

The Delaware County Bicycle Plan

Executive Summary

Prepared for the citizens of Delaware County

by the

Delaware County Planning Department

EXECUTIVE SUMMARY

Introduction and Goal

VISION: Improved acceptance of, access to, facilities for, and use of bicycling for the purpose of transportation in Delaware County.

The purpose of the Delaware County Bicycle Plan is to provide a base on which improvements to the safety and effectiveness of the bicycle as a mode of transportation in Delaware County can be built. The Delaware County Bicycle Plan is an implementation tool of the draft *Delaware County Comprehensive Plan*. A series of objectives for bicycle transportation are outlined in the Plan, but the essential goal is improving acceptance of, access to, facilities for, and use of bicycling as a mode of transportation in Delaware County. The Plan looks at the background of bicycle transportation locally, nationally, and internationally. On-road routes are selected to be examined for future improvements. Trail possibilities are examined to augment the on-road bicycle improvements. Then impediments to bicycle transportation are identified. Methods for dealing with these problems are outlined using the four E's of Engineering and Planning, Encouragement, Education, and Enforcement.

The Bicycle Plan is in accordance with the Complete Streets Concept, which creates streets where all users, motorists, bicyclists, pedestrians, transit users, and those with disabilities are accommodated. By increasing the use and acceptance of bicycles, roads will be another step closer to becoming a Complete Street.

Delaware County Bicycle Improvement Network

One of the central components of this Plan is the identification of corridors for on-road bicycle improvements. These routes are intended to be direct routes between multiple bicycle destinations, such as work sites, shopping, recreational facilities, schools, and transit stations. To determine the feasibility of bicycle improvements, the road network was analyzed using bicycle demand and the distance to these trip attractors. Bicycle demand was estimated by combining survey results with crash data to estimate demand for bicycling along certain routes. The results of this analysis can be seen in Table 3-1 and Map 3-1. This system provides us with a prioritization list for improvements and not an exclusive list of all improvements. The bicycle improvement network provides the rational basis for making bikeway improvements incidental to other highway improvements. Other projects that arise moving towards a Complete Streets system for the County are consistent with this Plan. The On-road Bicycle Improvement Network should be updated regularly to reflect completed projects and changes in current use, desire, and demand for their use by bicyclists.

It needs to be understood that this network should also not be mistaken for a list of bicycle-friendly streets. Indeed, many of the routes in this Plan are highlighted because they have a high level of crashes involving bicyclists. The document designates a network of roads for improvement because of their importance for bicycle transportation. The inclusion of a road in the network should not be taken as a recommendation to ride the road in its current condition.

Improvements to the bicycle level of service of the highlighted network routes will be a broad effort involving many parties from both the private and public sectors. The bicycle network provides the rational basis for making bikeway improvements incidental to other highway improvements. Such incidental improvements, requiring no special financial resources, will be a principal means of implementing the network. A proposed outline of the agencies' roles in improving the bicycle transportation of Delaware County is shown in Appendix A.

This document largely focuses on on-road improvements for bicycle transportation. Shared use paths can provide an off-road option to on-road bicycle facilities. The transportation uses of these paths as related to bicycles are touched on in this Plan. Delaware County is in the process of completing a greenway and trail plan for the Darby Creek watershed. After this plan is completed, similar plans will be completed for the other watersheds in the County. These will be combined into a comprehensive greenway and trail plan for the County. These plans and the combined greenway and trail plan will look at paved shared use paths as well as greenways that don't encourage human use and hiking trails. This document will serve as the plan for future off-road bicycle use in the County. In an effort to give Delaware County residents access to the recreational and transportation benefits of mixed use trails, the County should pursue the creation of multi-use trails in corridors created by stream valleys, utility corridors, roads, and railroad rights-of-way.

Objectives: The Four E's

It is generally accepted that successful bicycle planning involves more than just building facilities. A successful

strategy to improve bicycle ridership should have four broad components, sometimes called "the four E's."

1. **Engineering and Planning** deals with transportation planning and roadway design and construction issues for making both the new and existing road network bikeable. There are five main bicycle facility types described in the Plan; shared lanes, wide curb lanes, shoulders, bike lanes, and bicycle boulevards. It also involves providing bicycle facilities at destinations, such as bicycle parking, showers, and changing facilities, making stairways and transit stops bike accessible, and accommodating bikes on transit.

GOALS: Create an environment where bicyclists feel comfortable riding to destinations through an extensive network of on-road bike lanes, bicycle routes, or other means and a system of signs and pavement markings that identify bicycle facilities, direct bicyclists to destinations, and define the presence of bicycles in a shared roadway environment.

Create an environment where bicyclists feel comfortable riding to destinations through the elimination of road hazards, unresponsive demand-actuated signals, and other impediments to bicycling.

Encourage the provision of destination-oriented facilities that support bicyclists' end-of-trip needs, including bicycle parking, locker rooms, and shower facilities.

Encourage transit as a more viable means of transportation for Delaware County residents through the implementation of bike-on-bus and bike-on-rail programs.

2. **Encouragement** addresses the promotion of bicycling as a means of transportation through creating promotional campaigns and benefits for bicyclists. In addition to raising public awareness, encouragement can also include policies that make bicycling more attractive, such as guaranteed ride home programs or financial incentives for bicycling to work. Also, national campaigns from the health community, such as Safe Routes to School Programs, have dramatically increased in popularity in recent years.

GOAL: Make bicycling an accepted and legitimate mode of transportation for both adults and children.

3. **Education** deals with teaching proper bicycling skills and educating bicyclists and motorists about key safety issues and rules of the road. Education is key to having safe and effective bicycling.

GOALS: Ensure that the access to information pertaining to bicycle operation skills and bikeable routes is available through printed and electronic sources.

Encourage educational methods to reach everyone, even those who currently don't think about bicycle education.

4. **Enforcement** involves enforcing traffic laws for both motorists and bicyclists.

GOALS: Encourage motorists to obey the traffic laws with respect to bicyclists' rights.

Encourage bicyclists to learn and obey the traffic laws.

Plan Implementation

The Delaware County Bicycle Plan is a necessary guide to the implementation of bicycle improvements. A successful bicycle plan should provide policy continuity that will survive turnover of County Council, the County Planning Commission, and DCPD staff. The Plan will provide a legal and political basis for requesting improvements from other agencies. It should be recognized that many aspects of the Plan, including the desired bicycle improvements, represent a wish list that may prove to be unachievable with available resources. However, if the Plan is adopted and pursued, programs and funds are available to make some portion of it a reality. It will provide guidance and a model for local bicycle mobility plans. And it will provide a reasonable plan for action and benchmarks against which its success can be measured.

Bicycle Coordinators

The County and other agencies should cooperate to ensure that bicycle-friendly policies are instituted at all levels. Each municipality or multi-municipal planning group should name a bicycle coordinator or advisory committee. The County should also name a bicycle coordinator to monitor the implementation of County bicycle policies and be an expert on bicycle considerations. This does not necessarily mean hiring new staff, where the need isn't warranted. In most cases, explicitly naming an individual staff member as a bicycle coordinator in addition to other duties already carried out will achieve the goal of facilitating the implementation of the bicycle policies laid out in this Plan and create a contact for bicycle-related issues. Federal funding for a bicycle coordinator position can be obtained through federal CMAQ Program funds of the FHWA.

A Regional Handbook

A regional handbook should be created that includes the following elements:

- Bicycle parking requirements/recommendations
- Model ordinance provisions for bicycle planning
- Other useful guidelines for planning bicycle facilities

The above elements are useful but not specific to any particular county or even region. Duplicating them for each county makes little sense; a single regional or state reference book would be the best use of resources.

Action Agenda

Numerous entities need to be involved to realize a bicycle plan. Appendix A includes a summary of recommendations proposed in this Plan and a detailed list of partner groups and their proposed roles in implementing bike routes. Many of the recommendations in this Plan have been assembled into very general recommendations in order to appear on the matrix appearing in Appendix A. The County bicycle coordinator should actively encourage the participation of all partner agencies. There are several recommendations that the County can take the lead in initiating that come from this Plan. Specifically, the County should take the following actions:

1. Ensure that County operations, programs, plans, and ordinances are bicycle friendly where applicable and amend those that are currently deficient.
2. Introduce the Plan to municipal governments to gauge their interest in implementing bicycle-

friendly policies. This will allow future efforts to be directed to municipalities eagerly pursuing the objectives and recommendations of the Plan, maximizing County efforts.

3. Start a Delaware County Cycling Advisory Committee to provide a forum for interested municipalities to share strategies for implementing bicycle improvements.
4. Work with PennDOT to ensure that all new roads, major reconstructions, and as many resurfacings as possible provide for bicycle facilities.
5. Work with municipalities to develop TIP funding applications for bicycle facilities.
6. Push for the completion of the East Coast Greenway in the Route 291/U.S. 13 corridor.
7. Support the efforts of community trails organizations.
8. Support the adoption of a state “Bicycle Bill” requiring that a minimum percentage of transportation funds be spent on bicycle facilities.
9. Encourage PennDOT to revise the Bikeway Occupancy Permit (BOP) so that it is less onerous on municipalities.
10. Promote regional programs, such as the “Share the Road” campaign, to fund voluntary after-school cycling instruction programs, using certified instructors. Delaware County should strongly encourage the school districts to provide after-school instruction space for such programs and to promote them with students and parents.
11. Solicit bicyclist input on the “Share the Road” signs, and request more if the reaction is favorable.

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12. Revise the Delaware County Land Development and Subdivision Ordinance to require that shoulders, bicycle lanes, and bicycle parking be provided by property owners and developers.
 13. Encourage municipalities to follow bicycle-friendly policies and amend their plans and ordinances with bicycle-friendly provisions.
 14. Ensure that any airport expansion plans make accommodation for a fully off-road multi-use trail as part of the East Coast Greenway and Tinicum – Ft. Mifflin Trail.
 15. Work with the DRPA to improve bicycle access across the Ben Franklin Bridge and to provide some access across the Commodore Barry Bridge.
 16. Continue to have a “Bike to Work Day” for County employees and employees of Media businesses. Work with other employers and the TMA to help sponsor events at other major employment destinations. Work with Philadelphia’s Bike to Work Day sponsors to make Delaware County residents who commute to Philadelphia more aware of their events.
 17. If sufficient interest and resources exist, Delaware County should fund bicycle projects.
 18. In conjunction with the region, request that PennDOT incorporate questions about the obligations of motorists and bicyclists into the driver’s license exam.
 19. Encourage municipalities or multi-municipal planning districts to name bicycle coordinators or advisory committees.
 20. Work on a Countywide Safe Routes to School Program with input from municipalities and school district officials.
 21. Join the Keystone Active Zone (KAZ) program to encourage use of County and local parks by County residents.
 22. Complete a shared use path/greenway plan for the County. Update and specify off-road trail possibilities in conjunction with the Countywide open space plan. The County is currently preparing a greenway plan for the Darby Creek watershed as a pilot for the creation of a Countywide greenway plan.
 23. Look at specific routes for improvement and create detailed feasibility studies to facilitate the final construction of routes where interest exists.
 24. Examine the economic impact of bicycle facilities and shared use paths on local businesses and publish the results.
 25. Produce progress reports based on the recommendations, objectives, and performance measures outlined in this plan.
 26. Regularly update the *Delaware County Bicycle Plan*.

Bicycle Facility Implementation and Funding

Just as responsibility for providing roads and automobile facilities is in many different hands, providing bicycle facilities should also be the responsibility of anyone who is developing and or building new transportation facilities. Listed below are principal funding sources that are available for bicycle projects. Consult Appendix F for a more extensive list of possible funding sources. These appendices are not an exclusive list of funding sources and partner groups. As public funding for transportation gets increasingly tight, looking at innovative funding mechanisms like foundations, corporate investments, and producing revenue policies becomes more important. The importance of using public-private partnerships to fund bicycle related projects cannot be overstated.

- **New, rebuilt, resurfaced, and reconstructed roads.** Bicycle facilities built as part of new or rebuilt roads will be funded from normal highway funding sources. The bicycle network provides the rational basis for making bikeway improvements incidental to other highway improvements. Such incidental improvements, requiring no special financial resources, will be a principal means of implementing the network. Designated routes should be priorities for bicycle accommodation when they are resurfaced or rebuilt. For PennDOT-sponsored improvements, PennDOT would pay the required 20% local match; no local participation would be required. Municipalities and the County should update their zoning codes and subdivision and land use ordinances to require that these facilities be provided with new development.
- **Developers.** Developers should be strongly encouraged to dedicate sufficient right-of-way for shoulders and

sidewalks on routes featured in the on-road bicycle improvement network identified in Chapter 3. The County and municipalities should recommend that shoulders and bicycle lanes be provided where appropriate. Sidewalks should be separated from the road by a planting strip where feasible.

- **DVRPC programs.** DVRPC should consider modifying its long-range plan, *The Southeastern Pennsylvania Bicycle and Pedestrian Mobility Plan*, to correspond to the routes recommended in this Plan.

DVRPC has previously sponsored a Bicycle Mobility Improvements Program that was designed to select, evaluate, and make recommendations for improvements. Funds are set aside in the region's TIP to provide 80% of the cost of the recommended improvements. The TIP is a list of transportation projects agreed upon at the regional level. The total cost of programs in the TIP is not allowed to exceed the total federal, state, and local funds available. Setting aside funds in the TIP assures, with a high level of probability, that the money will be available when needed. The absence of regional funding of the 20% local match proved to be a stumbling block for the Bicycle Mobility Improvements Program. Municipalities can still get 80% funding without the help of this program by applying through the TIP process.

DVRPC's initial study highlighted two on-road bicycle routes in Delaware County, Bicyclists' Baltimore Pike and PA Route 252. The State agreed to provide the local match to implement the Bicyclists' Baltimore Pike route. DVRPC has hired a project manager who oversees the implementation of this and other nontraditional projects.

Delaware County has recommended that the local match requirement be waived for all of the regional network miles designated thus far under the Bicycle Mobility Improvements Program. Absent regional funding of some of the local match, top-down bicycle planning from DVRPC is not likely to yield results.

- **CMAQ funded regional programs.** In 2002, DVRPC submitted an application for CMAQ funding to install 1,000 inverted U racks for free upon request in front of any business. DVRPC would administer the program, and its labor would constitute the region's local match. Delaware County would be slated to receive 200 racks. Bulk orders and a single contract for installation and replacement would enable DVRPC to install racks at a cost far lower than any individual business could get for the installation of a single rack. The program would be completely request driven. This program was not included in the FY 2003-2006 TIP because no one stepped forward to provide a cash, as opposed to an in-kind, match. The program will be re-submitted when a commitment of local funds can be identified. The City of Philadelphia has a similar program that has proven extremely popular, with over 2,000 rack installations in a single year. Philadelphia is using a combination of CMAQ and City funds to purchase and install racks in its upcoming adopt-a-rack program, which should lead to the installation of an additional 2,000 racks. Businesses can get a free rack installed if they agree to remove graffiti and stickers and report serious damage to the Streets Department.
- **TE.** The TE program is funded with federal SAFETEA-LU money. SAFETEA-LU is the principal vehicle whereby federal gas tax money is handed down to the states

for highway and transit projects. The TE set-aside can be used to fund a broad range of "soft" transportation programs, such as landscaping, educational efforts, transportation museums, and restoration of historic transportation facilities, as well as bicycle and pedestrian improvements. In the past, numerous bicycle projects, especially trails, have been funded with TE money. However, the use of TE money for bicycle projects is in theory no longer necessary since such projects can now be funded with other, less competitive SAFETEA-LU funds. TE has a separate selection application and process from the rest of the TIP. As with most projects funded under SAFETEA-LU, a 20% local match is required.

- **SAFETEA-LU.** Bicycle projects are broadly eligible for most SAFETEA-LU funding categories. SAFETEA-LU funds are distributed within the region every two years in the TIP update. Municipalities should submit applications to the County, along with highway, transit, or pedestrian projects. Such applications require a 20% local match.
- **DCNR programs.** DCNR has several funding sources through its Community Conservation Partnership Program (C2P2) application process. This state funding can be used to match federal funds such as TE, SAFETEA-LU, and CMAQ funding.
- **County funding.** In exceptional cases, Delaware County could consider aiding a municipality in funding bicycle projects. Providing the 20% local match for projects on the TIP would permit the County to implement its network faster. Eighty percent of project costs would come from federal sources, 20% from the County. Or the County could offer 10% to match 10% from the local

municipalities. Since the costs might prove to be considerable, strong political support would be required. Eligible municipalities can also take advantage of Revitalization funding to match federal or state funds for the completion of bicycle-related projects. This program has elements of open space acquisition as well for the construction of shared use paths. Delaware County can also provide political support to well planned bicycle improvement projects, which can help projects get funding through other sources and influence landowners or developers.

Monitoring

The County can use the following general performance measures to assess the overall success of the Plan:

- Number of miles of bike lanes and multi-use trails
- Percentage of motor vehicle trips
- Percentage of bicycle trips
- Number of employees commuting to work by bicycle
- Number of persons bicycling for non-work purposes from their homes
- Volume count of bicyclists at selected locations
- Air pollution from automobiles
- Bike-on-transit counts from SEPTA
- Bicycle crashes
- Number of municipalities or multi-municipal planning areas that have appointed bicycle coordinators or have bicycling advisory committees
- Number of municipalities that have joined the Delaware County Bicycling Advisory Committee

The availability of data for the general performance measures is fairly good. The census provides periodic counts of bicycle commuters. Independent of the census, the National Personal Transportation Survey periodically gathers detailed information on mode shares. Air pollution is also routinely monitored. No one is currently doing ongoing bicycle counts, but performing counts at selected locations would make a good intern project. SEPTA will do periodic bike-on-transit estimates. PennDOT records data on the number and location of bicycle crashes in a readily accessible computerized format.

Performance Report

Reports evaluating the achievements/failures of bicycle policies, using the general performance measures above as well as those specific to each aspect of the Plan, should be made every two years following the adoption of the Plan. The most important measures of success of the Plan are the mode share of bicycles and the number of bicycle crashes. We would like to see the bicycle mode share go up and the crash rate go down; specifically, we would like to meet the national and regional goal of doubling bicycle use. When calculating performance measures, the Plan should also be updated to reflect changes in standards, completed facilities, changes in priorities, and any other elements that have changed from the adoption of the Plan. These additions will help to keep the *Delaware County Bicycle Plan* a pertinent and actively implemented document.

APPENDIX A

Policy Action Agenda

POLICY ACTION AGENDA

L = LEAD ROLE (active involvement in carrying out the action)
 S = SUPPORTING ROLE (indirect involvement in implementation. Provide support and advocacy for other partners to carry out.)

	State Government										County Government					Municipal Government					School Districts	DVRPC	Transit Providers	Bicycle Advocacy Organizations			Special Interest Groups		Federal Agencies		Professional Organizations		Commercial/Retail Providers																				
	State Officials/Legislators	PennDOT - Pedestrian & Bicycling Coordinators	PennDOT - Project Management Unit	PennDOT - Maintenance Unit	PennDOT - Assistant District Executive - Design	PennDOT - Bureau of Municipal Services	PennDOT - Bureau of Public Transportation	PennDOT - Bureau of Motor Vehicles	State Police	Historical and Museum Commission	Department of Conservation and Natural Resources	Department of Environmental Protection	County Council	Planning Department	Public Works Department	Intercommunity Health Department	Community Service	Parks and Recreation Department	Governing Bodies	Road/Public Works Departments	Parks and Recreation Departments	Police Departments	Planning Commissions	Environmental Advisory Board	School Boards	Administration	Planning Commission Board	Planning Staff	SEPTA	Amtrak	Bicycle Coalition of the Delaware Valley	Trail Groups	League of American Bicyclists	Bicycle Clubs	Transportation Management Associations	Chambers of Commerce	Automobile Associations/Clubs (I.e., AAA)	Insurance Providers (I.e. Health, Auto)	U.S. Fish & Wildlife Service	National Park Service	Elected Officials	Township/Borough Officials Associations	Police Chiefs Association	Pennsylvania Planning Association	Engineering Associations	Employers	Shopping Center Owners/Tenants	Bicycle Shops	Developers	Media/Press	General Public, Interested Citizens, Bicyclists		
Engineering and Policy Objectives:																																																					
1. Endorse and adopt Delaware County Bicycle Plan policies	L	L	S	S	S	S	S	S	S			L	L	S	S		L	L	S	S	S	S	S	L	S	L	S			S	S	S	S	S	S			S	S	L	L	S					S	S					
2. Retrofit roads	S	L	L	L	L	S			S	S		S	S	S	L	S		S	S	L	S		S	S	S	S	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
3. Remove hazards and hindrances	S	L	L	L	L	S			S			S	S	S	L	S	S	S	S	L	S		S	S	S	S	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
4. Develop trails	S	S	S		S							L	L		S		L	L	L		L	S	L	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
5. Provide bike racks and lockers		S				S		L	L		L	L	S		S		L	L	S	S	S	S	S	S	L	S	S	L	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
6. Provide showers and changing facilities		S						L		L		L	S		S			L	S	S	S	S	S	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
7. Establish bike-on-transit policies and equip transit vehicles	S	S			S	S						S	L					S	S	S	S	S	S	S	S	S	L	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
8. Include bike facility projects in funding programs	L	S	L	L		S	S					L	L	L				L	L	S	S	S	S	S		L	L	L	L	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S			
9. Adopt bike facility standards in municipal regulations		S										S		S				L	S	S	S	S	S																														
Encouragement Policy Objectives:																																																					
1. Publish and/or circulate literature about bicycling benefits		L						L					L		L		S	S		S	S	S		S	L				S		L	L	L	S	L	S		L	L	S			S		L	S		L	S				
2. Publish and/or circulate literature about bike commuting logistics		L											L		S		S	S		S	S	S		S	L				S		L	L	L	S	L	S		L	L	S			S		S		L	S		L	S		
3. Publish and/or circulate maps of bikeable roads and trails		L											L				L	S		L			S	S	L				S		L	L		S	L	S		L	L	S						S		L	S		L	S	
4. Advertise plans, programs, and policies	S	S					L	S				L	L	S			L	L	S	S			S	S	L		L	L	L	L	S	S	S	S	L			L	S			S								L	S		
5. Establish employer policies	L	S						L	L		L	L	S				L	S		L		S		L	L	S		L	S		S	S	S	L	S			S	S	S			S	S	S		L	L		S	S		
6. Establish bike-to-work days and special events	L	S										L	L	S		L	L	L	S		S	S	L	S		L	S		L	L	L	S	L	L	S	L	L	S		L	L	S							L	L	L		
7. Campaign to advance bicycling transportation	L	S			S		L	S		L		L	L	S	L	L		L	S	L		S	S		L		L		L	L	L	L	L	S	S	L	S	S	S		S	S	S							L	L	L	
8. Provide presentations and workshops		S						L					L					S		L			L	S	L	L		S		L	L	L	L	S	S	L																S	S

POLICY ACTION AGENDA

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	State Officials/Legislators	PennDOT - Pedestrian & Bicycling Coordinators	PennDOT - Project Management Unit	PennDOT - Maintenance Unit	PennDOT - Assistant District Executive - Design	PennDOT - Bureau of Municipal Services	PennDOT - Bureau of Public Transportation	PennDOT - Bureau of Motor Vehicles	State Police	Historical and Museum Commission	Department of Conservation and Natural Resources	Department of Environmental Protection	County Council	Planning Department	Public Works Department	Intercommunity Health Department	Community Service	Parks and Recreation Department	Governing Bodies	Road/Public Works Departments	Parks and Recreation Departments	Police Departments	Planning Commissions	Environmental Advisory Board	School Boards	Administration	Planning Commission Board	Planning Staff	SEPTA	Amtrak	Bicycle Coalition of the Delaware Valley	Trail Groups	League of American Bicyclists	Bicycle Clubs	Transportation Management Associations	Chambers of Commerce	Automobile Associations/Clubs (i.e., AAA)	Insurance Providers (i.e. Health, Auto)	U.S. Fish & Wildlife Service	National Park Service	Elected Officials	Township/Borough Officials Associations	Police Chiefs Association	Pennsylvania Planning Association	Engineering Associations	Employers	Shopping Center Owners/Tenants	Bicycle Shops	Developers	Media/Press	General Public, Interested Citizens, Bicyclists
Education Policy Objectives:																																																			
1. Publish and/or circulate literature about bicycle safety	L						L					L	S		L			S		L			S	L		S	L	S	S	S	L		S	S	L	L	S	S	L					S		L	S				
2. Establish and encourage school-based on-road bicyclist training	S						L	L				S	S		L			S		L	L			L	L		S			S	S	L				S	S	S	S	S	S					S			S		
3. Establish and encourage public workshops and bicyclist training	L						L					S	S		L			S		L	S	S	S	S	S	S	S	S	S	S	S	L	S	S	S	S	S	S	S	S	S	S	S					S		S	S
4. Establish and encourage driver education classes	S						L	S				S	S		S	S		S		S	S			L	L					L	S	L				S			S											S	
5. Incorporate bicycle issues in driver licensing manual and exam.	S	S					L	L				S	S		S			S		S										S	S	S				S			S											S	
6. Install "Share the Road" signs	L	L	L	L	S		S	S				S	S	S	S			L	L	S	S	S	S	S		S	S		L	L	S	S	S	S	S	S	S	S	S	S	S					S		S	S		
7. Provide profession development courses on bikeway planning and design for engineers and planners.	S	L	S	S	S	S	S	S	S	L	L	S	L	S	L		S	S	L	S	S	L	S	S	S	L	L	S	S	L	L	L	L	L	L	L	S	S	S	S	S	S	S	S	L	L			S	S	
Enforcement Policy Objectives:																																																			
1. Enact, modify, or repeal unsafe and inconsistent laws	L	S					L	L				S		S				L		L			S						S	S	S	S			S	S			L					S		S	S				
2. Train law enforcement officers	S	S					L					S	S	S				S		L			S				L		S	S	S				S	S			L								S	S			
3. Publish and circulate traffic laws	S	S					L					S	S	S				S		L			S				L		S	S	S				S	S			S	S									S	S	
4. Advertise high-profile bicycling incidents/crashes	S											S	S					L		L								L	L	L	L																		L	S	
5. Establish police-on-bike programs and bike patrols	S						L					S	S					L		L			S				L	L	L	S	S			S				S			S	L			S	S			S		
6. Promote good bicycling behavior and etiquette	S											S	S					S					S	S		S	S	L	L	S	S																		S	L	
7. Issue warnings and citations to bicyclists	S						L					S	S	S				S		L			S		S	S	S	S	S	S			S	S			S			S								S			
8. Issue warnings and citations to motorists	S						L					S	S	S				S		L			S		S	S	S	S	S	S			S	S			S			S									S		

Policy Agenda adapted from Montgomery County [Pennsylvania] Planning Commission. *Bicycling Road Map*. 1998

Table 3-1: Bicycle Improvement Network Results

Street Name	Votes	Crashes (1995-2000)	Schools		Recreational Facilities		Employers		Transit		Miles	Score	State Route #	Start	End	Priority
	number		number	number	points	number	points	number	points	number						
Bicyclists' Baltimore Pike	17	2	149	2.70	1742	2.39	12	2.70	32	2.01	11.68	11.43	partially 2010	Philadelphia	Leiper-Smedley Trail	Primary
Baltimore Pike	14	21	113	2.04	1342	1.84	8	1.80	30	1.89	9.25	11.35	2016 & 13	Philadelphia	PA 352	Primary
Upland Ave./22nd St./MacDade Blvd.	8	16	126	2.28	1506	2.07	10	2.25	23	1.45	7.42	11.28	2006	Kerlin St.	US 13	Primary
Chester Pike/MacDade Blvd./Cobbs Creek Pkwy. W/ Longacre Blvd. N	20	16	116	2.10	1356	1.86	7	1.57	26	1.63	8.90	11.20	13	Chester City	Philadelphia	Primary
Providence Rd./Palmer's Mill Rd./Newtown St./Darby-Paoli Rd.	38	4	97	1.76	1150	1.58	10	2.25	16	1.01	10.31	10.67	252	PA 320	Chester County	Primary
15th St.	0	3	104	1.88	1331	1.83	10	2.25	21	1.32	0.94	10.47		Several portions in Chester City		Primary
Madison St./Providence Rd./Chester Rd./Sproul Rd./Spring Mill Rd.	20	7	141	2.55	1636	2.25	10	2.25	25	1.57	14.94	10.43	320	4th St.	Montgomery County	Primary
Edgmont Ave./Middletown Rd.	23	13	89	1.61	1076	1.48	10	2.25	15	0.94	11.59	9.39	352	9th St.	Chester County	Primary
Barclay St.	0	2	51	0.92	574	0.79	7	1.57	10	0.63	0.37	9.32		5th St.	10th St.	Primary
6th St. (Darby Borough)	0	3	44	0.80	648	0.89	1	0.22	27	1.70	0.54	9.16		Keystone Ave.	Cedar Ave.	Primary
Marshall Rd.	2	11	65	1.18	841	1.16	2	0.45	25	1.57	2.71	9.16	2024	Burmout Rd.	Philadelphia	Primary
4th St./Highland Ave./9th St./Morton Ave.	0	13	65	1.18	750	1.03	9	2.02	11	0.69	3.28	8.88	13	Trainer Borough	Ridley Creek	Primary
West Chester Pike/Market St.	21	26	73	1.32	1150	1.58	2	0.45	24	1.51	11.82	8.84	3	Chester County	Philadelphia	Primary
Guilford Rd.	0	3	53	0.96	605	0.83	2	0.45	25	1.57	0.60	8.81		Radbourne Rd.	Aberdeen Rd.	Primary
Kerlin St.	0	4	53	0.96	657	0.90	7	1.57	10	0.63	0.93	8.36	partially 3001	2nd St.	Upland Ave.	Primary

Table 3-1: Bicycle Improvement Network Results

Street Name	Votes	Crashes (1995-2000)	Schools		Recreational Facilities		Employers		Transit		Miles	Score	State Route #	Start	End	Priority
	number		number	number	points	number	points	number	points	number						
12th St.	0	4	67	1.21	809	1.11	9	2.02	12	0.75	1.30	8.17		Various sections in Chester City		Primary
Wanamaker/Lincoln/Kedron/Woodland Ave.	6	8	81	1.47	1031	1.42	7	1.57	19	1.19	5.60	8.15	420	PA 291	PA 320	Primary
State Rd./Township Line Rd.	10	5	76	1.38	1032	1.42	3	0.67	21	1.32	4.58	8.06	1	Springfield Rd.	Montgomery County	Primary
Chatham Rd.	0	2	40	0.72	488	0.67	2	0.45	23	1.45	0.42	8.05		Garden Court Rd.	Walnut St.	Primary
Garrett Rd.	1	8	76	1.38	879	1.21	3	0.67	25	1.57	2.89	7.94	2019	Darby Creek	Market St.	Primary
Bullens Ln.	1	1	68	1.23	766	1.05	7	1.57	14	0.88	0.63	7.90	partially 2008	US 13	PA 320 & Fairview Rd.	Primary
Harwick/Booth St.	0	2	48	0.87	632	0.87	5	1.12	11	0.69	0.46	7.90		2nd St.	Highland Ave.	Primary
Madison St.	0	2	54	0.98	576	0.79	6	1.35	10	0.63	0.50	7.75		20th St.	Chester Park	Primary
Hampden Rd.	0	3	49	0.89	594	0.82	2	0.45	25	1.57	0.75	7.73		Ruskin Ln.	Ludlow St.	Primary
Price St./2nd St./Crosby St./4th St./Industrial Hwy./Governor Printz Blvd.	2	9	88	1.59	1086	1.49	9	2.02	20	1.26	9.06	7.57	291	US 13	Philadelphia	Primary
Hyatt St.	0	2	58	1.05	638	0.88	6	1.35	11	0.69	0.56	7.54		several portions in Chester City		Primary
Springfield Rd.	3	5	94	1.70	1169	1.61	4	0.90	29	1.82	5.32	7.53	2009	MacDade Blvd.	PA 320	Primary
Oak Ln.	1	4	82	1.48	986	1.36	4	0.90	24	1.51	2.32	7.40	2015	Primos Ave.	Springfield Rd.	Primary
Concord Rd./Engle St.	5	4	66	1.19	1139	1.57	12	2.70	13	0.82	8.82	7.30	3007 & 3033	9th St.	Baltimore Pike	Primary
State Rd.	2	6	74	1.34	950	1.31	4	0.90	21	1.32	3.48	7.17	2026	US 1	Philadelphia	Primary
Burmont Rd.	4	2	82	1.48	1114	1.53	3	0.67	24	1.51	3.27	7.02	2007	Glendale Rd.	Baltimore Ave.	Primary
Hook Rd.	2	2	42	0.76	632	0.87	2	0.45	17	1.07	1.04	7.00	2015	Philadelphia	Primos Ave.	Primary

Table 3-1: Bicycle Improvement Network Results

Street Name	Votes	Crashes (1995-2000)	Schools		Recreational Facilities		Employers		Transit		Miles	Score	State Route #	Start	End	Priority
	number		number	number	points	number	points	number	points	number						
Main St./Lansdowne Ave./Darby Rd.	5	14	69	1.25	1033	1.42	2	0.45	28	1.76	9.32	6.92	2005	Philadelphia	PA 320	Primary
Brookhaven/Turner Rd.	1	1	94	1.70	1053	1.45	11	2.47	15	0.94	5.74	6.91	3003	Bridgewater Rd.	Baltimore Pike	Primary
Amosland Rd.	0	2	56	1.01	705	0.97	6	1.35	18	1.13	0.83	6.87	2021	US 13	MacDade Blvd.	Primary
Victory Rd.	0	1	43	0.78	530	0.73	2	0.45	23	1.45	0.29	6.86	2041	Market St.	Philadelphia	Primary
7th St.	0	6	66	1.19	748	1.03	8	1.80	11	0.69	2.96	6.74		Various Sections in Chester City		Secondary
Yale Ave./Rose Valley Rd. /Manchester Ave.	3	1	77	1.39	809	1.11	9	2.02	15	0.94	3.62	6.56	3019	PA 320	Baltimore Pike	Secondary
Duttons Mill Rd.	1	0	71	1.28	845	1.16	7	1.57	14	0.88	0.60	6.56	3020	PA 452	PA 352	Secondary
Hathaway Lane	1	0	32	0.58	446	0.61	2	0.45	12	0.75	0.24	6.56	partially 1011	Darby Rd.	Montgomery County	Secondary
Cedar Ln.	0	3	68	1.23	915	1.26	3	0.67	20	1.26	1.43	6.52		Various sections in Upper Darby Twp.		Secondary
69th St. Blvd./Church Ln.	0	7	53	0.96	693	0.95	2	0.45	25	1.57	2.83	6.40	partially 2001	Market St.	Philadelphia	Secondary
Drexel Ave./Eagle Rd./Wynnewood Rd.	4	5	56	1.01	810	1.11	1	0.22	21	1.32	3.35	6.35	1005	Upper Darby Twp.	Montgomery County	Secondary
South Ave.	0	3	68	1.23	846	1.16	4	0.90	18	1.13	1.56	6.34	2017	US 13	Providence Rd.	Secondary
Ridley Creek Rd.	5	2	34	0.62	516	0.71	6	1.35	12	0.75	2.42	6.32	4003	Baltimore Pike	Bishop Hollow Rd.	Secondary
Bridgewater Rd.	0	1	64	1.16	832	1.14	9	2.02	13	0.82	0.88	6.28	3018 & 3015	Concord Rd.	Brookhaven Rd.	Secondary
Shadeland Ave.	0	3	73	1.32	965	1.33	2	0.45	26	1.63	2.01	6.22		Burmout Rd.	Dermond Recreation Area	Secondary
Chestnut St.	0	2	67	1.21	720	0.99	6	1.35	14	0.88	1.14	6.18	partially 3013	10th St.	PA 320	Secondary
Stewart Ave. / Pembroke Ave.	0	2	52	0.94	671	0.92	2	0.45	25	1.57	0.88	6.15	2022	Lansdowne Ave.	Oak Ave.	Secondary

Table 3-1: Bicycle Improvement Network Results

Street Name	Votes	Crashes (1995-2000)	Schools		Recreational Facilities		Employers		Transit		Miles	Score	State Route #	Start	End	Priority
	number		number	number	points	number	points	number	points	number						
3rd St.	0	4	65	1.18	736	1.01	8	1.80	10	0.63	2.69	6.11		Various sections in Chester City		Secondary
Essex Ave.	0	2	60	1.09	810	1.11	2	0.45	25	1.57	1.24	5.83		Shadeland Ave.	Wycombe Ave.	Secondary
Clifton/Sharon Ave.	0	3	72	1.30	863	1.19	1	0.22	27	1.70	2.26	5.74	2013	Hook Rd.	Springfield Rd.	Secondary
Sansom St.	0	2	45	0.81	563	0.77	2	0.45	23	1.45	0.91	5.68		Various sections in Upper Darby Twp.		Secondary
Edmonds Ave.	0	2	75	1.36	1004	1.38	2	0.45	24	1.51	2.05	5.68		Marshall Rd.	Steel Rd.	Secondary
Powell Rd.	0	2	67	1.21	746	1.03	3	0.67	16	1.01	1.16	5.64	2020	Thomson Rd.	Springfield Rd.	Secondary
Market St./Pennell Rd.	3	4	62	1.12	870	1.20	7	1.57	12	0.75	7.10	5.63	452	US 13	PA 352	Secondary
Ridley/13th Ave.	0	1	73	1.32	735	1.01	7	1.57	19	1.19	1.93	5.61	2004	US 13	PA 420	Secondary
4th St. (Darby & Colwyn)	0	2	42	0.76	638	0.88	1	0.22	18	1.13	0.79	5.52		Tribet Pl.	Fern St.	Secondary
Calcon Hook Rd.	0	2	49	0.89	717	0.99	1	0.22	19	1.19	0.91	5.49	2011	Hook Rd.	US 13	Secondary
Long Ln.	0	2	52	0.94	660	0.91	2	0.45	25	1.57	1.26	5.46		Church Ln.	Garrett Rd.	Secondary
Fairview Rd.	0	1	75	1.36	737	1.01	7	1.57	15	0.94	1.93	5.40	2035	US 13	PA 320	Secondary
Waterville Rd./Chestnut Pkwy.	0	1	68	1.23	734	1.01	7	1.57	14	0.88	1.41	5.40	3013	PA 320	Brookhaven Rd.	Secondary
Baltimore Pike	2	0	28	0.51	466	0.64	4	0.90	7	0.44	0.69	5.39	1	Darlington Rd.	Valley Brook Rd.	Secondary
Walnut St.	0	2	44	0.80	649	0.89	1	0.22	18	1.13	0.87	5.34		Bywood Ave.	Powell Ln.	Secondary
Ridge Rd./9th St.	0	4	48	0.87	668	0.92	6	1.35	11	0.69	2.80	5.26	3006	Delaware State	Highland Ave.	Secondary
Ashland Ave.	0	2	72	1.30	867	1.19	4	0.90	18	1.13	2.91	5.21		Maple Ave.	Providence Rd.	Secondary
Beatty Rd.	2	1	55	1.00	688	0.95	4	0.90	12	0.75	2.06	5.06	2018	Baltimore Pike	PA 320	Secondary
Wycombe Ave.	0	2	57	1.03	710	0.98	2	0.45	25	1.57	2.02	5.02		US 13	Marshall Rd.	Secondary

Table 3-1: Bicycle Improvement Network Results

Street Name	Votes	Crashes (1995-2000)	Schools		Recreational Facilities		Employers		Transit		Miles	Score	State Route #	Start	End	Priority
	number		number	number	points	number	points	number	points	number						
10th St./Post Rd.	2	0	39	0.71	596	0.82	6	1.35	10	0.63	1.45	4.89	13	Delaware State	Chester City	Secondary
Knowlton Rd.	1	0	53	0.96	640	0.88	8	1.80	12	0.75	2.12	4.86	3022	PA 452	PA 352	Secondary
Rose Tree Rd.	1	2	45	0.81	633	0.87	6	1.35	11	0.69	3.65	4.54	4002	PA 352	State Rd.	Tertiary
Bethel Rd.	0	1	40	0.72	836	1.15	6	1.35	8	0.50	1.27	4.51	3010	US 322	Concord Rd.	Tertiary
Earlington Rd.	0	2	43	0.78	684	0.94	1	0.22	21	1.32	1.62	4.49	1003	Upper Darby Twp.	Eagle Rd.	Tertiary
Brookline Blvd.	0	2	43	0.78	587	0.81	1	0.22	19	1.19	1.34	4.49	1050	Darby Rd.	Manoa Rd.	Tertiary
State Rd./Old Marple Rd.	1	0	57	1.03	760	1.04	4	0.90	15	0.94	2.53	4.30	1008	Providence Rd.	Springfield Rd.	Tertiary
Haverford/County Line Rd.	2	3	39	0.71	490	0.67	2	0.45	19	1.19	4.12	4.23	1001 & 1014	Philadelphia	Lancaster Ave.	Tertiary
10th St.	0	3	29	0.52	498	0.68	5	1.12	8	0.50	2.19	4.19		Various sections in Chester City		Tertiary
Media Line Rd.	3	1	24	0.43	445	0.61	1	0.22	6	0.38	1.58	4.17	1030	PA 252	West Chester Pike	Tertiary
Elwyn Rd.	0	1	34	0.62	436	0.60	6	1.35	9	0.57	1.02	4.12	3026	PA 352	Baltimore Pike	Tertiary
Malin Rd.	0	2	31	0.56	514	0.71	2	0.45	25	1.57	2.74	4.02		Springfield Rd.	Earles Rd.	Tertiary
Front St.	0	2	36	0.65	594	0.82	1	0.22	18	1.13	1.83	3.91		Various sections in Darby and Colwyn Boroughs		Tertiary
4th Ave. (Tinicum Twp.)	0	1	28	0.51	319	0.44	2	0.45	12	0.75	0.58	3.87	2029	2nd St.	PA 291	Tertiary
Chichester Ave.	0	1	36	0.65	705	0.97	6	1.35	8	0.50	3.94	3.72	3009	PA 452	Concord Rd.	Tertiary
Lancaster Ave.	5	4	27	0.49	407	0.56	1	0.22	8	0.50	4.67	3.70	30	Montgomery County	Chester County	Tertiary
Lenni Rd.	2	0	29	0.52	415	0.57	4	0.90	9	0.57	1.90	3.61	3032	Llewellyn Rd.	PA 452	Tertiary
Llewellyn Rd./Birney Hwy./Aston Mills Rd.	2	0	29	0.52	421	0.58	4	0.90	6	0.38	1.72	3.54	3023	Concord Rd.	Valley Brook Rd.	Tertiary
Bishop Hollow/Barren Rd.	1	0	38	0.69	674	0.93	5	1.12	9	0.57	5.67	3.49	4004	PA 352	West Chester Pike	Tertiary
Baltimore Pike	1	2	29	0.52	578	0.79	5	1.12	11	0.69	9.92	3.42	1	Chester County	PA 352	Tertiary

Table 3-1: Bicycle Improvement Network Results

Street Name	Votes	Crashes (1995-2000)	Schools		Recreational Facilities		Employers		Transit		Miles	Score	State Route #	Start	End	Priority
	number		number	number	points	number	points	number	points	number						
Gradyville Rd.	4	1	23	0.42	407	0.56	4	0.90	8	0.50	5.10	3.36	4008	Creek Rd.	Bishop Hollow Rd.	Tertiary
Street Rd.	4	0	6	0.11	77	0.11	0	0.00	3	0.19	1.37	3.33	926	Chester County	PA 352	Tertiary
Foulk Rd./Valley Brook Rd.	3	0	25	0.45	437	0.60	4	0.90	6	0.38	3.21	3.26	3029	PA 261	US 1	Tertiary
Ellis Rd./Ardmore Ave.	0	1	40	0.72	547	0.75	2	0.45	12	0.75	2.82	3.02	1018	Lawrence Rd.	Montgomery County	Tertiary
Naamans Creek Rd.	2	1	19	0.34	522	0.72	5	1.12	7	0.44	9.06	2.95	491	US 202	Delaware State	Tertiary
Cedar Grove Rd.	1	0	29	0.52	594	0.82	2	0.45	10	0.63	2.07	2.90	1024	PA 252	PA 320	Tertiary
College Ave.	0	1	28	0.51	485	0.67	2	0.45	10	0.63	1.69	2.85	1026	Darby Rd.	Montgomery County	Tertiary
Valley/Darlington Rds.	1	1	20	0.36	378	0.52	4	0.90	8	0.50	3.70	2.82	4005	US 1	PA 352	Tertiary
Bryn Mawr Ave.	1	0	37	0.67	595	0.82	2	0.45	10	0.63	4.54	2.79	1032	West Chester Pike	Montgomery County	Tertiary
Darby Paoli Rd.	0	1	29	0.52	386	0.53	2	0.45	8	0.50	2.29	2.44	1015	Bryn Mawr Ave.	Brooke Rd.	Tertiary
Conestoga Rd.	0	2	25	0.45	378	0.52	1	0.22	7	0.44	4.47	2.08	1019	Montgomery County	Lancaster Ave.	Tertiary
St. Davids Rd./Darby Paoli Rd./Brooke Rd./Wayne Ave.	0	1	21	0.38	280	0.38	2	0.45	8	0.50	3.31	2.01	1046	PA 252	Chester County	Tertiary
Newtown/Radnor Chester/King of Prussia Rds.	0	1	22	0.40	274	0.38	2	0.45	8	0.50	3.99	1.98	1021	Darby Paoli Rd.	Chester County	Tertiary
Pyle Rd.	0	1	3	0.05	238	0.33	1	0.22	1	0.06	0.87	1.81	3042	US 202	PA 491	Tertiary
Harvey Rd.	1	0	0	0.00	231	0.32	1	0.22	2	0.13	1.37	1.40	4020	US 1	Oakland Rd.	Tertiary
Totals	Votes	Crashes	Schools		Recreational Facilities		Employers		Transit		Miles	Score				
Total	265	343	215		3200		18		36		329.1					
Average	2.57	3.33	55.26		727.61		4.45		15.91		3.20	5.97				

County Boundary

On-road Bicycle Improvement Network

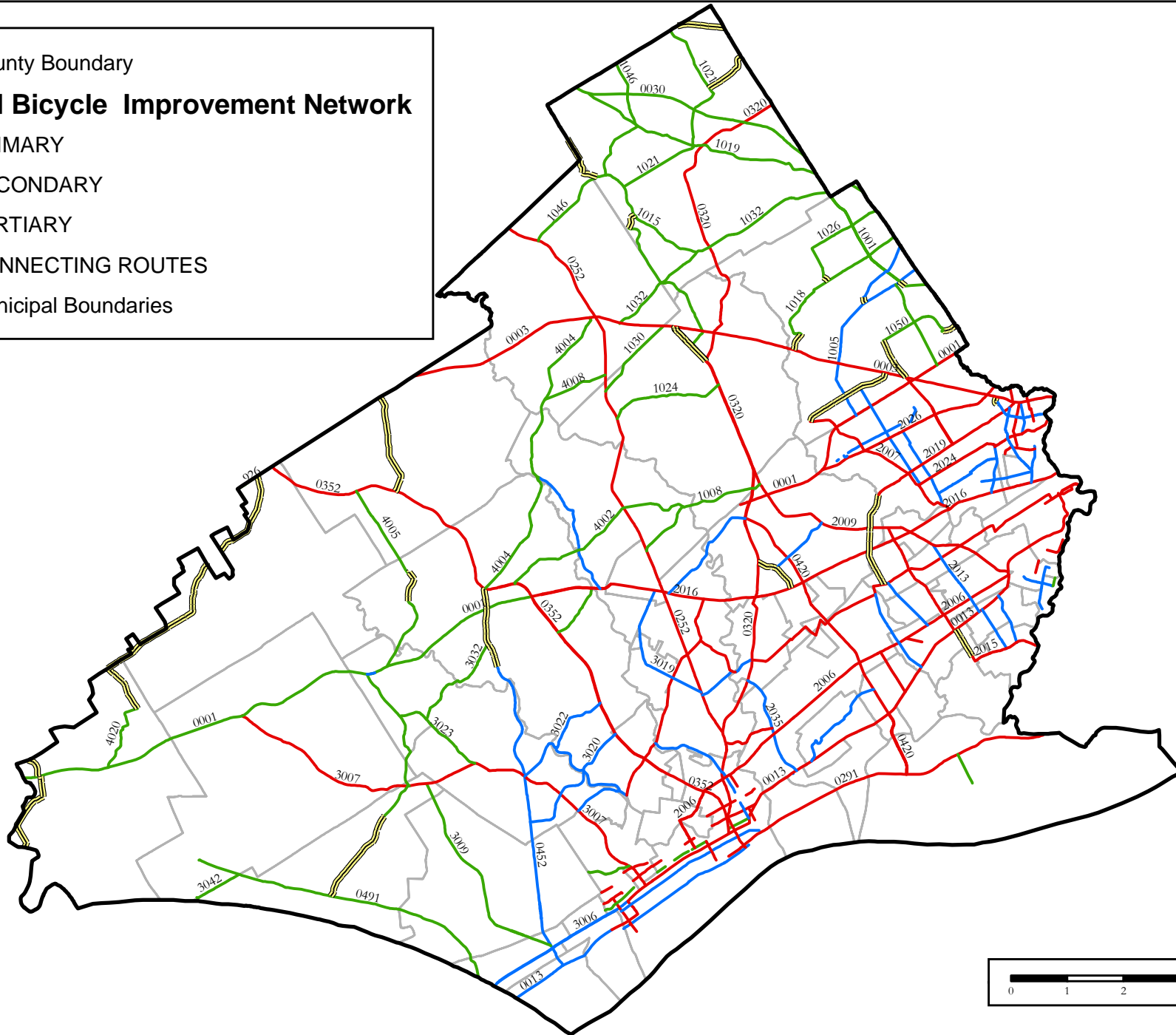
PRIMARY

SECONDARY

TERTIARY

CONNECTING ROUTES

Municipal Boundaries



NOTES:

1. USGS - County and Municipal Boundaries
2. Delaware County Planning Department - Bicycle Improvement Areas

Disclaimer
This map is for analytical purposes only. The reliability of this map depends on the accuracy of the underlying data sources which have not been verified.

Prepared by
Delaware County
Planning Department
March 2005