Gaithersburg

A CHARACTER COUNTS! CITY

CITY OF GAITHERSBURG

BIKEWAYS AND PEDESTRIAN PLAN

A MASTER PLAN ELEMENT

Published August 1999

BIKEWAYS AND PEDESTRIAN PLAN
Adopted March 1, 1999

MAYOR AND CITY COUNCIL

Sidney A. Katz, Mayor

Stanley J. Alster
Sharon B. Bohrer
Charles F. Davis
Geraldine E. Edens
Henry F. Marraffa, Jr.

PLANNING COMMISSION

Basil Waters, Chairman
John B. Schlichting, Vice Chairman
Victor E. Hicks
Blanche Keller
Timothy J. Sexton

BOARD OF APPEALS

Marsha D. Levin, Chairman
Harvey Kaye, Vice Chairman
James Harris
Richard Knoebel
Leonard Levy
Gary Trojak, Alternate

CITY MANAGER

David B. Humpton

PLANNING AND CODE ADMINISTRATION DEPARTMENT

Jennifer Russel, Director
Glenn Mlaker, Senior Planner*

Publication Team:
Patricia Patula, Publication Coordinator
Maria Fullerton, Publication Layout
Glenn Mlaker, Geographic Information System

* Principal Author
Consulting services provided by Charles Denney and Associates

TABLE OF CONTENTS

INTRODUCTION 1

GOALS AND OBJECTIVES 2

BIKEWAYS AND PEDESTRIAN PLAN

Bikeways Plan 7

Introduction 7

Gaithersburg Bicycle Loop 8

Origins and Destinations 9

Travel Corridors 9

Major Constraints 9

Fundamentals for Planning and Designing Bicycle Facilities 15

On-street Bike Lanes 15

Drainage Facilities 16

Traffic Control Devices 17

Traffic Calming and the Bicyclist 18

Intersection/Turn Lanes 19

Multi-use Path or Trail 19

Design Principles 21

On-street Bike Lanes 21

Intersections 22

Bicycle Use of Sidewalks 24

Design of Bicycle Path Adjacent to Roadway 24

Off-street Trails 25

Signing and Marking Bicycle Facilities 26

Bicycle Parking and Storage Facilities 27

Bicycle Safety Education 28

Pedestrian Plan 29

Introduction 29

Sidewalk Guidelines 29

Intersections and Crosswalks 31

Coordination with Other Government Agencies 34

Plan Implementation 35

DEFINITIONS 39

INTRODUCTION

Improving bicycling and walking opportunities for the citizens of Gaithersburg has become a top priority for the City. In recent surveys conducted by the City's Parks and Recreation Department, improving walking and biking access to City-wide and regional trails was one of the most noted survey responses. The Mayor and City Council responded to citizen requests and have devised a strategic direction aimed at implementing this *Bikeways and Pedestrian Plan*. The City has embarked on an aggressive campaign to focus all City resources on specific strategic directions.

The City of Gaithersburg has undertaken the task of writing this *Bikeways and Pedestrian Plan* because of the increasing interest in providing a Smart Growth alternative to the single occupant motor vehicle. The principles of Smart Growth rely heavily upon the citizens of Gaithersburg utilizing alternative modes of transportation. The goal of this plan is to promote the use of the bicycle and walking to complete everyday tasks such as commuting to work, conducting every day routine errands, and for recreational purposes. The ability to walk to destinations will also achieve the Smart Growth goal of providing proper facilities to maneuver through an auto-dominated environment.

The intent of this *Bikeways and Pedestrian Plan* is to provide convenient access to parks, schools, and transit nodes as well as commercial employment and shopping centers. Full implementation of this plan will provide opportunities for the citizens of Gaithersburg to use alternative transportation (i.e., bicycling and walking).

Gaithersburg's street system was largely built decades ago without much thought to the bicyclist and pedestrian needs. This plan will refocus the efforts on designing streets that accommodate bicycles and pedestrians.

Bicycle and pedestrian planning is undertaken through the Master Plan process and is administrated by the Planning and Code Administration for the City of Gaithersburg. The administration and coordination with other City departments, relative to the completion of this plan, is appropriate. The full implementation of the plan will be a team effort by all City departments.

This plan is divided into two sections: a Bikeways Plan section, which will address a wide variety of bicycle topics, and a Pedestrian Plan, focusing on walking priorities. Each section relates to the other because many of the facilities are interlinked. The design guidelines for each section should be strictly enforced and the City will make every effort to implement this plan. The goals and objectives have been placed at the front of the document and should be used hand-in-hand with the more technical text. The maps and graphics within the report should be used as a graphic tool to visualize the placement of bicycle paths and on-street bike lanes. The intent of the maps is to conceptually show where a facility may be located.

GOALS AND OBJECTIVES

1. The implementation of this *Bikeways and Pedestrian Plan* will promote Smart Growth.

Smart Growth in the City of Gaithersburg, as it relates to the *Bikeways and Pedestrian Plan,* focuses on two principles. The Smart Growth Policy addresses many different types of problems, and the promotion of bicycle and pedestrian issues is in the forefront. Specifics of the policy, as it relates to this goal and master plan, can be summarized in the principles, as follows:

- Community size should encourage walking and bicycling so that housing, schools, employment, daily needs, and other activities are within easy walking and bicycling distance.

- The street network and pedestrian and bike paths should contribute to a system of fully connected and interesting routes to all destinations. Their design should encourage pedestrian and bicycle use by being small, manageable in size, and spatially defined by buildings, trees, lighting, and by discouraging high speed traffic.

The integration of these principles (and many of the other Smart Growth Principles) as it relates to the policy, will promote bicycling and walking issues. As part of the adoption of this plan, it is the recommendation that a person from the newly appointed Gaithersburg Bicycle and Pedestrian Advisory Committee be retained to counsel Planning Staff and the Planning Commission on large site plan reviews and other capital improvement projects.

2. The City will appoint a group of citizens to act as a standing committee on bicycle issues and designate a City Staff member as the official Bicycle Coordinator.

Cities that have been successful in creating a bicycle-friendly environment have dedicated people—citizens, staff, and elected officials—to assure that plans and programs are in place to improve conditions for bicycling and walking. The Mayor and City Council will appoint a Gaithersburg Bicycle and Pedestrian Advisory Committee (GBPAC) within the first six months of the adoption of this plan. This standing committee will be charged with the implementation of this *Bikeways and Pedestrian Plan*, plus act as advisors to the Mayor and City Council on related issues. The Gaithersburg Bicycle and Pedestrian Advisory Committee will be used as a clearinghouse for City capital improvement projects relating to budgeting issues and prioritizing projects. The appointment of a City staff member as the official Bicycle and Pedestrian Coordinator will provide a centralized person who can promote the plan and help in its implementation. This appointment will also demonstrate the City's commitment to these issues.

Measure of Effectiveness: The City will appoint a Gaithersburg Bicycle and Pedestrian Advisory Committee (GBPAC) within the first six months of the adoption of this plan. The GBPAC will prepare a yearly report for the City Council that includes a status report on bicycling in Gaithersburg and an update on progress towards implementation of this plan.

3. Increased education/training and law enforcement of bicycle rules will encourage proper bicycle use.

To fully implement this plan, the City Police Department will be an advocate for bicycle education/training and will continue to enforce all appropriate City laws pertaining to bicycles.

- Bicycle program advocates have long advocated including education/training and law enforcement activities as an integral part of encouraging and managing bicycle use.

- The City should develop programs to educate and train adults and children on the proper use of bicycles in traffic and make bicycle-related law enforcement a routine, ongoing enforcement element within the City's Police Department.

Measure of Effectiveness: Working with GBPAC, the City Police Department, and other interested parties will develop an education and enforcement program that encourages safe and lawful riding by all cyclists.

4. Bicycles will be fully integrated into the planning, design, and operation of the local transportation system.

For many years, the development of a transportation network in the City of Gaithersburg has been focused on allowing motor vehicles to move freely from place to place. Better recognition of bicycle use on City streets as a viable and valuable means of transportation is needed.

To implement this goal, the Planning and Code Administration will conduct critical reviews for all site plans, specifically looking for compliance with, and implementation of, this bikeways and pedestrian plan.

- All new residential and commercial developments within the City must take into consideration facilities for bicycle use as a means of recreation and larger transportation linkages.

- Any redevelopment of a site or large request to amend an existing site plan will cause the applicant to provide accommodations for bicycles in a manner described in this master plan element.

Measure of Effectiveness: The site plan review process will be reviewed and amended to include provisions of facilities for bicycling and walking within two years of the adoption of this plan.

5. The City's bicycle network will attempt to overcome major physical constraints by seeking ways of providing access to destination points throughout the City.

Bicycle and pedestrian access around and through the City is severely constrained by the presence of several large barriers such as Interstate 270, the CSX rail line, large road intersections, narrow road right-of-way widths, and the lack of bike trails and dedicated lanes. To overcome many of these constraints, an in-depth study will be undertaken within the next year to explore all options in fulfilling the above-stated goal, as mentioned in the measure of effectiveness.

- The City will continue to seek options to provide easy bicycle and pedestrian access for cross-City connections from the east and west sides of Gaithersburg. The presence of Interstate 270 and its 14 lanes of traffic is a major constraint.

- The City will work with all State and County agencies, with the ultimate goal of retrofitting underpasses for Interstate 270 to provide access for bicycles and pedestrians. Retrofitting can take place with future road projects around these constraint points.

- The City will seek out ways of improving bicycle and pedestrian safety in and around major intersections.

- Where possible, the City will negotiate increased right-of-way widths during the site plan review process for the purpose of providing bicycle or pedestrian facilities.

- Existing bike lanes that are presently unmarked will be marked and signed.

Measure of Effectiveness: Working with the newly formed Gaithersburg Bicycle and Pedestrian Advisory Committee (GBPAC), priorities will be established for studying major barriers to cycling, with one barrier being studied each year until recommendations for each are completed.

6. The City's bicycle and pedestrian network will provide connectivity to existing and future facilities located within Montgomery County.

Providing a bicycle and pedestrian network that connects to the County system of trails and walkways is an important goal of this plan. The current and future opportunities to link Gaithersburg's and Montgomery County's facilities together will provide a great opportunity to access major destinations such as the C&O Canal, Seneca Creek State Park, and other key recreational areas. This goal will be achieved by establishing a working relationship between the appropriate Montgomery County agencies and City Staff.

- The City will coordinate with the Maryland-National Capital Park and Planning Commission (M-NCPPC) on identifying linkages between Gaithersburg and Montgomery County's future and existing facilities.

- Gaithersburg's bikeways and pedestrian plan will not conflict with the M-NCPPC master plan for trails and bikeways.

Measure of Effectiveness: A yearly meeting between City staff and M-NCPPC representatives will be conducted to coordinate City and County bike and pedestrian projects.

7. The bicycle and pedestrian plan will take a multi-modal approach by emphasizing walking and bicycle riding to existing and future transit nodes.

The presence of transit opportunities for the citizens of Gaithersburg include two Marc Commuter Rail stops, a large bus transfer station at Lakeforest Mall, the Shady Grove MetroRail Station, and the future Shady Grove/Clarksburg Transitway. As the existing road system nears final build-out and increased motor vehicle trips force these roads beyond carrying capacity, alternative modes of transportation such as the bicycle must be accommodated. Gaithersburg will promote this goal through continued marketing of the plan's principles. Possible outlets may include the City's informational publication *Communique*, special promotions, and outreach to the business community.

- The City recognizes the use of bicycles as an alternative means of transportation for its citizens getting to and from work.

- The City will encourage the use of the bicycle as a segment of a multi-modal commute by providing safe, clear connections to transit nodes while providing secure places to lock bicycles.

- The City will work with Montgomery County so as to provide safe bicycle access to the Shady Grove MetroRail Station.

Measure of Effectiveness: Working with the GBPAC, priorities will be set for studying access to transit nodes, one per year, until completed.

8. Secure bicycle parking will be provided at all commercial buildings, multi-family residences, and City facilities. Employers will be encouraged to provide shower and locker facilities for employee use.

The site plan review process allows the City the opportunity to require all appropriate development in Gaithersburg to comply with a new standard of providing secure bicycle parking and begin discussing shower and locker facilities. In recent years, the City has been requiring new commercial and multi-family residential developments to supply bike racks for its workers, visitors, and residents.

- The City will require that all new commercial, multi-family residential development, and City facilities place bike racks on their respective properties.

- During the site plan amendment process, the City will require the retrofitting of all commercial buildings and multi-family residences for the installation of bike racks.

- The City will encourage employers to provide shower and locker facilities for their employees as an incentive to bicycle commuting.

Measure of Effectiveness: The City will, within two years, develop regulations requiring or encouraging installation of bike parking, showers, and lockers when properties are developed or redeveloped. A list of manufacturers of racks will be developed by City staff.

9. Trail facilities within environmentally sensitive areas will be improved so as to minimize adverse impact to the surrounding natural habitat.

This bikeways and pedestrian plan does make recommendations to place trails within environmentally sensitive areas along stream beds and wetlands. The City of Gaithersburg is an urban setting and providing nature walks and trails within existing forested areas can be a recreational benefit. However, studies must be undertaken to determine the type of trail, surface material, and environmental impact before any final decision can be made on trail placement.

- The City will undertake environmental impact studies when reviewing the placement of a trail in an environmentally sensitive area.

- The City will limit the amount of disturbance to an environmentally sensitive area by possibly using a natural surface trail, limiting clearing, and narrowing recommended trail widths.

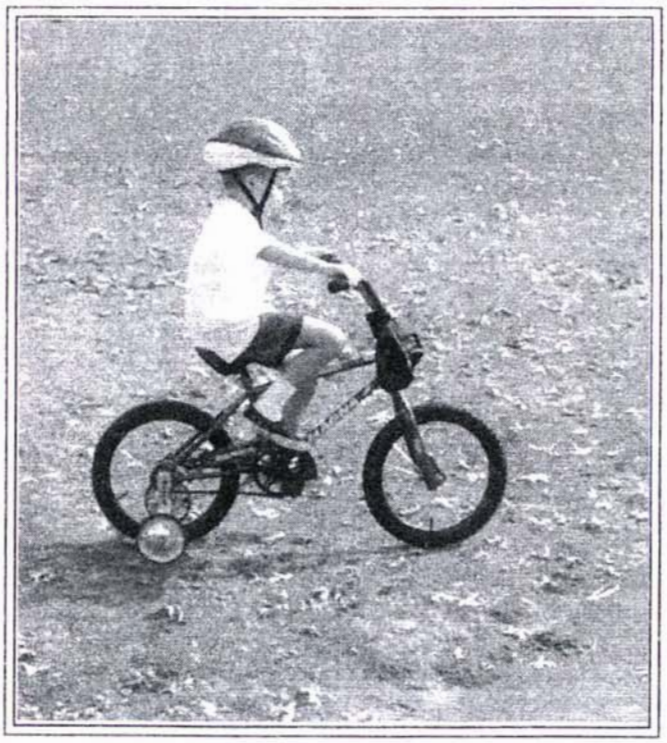
10. There will be increased opportunities for recreational bicycling, walking, and in-line skating within the City of Gaithersburg.

Outdoor recreation and physical fitness are increasingly being considered important factors in defining a high quality of life. Bicycling, walking, and in-line skating are popular activities for adults and children in Gaithersburg.

- To increase bicycling opportunities, the City, in cooperation with others, will permit and encourage the development and growth of bicycle clubs, special events rides, tours, bicycle races, bicycle rodeos, and bicycle safety instructions.

- Bicycle touring will be encouraged through marketing and promotion of Gaithersburg's bikeways and pedestrian system by producing a pocket map of routes.

Measure of Effectiveness: A Gaithersburg bicycle club should be formed in the next two years. A yearly bicycle event within the City limits should be instituted in the next five years, and a bicycle map should be published within the next year.



BIKEWAYS PLAN

INTRODUCTION

Nearly 100 million people in the United States own bicycles. However, the Bicycle Federation of America estimates that fewer than five percent would qualify as experienced or highly skilled cyclists. The City of Gaithersburg's policy is to accommodate existing bicyclists and encourage increased bicycle use. Novice riders will account for a large portion of the total cyclists converted to advanced bicyclists using the bicycle and trails network. Therefore, any roadway treatments intended to accommodate bicycle use must address the needs of both the experienced and novice rider. One solution to this challenge is to develop the concept of a classification system for bicycle users such as the following:

Advanced Bicyclists. These cyclists are experienced riders who can operate under most traffic conditions. They comprise the majority of the current users of collector and arterial streets and are best served by routes that provide direct access to destinations, usually via the existing street and highway system. These cyclists operate at maximum speed with minimum delays where sufficient operating space is present on a roadway or shoulder. Although advanced bicyclists represent only twenty percent of all bicyclists, they account for an estimated eighty percent of all bicycle trips. They are comfortable traveling long distances, are accustomed to using their bicycle in a variety of environments, and will be the most likely to choose to bicycle for commuting and shopping.

Basic Bicyclists. These cyclists are casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles. Some will develop skills and progress to the advanced level, but the majority of cyclists are within this category. These cyclists prefer comfortable access to destinations by a direct route using low-speed, low-volume streets or designated bike paths. Although they form the largest group of bicyclists, since they only ride occasionally, basic bicyclists account for a smaller percentage of total bicycle trips. However, many casual riders may progress into becoming more confident and active riders as they gain experience. Basic bicyclists will be more comfortable riding on lightly traveled neighborhood streets, or on separate bike paths. Basic bicyclists travel at slower speeds and for shorter distances compared to advanced cyclists, and frequently travel with other family members or friends.

Children Bicyclists. These cyclists are pre-teen riders whose roadway use is initially monitored by parents. Eventually, they are accorded independent access to the bicycle system. They, and their parents, prefer access to key destinations surrounding residential areas including schools, recreation facilities, shopping centers, and other residential areas. These riders like streets with low motor vehicle speeds and volumes, and well defined separation of bikes and motor vehicles.

Bicyclists in Gaithersburg form a highly diverse population with varying needs and interests. These bicyclists range from advanced, highly experienced riders who ride frequently and are confident in all traffic conditions and can negotiate with less operating space, to basic riders who are more casual in their riding practices and less comfortable riding in traffic, to young children who have not yet developed adequate judgement or received special training enabling them to ride in the street unless under parental control.

In establishing the bikeways plan for Gaithersburg, the following elements need to be taken into consideration:

Accessibility. This will measure the distance a bicycle facility, which could be a bike lane, trail or bike path, is from a specified trip origin or destination; the ease by which this distance can be traveled by bicycle; and the extent to which all likely original destinations are served. The City may decide to adopt a criterion of having a bicycle facility within one mile of every Gaithersburg residence. More importantly, no residential area of high priority destination (school, shopping center, large office park, or park) should be denied reasonable access by bicycle.

Directness. Studies have shown that most bicyclists will not use even the best bicycle facility if it greatly increases the travel distance or trip time relative to another alternative. Therefore, bike routes for basic and children bicyclists should be reasonably direct. The notion of directness relative to perceived safety can be a trade-off depending on the characteristics of the bicycle facility.

Continuity. The proposed network should have as few missing links as possible. If gaps exist, they should not include traffic environments, such as high volume or high speed motor vehicle traffic with narrow outside lanes, that are unpleasant or threatening to basic and children riders.

Route Attractiveness. This can encompass such factors as separation from motor vehicle traffic, visual aesthetics, and the real threat to personal safety along the route.

Low Conflict. The route should present few conflicts between bicyclists and motor vehicle operations.

Cost. Estimating the total costs to construct and maintain all facilities in the bike plan will help in the budgeting and implementation of the plan.

It is evident that bicycle facilities within the City limits of Gaithersburg are limited. (See Overall Bikeways Map on page 11.) Existing pathways can be found within the Kentlands community, Washingtonian Woods Park, and Summit Hall Farm Park. Newer and larger roads built by Montgomery County, such as Great Seneca Highway and Mid-County Highway, both have multi-purpose pathways adjacent to the roadways. All of these trails accommodate pedestrians, in-line skaters, and cyclists.

A comprehensive bikeways plan must take into account origins and destinations, travel corridors, and major constraints to the future network.

GAITHERSBURG BICYCLE LOOP

A goal of this Master Plan Element is to provide bicycle and pedestrian facilities that link the City together by providing a continuous double loop system around Gaithersburg. These two loops are designed to provide a safe and enjoyable route to get from point-to-point. The inner loop of the system will consist of bike paths and on-street bike lanes. The inner loop will be six miles and provide access to areas such as NIST, Kentlands, Quince Orchard Park, and other retail and office destinations. The 15-mile outer loop will be located within City parks on pathways, with on-street bike lanes and off-street hiker/biker paths. The outer loop will provide access to almost all major retail and office developments within the City. The official opening of the outer loop is a long-term goal and will take extensive coordination with other government agencies. The outer loop may require a phasing plan to fully implement the goal.

ORIGINS AND DESTINATIONS

The underlying assumption is that people on bikes want to go to the same places as do people in cars, and the existing system of streets and highways reflects the existing travel demands of the community. Most adults have a mental map of their community based on their experience as a car driver. Thus they tend to orient themselves by the location of major streets and highways.

The identification of origins and destinations will help in the decision-making process for determining where to place future bicycle facilities. Destinations Map, page 13, shows originating trips being generated from the residential neighborhoods and the destinations being the larger commercial and office centers as well as recreational facilities such as City parks and schools. The MetroRail station at Shady Grove is a major destination for commuters. Linking all these points together is the overall goal of this Master Plan.

TRAVEL CORRIDORS

The physical layout of the City of Gaithersburg, with many larger streets running north-south and east-west, lends itself to the development of bicycle travel corridors. These corridors are along Frederick Avenue, Great Seneca Highway, Mid-County Highway, Quince Orchard Road, Clopper Road, Summit Avenue, and Muddy Branch Road. The safe and easy movement of bicycles along these corridors will help achieve the goal of linking origins and destinations.

MAJOR CONSTRAINTS

Major constraints within Gaithersburg relative to the implementation of this bikeways plan revolves around the physical barriers of Interstate 270 and several large road intersections.

Interstate 270 is a north-south, 14-lane, limited access highway which divides the City. This interstate has been an asset to the development of the City, but not in terms of moving pedestrians or riding a bicycle.

I-270 and Quince Orchard Road

There are currently four existing, and one future, road crossings of Interstate 270; each one has been identified below with a brief discussion of the current situation.

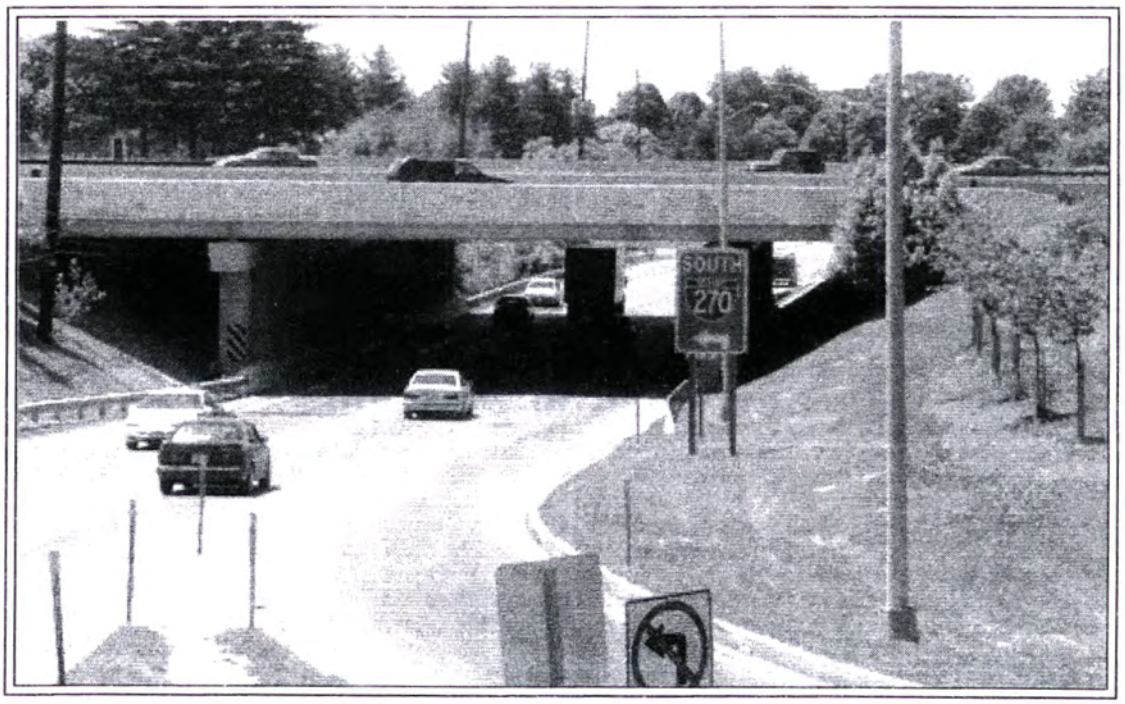
I-270 and Game Preserve Road. Game Preserve Road, a small two-lane rural road crosses underneath Interstate 270 at the northern boundary of the City. This road has great potential to serve as a bicycle link; however, the road is very narrow and additional road widening for an on-street bike lane is unlikely.

I-270 and Quince Orchard Road. This interchange area is one of the most congested in Montgomery County. The presence of many on and off ramps and the presence of a CSX overpass with abutments limits the capabilities of developing a safe bikeway system. Great care must be taken to retrofit this area to accommodate bicycle traffic for the basic and child cyclists.

I-270 and West Diamond Avenue. This intersection is one of the most dangerous and unpleasant places to walk or bike. The Maryland State Highway Administration is currently designing a new park and ride lot at Exit 10 and Interstate 270. As a result of this project, West Diamond Avenue will be widened and sidewalks will be placed behind the bridge abutments to provide a safe bicycle and pedestrian access.

I-270 and Future West Watkins Mill Road. The future construction of West Watkins Mill Road over Interstate 270 must take into consideration the placement of a bike path and sidewalks. This crossing may be able to off-set the deficiencies of the Interstate 270 and Quince Orchard Road intersection.

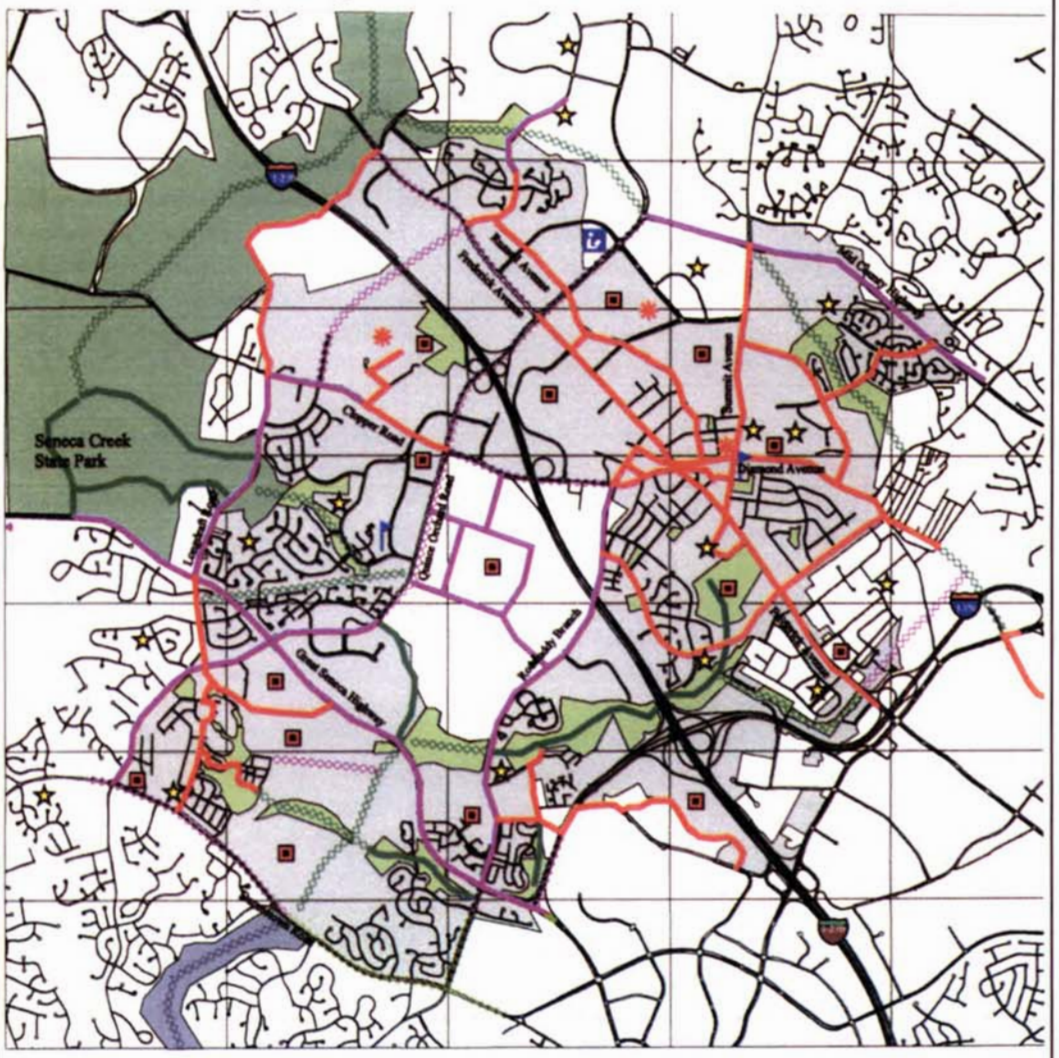
Each of the above mentioned areas will require an engineering study to determine what alternatives are available to better accommodate bicycles and pedestrians. Working with the GBAC, the City should develop a priority listing for studying these constrained areas, and commit to completing one study each year until all the areas have been addressed.



I-270 and West Diamond Avenue

Gaithersburg Bikeways And Pedestrian Plan

Overall Bikeways Map



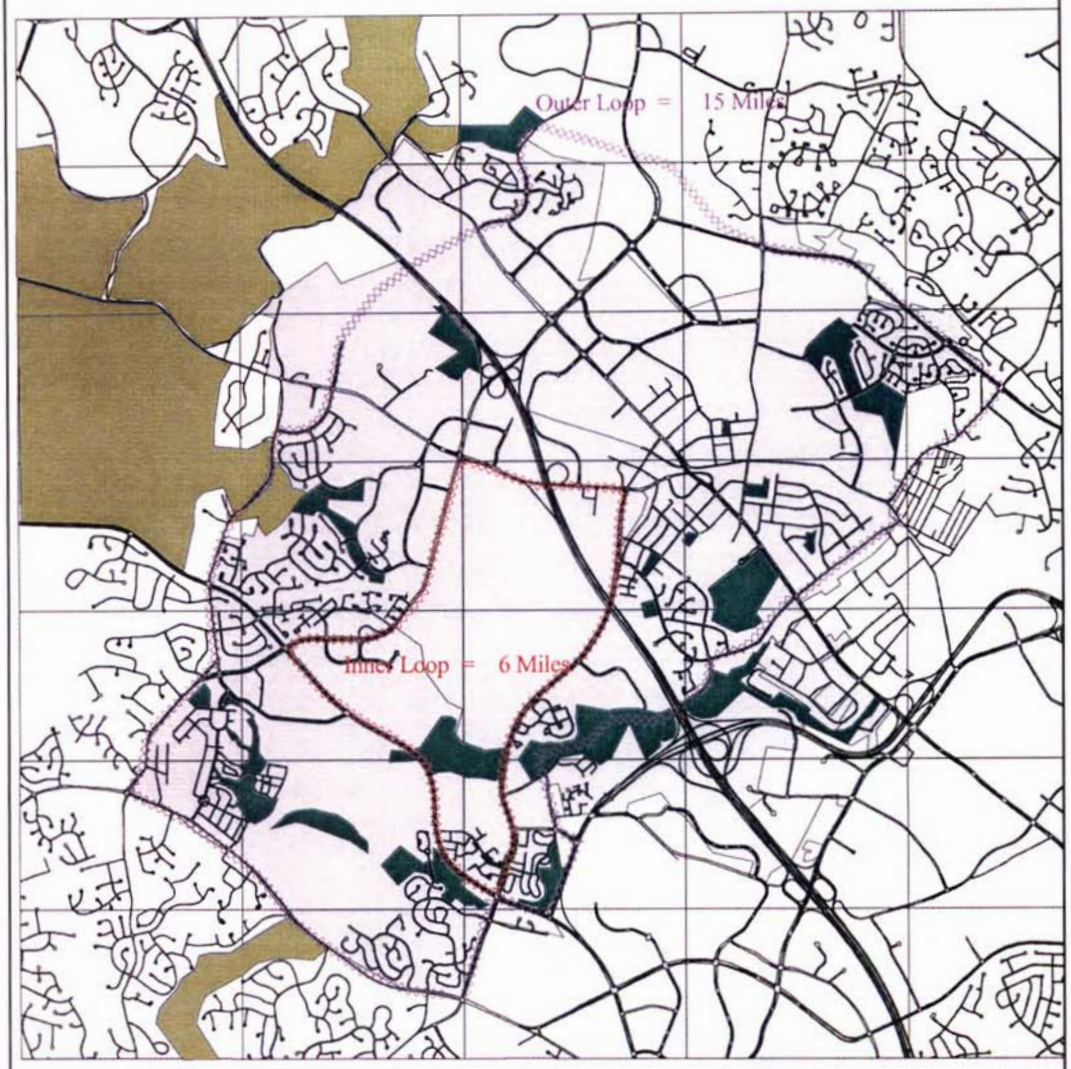
- Schools
- Post Office
- Transit Center
- Major Destination
- Library
- On-Street Bike Lane
- Existing Bike Lane/Trails
- Proposed Bike Trails
- Proposed Greenways Trail
- Existing Greenways Path
- City Parks
- County/State Park

Gaithersburg
A CHARACTER COUNTS! CITY
PLANNING AND CODE ADMINISTRATION

March, 1999

Gaithersburg Bikeways And Pedestrian Plan

Bicycle Loop Map



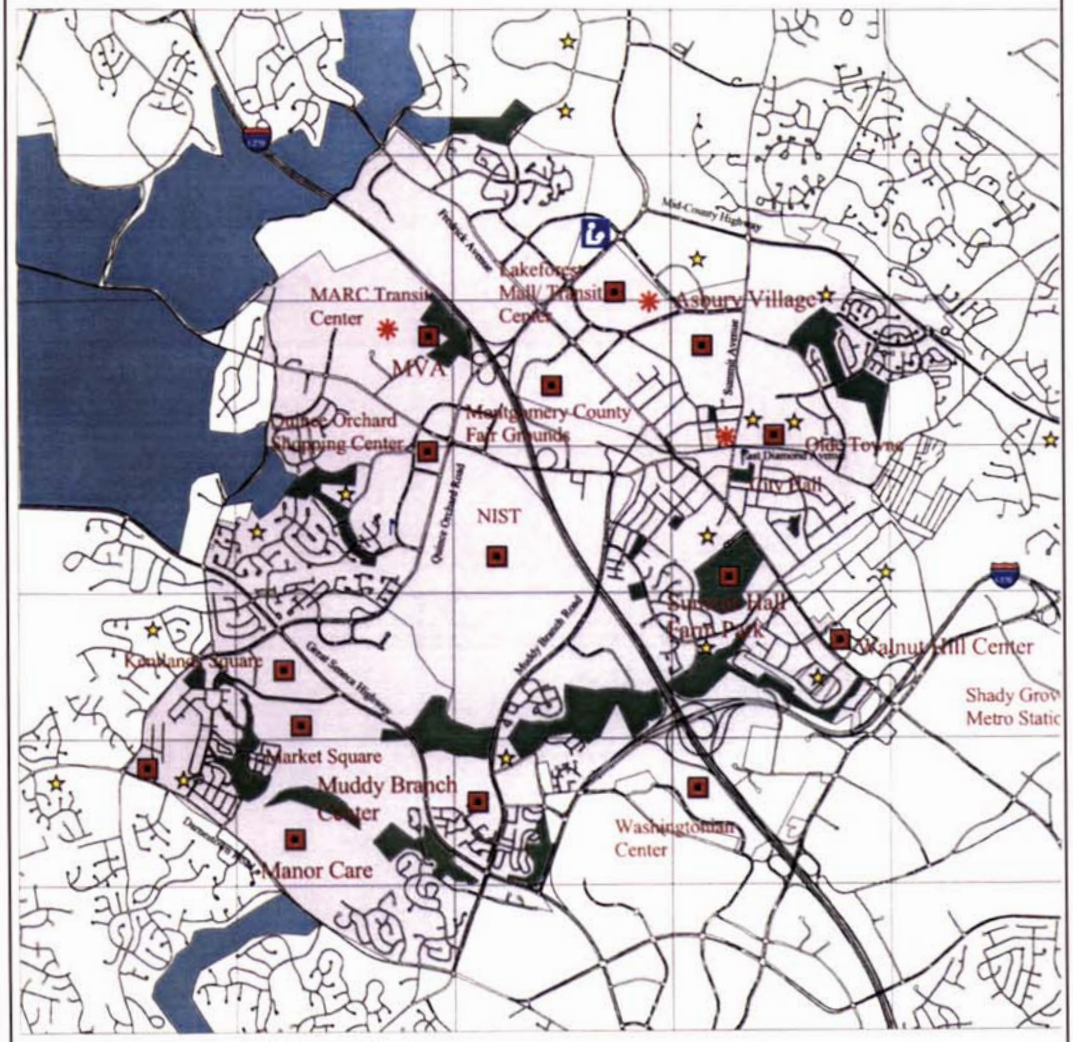
Outer Loop
Inner Loop
City Parks
County/State Park
Roads
City Limit

Gaithersburg
A CHARACTER COUNTS! CITY
PLANNING AND CODE ADMINISTRATION

March 1999

Gaithersburg Bikeways And Pedestrian Plan

Destinations Map



- Schools
- Post Office
- Transit Centers
- Destinations
- Library
- Parks
- State Park
- Roads
- City Limits

Gaithersburg

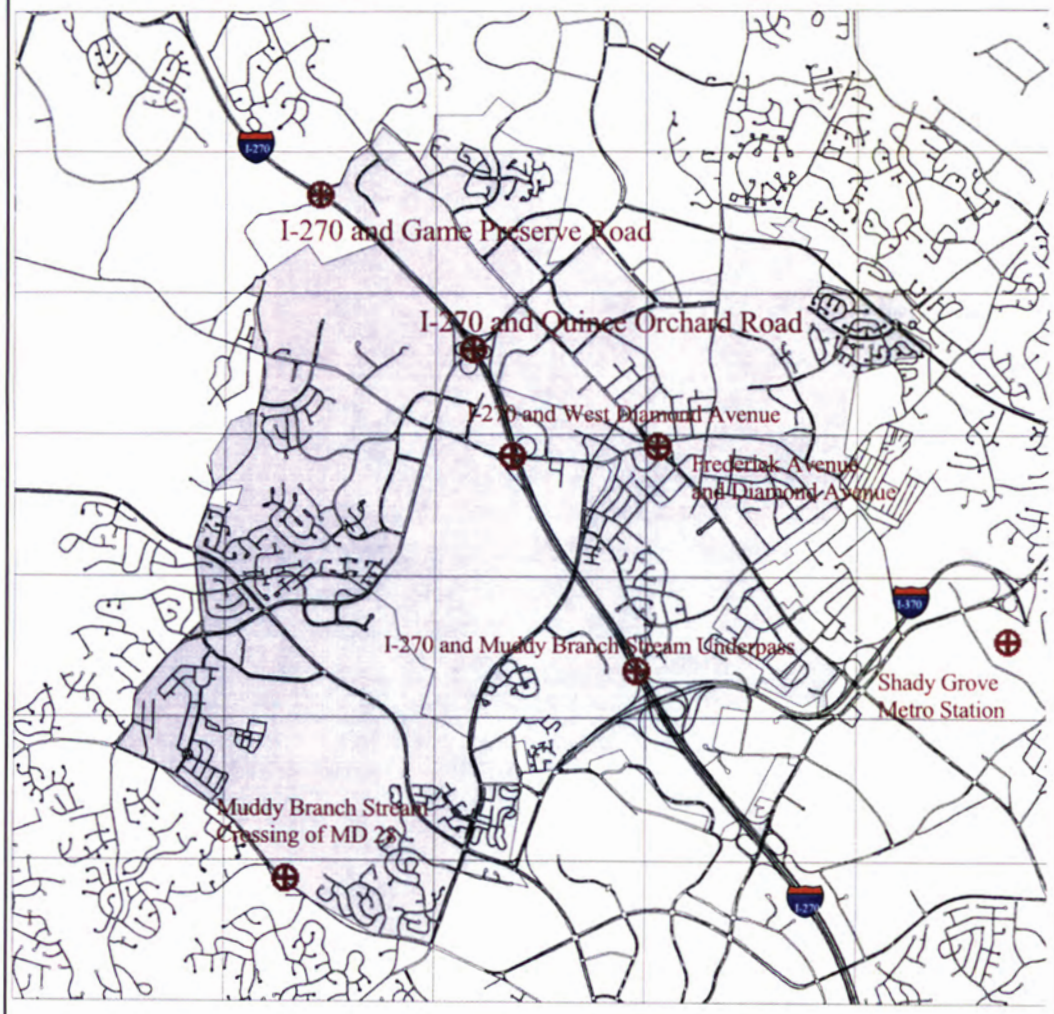
A CHARACTER COUNTS! CITY

PLANNING AND CODE ADMINISTRATION

March, 1999

Gaithersburg Bikeways And Pedestrian Plan

Major Constraints Map



Major Constraints
Roads
City Limits

Gaithersburg
A CHARACTER COUNTS! CITY
PLANNING AND CODE ADMINISTRATION

March 1999

FUNDAMENTALS FOR PLANNING AND DESIGNING BICYCLE FACILITIES

ON-STREET BIKE LANES

Advanced cyclists are best served by making streets "bicycle friendly." This may be accomplished by adopting highway design standards that include wide curb lanes and paved shoulders to accommodate shared use by bicycles and motor vehicles. This approach will provide adequate space for bicycles and motor vehicles to share the roadway with minimum need for changing lanes or lane position. The desired outcome is to have sufficient space to accommodate shared use by bicycles and motor vehicles with minimum delays and maximum safety for all users.

Basic and older child cyclists prefer on-street bike lanes. These cyclists desire a facility with dedicated space for autos and bicycles. A properly designed bicycle lane provides this space and can meet the needs of basic bicyclists. Bike lanes are also a visible indication that travel by bicycle is being encouraged by the City.

The benefits of providing on-street bicycle lanes are as follows:

Bike lanes offer a critical physical separation between bicyclists and motorists. Even though there is no added actual physical space, the critical range of separation (four feet) between motorist and bicyclist is more assured due to the presence of line painting delineating the space for bikes and motor vehicles.

On-street bike lanes create added border width which benefits both motorists and pedestrians by adding a four-foot border area. A border area is the distance between the actual motor vehicle and the sidewalk. The additional four feet for an on-street bike lane increases the distance between moving traffic and pedestrians. Pedestrians feel greater security and comfort the more distanced they are from the moving motor vehicle traffic.

On-street bike lanes allow a municipality to add bicycle facilities without acquiring right-of-way for the construction of a bike path. Whenever possible, especially during road widening projects, right-of-way acquisition should accommodate off-street bike paths, thus eliminating the need for on-street bike lanes.

Passing is easier and less confusing. Both bicyclists and motorists find shared lane passing confusing and challenging. With a clearly striped on-street bike lane, the motorists know that they are expected to pass, and the bicyclists know that they have their own space on the street.

Bike lanes reduce pedestrian conflicts. Novice bicyclists using sidewalks create danger and discomfort to pedestrians and especially to older adults. Bike lanes can reduce the frequency of conflicts, increase safety, and allow pedestrians to walk without fear.

Bicyclists ride in a safer location. When bike lanes are not provided, novice bicyclists tend to ride in unsafe locations. Unsafe locations include riding near or over the road storm drains where they are most likely to fall, swerve around debris, or otherwise exhibit unsafe movement. Others practice wrong way riding or riding on sidewalks.

On-street bike lanes reduce sidewalk bike crashes. Up to 25 percent of all urban area bike/car accidents occur where bicyclists were using the sidewalk. On-street bike lanes can eliminate much of the risky sidewalk riding behavior.

Bike lanes can reduce wrong way riding. One reason bicyclists ride against traffic on sidewalks and in the roadway is that they have no designated space on the street.

Motorists use more care. Motorists tend to pass bicyclists using marked bike lanes with increased awareness and acceptance. Pavement symbols and signing are constant reminders to motorists that bicyclists belong in the roadway environment. Many bicyclists report reduced antagonism with motorists when riding in bike lanes.

An unfounded concern is that on-street bike lanes attract young riders who otherwise do not possess the skill level to travel on certain high volume traffic streets. There appears to be a strong consistent message from parents not to ride on certain streets. Children aged 5-13, who eventually ride on arterial streets, almost always ride on the sidewalk. On the other hand, many adult riders are attracted to bike routes that are marked with on-street bike lanes. On-street bike lanes provide a latent demand for the public who state that they will not ride a bicycle to work, to shop, or to a park until, or unless, a bike lane or separate bike path is provided.

Do bikes belong on higher speed roads like Frederick Avenue? The answer is yes, according to a report done by the Florida Department of Transportation. In this report, research has shown that higher speed roads provide the least opportunity for conflicts between motorists and advanced riders due to consistent speeds. The presence of an on-street, four-foot wide painted bike lane in an urban street section will accommodate bikes and higher speed traffic. A painted on-street bike lane and proper signage reminds motorists that the road should be shared, and it clearly defines the space for the bicycle and the vehicle.

Maintenance of on-street bike lanes in areas with significant motor vehicle traffic volumes or regular bicycle traffic, including periodic street sweeping of the shoulder and curb lanes to remove debris, will help eliminate potential hazards.

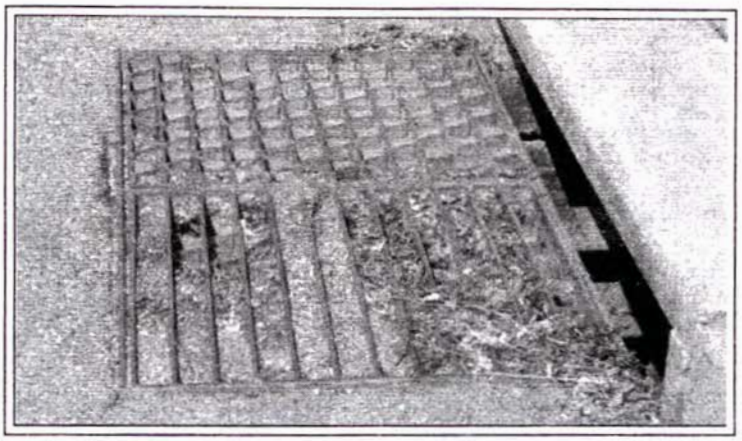
On-street bike lanes and on-street parking can work together. Bike lanes along roadways with on-street parking are helpful in placing bicyclists a comfortable distance from the door swing width. Lanes used in this context also serve as a reminder to motorists that they need to be watchful of bicyclists.

Bike lanes are a useful tool in urban areas to separate and control bicycling and motorist movements. Bike lanes increase the comfort of bicyclists and motorists. Bike lanes benefit motorists and pedestrians by adding border width, improving turns, and permitting better sidewalk design and usage. Properly designed and installed bike lanes can reduce the potential for conflict between road users, resulting in an improved facility for pedestrian, bicyclists, and motorists.

DRAINAGE FACILITIES

Storm water drainage facilities and structures are usually located along the edge of the roadway where they often present conflicts with bicyclists. Careful consideration should be given to the location and design of drainage facilities on bicycle compatible roadways.

All drainage grate inlets pose some hazard to bicycle traffic. The greatest hazard comes from storm flow drainage grates which can trap the front wheel of a bicycle and cause the cyclist to lose steering control or have the narrow bicycle wheels drop into the grate. A lesser hazard is caused by bicyclists swerving into the traffic lane to avoid any type of grate or cover. These grates, or covers, are often poorly installed creating a large obstruction to bicycle travel.



Poorly designed drainage grate

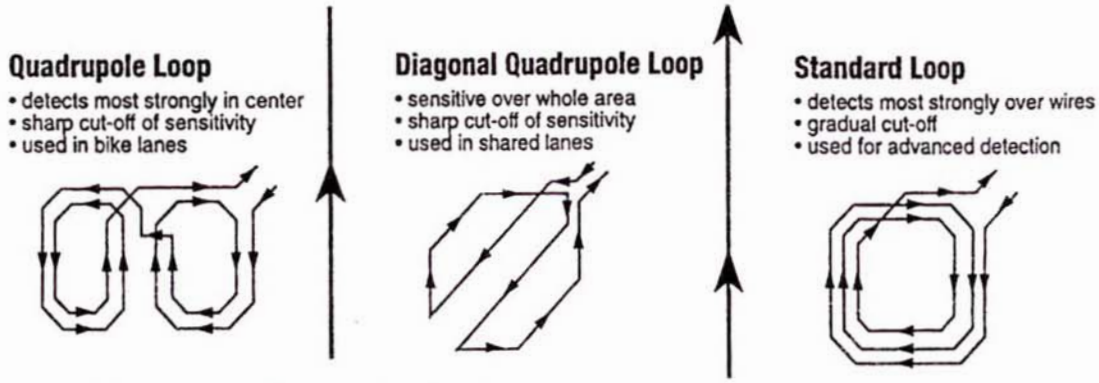
A bicycle safe drainage grate with acceptable flow characteristics should be used in all new street construction or replacements.

Manholes and covers should be located outside of the bike shoulder area wherever possible. Where these fixtures cannot be avoided, the pavement surface should be made flush with the particular facility.

TRAFFIC CONTROL DEVICES

As legitimate users of Gaithersburg's roadways, bicyclists are subject to essentially the same rights and responsibilities as motorists. In order for bicyclists to properly obey traffic control devices, those devices must be selected and installed to take into account their needs. All traffic control devices should be placed so they can be observed by bicyclists who are properly positioned on the road.

Detectors for traffic-activated signals should be sensitive to bicycles and be located in the bicyclists' expected path. Stenciling should direct cyclists to the point where their bicycle will activate detectors.



Typical detectors for traffic-activated signals

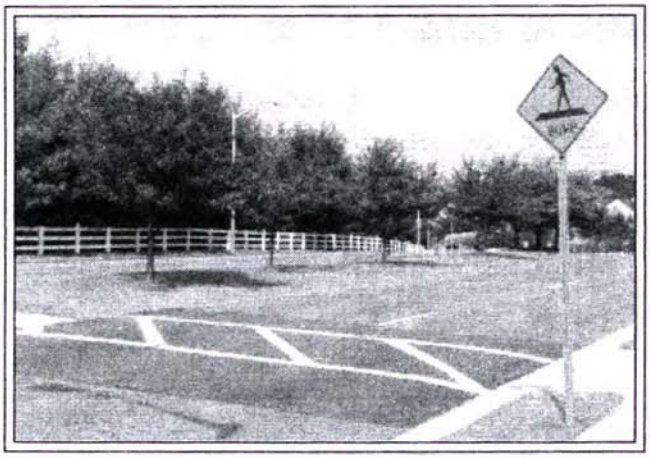
TRAFFIC CALMING AND THE BICYCLIST

On-street traffic calming devices can provide many inherent benefits for bicyclists by reducing speeds of motor vehicles. Traffic calming offers a more bicycle-friendly alternative to speeding street traffic. However, poorly designed traffic calming facilities can inconvenience or even endanger bicyclists. Bicyclists are particularly susceptible to changes in surface height and texture and may be put at risk by poorly considered devices. Horizontal shifts in traffic flow, such as roundabouts, chicanes, and other traffic calming devices, can be designed to be compatible with bicycle use.

Traffic calming devices should not discourage cyclists from using the bike route. The following general design guidelines should be used when implementing traffic calming schemes.

Where a reduction in roadway width is employed as a speed control measure, careful consideration should be given to how motorists and bicyclists can safely share the remaining space. Future road construction projects incorporating traffic calming measures must take into consideration the placement of bicycle facilities.

Surface materials should have a good skid resistance, while textured surfaces should not be so rough that they endanger the stability of bicyclists or cause severe grazing if the bicyclist falls. A smooth transition on entry and exit ramps should be provided. Inclines should be clearly indicated and have a gradient of not more than 10 percent.



Saybrooke Oaks Boulevard speed hump

West Side Drive choker

INTERSECTION/TURN LANES

Particular attention should be given to the safety and treatment of cyclists at intersections with right-turn lanes. Many times, the turn lane displaces the shoulder along the mainline roadway leaving little or no room for the cyclist. Acceptable solutions may include widening the turn lane and ensuring that the intersection channelization is set back sufficiently to allow room for the through movement of cyclists.

The objective is to establish at least a minimum two-foot wide continuous unobstructed bicycling area along on-street bike routes.

MULTI-USE PATH OR TRAIL

Basic and children cyclists will be best served by identifying key originating points with destinations and by providing designated bicycle facilities on selected routes with maximum access along the route from beginning to end. The presence of off- street bike paths and trails will be a great benefit to these types of cyclists.

Multi-use paths and trails can offer the most scenic and tranquil settings for bicycle riding and walking. A good example of a current pathway system can be found in the Kentlands development in the western edge of the City. The intricate network of paths along the lakes is very enjoyable for all citizens. The newly finished pathway system around the Summit Hall Farm Park provides a tranquil setting for citizens on the east side of the City.

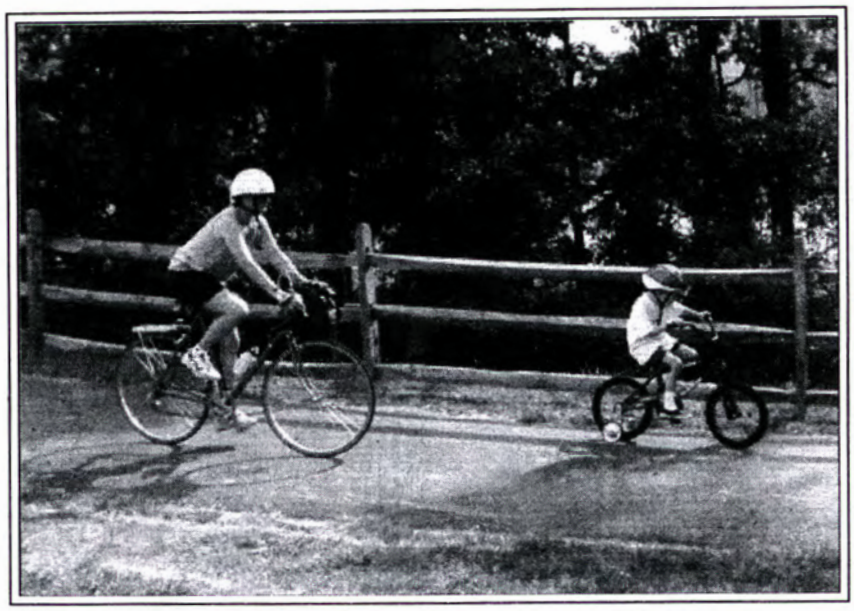
The development of off-street, multi-use paths and trails should be considered wherever appropriate. Future projects along water features, streams, and forested areas may include provisions for additional natural trails and bike paths. Special care must be taken when developing environmentally sensitive areas. Natural surface materials can be used to minimize impact to existing trees, streams, and wildlife.

Bicycle and pedestrian trails can serve a variety of users. They can be used as a commuter bike route and as recreational facilities. In either case, the trail should be designed to fit into the environment in which it is being placed. Pathways should be designed to avoid impacts to sensitive environmental resources and generally follow the topography with minimal cut and fill. The user should experience an enjoyable trip and appreciate interesting environmental features along the trail.

Off-road pathways should be ten feet in width to allow for adequate passing space and multiple uses by walkers, bikers, and in-line skaters. A two-foot wide clear zone is generally provided adjacent to the trail. These standards can vary depending upon the environmental impact and the expected users. A hard surface pathway will serve the greatest number of users for in-line skating, jogging, biking, and walking, while a natural surface trail can only accommodate mountain bikes and walkers.

Pavement surfaces for trails are typically constructed of asphalt; however, in environmentally sensitive areas such as stream valleys and wetlands, a natural surface consisting of wood chips, crushed stone, stabilized soil, and recycled pavement millings would be acceptable.

The use of sharp curves should be avoided. In general, curves with radii of less than fifty feet should not be used, unless it is in an area where speeds are expected to be low, or in environmentally sensitive areas. Sharper curves may be suitable in areas such as a trail entrance/exit point, or where it is desirable for the cyclists to ride slowly.



Multi-use path at Summit Hall Farm Park

Multi-use path around Kentlands lakes

The preferred grade for a trail should generally not exceed five percent. This is the maximum grade preferred for bicycles and it also meets ADA guidelines. However, grades steeper than five percent may be acceptable for short segments of a trail.

The accessibility of all neighborhoods to bicycle lanes and paths is one of the key goals of this plan. Connectivity of the entire pedestrian and bicycle system will allow citizens to bike and walk to their destinations. This can be achieved through site plan review and projects that correct past inefficiencies.

DESIGN PRINCIPLES

The City's highway transportation system is characterized by the interaction of three basic modes of transportation: motor vehicles (including transit service), bicycles, and walking. All decisions related to the planning, design, and implementation of new street design and street retrofitting should address the potential impact on each of these modes. All members of the public are entitled to use public thoroughfares to get from point to point. Therefore, it is incumbent for the City to plan and design facilities accordingly. The Maryland State Highway Administration has published guidelines regarding design of bicycle facilities, and the American Association of State Highway and Transportation Officials publishes *A Guide for the Design Of Bicycle Facilities*. These two guides will be consulted when bicycle facilities are being designed. The following are examples of design guidelines included in both publications.

ON-STREET BIKE LANES

Bicycle lanes can be considered when roadway widths are adequate to allow the preferred lane declination. Bicycle lanes should always be one-way and carry traffic in the same direction as adjacent motor vehicle traffic. Two-way bicycle lanes on one side of the roadway are unacceptable because they promote riding against the flow of motor vehicle traffic. Wrong way riding is a major cause of bicycle accidents and violates the "rules of the road." Bike lane markings can increase a bicyclist's confidence in motorists not straying into their path of travel. Likewise, passing motorists are less likely to swerve to the left out of their lane to avoid bicyclists on their right.

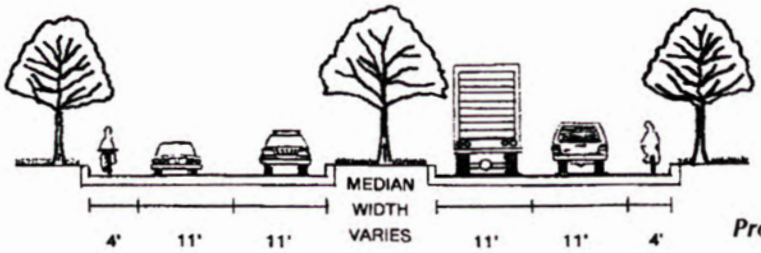
The most appropriate time to install on-street bike lanes, including lane striping, is during street construction or re-construction. Cooperation among City departments on street construction is key to fully implement this plan. Any street construction conducted by the Maryland State Highway Administration, Montgomery County, and the City Department of Public Works and Engineering must take into consideration the recommendations of this plan. Coordination between all agencies involved will help in the advancement of this plan's goals.

Bicycle lanes should never be placed between the parking lane and curb line. Bicycle lanes between the curb and parking lane can create obstacles for bicyclists such as the opening of car doors, poor visibility at intersections and driveways, and prohibiting bicyclists from making left turns.

Bicycle lane striping should not continue through any street intersection or be painted over any pedestrian crosswalk.

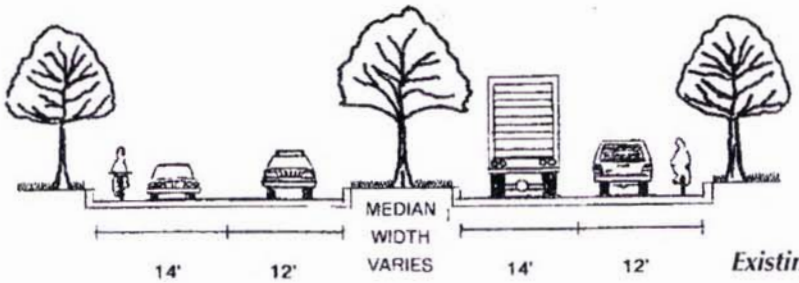
Resurfacing of streets provides an opportunity to add bicycle facilities. It is often possible to add a bike lane to an existing street by reallocation of the space designated to various users. Space for bicycles in the road can be created by reducing the width of travel lanes.

BIKEWAYS STREET SECTIONS

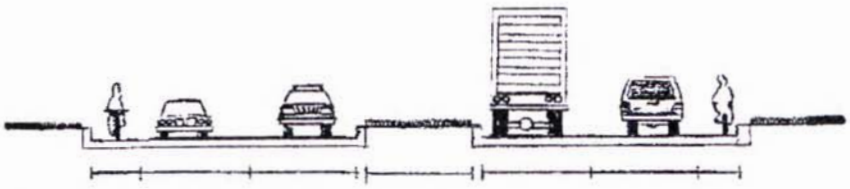


Proposed designated bike lane

BIKEWAYS STREET SECTIONS



Existing non-designated bike lane

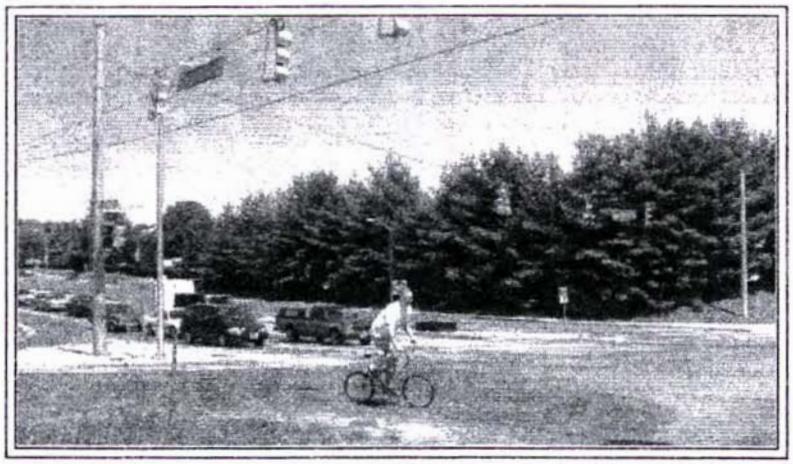


New Watkins Mill Road

INTERSECTIONS

Intersections pose special challenges to bicycle and motor vehicle operators, especially when on-street bike lanes or separate bike paths are introduced. Bicycle lane striping should not continue through any street intersection and should not be painted over any pedestrian crosswalks.

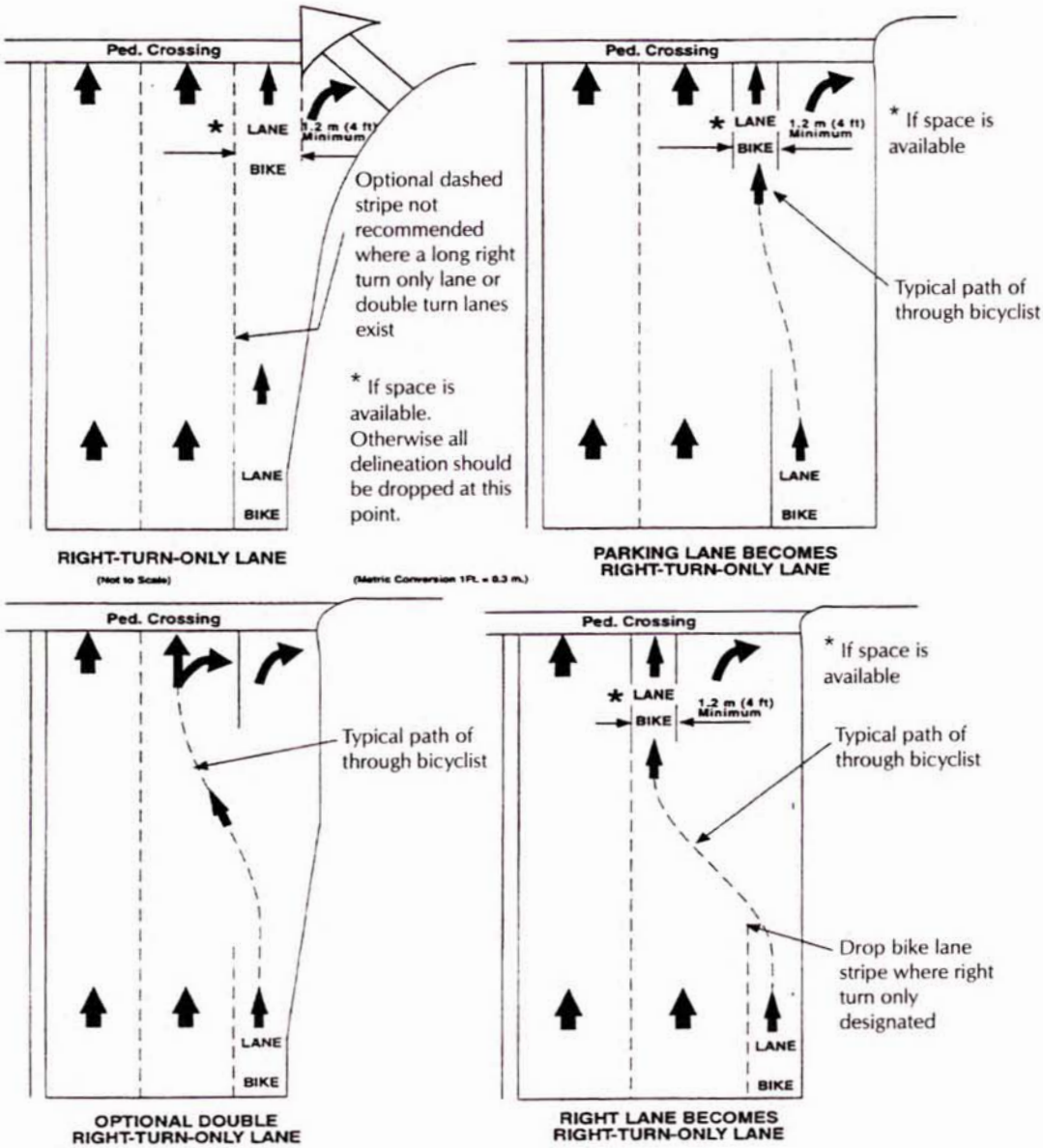
At signalized intersections with right-turning movements, the solid line for the on-street bike lane should be replaced with a broken line located between the motorist travel lane and the on-street bike lane. The length of the broken line is usually 25 feet. This broken line will alert both bicyclist and motorist that they are approaching an intersection.



Muddy Branch Road and Great Seneca Highway, improperly marked crosswalk

Bicycle lanes tend to complicate both bicycle and motor vehicle turning movements at intersections. Since they encourage bicyclists to keep to the right and motorists to keep to the left, both operators are discouraged from merging in advance of turns. Thus, some bicyclists will begin left turns from the right side bicycle lane and some motorists will begin right turns from the left of the bicycle lane. Both maneuvers are contrary to established "rules of the road" and result in conflicts.

At intersections, bicyclists proceeding straight through and motorists turning right must cross paths. Striping and signing configurations which encourage these crossings in advance of the intersection, in a merging fashion, are preferable to those that force the crossing in the immediate vicinity of the intersection. Left turning bicyclists can perform two maneuvers to complete their turn. The first would be for the bicyclist to merge leftward to the same lane used for motor vehicle left turns. The second would be a "pedestrian style" left turn, where the bicyclist proceeds straight through the intersection, turns left at the far side cross walk, and proceeds across the intersection. See figures below.



BICYCLE USE OF SIDEWALKS

Identifying a sidewalk, unless otherwise designated, as a bicycle path is undesirable for a variety of reasons. Sidewalks are typically designed for pedestrian speed and maneuverability and are not safe for higher speed bicycle use. Conflicts are common between pedestrians traveling at low speeds and bicycles, as are conflicts with fixed objects (utility poles, signposts, bus shelters, trees, fire hydrants, etc.). Walkers, joggers, skateboarders and roller skaters can, and often do, change their speed and direction almost instantaneously, leaving bicycles insufficient time to react to avoid collisions.

Similarly, pedestrians often have a difficult time predicting the direction an oncoming bicyclist will take. At intersections, motorists are often not looking for bicyclists entering the crosswalk area, particularly when motorists are making a turn.

In residential areas, young children can be anticipated to ride bicycles, tricycles, scooters, and other riding toys on sidewalks. This type of use is an acceptable exception to the general rule that use of the sidewalks by bicyclists is undesirable. Sidewalks in residential areas generally have low pedestrian volumes and are acceptable as extended play areas for children. Pedestrians anticipate and usually enjoy encounters with young children who are playing on the sidewalk.

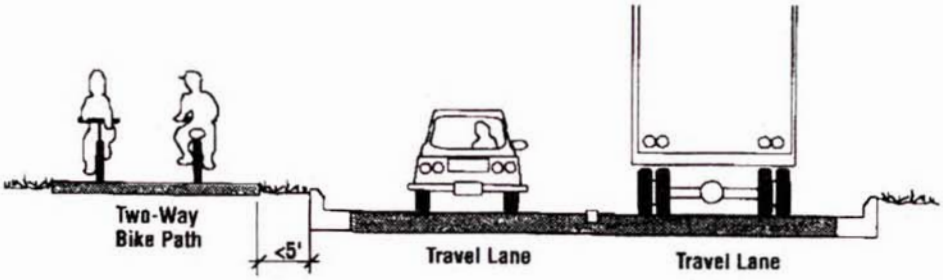
Bicyclists riding on sidewalk

DESIGN OF BICYCLE PATH ADJACENT TO ROADWAY

The paved width and the operating width required for a bicycle path are primary design considerations. Under most conditions, the recommended paved width for a two-way directional bicycle path is ten feet. However, in some instances a minimum of eight feet can be adequate.

A minimum of a two-foot width of graded area should be maintained adjacent to both sides of the pavement to allow for clearance of trees, poles, walls, and fences. The vertical clearance of

obstructions should be a minimum of eight feet. Clearance through tunnels and underpasses should be ten feet. Bike paths should always be considered in conjunction with any street widening and right-of-way discussion.



Bicycle path next to street

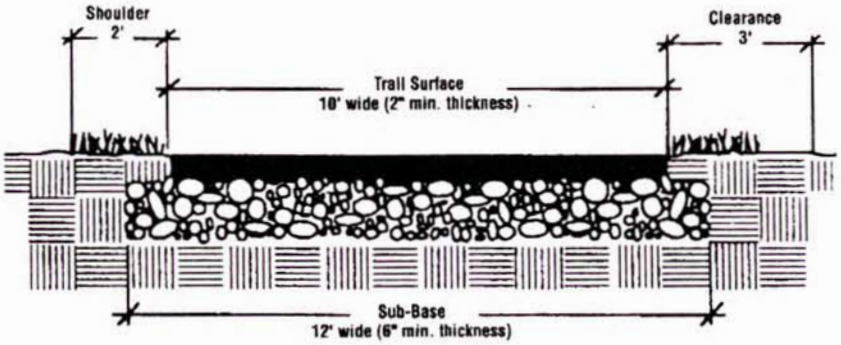
OFF-STREET TRAILS

Off-road paths are rarely constructed for the exclusive use of bicyclists, but instead must be shared with other non-motorized users such as pedestrians and in-line skaters. Just as conflict can occur between bicycles and pedestrians on sidewalks, or between motor vehicles and bicycles on highways not constructed to compatible standards, heavy use of trails and other multiple use paths can create conflicts between different user groups.

Under most circumstances, a two-inch thick asphalt concrete top course placed on a six-inch thick select granular subbase is suitable for a bikeway pavement structure. Where unsatisfactory soils can be anticipated, a soil investigation should be conducted to determine the load carrying capacity of the native soil and the need for any special provisions.

It is important to construct and maintain a smooth riding surface on bicycle paths. Bicycle path pavement should be machine laid. Root barriers should be used where necessary to prevent vegetation from erupting through the pavement.

The minimum width for multi-use trails is ten feet of paved or cleared area. This width allows for many different types of users at varying speeds. The construction standards can be found in the below cross section of a typical paved pathway. A natural surface trail can be constructed of stone dust and other materials.



Typical trail surface section

Trails should be designed to minimize disruption of historic resources, trees, and the natural environment. Trail designs should undergo public review, focusing on the impacts to the natural, scenic, and historical resources. Trails are to be designed to avoid injury to healthy mature trees and wetlands; however, trails should have relatively straight alignments. Where feasible, landscaping should be planted so as to separate the trails from streets and create an attractive environment. Physical barriers to prevent motor vehicles from entering the trails should be put in place. Barrier posts placed at the trail head spaced five feet apart will allow users to enter while discouraging motor vehicles.

SIGNING AND MARKING BICYCLE FACILITIES

Signs and pavement markings for bicycle facilities will encourage increased use. In addition to obvious traffic operation benefits, signs and pavement markings have the effect of advertising bicycle use. This helps legitimize the presence of bicycles in the eyes of the motorists and potential cyclists.

Typical signage may include the following:

Bike Route Sign

Share the Road Sign

Navigational signs should be used to convey the following information:

Destination of the route or route name
Distance to the desired destination
Direction of travel

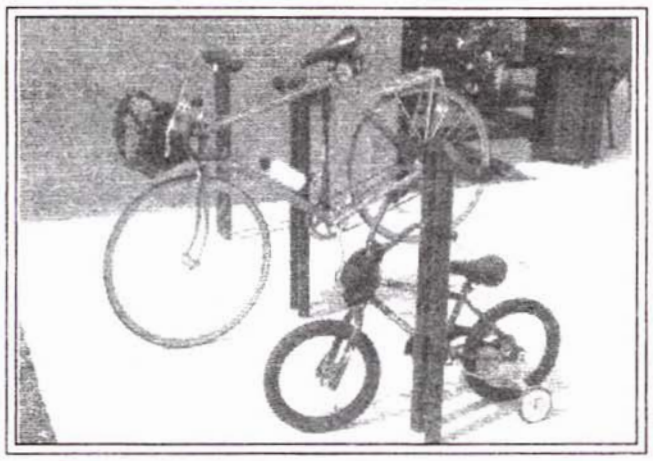
Adequate signing and marking are essential on bicycle paths, especially to alert bicyclists to potential conflicts as well as to convey regulatory messages to both bicyclists and motorists at highway intersections. In addition, guide signing to indicate directions, destinations, distances, route numbers, and names of cross streets should be used in the same manner as they appear on roadways. All bi-directional, multi-use trails are to include center line striping by way of a solid line in areas where crossing the center line is hazardous, and dashed line elsewhere. A four-inch wide yellow center line stripe to separate opposite directions of movement is ideal. Directional and destination signs should be placed along trails, bicycle paths, and bicycle lanes to designate routes, especially where bikeways intersect and locations where the connection of the trail or route to nearby activities is not readily apparent. All new signs should include distances.

BICYCLE PARKING AND STORAGE FACILITIES

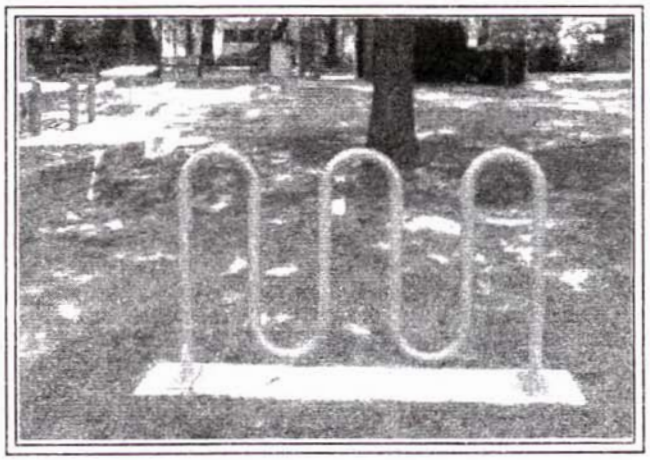
Provisions for adequate bicycle parking facilities is a key to encouraging greater use of bicycles for transportation. Knowing that a relatively safe and convenient parking facility can be found at a destination increases the likelihood that a person will choose to bike to that destination. Incorporation of bicycle parking in all new development and redevelopment proposals can be accomplished through amendments to signing and site plan approvals to require installation. The number of bike parking spaces to be provided can be calculated as a percentage of the automobile parking or related to the land use of the proposed development. Examples of both methods can be found in communities around the country.

Two basic types of bicycle parking facilities are available. Class I facilities are high security facilities that fully protect the bike and its components from theft and weather. Bicycle lockers and indoor storage facilities are examples of Class I facilities. Class II facilities are stationary racks that support the bicycle by its frame and to which the user can secure the bike frame and at least one wheel using various locking devices. Class I facilities are targeted toward long term users such as commuters to transit centers or offices, while Class II facilities best serve short term users such as shoppers or students.

Although a bike rack that pleases all users has yet to be invented, numerous styles of racks that meet the criteria for a Class II rack are available. A few examples are shown below. City staff will develop a list of manufacturers of racks that meet these criteria for use of the installation of racks.



Styles of bicycle racks:
Summit Hall Activity Center



Styles of bicycle racks:
Olde Towne Park

BICYCLE SAFETY EDUCATION

Education is a key component to any bikeways and pedestrian plan, with a goal of increasing bicycle usage and pedestrian safety in a community. Education programs targeted towards bicyclists, pedestrians, and motorists will help all roadway users to learn and practice behaviors that allow all groups to share the road.

There are four primary audiences for education and awareness efforts of bicycle safety, and each group has specific educational needs to promote safer bicycling.

Children are an obvious target for bicycle education, from learning how to ride a bike at age four or five, to learning basic traffic rules at age ten or eleven, to learning to share the road concepts in driver education. At each of these levels there is an opportunity to create education programs in schools that will allow for bicycle education throughout a child's development years and encourage both safer use of bicycles and the use of bicycles as transportation.

Parents are, in most cases, a child's first teacher regarding bicycling. It is important that parents learn and pass on correct information on how and where to ride a bike. For example, in years past, many children were taught to ride a bike against traffic, which is now recognized as a dangerous practice. These children are now adults who are teaching their children to ride bikes and they may be unaware that they should be telling their child to ride with the flow of traffic. Again, schools provide a good opportunity to pass education material to parents.

As bicycle use in the City increases, many **adults** who have not ridden a bicycle since childhood will start riding again. These bikers need to be made aware that bicycles are considered to be a vehicle and should be operated according to the same rules that apply to motor vehicles. Additionally, as more bike lanes and other bicycle facilities are built in the City, bicyclists will need to be educated as to proper use of paths and trails. Opportunities for educating adults include messages in the City's *Communiqué*, and offering programs through the City's Parks and Recreation Department.

Many **motorists** are not use to seeing bicycles on the street and think that bicycles should only be ridden on sidewalks and trails. This mistaken perception needs to be addressed. Motorists need to be made aware that bicycles are considered to be vehicles and are entitled to share the road, following the same rules that apply to motor vehicles. Again, the City's *Communiqué* provides an opportunity for education. Also public service announcements on the City's cable television channel can be effective.

The City of Gaithersburg does not need to start from scratch or reinvent the wheel when developing educational programs. Agencies and organizations around the country have developed educational programs for all these target audiences and are usually willing to share or sell them for a modest fee. Building bicycle facilities is crucial to creating a bicycle friendly environment in Gaithersburg, but educating City residents regarding proper and safe use of the facilities is equally important. Without education, unsafe practices by both bicyclists and motorists could lead to increased conflicts between these users and ultimately serve to discourage bicycling.

PEDESTRIAN PLAN

INTRODUCTION

The City of Gaithersburg is committed to providing opportunities for its citizens to walk safely along all City streets. Gaithersburg's goal is to make the City a walkable community. Pedestrians are an important part of the urban fabric within Olde Towne and the many other retail commercial districts within the City. Walking is encouraged as an alternative to driving a motor vehicle short distances for routine trips.

SIDEWALK GUIDELINES

Sidewalks should be provided in all development proposals and it is the role of the site plan review process to require sidewalks, where appropriate, on both sides of a street. Missing gaps in the pedestrian network should be a top priority in the City's Capital Improvement Program (CIP). The City has embarked on several large sidewalk programs that have included construction to fill in missing gaps.

Off-street paths within a private community will be encouraged through the site development approval process. The linking of residential communities to retail/office developments is highly encouraged. The benefit of these linkages greatly outweighs any negatives.

Sidewalk in Kentlands

Washingtonian Center, boardwalk

Booth Street, good example of sidewalk planting strip and street activating retail

Sidewalks must be five feet in width and constructed of concrete. The use of special paving materials is encouraged where appropriate. In areas of heavy pedestrian usage, such as in Olde Towne or other retail commercial districts, wider sidewalks and special pavement treatment may be appropriate to accommodate cafe seating and pedestrians.

Sidewalks must be placed within the right-of-way of the street and should be set back three feet so as to provide for a planting strip. The placement of street trees between the street edge and the sidewalk will provide a buffer area, while the tree canopy enhances the pedestrian experience.

The construction of good sidewalks where pedestrians do not feel threatened can be accomplished. Gaithersburg has had many successes in sidewalk design and construction. Good examples include:

- Planting strips between the street curb and sidewalk.
- Shade tree planting along the street.
- Five-foot wide sidewalks.
- Building placement close to the street which gives pedestrians a pleasant environment.
- On-street parking which acts as a buffer between the pedestrian and moving street traffic.

A sidewalk inventory has been taken which clearly shows that there are areas deficient in pedestrian accessibility. The City's policy relative to missing sidewalk gaps has been for the development community to provide this infrastructure during development of an adjacent site. This strategy has not always worked because development in some areas has not occurred. Meanwhile, residential housing developments have been located along the walking routes between houses and other destinations.

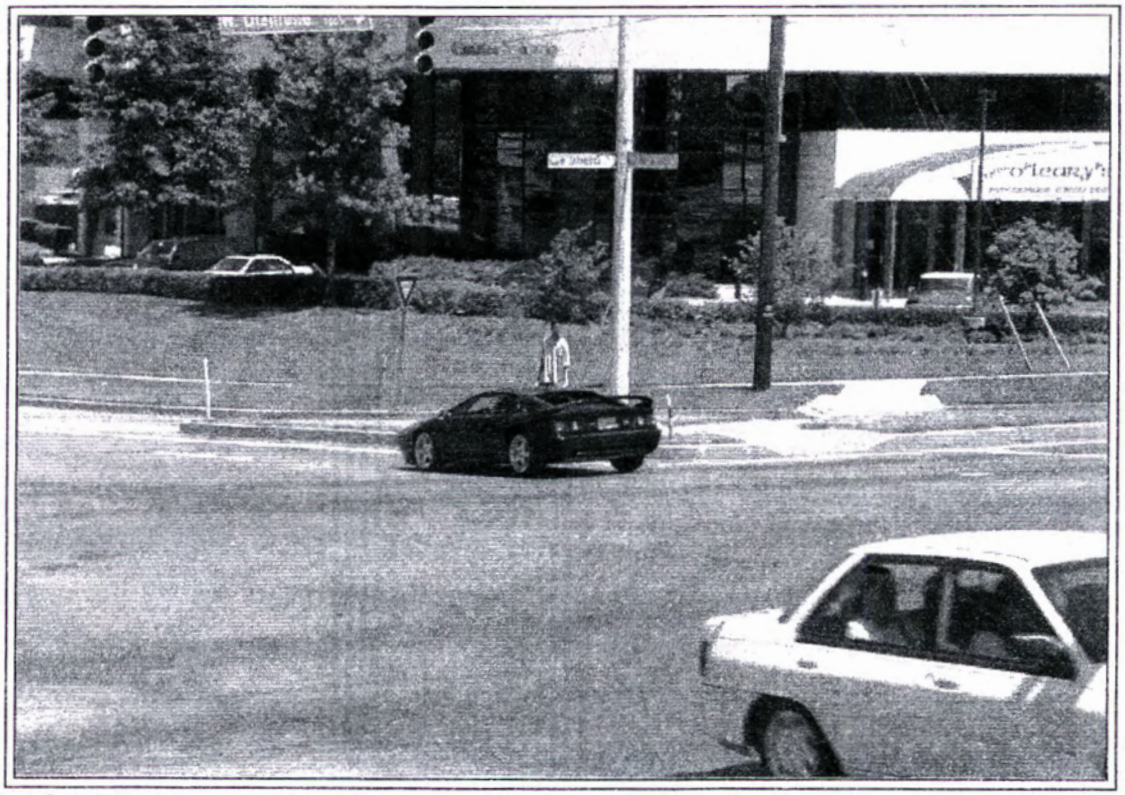
INTERSECTIONS AND CROSSWALKS

The treatment of intersections to incorporate the needs of pedestrians is an important component of this pedestrian plan. Most intersections within the City of Gaithersburg do not adequately serve the needs of pedestrians. The most poorly designed intersections are currently maintained by either Montgomery County or the State of Maryland. Most major highway intersection crosswalks are poorly maintained with non-existent lines. These intersections were built solely to transport automobile vehicles and not people. Gaithersburg's major streets are uninviting for the pedestrian because of the width of the street and the timing of traffic lights. Six lanes of pavement may be difficult to cross within the traffic light phasing. Pedestrians with disabilities or the elderly may not be able to cross all lanes within the time allotted. Handicapped depressed curbs in accordance with the Americans with Disability Act must be included in any sidewalk construction.

The incorporation of textured crosswalks, to include pavers and other traffic calming measures, is a benefit to pedestrians. Lively street activity such as outdoor cafes or sidewalk displays should be encouraged because it makes the walk enjoyable and may extend the walking activity. The experience of walking next to a large parking lot is different from walking through Olde Towne Gaithersburg. Specific design guidelines for sidewalk construction should take all of these factors into consideration.

Textured crosswalk and cafe seating along sidewalk

Quince Orchard Road and Clopper Road, an intersection without a crosswalk



Pedestrian in an uninviting intersection

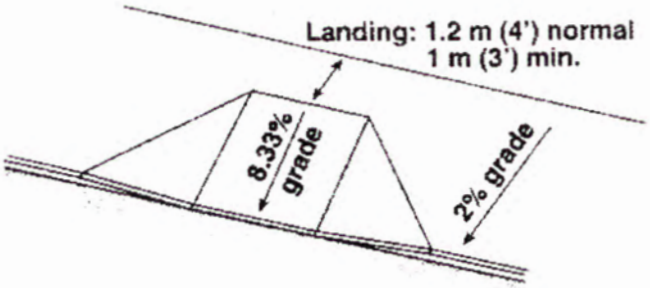
Improving Crosswalks

To increase pedestrian crossing opportunities and safety, two approaches can be considered:

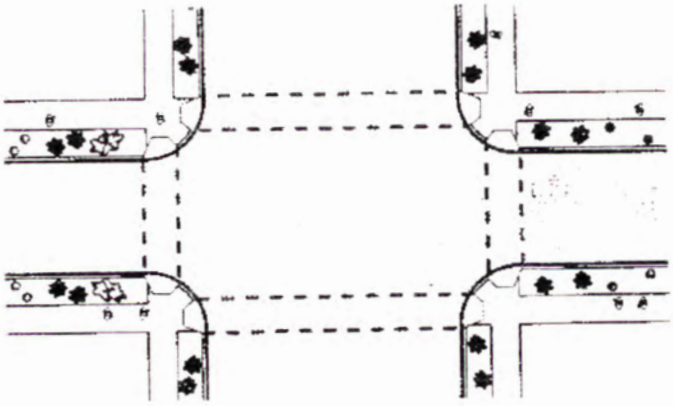
1. Designing roads that allow crossings to occur safely by incorporating design features such as raised medians, or signal timing that creates gaps in traffic or;

2. Constructing actual pedestrian crossings with pedestrian activated signals, mid-block curb extensions, marked crosswalks, etc.

There are many issues to look at when designing pedestrian crossings. These issues include the level of service on the roadway, adjacent land uses, transit stops, signal spacing, and maintenance. Solutions to these problems can include raised medians to provide a safe space on a very wide street section, curb extensions which shorten the distance between opposite curbs, illumination of the crosswalk area, crosswalk markings, and islands. The incorporation of many different ideas relative to slower speeds of automobile traffic will make Gaithersburg safer for pedestrians.



Two curb cuts per corner at intersection

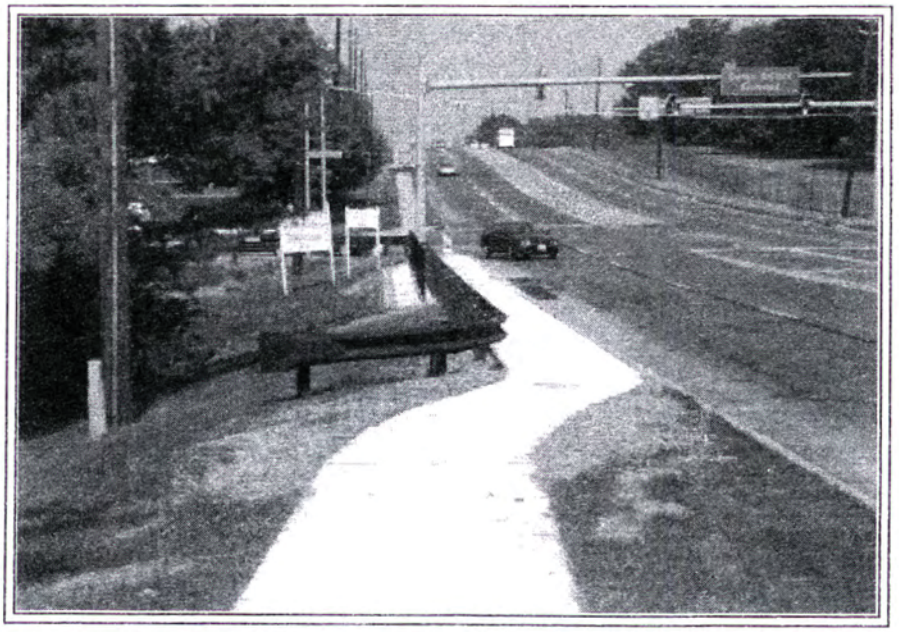


Crosswalk detail

COORDINATION WITH OTHER GOVERNMENT AGENCIES

The coordination with other government agencies is crucial in implementing this pedestrian plan. All government agencies must be committed to providing safe and aesthetically pleasing transportation facilities. To achieve this goal, Gaithersburg must be involved from the very beginning with the design of any street. Better coordination in design will allow the street construction to take into consideration sidewalks, on-street bike lanes, bike paths, landscaping, and right-of-way widths. This plan encourages better communication between all government agencies in reviewing these important projects.

Conflicts between sidewalk and State Highway Administration roadwork



Quince Orchard Road, completed sidewalk after government coordination

PLAN IMPLEMENTATION

The goals of this plan will be achieved primarily through the adoption of polices that fully integrate the needs of bicyclists and pedestrians into all City planning.

To fully implement this *Bikeways and Pedestrian Plan,* cooperation between public and private entities must take place. The City will rely on the private sector to construct sidewalk and bikeway connections in conjunction with development proposals, and the City will commit to implementing improvements, where appropriate, such as street bike lanes, trails, and sidewalks.

To help assure continued public participation in the implementation of this plan, the Gaithersburg Bicycle and Pedestrian Advisory Committee (GBPAC) should be created. Studies by the Bicycle Federation of America, and others, have found that existence of such committees is a critical element in cities that are considered to be bicycle friendly. The GBPAC should have a broad range of citizen members, including representatives from local bicycle advocacy groups, neighborhood organizations, schools, the chamber of commerce, and others with an interest in improving cycling and walking conditions in Gaithersburg. Additionally, representatives from the City's departments of planning, public works, as well as parks and recreation, and Montgomery County Schools should be made ex-officio members of the committee.

The GBPAC should be charged with recommending policies and procedures to implement this plan, recommending priorities for projects included in this plan, and to address other matters related to bicycling and walking that will arise in the community on a regular basis. The GBPAC should prepare a yearly report for the City Council that includes a status report on bicycling in Gaithersburg and an update on progress toward implementation of this plan. It is recommended that the GBPAC be created within six months of adoption of this plan.

A major implementation mechanism for the plan will be the adoption of new City-wide road code or street design guidelines. These guidelines will specifically list the types of bicycle facilities that must be incorporated into a new road project. It has been shown that requiring bicycle facilities at the time of street retrofit or street resurfacing would be an effective tool in advancing Gaithersburg's *Bikeways and Pedestrian Plan.*

The Maryland State Highway Administration is currently designing a new park and ride lot at Exit 10 and Interstate 270. As a result of this project, West Diamond Avenue will be widened and sidewalks will be placed behind the bridge abutments to provide a safe bicycle and pedestrian access.

Funding for the implementation of this plan can come from many sources. The City of Gaithersburg will prioritize future bikeways and pedestrian projects and budget money through the Capital Improvement Program (CIP). Many funds have already been allocated for such projects. Outside funding sources, such as Federal ISTEA monies, funds relating to Maryland State programs as well as Montgomery County, will be pursued.

Funding is available from a variety of county, regional and state sources, most of which is actually federal money that is distributed by these other agencies. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) changed the way federal transportation money was allocated by the states. State and regional agencies were given greater authority to determine what projects and programs were funded. Bicycle and pedestrian projects became eligible for funding in many ISTEA programs. These changes resulted in over $1.5 billion being spent on bicycle and pedestrian projects nationwide during the six-year period of ISTEA. In the spring of 1998, Congress passed, and the

President signed, the Transportation Equity Act for the 21st Century (TEA-21), the successor bill to ISTEA. TEA-21 maintained the bicycle and pedestrian provisions included in ISTEA, increased funding for all transportation programs, and made bicycle and pedestrian projects eligible for funding in some new categories. Most TEA-21 programs require a 20 percent local match for funded projects.

The primary programs of interest for bicycling and walking are the Surface Transportation Program (STP) and the Transportation Enhancements Activities (TEAs). In Maryland, the majority of STP funds are sub-allocated to cities and counties by the Maryland State Highway Administration (MSHA). STP funds are generally used for highway construction projects, but bicycle and pedestrian facilities are eligible for funding, either as part of a larger project or as stand alone projects. Montgomery County decides how their sub-allocation is spent. TEAs funding is distributed by the MSHA on a competitive basis. Bicycle and pedestrian facilities are one of the 12 eligible types of projects for funding from this source.

The Metropolitan Washington Council of Governments administers a funding category known as the Congestion Mitigation and Air Quality Improvement Program (CMAQ). CMAQ funds can be used for projects and programs aimed to reduce congestion and improve air quality. Bicycle and the pedestrian activities are eligible for funding, and projects such as installation of bike racks and development of campaigns to promote bicycling and walking are examples of activities funded locally.

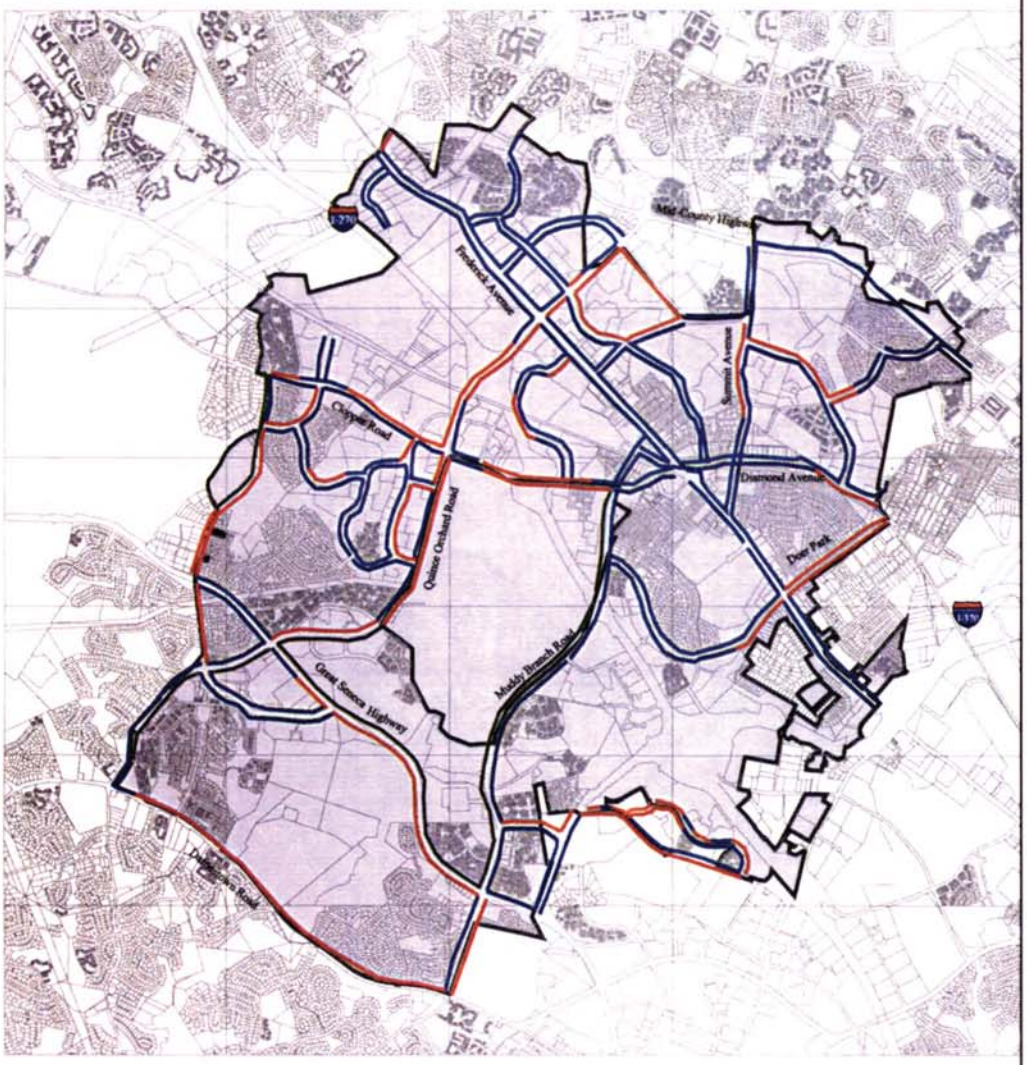
Implementation of this plan will require funding from all or most of these sources. Success in securing funding will require creativity and persistence from all those involved including citizens, City staff and elected officials.

Incentives to promote walking and biking will be needed to implement this plan. Biking and walking instead of driving a car to complete daily trips is a good thing and should be rewarded. Employers need to encourage their workers to take alternative modes of transportation by providing adequate bicycle parking and storage, vouchers from bicycle shops for bicycle maintenance and, where possible, shower and locker facilities.

Over time, conditions and priorities will change and this plan will need to be revised to remain current. Plan amendments may be made prior to the next general plan revision. Moreover, the plan should be implemented in a flexible manner that permits the City to take advantage of unanticipated opportunities and respond to unforeseen challenges. Revisions, amendments, and general implementation of the *Bikeways and Pedestrian Plan* should be undertaken in a manner that is open to public participation, with appropriate approvals from the Planning Commission and Mayor and City Council.

Gaithersburg Bikeways And Pedestrian Plan

Sidewalk Inventory



Missing Sidewalk
Existing Sidewalk
Multi-Use Sidewalk/Path
Roads
City Limits

Gaithersburg
A CHARACTER COUNTS! CITY
PLANNING AND CODE ADMINISTRATION

March 1999

DEFINITIONS

Advanced Bicyclists
These cyclists are experienced riders who can operate under most traffic conditions. They comprise the majority of the current users of collector and arterial streets and are best served by routes that provide direct access to destinations usually via the existing street and highway system. These cyclists operate at maximum speed with minimum delays where sufficient operating space is on a roadway or shoulder.

Basic Bicyclist
These cyclists are casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles. Some will develop skills and progress to the advanced level, but the majority of cyclists are within this category. These cyclists prefer comfortable access to destinations by a direct route using low-speed, low-volume street or designated bike paths.

Bicycle Lane
This is a space on the roadway that is designated for bicycle use by signing, striping, and markings. The bicycle lane can utilize a portion of a curb lane or shoulder. A minimum width of three (3') feet is recommended to support this designation.

Bicycle/Pedestrian Path
This is a paved or unpaved natural surface that is physically separated from traffic by either an open space (5-foot minimum) or a barrier. It can be located within the highway right-of-way or in an independent right-of-way. A trail is typically eight (8') feet to ten (10') feet wide. Paths are considered shared-use facilities in that they are used by bicyclists, pedestrians, in-line skaters, and equestrians.

Bicycle Route
Any roadway or path without regard to geometrics can be designated as a bicycle route. Bicycle route signs simply serve as a guide to direct a cyclist from one point to another.

Children Cyclists
These cyclists are pre-teen riders whose roadway use is initially monitored by parents. Eventually they are accorded independent access to the bicycle system. They and their parents prefer access to key destinations surrounding residential areas including schools, recreation facilities, and shopping centers. These riders prefer streets with low motor vehicle speed and volume and well-defined separation of bikes and motor vehicles.

ISTEA
Intermodel Surface Transportation Efficiency Act (ISTEA) is federal legislation which provides funding for a variety of eligible transportation projects that link different modes of transportation. The use of these funds for bicycle and pedestrian facilities is permitted.

Shared-Use Facility
This is a travel lane that both the bicyclist and motorist share. This could either be a curb lane or a lane with little or no shoulder.

Shared Roadway
A general term denoting any roadway upon which a bicycle lane is not designated and which may be legally used by bicycles regardless of whether such facility is specifically designated as a bikeway. A shared roadway may consist of a shared lane or lane plus paved shoulder.

Shoulder
This is a smooth paved surface adjacent to the roadway's travel lane. A minimum width of three (3') feet should be provided, although a width of eight (8') feet to ten (10') feet is desirable.

Sidewalk
This is a paved separate facility adjacent to the roadway that is designated for pedestrian use.

Wide Curb Lane
This is a shared-use facility where the outside curb lane is at least fourteen (14') feet wide, but does not exceed sixteen (16') feet. The wide curb lane may be striped to indicate separate spaces for the motorist and bicyclist.