shared by many different modes of transportation, and all street users abide by traffic laws and posted regulations.*

*Bicycle accidents and fatalities are rare in Pittsburgh, thanks to safety literature and education, increased use of bicycle helmets, more and safer bicycle facilities, and bicycle skills training.*

*In Pittsburgh, bicycle paths and trails allow cyclists to experience the City’s spectacular natural surroundings, breathtaking hilltop vistas, historic neighborhoods, and scenic riverfronts. Bicycling promotes good health and physical fitness, provides for memorable family outings, and contributes to the high quality of life which Pittsburghers enjoy.*

## The Commonwealth of Pennsylvania Statewide Master Pedestrian and Bicycle Plan

Pennsylvania's Statewide Bicycle and Pedestrian Master Plan (April 1996) establishes targets, goals, and objectives for bicycle usage in the Commonwealth's large urban areas, including Pittsburgh.

**The City of Pittsburgh should work to fulfill the Bicycling Targets, Goals, and Objectives set forth by the Commonwealth of Pennsylvania Statewide Bicycling and Pedestrian Master Plan.**

The usage and safety targets applicable to Pittsburgh are listed below:<sup>4</sup>

### Statewide Targets:

The statewide targets are adopted from the National Bicycling and Walking Study, U.S. Department of Transportation, 1994:

- *Double the percentage of trips by foot and bicycle, from a national average of 7.9 percent to 15.8 percent of all trips;*
- *Reduce the number of injuries and fatalities suffered by bicyclists and pedestrians by 10 percent.*

### For Large Cities/Metropolitan Areas in Pennsylvania:

- *Target (a) Bicycle use should account for 5 to 10 percent of trips within the Central Business District*
- *Target (b) For trips less than 4.8 km (3 miles), 5 percent of trips should be made by bicycle.*
- *Target (c) Double the percentage of persons accessing transit on foot or by bicycle.*

These targets recognize that some qualities of large cities, such as heavy traffic volumes and sheer geographic size, are detrimental to bicycling as a mode of transportation. The Plan thus focuses on those trips where bicycling is most practical and useful, namely short commuting and errand trips and feeder trips to transit stations.

---

<sup>4</sup> Pennsylvania Department of Transportation, *Statewide Bicycle and Pedestrian Master Plan* April 1996, pp. 3-5.

## College and University Towns

The statewide plan also states that ten percent of trips to campus in college towns should be made by bicycle, and all roads within a 4.8 km (3 mile) radius of campus should be fully bicycle accessible. While these targets are not directed at large cities like Pittsburgh, they do emphasize the need for high levels of bicycle accessibility in university districts, such as Oakland.

## Statewide Issues and Needs:

To better accommodate bicycles and achieve the above targets, the transportation system must be conceptualized, planned, and utilized differently than it is today. The Plan identifies five broad needs for making the transportation system more bicycle accessible:<sup>5</sup>

- **A need for more safe places to bicycle**—i.e., providing more and safer bike lanes and trails;
- **A need for better understanding between all road users**—i.e., less cyclist intimidation by motorists, motorists should not feel hindered by sharing the road;
- **A need to address major policy issues affecting the transportation system and land use decisions**—i.e., do not treat bicycle planning in isolation;
- **A need to have responsible agencies recognize that bicycle transportation must be treated systematically**—i.e., treat roadway improvements, parking, lighting, traffic controls as a complete system;
- **A need to reinvent the way government agencies in Pennsylvania take responsibility of bicycling**—i.e., promote consistency and cooperation between agencies.

## Statewide Goals, Objective, and Actions

The Statewide Plan contains Goals, Objectives, and Actions for meeting the above targets, and outline policies and tasks for making PennDOT and Pennsylvania's transportation system more bicycle friendly. The Goals are listed below; the corresponding Objectives are listed in Appendix B:<sup>6</sup>

---

<sup>5</sup> Ibid., pp. 9-10.

<sup>6</sup> For a complete listing of Action Items, Strategies, and Performance Measures, refer to: Pennsylvania Department of Transportation, *Statewide Bicycle and Pedestrian Master Plan* April 1996, pp. 12-31.

---

**PA Goal #1: Modify the existing transportation infrastructure to encourage bicycling in targeted rural, suburban, and urban areas of the Commonwealth.**

**PA Goal #2: Plan, design, construct, and maintain new and improve transportation facilities to accommodate and encourage appropriate use by bicyclists.**

**PA Goal #3 Provide technical assistance, training, and leadership to support local jurisdictions in improving conditions for bicycling.**

**PA Goal #4 Implement education and enforcement programs to reduce crashes involving bicycles by at least 10 percent over the next 20 years and to provide a better sense of safety and security for bicyclists.**

**PA Goal #5: Promote acceptance and welcome bicyclists and pedestrians as users of the transportation system.**

## Bicycle Program Objectives

The ten objectives of the Pittsburgh Bicycle Program are broad directives for achieving PennDOT’s statewide bicycle targets, as well as fulfilling the City of Pittsburgh Bicycling Vision. Action items and performance measurements for each are listed in the next section:

- Objective #1**      The City shall assimilate bicycle considerations and needs into all comprehensive planning activities, policy decisions, legislation, and capital improvement programs.
- Objective #2**      The City shall designate a “Bicycle Coordinator” responsible for implementing and managing the City’s Bicycle Program, for the purpose of increasing bicycle usage and safety.
- Objective #3**      The City shall regard the comments and concerns of the cycling community and the general public when making decisions affecting bicycling in Pittsburgh.
- Objective #4**      The City shall implement a recommended network of bicycle routes and corresponding roadway improvements, providing City-wide access for bicyclists of all skill levels, and all types of recreational and utilitarian travel.
- Objective #5**      The City shall improve the safety and accessibility of bridge crossings for bicyclists.
- Objective #6**      The City shall increase the quantity and quality of end-of-trip bicycle facilities, such as parking and commuter facilities.
- Objective #7**      The City shall encourage programs integrating bicycles and transit.
- Objective #8**      The City shall increase the visibility and utility of the Bicycle Program, as well as the safety of cyclists, through informational literature and programming.
- Objective #9**      The City shall provide adequate maintenance to ensure the safety and functionality of the Bicycle System.
- Objective #10**     The City shall mitigate conflicts between off-road cyclists and other trail users, and also protect park ecology, through a clearly-defined and enforced policy for off-road cycling on City lands.

## **Bicycle Program Objectives, Action Items, and Performance Measures**

The ten Bicycling Objectives for the City of Pittsburgh are elaborated below. Following each Objective is a set of **Action Items**, which are specific tasks necessary to meet the each objective. The **Performance Measures** are quantifiable indicators of progress towards each objective.

### **Objective #1 Comprehensive Planning**

Bicycle planning should not occur in a vacuum—to be effective, it must be integrated into each of the City’s planning, engineering, and policy-making activities. Bicycles are an integral part of the City’s transportation and recreational systems, and should be expected on every street and in every neighborhood. Bicycle improvements can only come when cycling is viewed as an integral part of the urban system.

**Objective #1: The City shall assimilate bicycle considerations and needs into all comprehensive planning activities, policy decision, legislation, and capital improvement programs.**

#### **Action Items:**

- Develop and maintain a Bicycle Program, to improve the safety and practicality of bicycling in the City of Pittsburgh;
- Promote land use patterns and street networks which are amenable to bicycling as a mode of transportation;
- Incorporate bicycling needs into Transportation Improvement Plans, transportation facility construction and reconstruction projects, and local and regional transportation needs assessments;
- Coordinate bicycle system upgrades with major infrastructure projects, such as roadway and bridge rehabilitation, to maximize possibilities and minimize costs;
- Encourage or require bicycle parking at new developments, subject to minimum standards of quantity and design (security, visibility, accessibility);
- Establish a prioritized bicycle capital improvement program, for annual, short-term, and long-term horizons;
- Develop a yearly work program featuring quantifiable and measurable goals;<sup>7</sup>
- Ensure that City policies and ordinances encourage a truly multi-modal transportation system.
- Provide bicycle training for relevant City Personnel, to increase their effectiveness in addressing bicycle issues;

---

<sup>7</sup> Refer to National Bicycling and Walking Study, FHWA, Vol. 23, pp. 42-48.

### **Performance Measures:**

- Establishment and funding of a Bicycle Program;
- Funds allocated in the City budget for bicycle facilities and programs;
- Outside funds (ISTEA, CMAQ, etc.) procured for bicycle upgrading of transportation facilities;
- Number of bicycle-friendly City ordinances and policies adopted;
- Number of inter-departmental and/or inter-agency meetings dedicated to bicycle issues;
- Dedication of staff time to bicycle issues;
- Hours of professional development training received by bicycle staff.

### **Objective #2**

#### **Bicycle Coordinator**

Retrofitting an existing urban transportation network to better accommodate bicycles is a daunting task. A Bicycle Coordinator is necessary to manage and coordinate the work of the many City departments and outside agencies who will implement the Bicycle Plan. The Bicycle Coordinator is the key contact for cyclists, the general public, institutions, and government personnel regarding the Bicycle Program. By evaluating plans and projects from a cycling perspective, the Bicycle Coordinator ensures that the goals and objectives of the Bicycle Plan are being pursued in an expedient fashion.

**Objective #2: The City shall designate a “Bicycle Coordinator” responsible for implementing and managing the City’s Bicycle Program, with the purpose of increasing bicycle usage and safety.**

**The duties of the Bicycle Coordinator include:<sup>8</sup>**

- Implementing the recommendations of the Bicycle Plan;
- Supervising the routine operation of the City’s Bicycle Program;
- “Institutionalization” of bicycle needs and concerns, so that they become a routine consideration in every City activity;
- Review of capital improvement projects, development proposals, and plans which could positively or adversely affect the quality of bicycling in the City;
- Managing public resources and leveraging private involvement to maximize the effectiveness of the Bicycle Program;
- Seeking outside funding sources for bicycle capital improvements;
- Elevating the status and acceptance of bicycling as a mode of transportation;

---

<sup>8</sup> Refer to the *National Bicycling and Walking Study*, FHWA, Vol. 23, “The Role of Local Bicycle and Pedestrian Coordinators” for a detailed description of the roles and qualifications of the Bicycle Coordinator.

---

- Acting as the primary liaison with cyclist, the general public, city departments, and outside agencies with regard to bicycle issues;
- Preparing updates and amendments to the Bicycle Plan.

**Action Item:**

- Create a Bicycle Coordinator position within City Government.

**Performance Measure:**

- Creation of a Bicycle Coordinator position.

**Objective #3**

**Public Involvement**

The Bicycle Program must be responsive to the needs of the cyclists who use the system. User comments and suggestions are the best way to evaluate and improve the bicycle program. Therefore, it should be simple and convenient for cyclists to relay their concerns to the Bicycle Coordinator. At the same time, the City should actively seek the input of the cycling community to gauge the successes and shortcomings of the Bicycle program.

**Objective #3: The City shall regard the comments and concerns of the cycling community and the general public when making decisions affecting bicycling in Pittsburgh.**

**Action Items:**

- Involve the bicycling community in all aspects of the bicycle decision-making process, including route planning, maintenance, legislation, education, and special events planning;
- Establish information and feedback channels such as public meetings, mail-in comment cards, telephone hotlines, email addresses, and online comment forms. These information channels should provide swift and direct communication with the Bicycle Coordinator;
- Form a Bicycle Advisory Committee consisting of City personnel and bicycle advocates, for routine discussions of bicycling issues;

**Performance Measures:**

- Establishment of public communication channels with the Bicycle Coordinator;
- Formation of a Bicycle Advisory Committee;

- Number of public meetings or information sessions held;
- Number of comments or suggestions received and acted upon.

#### **Objective #4**

### **Bicycle Route Network**

*For more information on Bicycle Routes, see Section Three, City of Pittsburgh Proposed Bicycle Routes.*

Bicycle routes serve dual purposes. First, they indicate to cyclists which streets are the safest and most convenient for bicyclists, especially those cyclist who are unfamiliar with the City’s street network and topography. Second, they legitimize the presence of bicycles on the street network, alerting motorists that bicycles are likely to be sharing road with them. Where street geometry permits, bicycle lanes should be added along bicycle routes, reserving a portion of the roadway for bicycles. By channeling motor vehicles towards the center of the roadway, bicycle lanes minimize vehicle conflict, increasing safety.

**Objective #4: The City shall implement a recommended network of bicycle facilities and corresponding roadway improvements, providing city-wide access for bicyclists of all skill levels and all types of recreational and utilitarian travel.**

#### **Action Items:**

- Develop a bicycle route system which caters to the diverse needs of bicyclists and bicycle travel purposes;
- Adopt minimum bicycle-friendly standards for all roadways, including shoulder and curb-lane improvements on arterial streets;
- Eliminate or circumvent major barriers to bicycle connectivity, such as hazardous intersections or dangerous arterial streets;
- Provide bike route signage in the “Wayfinder” format, indicating the names of destinations and attractions served by those routes;
- Name and number major through bicycle routes for ease of reference;

#### **Performance Measures:**

- Miles of designated and improved bicycle routes;
- Number of projects/dollars spent on bicycle-friendly street upgrades;
- Number of improvements/dollars spent in areas of poor bicycle connectivity;
- Establishment of a route naming and numbering system.

---

## Objective #5

### Bridge Improvements

Because of Pittsburgh's rivers and hilly topography, many bicycle trips in the City require at least one bridge crossing. Bridge crossings are often the only convenient linkage between origins and destinations, especially in the vicinity of the riverfront trail system. However, bridges can be serious obstacles for bicyclists, because of narrow road surfaces and sidewalks, high traffic volumes, or poor states of repair. Substandard bridges should be upgraded to facilitate bicycles through retrofit projects or in conjunction with major bridge rehabilitation projects.

*Note: See Appendix A: High-need Bicycle Capital Improvements, for suggested high-priority bridge retrofit projects.*

**Objective #5: The City shall improve the safety and accessibility of bridge crossings for bicyclists.**

#### Action Items:

- Compile an inventory of City bridges, noting the bicycle worthiness of each, upcoming rehabilitation opportunities, and potential bicycle upgrades;
- Remedy hazardous bridge deck features, including dangerous expansion joints, sunken drainage grates, and crumbling pavement;
- Require dedicated bicycle lanes or a separated bikeway on all newly constructed bridges;
- Install bicycle facilities during upgrades and rehabilitation of existing substandard bridges, when it is most cost-effective;
- Provide signage near substandard bridge crossings, directing cyclists to nearby bicycle-friendly bridge crossings;
- Add a sidewalk bikeway or shared bicycle/pedestrian sidewalks on bridges with high traffic volume;
- Upgrade bridge approach roadways and intersections to bicycle-friendly status, especially routes between bridges and the riverfront trail system.

## Objective #6

### End-of-Trip Facilities

A major deterrent to using bicycles as a mode of transportation is the lack of secure parking, changing facilities, showers, and other amenities which cyclists need at the end of a trip. Some existing parking facilities are substandard—they either require cyclists to leave expensive bicycles in secluded, theft-prone locations, or can damage bicycle wheels and frames. Changing facilities and lockers in downtown Pittsburgh are almost nonexistent, and Parking Authority bicycle racks are poorly-marked and invisible from

the street. To encourage bicycle use for errands and commuting trips, end of trip facilities must be plentiful, visible, and secure.

**Objective #6: The City shall increase the quantity and quality of end-of-trip bicycle facilities, such as parking and commuter facilities.**

**Action Items:**

- Install sidewalk bike racks in neighborhood business districts, community centers, and transit stations;
- Install curbside bicycle racks in downtown Pittsburgh for short-term parking needs, in addition to the longer-term commuter parking;
- Increase visibility and awareness of bicycle parking with signage that directs bicyclists these facilities, especially those installations which cannot be seen from bicycle routes (as in downtown parking garages);
- Establish a by-request bike rack installation program (Appendix C);
- Establish bicycle commuting stations, with changing facilities, showers, and bike lockers, in the City’s major employment centers. These may be self-contained or operated in conjunction with existing fitness or community centers;
- Install racks in public parks and at key positions along the riverfront trail system;
- Encourage bicycle parking and commuter facilities in new private developments, and provide design guidelines to any party interested in installing effective bicycle parking;

**Performance Measures:**

- Number of bicycle racks and lockers installed;
- Number of bicycle rack requests satisfied;
- Establishment of bicycle commuter stations;
- Installation of bicycle parking signage.

**Objective #7**

**Bicycles and Transit**

Bicycles and transit are mutually reinforcing. Examples of intermodal bicycle/transit facilities include bicycle parking at stations, bicycle racks on buses, bicycle access on light rail vehicles, and informational materials about these services. Bicyclists can use transit to overcome topographic or traffic obstacles, and also to enable longer travel distances. For example, bicyclists living in hilltop neighborhoods might use transit to reach riverfront trails and commuter routes. From a transit perspective, bike/transit programs increase ridership, since customers are willing to travel further on bicycle than

on foot to reach a transit stop. Bicycle/transit programs should become an integral part of the City's bicycle infrastructure.

**Objective #7: The City shall encourage programs integrating bicycles and transit.**

**Action Items:**

- Maintain an ongoing discussion with the Port Authority regarding bicycle-transit integration;
- Expand bicycle access on transit vehicles, including 7-day access to the light rail system and a bike-on-bus rack program. Particularly important are routes which help cyclists circumvent topographic or other obstacles;
- Provide secure, convenient, and well-marked bicycle parking, both short-term (racks) and long-term (lockers), at key transit stops and stations. Ensure that the streets surrounding transit-stop bicycle parking are safely accessible by bicycle from the surrounding neighborhood;
- Provide directional signage and access between bicycle route and trails and nearby transit stops offering bike-on-transit services;
- Develop informational materials outlining the availability and rules of usage of bike-on-transit services. Timetables and transit maps should show interfaces with adjacent bike routes, trails, and parking. On-board and in-station advertisements will raise awareness of the bicycle program.

**Performance Measures:**

- Percentage of fleet vehicles accessible to bicycles;
- Percentage of transit system which is bicycle accessible;
- Annual carriage of bicycles on transit vehicles;
- Number of transit stops with bicycle parking facilities;
- Production and distribution of informational literature about bike-on-bus literature;

**Objective #8**

**Information and Education**

The success of the City's Bicycle Program depends upon cyclists' familiarity with the facilities and services available to them. If cyclists are not aware of the existence of bicycle routes and parking, or how to use these facilities safely, the bicycling infrastructure will not serve its intended audience. These materials may be distributed through City offices as well as bicycle shops, community centers, businesses, universities, information boards, visitor centers, and any other venue which cyclists frequent.

**Objective #8: The City shall increase the visibility and utility of the Bicycle Program, as well as the safety of bicyclists, through informational literature and programming.**

**Action Items:**

- Develop an official City Cycling Map, featuring: bicycle routes and trails; classifications of facilities; bicycle parking locations and type; bicycle-transit interfaces; degree of difficulty; routes to avoid; grades of 5%. Distribute the map through bicycle shops, businesses, neighborhood institutions, the Mayor’s Service Center, and through the mail;
- Promote the Bicycle Program on the official City of Pittsburgh World Wide Web site (<http://www.city.pittsburgh.pa.us>). Include a program overview, a digitized bicycle route maps and route descriptions, upcoming projects and events, contact information, and an online comment and maintenance request form;
- Post cycling maps, newsletters, and system information at strategic locations along the riverfront trail system and at major bicycle parking facilities citywide;
- Produce a Bicycle Program Newsletter to inform the cycling community about recent or upcoming bicycle projects, advertise public meetings, and solicit user feedback about the Bicycle System;
- Develop and distribute guidelines for installing effective bicycle parking to businesses, developers, and institutions who may be interested in providing quality bicycle parking facilities;
- Provide brochures on bicycling safety, commuter tips, riding safely in city traffic, etc. Develop these materials in-house or use existing literature produced by national bicycling advocacy groups;
- Conduct special events such as Bike-to-Work Day, to encourage bicycle commuting. A representative of the bicycle program should also be present at bicycle events like the Great Ride and the annual Pitt Bike Fair.
- Issue City Press Releases in conjunction with major bicycle capital improvements, program launches, or special events.

**Performance Measures:**

- Development and distribution of an Official City Cycling Map;
- Posting of Bicycle Program information online;
- Development and distribution of bicycle informational and educational brochures;
- Development and distribution of Bicycle Parking Installation Guidelines;
- Development and Distribution of a Bicycle Program newsletter;
- Number of Bicycle Program information boards posted along riverfront trails and at major parking facilities;
- Number of bicycle promotional events hosted or attended;

- Number of Bicycle Program press releases issued;

## **Objective #9**

### **Maintenance**

Because bicycles rely on two thin, high-pressure tires, they are much more susceptible to damage and crashes than other types of vehicles. Potholes, pavement deformations, parallel-slat drainage grates, sunken utility covers, wet leaves, and roadway debris can all cause serious problems for bicyclists. Untended roadway defects decrease the safety, comfort, and appeal of cycling, and can cause cyclists to unexpectedly sway out of line to avoid hazards. Roadway conditions and maintenance have a direct and dramatic effect on the quality of cycling in the City.

**Objective #9: The City shall provide adequate maintenance to ensure the safety and functionality of the Bicycle System.**

#### **Action Items:**

- Establish a Spot Maintenance Program for low-cost, cyclist-requested repairs. (Appendix C) Solicit maintenance requests via mail-in cards, on-line forms, or a telephone hotline. Give “fast track” attention to such requests;
- Conduct annual inspections of the bikeway system to identify areas in need of repairs and improvements;
- Develop an annual list of high priority bicycle maintenance projects;
- Establish routine and long-term maintenance plans for bicycle infrastructure;
- Sweep and patch roadway shoulders along arterial roadways and bridges so that they may be used by bicyclists;
- Ensure routine maintenance of off-road trails, including patching, sweeping, and vegetation trimming;
- Refresh bike lane pavement striping and stencils at least once per year;
- Raise drainage grates and utility covers flush with the pavement surface after resurfacing projects. Replace drainage grates which may trap bicycle tires;
- Promptly repair spawling and potholes on concrete-surfaced roadways;
- Require high-quality patching after utility work to prevent future pavement irregularities;
- Repair asphalt buckles and bulges caused by heavy vehicles, especially when occurring near the right-hand edge of the curb lane;

#### **Performance Measures:**

- Funds allocated for bicycle system maintenance;
- Number of maintenance requests fulfilled;
- Creation of a comprehensive maintenance plan for bicycle infrastructure.

## **Objective #10 Off-Road Bicycling**

Local mountain bikers consider the wooded areas of the City’s parks, particularly Frick and Schenley Parks, to be some of the best urban trail riding in the United States. Off-road cycling is an immensely popular activity for families and individuals—nonetheless, seldom-enforced City ordinances prohibit bicycle trail riding in City parks. There is also a growing animosity between bicyclists and other trail users, such as walkers, joggers, and nature-seekers. Cycling may cause ecological damage and soil erosion when cyclists ride in wet conditions or blaze new trails.

In general, the issue of off-road cycling in City parks has not been adequately addressed, and ordinances do not reflect the current utilization of park facilities. Without trail use guidelines, some cyclists have engaged in behavior which is not in the best interests of park ecology or compatible with other trail users. There is a clear need for public discussion about off-road cycling, a revamped trail policy borne of those public discussions, and better enforcement of the resulting trail use ordinances.

**Objective #10: The City shall mitigate conflicts between off-road cyclists and other trail users, and also protect park ecology, through a clearly-defined policy for off-road cycling on City lands.**

### **Action Items:**

- Facilitate public discussions about off-road cycling, so that cyclists and other trail users can find a common ground. Allow this outcomes of this public process to guide the City’s off-road cycling policy;
- Incorporate off-road cycling needs, conflicts, and strategies in the forthcoming Regional Parks Master Plan;
- Inform the planning process by examining existing research and policy decisions of other organizations and jurisdictions who have dealt with off-road cycling;
- Develop legislation which clearly articulates the rights and responsibilities of all trail users, with particular regard to trail access;
- Develop a trail maintenance and erosion control program, including volunteer trail maintenance days. Consider bicycle access restrictions following wet weather, to prevent trail erosion and damage (e.g., prohibit mountain biking within 36 hours of heavy rainfall);
- Ensure that trail regulations are clearly posted in each park and at every trailhead.
- Where off-road cycling is permitted, establish trail etiquette and right-of way protocol, such as the International Mountain Bike Association’s “Rules of the Road” (Appendix D);

- Where mountain biking is prohibited, clearly post the restriction at access points. Enforce the regulation to prevent animosity between legitimate and illegal trail users.

**Performance Measures:**

- Number of public meetings held on the topic of off-road cycling;
- Development of a comprehensive off-road cycling policy;
- Number of parks/trails for which access restrictions and trail etiquette rules are posted;
- Reduction in number of bicycle complaints received;
- Miles of bicycle-accessible trails;
- Development of a trail maintenance and erosion control plan;
- Number of trail maintenance days held;

**City of Pittsburgh Proposed Bicycle Routes**

**Section Three**

## City of Pittsburgh Proposed Bicycle Routes

Bicycle routes form the backbone of the City’s bicycling infrastructure. While several past attempts have been made to implement a bicycle route system (resulting in several built facilities), the routes have not been treated as an integrated system combined with parking, maintenance, information, and safety training. Furthermore, most of the existing routes are routes in name only—they do not have even basic roadway upgrades to justify their designation as bicycle priority streets. Some bicycle routes end just where they are needed most, for example, the sudden termination of bicycle routes leading from Schenley Park into Oakland and Fifth Avenue into downtown.

The proposed route system will include more direct connections, bike route designations in congested and difficult cycling areas like central Oakland, improved signage with destinations indicated on the bike route markers, and expanded access to bridges, riverfronts, and areas of the City outside of the East End.

### Classifications of Bicycle Facilities

There are three classifications of bicycle facilities: Class One, Class Two, and Class Three:

**Class One**—Class One facilities are completely separated from the roadway. They offer the greatest degree of protection from motor vehicles, but are often shared with pedestrians and in-line skaters. Examples of Class One bikeways include the Eliza Furnace Trail and the Three Rivers Heritage Trail.

**Class Two**—Class Two facilities are on-street bike lanes. These facilities still offer protection from motorized vehicles, but to a lesser degree than Class One facilities. Examples of Class Two bikeways include the Beechwood Boulevard Bikeway and the Riverview Park Bikeway.

**Class Three**—Class Three bikeways are on-street facilities without bicycle lanes. Cyclists share the roadway with motor vehicles, although a wide curb lane may be provided. Class Three bikeways are only recommended on streets with low traffic volume or streets where roadway width is severely constrained. Examples of Class One bikeways include Bayard Street in Oakland and Stanton Avenue in Highland Park.

There are, of course, other ways to classify bike routes. For instance, some routes are geared toward commuters (Fifth Ave), while others are scenic or touring routes (Highland Park Loop). Some are combination of both (Eliza Furnace Trail). The diversity of uses is an important consideration in route planning, so that the overall system design effectively balances the needs of all bicycle trip purposes.

## Existing Bicycle Facilities

Pittsburgh’s current signed route system is a conglomeration of several distinct planning processes of the last twenty years. All of the routes, except for the Riverview Park Loop and Three Rivers Heritage Trail are located in the East End. Most of the East End routes pass through the Oakland university and civic district.

Few of the existing facilities feature roadway improvements to justify their designation as bicycle routes. The only streets with Class Two improvements are Beechwood Boulevard, Schenley Drive, the Highland Park Reservoir Loop, and the Riverview Park Loop. The other on-street routes are simply signed, Class Three facilities. All completed sections of the Riverfront trail system are Class One facilities.

Currently, these routes are signed with green “Bikeway” markers, similar to the standard D 11-1 “Bike Route” sign. One disadvantage of the current system is that the signs do not indicate bicycle route numbers or the names of the destinations they serve. Since there is no current City Bicycle Map, cyclists’ only way to figure out where the routes lead is to literally follow them to their termini.

## Proposed City of Pittsburgh Bicycle Route System

The Proposed Bicycle Route System is shown on Map 1. This system has a far greater geographic coverage than the existing route system, and includes the build-out goals of the riverfront trail system and other proposed City and County recreation trails.

## Bicycle Route Design Principles

The City of Pittsburgh Proposed Bicycle Routes were designed around the following principles:

- **Principle #1—All Bicyclists are Different.** Even beyond the FHWA designations of Type A, B, and C bicyclists, there is great variation in skill level and needs observed for different cyclists. Cyclists ride for many different reasons, including recreation, commuting, running errands, exercise, and competitive sport. A bicycle system planned for only one type of cyclists will inevitably fail to satisfy the requirements of other types of cyclists. **The City of Pittsburgh Bicycle System will be designed to accommodate ALL types of cyclists, with many different needs, and many different travel purposes.**
- **Principle #2—Expect Bicycles on Every City Street.** Because bicyclists’ travel patterns are as diverse as motorists, bicyclists will choose to ride on

every City street on which they are legally permitted to a greater or lesser extent. While the bicycle route network provides suggested through routes for bicyclists, they cannot possibly serve every destination or satisfy every cyclist's unique criteria for directness and comfort. **Therefore, the entire roadway network should eventually be upgraded to a minimum "bicycle-friendly" standard, with wide curb lanes or paved shoulders and repair of dangerous road defects.**

- **Principle #3—Bicycle Routes, Support Facilities, and Programs Should Be Treated as an Integrated System.** Bicycle routes achieve their optimal potential when coupled with bicycle parking, informative signage, a bicycle system map, and safety literature. **The routes alone will not attract their intended audience if potential users lack necessary information or support facilities.** Just as motorists need road maps, directional signs, and parking stalls, so to do bicyclists require certain basic amenities.
- **Principle #4—Directness is Critical.** Bicyclists, like motorists, prefer the most direct route between their origin and destinations. **While most bicyclists will accept short detours to avoid serious obstacles, they will not follow bike routes which are unnecessarily convoluted.**
- **Principle #5—Bicyclists Wish to Preserve Their Momentum.** Because bicyclists are human-powered vehicles, they prefer routes with the fewest signals and stop signs, which sap their momentum. **If bicycle routes follow side streets with excessive stoppages, cyclists will tend to ignore the traffic control devices or use a parallel arterial street, which has signal priority.**

## Connectivity Objectives

The proposed routes are designed to connect important bicycle origins and destinations within the City. Some of the more prominent connectivities built into the proposed system include:

- Connection of **Downtown with surrounding neighborhoods** via commuter routes and riverfront recreation trails;
- Connection of **Riverfront Trails** to each other and to surrounding neighborhoods;
- Connection of **Downtown to Oakland** via on-street and Class One routes;
- Connection of **Oakland Universities** to surrounding neighborhoods and trip attractors;
- Connection of **Regional Parks to Riverfront Trails** and each other;
- Connection of **Neighborhoods to Local Business Districts**;
- Connection of **Bike Routes to Transit Facilities**;
- **Cross-River** connections;

- Connections which Circumvent Major Traffic or Topographic Obstacles

## **Signage**

Instead of the green “Bikeway signs currently in use, the new bike routes will be signed with a modification of the City’s Wayfinder directional sign format. The Wayfinder Bike Route signs will include the names of destinations and attractions served by the bike routes, in addition to directional arrows. Spurs to major destinations (schools, business districts, transit stops, parking facilities) should be signed as well.

## References

Allegheny Trail Alliance. "Master Implementation Plan: Pittsburgh, PA to Cumberland, MD Trail." May 1997.

American Association of State Highway and Transportation Officials. "Guide for the Development of Bicycle Facilities." August 1991.

Bicycling in Pittsburgh Committee, Tom Armstrong, Chair. *Report to the Mayor: Recommended Bicycling Strategy and Plan*. City of Pittsburgh, Department of City Planning, January 4, 1991.

BKI Associates, Inc. *East End Area TSM Study: Bikeway Plan*. Prepared for City of Pittsburgh, Department of City Planning, November 1980.

City of Pittsburgh, Department of City Planning. *Bikeways for Pittsburgh: Identification of Issues*. June 21, 1990.

City of Pittsburgh, Department of City Planning. *City of Pittsburgh Bicycling Map*. 1992.

City of Pittsburgh, Department of City Planning. *The Riverfront Development Plan: A Comprehensive Plan for the Three Rivers*. 1998.

Mendonca, David. "Oakland Bikeways Report." City of Pittsburgh, Department of City Planning, August 1993.

*National Bicycling and Walking Study*. U.S. Department of Transportation, Federal Highway Administration, 1992-93.

Pennsylvania Department of Transportation. *Statewide Bicycle and Pedestrian Master Plan*. April 1996.

Pinsof, Suzan Anderson and Terri Musser. "Bicycle Facility Planning." American Planning Association, Report #459, 1996.

Pittsburgh Council of American Youth Hostels, Inc. and Western Pennsylvania Wheelmen. "Bikeways for Pittsburgh." September 1972.

Southwestern Pennsylvania Regional Planning Commission. *CBD-Oriented Bikeways*. 28 February 1975.

**High-Need Bicycle Capital Improvement Projects**

**APPENDIX A**

**Statewide Master Bicycle & Pedestrian Plan  
Goals and Objectives**

**APPENDIX B**

## Commonwealth of Pennsylvania Statewide Master Bicycle and Pedestrian Plan

### Goals and Objectives

The Statewide Plan outlines Goals, Objectives, and Actions for meeting state bicycle usage and safety targets, making PennDOT and Pennsylvania’s transportation system more bicycle-friendly. The full list of Goals, Objectives, Action Items, and Performance Measures is contained within the *Statewide Bicycle and Pedestrian Master Plan*, pp. 12-31.

**Goal #1: Modify the existing transportation infrastructure to encourage bicycling in targeted rural, suburban, and urban areas of the Commonwealth.**

**Objective #1a:** Investigate establishing a method of funding nonmotorized transportation improvements to the existing infrastructure for bicycling.

**Objective #1b:** Target bicycling improvements in areas where the most impact in increasing bicycling and improving the safety of bicyclists can be accomplished.

**Goal #2: Plan, design, construct, and maintain new and improve transportation facilities to accommodate and encourage appropriate use by bicyclists.**

**Objective #2a:** Design new construction projects with the intent that they will be used by bicyclists and that they will share the roadway with motorists.

**Objective #2b:** Develop and implement a process to ensure the needs of bicyclists are adequately addressed in the planning and design of new and improved transportation facilities and services.

**Objective #2c:** Make intermodal transportation facilities, such as airports, ports, park and rides, rail and transit systems accessible to bicyclists.

**Goal #3 Provide technical assistance, training, and leadership to support local jurisdictions in improving conditions for bicycling.**

**Objective #3a:** Demonstrate leadership to all levels of government in the Commonwealth by producing state-of-the-practice guidance documents,

model programs and procedures, and training opportunities for state, regional, metropolitan, and local engineers and planners.

**Objective #3b:** Encourage MPOs, LDDs, cities and counties to continue to develop and implement plans for bicycle networks in targeted areas of the state.

**Objective #3c:** Develop and internal structure and philosophy which promotes bicycle planning and engineering by strengthening the working relationships between state agencies and all levels of government.

**Objective #3d:** Become a central resource and clearinghouse for information on bicycle programs.

**Goal #4 Implement education and enforcement programs to reduce crashes involving bicycles by at least 10 percent over the next 20 years and to provide a better sense of safety and security for bicyclists.**

**Objective #4a:** Coordinate and oversee a wide range of education and enforcement activities such as driver licensing and training, bicycle and pedestrian safety education, traffic law enforcement, and the provision of public service information, to provide consistent safety messages and training to all road users.

**Objective #4b:** Involve bicycle handling skills and teach safer walking strategies through education and training opportunities.

**Objective #4c:** The training of drivers should be expanded to promote sharing the road with bicyclists.

**Objective #4d:** Improve enforcement of laws to prevent dangerous and illegal behavior by motorists, pedestrians, and bicyclists.

**Goal #5: Promote acceptance and welcome bicyclists and pedestrians as users of the transportation system.**

**Objective #5a:** Establish policies which will encourage bicycling throughout the Commonwealth and raise the profile and awareness of this mode of transportation.

**Objective #5b:** Develop programs to increase awareness of benefits of bicycling.

**Objective #5c:** Become a model employer for bicyclists.

**Proposed Bicycle Rack and  
Maintenance Request Programs**

**APPENDIX C**

## APPENDIX C

### Proposed Bicycle Rack and Spot Maintenance Programs

Many American cities, including Seattle, WA, Portland, OR, and New York, NY, have successfully implemented on-request bicycle rack and spot maintenance request programs. The advantage of such programs is that they allow those who know most about cycling needs, the cyclists themselves, to suggest low-cost improvements to the bicycle system. This focuses Bicycle Program resources on those locations where improvements will have an immediate and assured impact, while demonstrating the Program’s responsiveness to user needs.

An on-request bicycle rack or maintenance program consists of three primary features: a means of receiving user requests, an internal City mechanism for evaluating and implementing the requests, and a program budget to fund the requested improvements.

**Bicycle Rack Request Programs**—Typically, the bicycle racks installed by user-request programs are inverted “U”-shaped racks located along curbs on public right-of-way. They are constructed of heavy-gauge steel pipe, with a coating to protect bicycle finishes. Larger, 4, 8, or 10-bicycle racks may be installed, if demand and space allow. Whichever device is used, it must be *convenient* to the destinations being served, and highly visible to promote usage and discourage theft.

The following criteria must be satisfied for a bicycle rack to be installed:

- The location is publicly-owned, or the City has the owner’s permission to install the rack.
- The location serves more than one destination. If the location is an isolated business, the City should send a form letter stating that a patron has requested bicycle parking, along with effective bicycle parking guidelines (see Objective # 6).
- If installed on a sidewalk, at least 5’ of clear width must remain after the rack is installed. (Assume an occupied “U” rack will require a 2’ by 6’ rectangle)
- The rack must not conflict with pedestrian movements, bus or freight loading, building entrances or automobile parking.

**Spot Maintenance Programs**—These are aimed at simple, low-cost repairs which improve the safety and convenience of the Bicycle System, such as: road patching, sign replacement, lane stripe refreshing, street sweeping, and foliage trimming. It is not intended for major capital projects like new bikeways or bridges. Requests that are beyond the scope of the spot program should be recorded for future capital improvement planning.

The following criteria must be satisfied for a maintenance request to be processed:

- The defect is on City-owned property, which the City has the responsibility of maintaining;
- The defect constitutes a relatively low-cost and simple repair.

**Request Program Protocol:**

- **Request Submittal**--Cyclists submit requests via paper mail-in forms (see samples, following pages), a telephone hotline, and/or online Internet request forms. Information about the programs, and a generous supply of request forms should be located at bicycle shops, community centers, universities, businesses, Mayor's Service Center, special events (Great Ride, Pitt Bike Fair), and other venues which cyclists are likely to frequent.
- **Request Evaluation**—Once received, the requests must be evaluated for feasibility and, if feasible, physically implemented. An internal City mechanism must be established to manage the request programs. While subject to further discussion, responsibilities would likely fall between the Department of Public Works, the Department of Engineering and Construction, and the Department of City Planning. In one scenario, DPW would physically implement the improvements, DEC would evaluate the feasibility of the requests, and DCP would distribute request forms and keep records for comprehensive planning purposes.
- **Request Implementation**—The rack request or repairs should be completed in a timely fashion. The City may wish to notify the requester when the suggestion has been implemented, or explaining why the request is currently infeasible.

**International Mountain Biking Association**      **APPENDIX D**  
**“Rules of the Trail”**

## **APPENDIX D**

### **International Mountain Biking Association**

#### **“Rules of the Trail”<sup>9</sup>**

Thousands of miles of dirt trails have been closed to mountain bicyclists. The irresponsible riding habits of a few riders have been a factor. Do your part to maintain trail access by observing the following rules of the trail, formulated by IMBA, the International Mountain Bicycling Association. IMBA's mission is to promote environmentally sound and socially responsible mountain bicycling.

#### **1. RIDE ON OPEN TRAILS ONLY.**

Respect trail and road closures (ask if not sure), avoid possible trespass on private land, obtain permits or other authorization as may be required. Federal and state Wilderness areas are closed to cycling. The way you ride will influence trail management decisions and policies.

#### **2. LEAVE NO TRACE.**

Be sensitive to the dirt beneath you. Even on open (legal) trails, you should not ride under conditions where you will leave evidence of your passing, such as on certain soils after a rain. Recognize different types of soils and trail construction; practice low-impact cycling. This also means staying on existing trails and not creating new ones. Don't cut switchbacks. Be sure to pack out at least as much as you pack in.

#### **3. CONTROL YOUR BICYCLE.**

Inattention for even a second can cause problems. Obey all bicycle speed regulations and recommendations.

#### **4. ALWAYS YIELD TRAIL.**

Make known your approach well in advance. A friendly greeting or bell is considerate and works well; don't startle others. Show your respect when passing by slowing to walking pace or even stopping. Anticipate other trail users around corners or in blind spots.

---

<sup>9</sup> Source: International Mountain Biking Association, P.O. Box. 7578, Boulder, CO 80306.

## **5. NEVER SPOOK ANIMALS.**

All animals are startled by an unannounced approach, a sudden movement, or a loud noise. This can be dangerous for you, others, and the animals. Give animals extra room and time to adjust to you. When passing horses use special care and follow directions from the horseback riders (ask if uncertain). Running cattle and disturbing wildlife is a serious offense. Leave gates as you found them, or as marked.

## **6. PLAN AHEAD.**

Know your equipment, your ability, and the area in which you are riding – and prepare accordingly. Be self-sufficient at all times, keep your equipment in good repair, and carry necessary supplies for changes in weather or other conditions. A well-executed trip is a satisfaction to you and not a burden or offense to others. Always wear a helmet and appropriate safety gear.