Washington Township
Master Plan

Transportation and Circulation Element

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(The original of this report has been signed and sealed in accordance with the law

PPK #6214.03

Executive Summary

The Transportation and Circulation Element of the Master Plan examines the present conditions of all aspects of the Township's circulation system, from automobile traffic and mass transportation options to non-vehicular alternative modes such as cycling and pedestrian movement.

In the case of Washington Township, statistics illustrate that more than 83% of the residents commute to and from work in automobiles. Such being the case, it is not surprising that traffic congestion and the associated accidents are a primary concern for many of the residents and Police Department alike. It is noted that the following intersections were identified as significant areas of concern:

(1.) Egg Harbor Road (C.R. 630) and Delsea Drive (State Highway 47).
(2.) Hurffville-Grenloch (C.R. 635) and Egg Harbor Road (C.R. 630).
(3.) Egg Harbor Road (C.R. 630) and Greentree Road (C.R. 651).
(4.) Egg Harbor Road (C.R. 630) and Ganttown Road (C.R. 639).
(5.) Hurffville Cross Keys Road (C.R. 654) and Fish Pond Road (C.R. 634)
(6.) Black Horse Pike (S.R. 42) and Tuckahoe Road (C.R. 555).
(7.) Woodbury-Turnersville Road (C.R. 705) and Black Horse Pike (S.R. 42).
(8.) Black Horse Pike (S.R. 42) from milepost 6.0 to milepost 5.0.
(9.) Section of Black Horse Pike (S.R. 42) between milepost (8.0) and (9.0).

Recommendations to improve the safety are noted within this Element, including traffic calming techniques and more appropriate signal synchronization. However, the primary issue is the fact that the Township is overly dependent upon the automobile for transportation, not only for commuting, but also for everyday needs such as shopping, entertainment and children's access to schools. Due to this over dependence on the automobile, non-vehicular modes of transportation are explored to balance out the current transportation network.

Non-Vehicular Modes of Transportation

The focus on non-vehicular modes of transportation becomes the key to the Transportation and Circulation Element. Such forms of mobility include:

- Pedestrian movement via convenient and safe accessways/sidewalks;
- The creation of a Township-wide Bicycle Plan;
- The incorporation of pedestrian and cyclist needs into the proposed Greenways Corridor.

Relative to this goal is the Delaware Valley Regional Planning Commission's report entitled *Southern New Jersey Bicycle and Pedestrian Mobility Plan*, an Element of the *DVRPC Year 2020 Plan*:

> *Year 2020 Vision: Southern New Jersey is a place where people will choose to bicycle and walk. Residents and visitors will be able to conveniently walk and bicycle with confidence and a sense of security in every community. Both activities will become a routine part of the transportation and recreation systems.*

Goals & Objectives

- Create a pedestrian and bicycle friendly transportation infrastructure by planning, designing, constructing, and managing transportation and recreation facilities which will accommodate and encourage use by bicyclists and pedestrians, and be responsive to their needs.

- Make the necessary revisions to the Township's Land Use Ordinance to further facilitate non-vehicular modes of transportation.

- Incorporate any pedestrian/bicycle plan within the Township's proposed Greenways Corridor Plan, thus creating not only transportation alternatives to the automobile, but also including a recreational element.

- Continue to require sidewalk implementation for all development that occurs within the Township. Future development should also include bicycle lanes, paths, trails or easements dedicated for such use.

- Utilizing the plans proposed within this Element of the Master Plan, the Township should prepare an application to submit for various State and Federal grants for the implementation of the Greenways Corridor Plan, including the request for TEA-21 (Transportation Efficiency Act) Funds.

- Implementation of traffic calming techniques to maintain the safety of the Township's rights-of-way. This must be completed in conjunction with the County and State.

- The completion of a Transportation Improvement Plan (TIP) examining not only problematic intersections, but also the overall traffic system within the Township.

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I. Introduction

The Transportation and Circulation component of the Master Plan regulates the method by which mass transit, vehicular, bicycle and pedestrian circulation routes are developed and managed in the community.

The intent of the plan is summarized in the purposes of the Municipal Land Use Act which states that the objective of the transportation plan is to, "... *encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging the location of such facilities and routes which result in congestion and blight".*

This simple statement provides a clear objective for the community to follow in its review of new development within the Township and in its negotiations with county and state agencies which control county and state roadways. Since Washington Township has a composite of limited access, arterial, primary collector, and secondary route systems that service the community, it must develop its Transportation and Circulation Plan with the knowledge that the community must be proactive in coordinating its goals with the New Jersey Department of Transportation, the Delaware Valley Regional Planning Commission and the Gloucester County Planning Department.

Many communities do not take a proactive role in transportation planning because they allow the other higher authorities to do the planning for them, specifically for roadways that are within the state and county jurisdiction. Given the fact that Washington Township has such a critical linkage with the state and county roadway systems, it should take the prerogative of being proactive. By planning ahead and developing an overall strategy for transportation improvements within its jurisdiction, and lobbying for appropriate changes at state and county levels, the Township can ameliorate future traffic problems.

This report evaluates planning issues as goals and objectives that are translated into implementation strategies. These strategies establish a plan for the Township together with its Traffic Engineer to implement that will enable the Township to remain at the forefront in developing a transportation and circulation strategy that satisfies its current and future needs.

II. Planning Issues, Goals And Objectives For Transportation And Circulation Planning

By translating planning issues into goals and objectives, the process of identifying problem areas and proposing solutions for coordination with N.J.D.O.T., New Jersey Transit, South Jersey Transportation Authority, Delaware Valley Regional Planning Authority, Gloucester County Planning Department and related agencies with jurisdiction over the Township's regional and county systems becomes much easier.

With defined goals and objectives, the community can develop implementation strategies in a rational manner. This implementation process can take place at the local, site plan review level, where transportation issues can be monitored on a development-by-development basis. Local transportation issues then can be coordinated with the strategies of the New Jersey Department of Transportation, to develop traffic solutions for impacted portions of Delsea Drive (State Route 47) and the Black Horse Pike (State Route 42/322).

These strategies also can be translated into monetary contributions for transportation improvement assessments, where developments that generate transportation impacts contribute revenues that aid in the solution of a problem.

Therefore, the transportation plan becomes a tool to establish a policy for improving key roadways in the Township, and for coordinating and monitoring improvement strategies with higher authorities that have the responsibility for state and county roads.

A. Transportation Goals and Objectives

Transportation goals and objectives assist the community in outlining its transportation planning strategy. They should be reviewed annually by the Planning Board to test their adequacy. These goals and objectives are listed as follows:

- Promote Marginal Access Routes/Parallel Access Roads.
- Coordinate with South Jersey Transportation Authority to provide improved intersection connections.
- Coordinate future transportation planning with county and state agencies.
- Become proactive by establishing a monitoring program for local roadways.
- Develop a downtown (town center) parking strategy.
- Integrate locally developed bike paths and pedestrian ways into a county system.
- Monitor the adequacy of public transportation within the Township relative to population increases.
- Maintain setback standards along major arterials to assure highway aesthetics and room for future expansion into the rights-of-way.
- Address problematic streets and intersections in the Township as identified by the Washington Township Police Traffic Safety Bureau.
- Direct truck traffic onto major arteries and away from residential areas.

1. Promote Marginal Access Routes which, in Transportation Planning, frequently are called Parallel Access Roads.

   A marginal access route or parallel access road system is designed to provide secondary linkage between/among major commercial developments along a commercial arterial, thereby relieving traffic congestion along major corridors.

   These secondary access routes also improve the ease of access from one shopping center to another, which has proven to be a great asset to retailers. By linking one shopping center with another, customers can pass freely among the retail centers without having to re-enter the crowded regional arterials.

   The Planning Board, through its site plan review, must assure that the marginal access road systems are interconnected with each new proposed development.

2. Coordinate with the South Jersey Transportation Authority to Create Improved Connections with the Atlantic City Expressway.

   Although the Atlantic City Expressway crosses only a small part of the northeasterly edge of Washington Township, it is the major regional connector uniting the county with neighboring communities and the national highway system. Since Washington Township is a community of almost 50,000 and anticipating future growth, its impact on the Atlantic City Expressway, especially at major interchanges servicing the Township, should be coordinated with the South Jersey Transportation Authority to avoid any complications caused to the overall network by local area population growth.

3. Coordinate Future Transportation Planning with the County and State Department of Transportation to Maximize the Efficient Use of Existing Roadway Systems.

   Washington Township must take a proactive position with respect to its transportation planning and coordinate these efforts with the county and state before a transportation crisis arises. The existing roadways are destined to become increasingly congested, some to the point of failure. Transportation planning traditionally has been a reactive process that remedies situations after problems exist. By taking a *proactive position* and constantly monitoring the situations on an annual basis through the offices of the Township Transportation Engineer, an overall transportation plan can be developed on a road-by-road basis, enabling the Township to develop a program for collecting transportation funds from developers to implement necessary improvements.

   With this proactive action, the community can monitor and target necessary improvements as developments take place in the community, setting aside funds in a transportation trust fund to make such improvements.

With development fund legislation passing the New Jersey Senate and awaiting approval in the Assembly, the concept of development contributions may be expanded. The community should be prepared to work with other agencies to initiate improvements. Only by "planning ahead" and having a transportation plan conceptually designed by the Transportation Engineer of the Township can the community hope to access the necessary funds to make these improvements.

4. Become Proactive by Establishing a Monitoring Program for Local Roadways Through the Offices of the Township Traffic Engineer to Enable the Township to Develop a System of Facts that Identify the Existing "Problem Areas" and Those That Can be Anticipated to be Roadway Failures in the Future.

As a continuation of concepts discussed in the previous goal, by setting up a defined monitoring system through the office of the Township Traffic Engineer, an annual traffic engineering analysis budget can be substantiated with facts that will justify a request for New Jersey DOT expenditures. In addition, such a system will enable the Township to receive grants for developing traffic improvement districts and allow the community to collect and reserve fees for improvement from surrounding developments. It is envisioned that such a system would develop ongoing data using base counts and supplemented by traffic volumes generated from new development that would continuously test the capacity of existing roadways. The municipality need not develop primary data since most of these statistics are regularly available from the Department of Transportation. However, it should develop supplemental data in order to refine the statistics and counts that are provided by D.O.T. Again, the Township should act in a manner to supplement information and to develop a monitoring system that would be able to input traffic volumes from various sources on an annual basis to assist in soliciting funds from a variety of sources to make the necessary improvements to its roadways.

5. Develop a Downtown Parking Strategy for the proposed Town Center.

The concept of a "Town Center" has been generated due to various uses such as the Municipal Building, Washington Township High School, and Kennedy Hospital Center, which place a high demand on the local street system. In cases such as this, on-street parking becomes a difficult issue for the local street system to service, necessitating the following:

(a.) A comprehensive parking strategy needs to be developed in conjunction with the county. Such a strategy should consider the feasibility of a low-level parking garage to service employees in this area and also provide a reserve capacity for the merchants in the commercial/retail uses.

(b.) In newly constructed developments, using the lower level/basement as a parking garage as well as utility and storage space will provide access to the building protected from the elements and relieve the need for outdoor surface parking.

6. Integrate Local Bike Paths and Pedestrian Ways into a County System

A bike path system provides an excellent opportunity for the movement of bicycle traffic throughout the Township. In addition, it provides a unique opportunity to integrate people from isolated subdivisions and commercial developments into the greater community via this bikeway system.

The current zoning ordinance for the Township has standards for bike paths that are predicated upon nationally recognized bikeway systems. However, practical experience of developing bikeways as part of subdivision developments has led functionally to the combination of pedestrian ways and bikeways as single units. The standards in the current ordinance need to be reviewed in conjunction with the Transportation Engineer's recommendations in order to provide consolidated standards for pedestrians and for bikeways. By doing so, all subdivisions and commercial developments within the Township can be linked with a proposed county pedestrian and bikeway system. This county bikeway system would provide the corridors into which local systems could tie.

By combining the requirement for bikeways within locally approved subdivisions and commercial developments, a system of safe bicycle paths can be developed to intersect with the county's rural bikeway corridor plan. Some or most of the cost for this integrated system can be passed on to the developers of individual projects that need linkages to the existing and proposed overall systems. At present, a survey of existing sidewalks in the Township shows a predominance of sidewalks in suburban settlements, and a scarcity of sidewalks between individual settlements. These subdivision sidewalk systems terminate at major arteries instead of extending along them.

Consideration should be given to linking these suburban pedestrian and bicycle neighborhood networks by extending them along the major arteries. Since major roadways service most of the Township, the integration of pedestrian paths and bikeways into the county and state road system should be a priority of the Governing Body for evaluation and execution. The Greenways Corridor concept in which bicycle paths and pedestrian ways are incorporated into the buffer/transitional areas of the wetlands that follow the stream corridors throughout the Township is discussed in more detail later in this report.

As part of the implementation of the Open Space and Recreation Plan, bikeways can be used to link proposed open areas. For example, Washington Lake Park in the central western portion of the Township can be united with nearby open spaces/recreation areas to the north and south with a combination of bikeways/greenways. Smaller parcels of open space/recreation areas in the eastern half of the Township from south to north need to be evaluated for linkage by bicycle paths/greenways and integrated with the roadway system.

7. Monitor the Adequacy of Public Transportation Within the Township Relative to Population Increases.

   Public transportation within the Township is provided by New Jersey Transit. New Jersey Transit operates buses primarily along regional corridors, connecting the Township with major population centers.

   As the Township grows, new bus routes and increased commuter parking areas, such as Park-and-Ride lots, should be considered a planning priority. The Township Transportation Engineer should be authorized to meet with New Jersey Transit officials to discuss routes, adjustment of schedules and fees, temporary storage of commuter vehicles, and related topics, to accommodate the anticipated population growth, particularly in the Township's major growth area(s).

   Such proactive measures will help the Township develop systems to provide alternates to automotive travel, and ways to accommodate automobiles used for access to nodes of transportation that act as bus and railway stations/terminals.

8. Setback Standards Along the Major Arterials to Assure Highway Aesthetics and Room for Future Expansion into the Right-of-Way

   Future development along major arterials should be separated from those arterials by substantial setbacks. Requests for intrusion into the setback area by developers for any reason, be it the need for increased coverage drainage basins or other physically necessary engineering elements, should be reviewed carefully by the Planning Board. During site plan review, every effort should be made to maintain the "look" that has been established in Washington Township in the past several years. Of particular importance is the establishment of drainage basins along major highway corridors. Frequently the location of basins is guided by the existence of low points in the contours of the site that parallel the highway corridor. When this occurs, the Township's Landscape Architect, in conjunction with the Township's other professionals, should coordinate a design that establishes a vegetative buffer between a highway and existing properties which would be consistent with existing highway design. Thus, the setback standards are not only a spatial separation but also a space in which the existing vegetation or introduced vegetation provides a natural screen from highway noise and visibility.

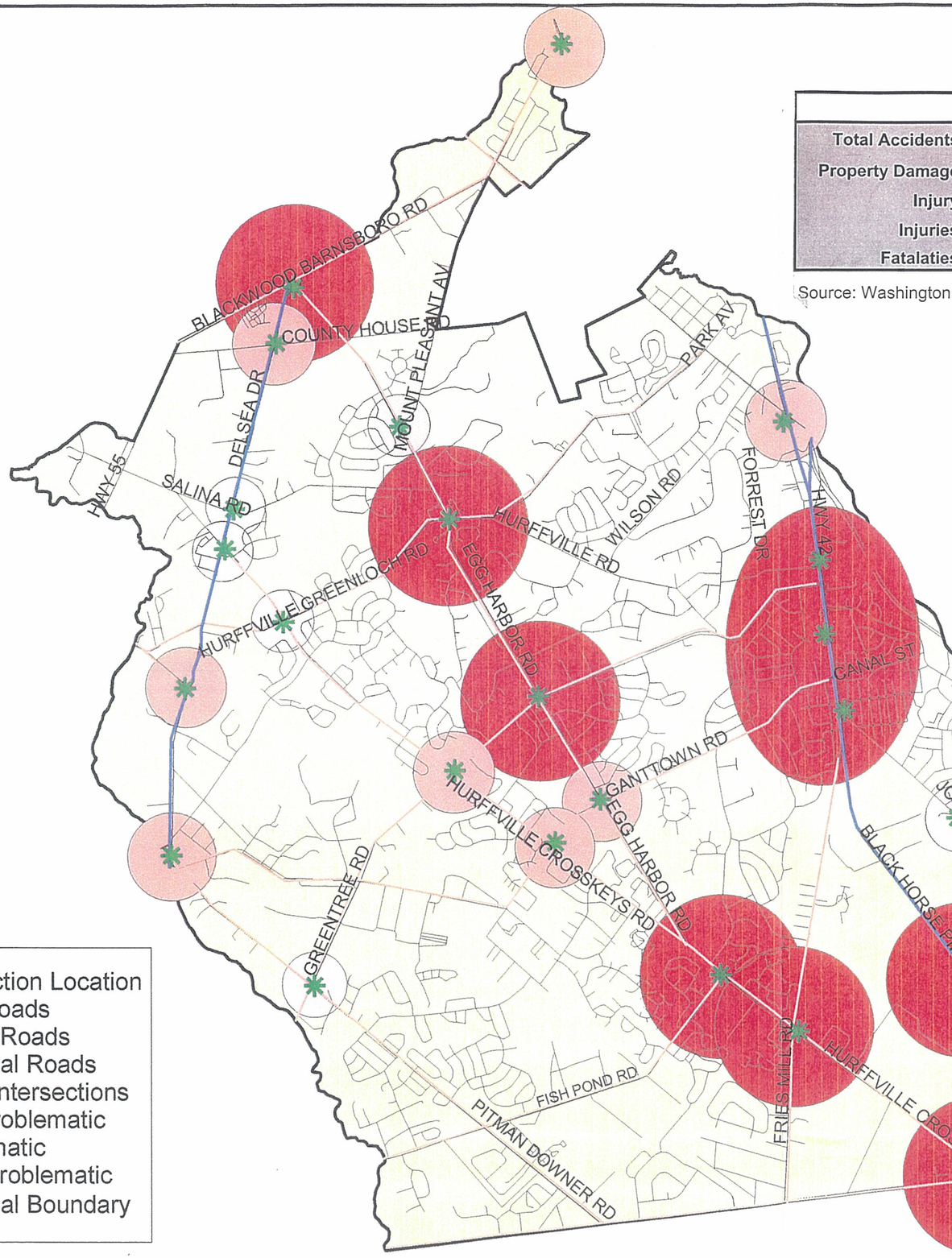
9. Address Problematic Streets and Intersections in the Township as Identified by the Washington Township Police Traffic Safety Bureau.

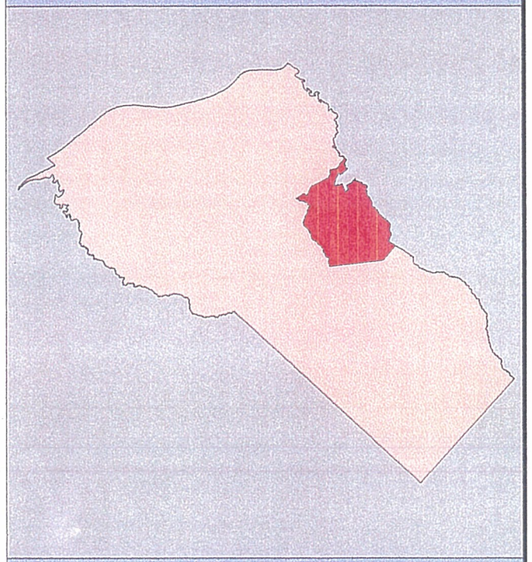
   A most basic and vital component of a transportation plan is the input of the local police department. The Washington Township Police Traffic Safety Bureau has identified the following intersections and streets as problematic at present (See Figure 1).

Figure 1
Problematic Streets and Intersections

	1998	1999	2000
Total Accidents	1518	1670	1683
Property Damage	1180	1318	1317
Injury	335	349	364
Injuries	528	572	556
Fatalaties	3	3	3

Source: Washington Township Police Department, 2001





Washington Township
Gloucester County
New Jersey

1 inch = 3,600 feet

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Source: Washington Township Police Department, NJDEP

Intersections:

(a.) Egg Harbor Road (C.R. 630) and Delsea Drive (State Highway 47).
(b.) Hurffville-Grenloch (C.R. 635) and Egg Harbor Road (C.R. 630).
(c.) Egg Harbor Road (C.R. 630) and Greentree Road (C.R. 651).
(d.) Egg Harbor Road (C.R. 630) and Ganttown Road (C.R. 639).
(e.) Hurffville Cross Keys Road (C.R. 654) and Fish Pond Road (C.R. 634)
(f.) Black Horse Pike (S.R. 42) and Tuckahoe Road (C.R. 555).
(g.) Woodbury-Turnersville Road (C.R. 705) and Black Horse Pike (S.R. 42).
(h.) Black Horse Pike (S.R. 42) from milepost 6.4 to milepost 5.0.
(i.) Section of the freeway (S.R. 42) between milepost (8.0) and (9.0).
(j.) Hurffville-CrossKeys C.R. 654 and Ganttown Road (C.R. 639)

The aforementioned intersections/street segments require immediate attention to avoid additional loss of life and property. The most critical area is the intersection noted in (a) above. To quote Captain Stephen A. Branco of the Washington Township Police Bureau, "There is a jug handle at this location which causes numerous crashes and traffic delays."

The next most severe area is the portion of the Black Horse Pike (S.R. 42) noted as milepost (6.4) to (5.0) above which experiences a high volume of traffic daily.

Additional intersections and streets that are difficult at present and promise to increase in severity as Problematic Areas are (See Figure 1):

(a.) Hurffville-Cross Keys Road (C.R. 654) from Brook Lane to Ganttown Road (C.R. 639), commonly described as the area in front of the Washington Township High School.
(b.) Delsea Drive (S.R. 47) and Pitman Downer Road (C.R. 658)/Chapel Heights Road (C.R. 639).
(c.) Tuckahoe Road (C.R. 555) and Hurffville Cross Keys Road (C.R. 654).

The area in front of Washington Township High School referred to as (a) above is in need of relief/redesign most urgently during morning arrival and afternoon departure due to the high number of travelers at those times of the day.

Address problematic streets and intersections in the Township as identified above by:

(a.) Eliminating the number of curb cuts (i.e. along the Black Horse Pike).
(b.) Improving traffic signal coordination by utilizing computer models to improve current timing and delay issues, primarily at the intersections and along the problem portions of streets noted above.

Note: Since expanding the number of lanes and increasing the widths of roads at random generally increases/encourages more traffic, focus first on signal

coordination to alleviate problems until more sophisticated methods can be implemented with funds from developments or grants.

10. Direct truck traffic onto major arteries and away from residential areas.

To preserve the tranquility and cleanliness of residential areas, signs delineating major roadways saying "Truck Route" will encourage trucks to use state routes, county roads and local major arteries instead of venturing onto residential streets. With these routes clearly marked with signage, trucks will be able to navigate throughout the Township and perform their business most efficiently.

The total prohibition of truck usage within residential areas is inadvisable. When the need arises, for delivery purposes to fulfill specific requests of residents, trucks need to be allowed to enter residential areas.

On Figure 2, county and state roadways are highlighted for emphasis. From this Township map, it can be seen that the many existing direct routes provide access to all points in the county without violating the privacy and peace of the residential developments.

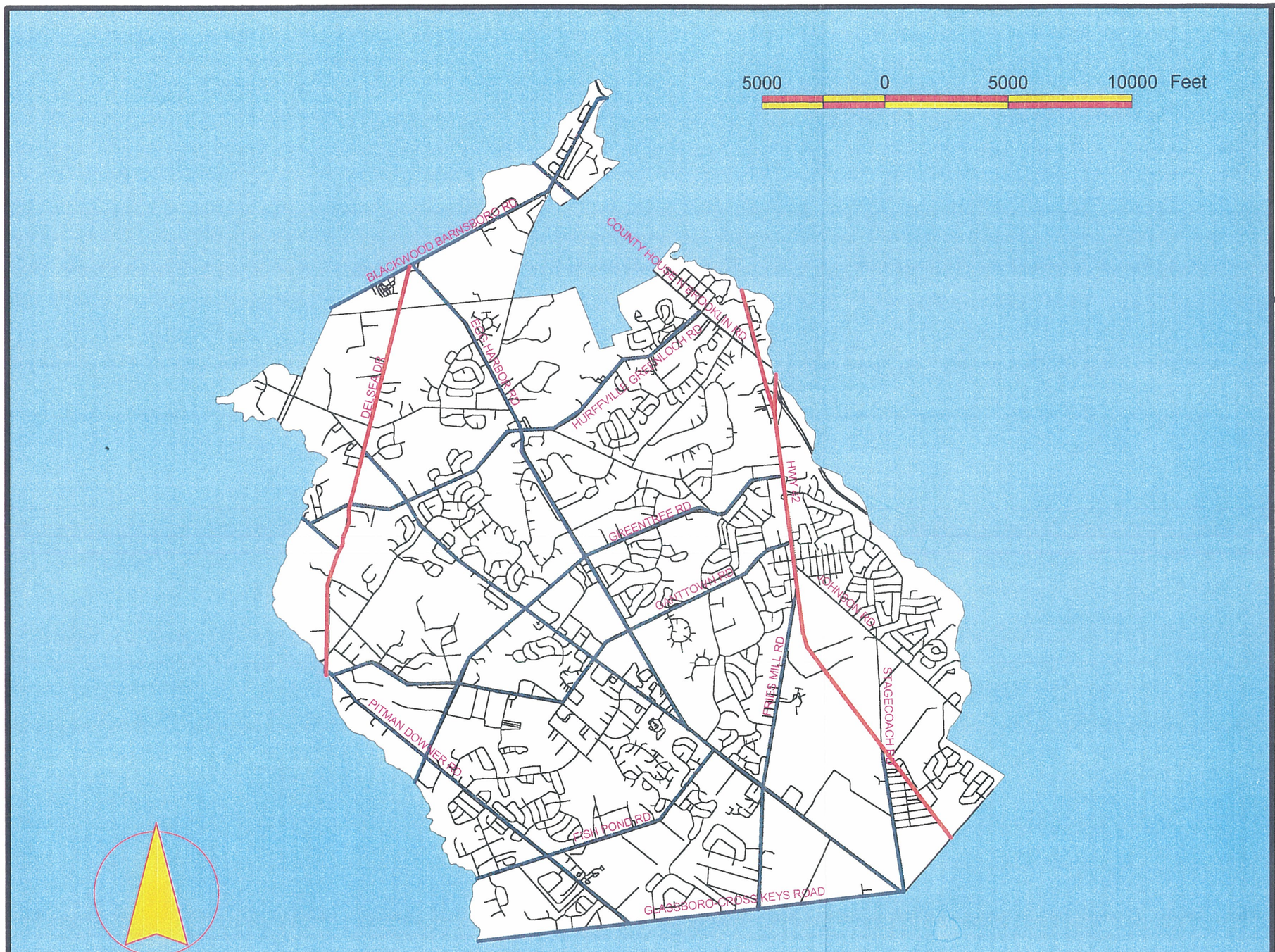


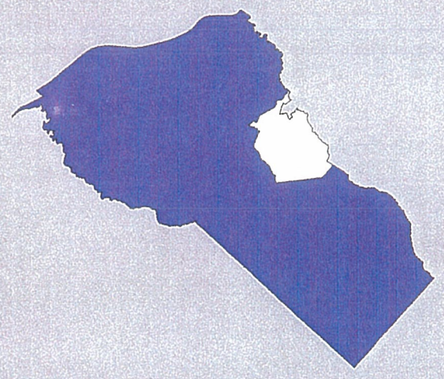
Figure 2

Arterials & Collectors

State Roads

County Roads

Washington Township
Gloucester County
New Jersey



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III. State and County Roads -- What is Washington Township's Involvement

The number of streets that are designated County or State rights-of-way in the Township may cause local residents to believe that there is nothing that can be done to improve these rights-of-way. However, such is not the case, specifically for State designated rights-of-way (i.e. State Route 42 and State Route 47).

The New Jersey Department of Transportation (NJDOT) has incorporated an approach to planning and designing transportation projects based on active and early partnerships with communities called Context Sensitive Design (CSD). While CSD is not a new concept for the NJDOT it was formally incorporated into its procedures in 1999. CSD involves a commitment to a process that encourages transportation officials to collaborate with community stakeholders so that the design of a project reflects the goals of the people who live, work and travel in the area. Such collaboration results in creative and safe transportation solutions.

The Congestion Relief and Transportation Trust Fund Renewal Act, signed into law in July 2000, requires the NJDOT to have such a CSD program. The aim is to have NJDOT engineers, planners, project managers and community relations representatives, as well as consultants and community leaders who have been trained in CSD techniques, flexible design, respectful communication, consensus-building and community participation, negotiation and conflict resolution coordinate with one another to reach a desirable outcome in State transportation projects.

Past projects have included everything from improved bridge design (architectural design in addition to engineering design), bicycle lanes being added to rights-of-way, improved pedestrian access and safety measures and streetscape improvements.

Relative to Washington Township, the community should consider a vision for State Road 42 and State Road 47 so that when NJDOT makes an announcement that they intend to complete a new study or project within the community, Washington Township residents will be ready to meet with the NJDOT representatives. Some considerations for these rights-of-way, and others within the Township should be:

- Inclusion of marginal access ways;
- Addition of protected bicycle and pedestrian lanes;
- The creation of a "green" median (SR 42);
- Improved architectural lighting;
- Reduced curb cuts along the primary rights-of-way;
- Streetscape improvements (i.e. landscape buffers, underground utilities, etc.).

IV. Implementation Strategy for the Township -- Streets and Intersections

The transportation goals and objectives need to have a rational basis by which to be evaluated, implemented and measured. Accordingly, an implementation strategy must be established.

As noted previously in the report, Figure 1, a map entitled *Problematic Streets and Intersections, Washington Township,* illustrates the issues and problem areas. Possible implementation strategies recommended to resolve these problems including jughandle reconfigurations, turn signal modifications, light synchronization, upgrading the local road systems and establishing a parking strategy for areas such as the Kennedy Hospital Center, to coordinating the up-grading of police identified "trouble" intersections and street segments. These are some of the issues that need to be dealt with as a comprehensive transportation strategy. The leadership role for guiding the process should be given to the Township's Transportation Engineer who can monitor and coordinate the process with the other Township professionals.

These measures require coordination of the state, county and local authorities in a variety of project formats. Highway improvements involving state NJDOT. roadways must be coordinated at the state level. Similarly, county projects must be coordinated at a county level. It should be the role of the Township Transportation Engineer to evaluate and prioritize for the Planning Board and Governing Body each element so that a systematic process is established for preemptive implementation[1].

[1] Preemptive implementation refers to a strategy in which the Township underwrites conceptual designs, collects and pools transportation impact fees and initiates discussions for corrective roadway improvements before roadway failures materialize.

V. Alternative Options for Washington Township

Washington Township, like so many similar "bedroom" communities, depends heavily upon the automobile for everyday movement within the Township and for travel outside the area. As is illustrated in Figure 3, 83% of the population utilizes its own automobile for daily travel to/from their place of employment. The impact on the Township's road system is severe, and there is no indication of improvement on the horizon without utilizing alternative modes of transportation to reduce the Township's dependency on the automobile.

Figure 3
Modes of Transportation within Washington Township

	1990		2000	
	Total	Percent	Total	Percent
Means Of Transportation				
Drive Alone	17,597	81.6	19,710	83
Car Pool	2,503	11.6	2,275	9.6
Public Transportation	636	2.9	740	3.1
Walked	260	1.2	182	0.8
Worked at home	436	2	743	3.1
Other	141	0.7	101	0.4
Bicycle	52		3	
Motorcycle	10		0	
Total Workers	21,573	100	23,754	100
Location of Employment				
Worked outside County	8,243	38.2	14,775	62.2

Source: U.S. Census Bureau, 1990, 2000

Given the Township's current status regarding potential future developable lands being minimal at best, it appears that the opportunity to alter existing rights-of-way is not necessarily feasible. This is not to say that improvements cannot be made to correct individual problematic circulation problems throughout the Township, but the real efforts that the Township should put forth at the present time are to encourage increased car pooling, and the fostering of an effective and highly publicized plan to encourage non-vehicular transportation alternatives.

The fact that the number of bicycle commuters dropped from fifty-two (52) persons 1990 to just three (3) persons in 2000 is cause for significant concern. Three (3) persons per 23,754 workers is less than .01% (less than a tenth of one percent). This is significantly

below the national average of approximately 1.67%, and all the more disconcerting given the fact that bicycle commuting in the United States, overall, has been increasing by 12% a year since 1983. The significant decline in bicycle commuting in Washington Township is likely due to safety concerns which should be addressed by Governing Body. Many communities across the country have actively engaged in street redesign and marketing campaigns to increase the number of commuter cyclists and have been successful.

Recommendations for improved bicycle facilities throughout the Township are noted in the Greenways Corridor section of this Transportation & Circulation Element, and within the Non-Vehicular Transportation Alternatives, Section D.

A. Park-and-Ride/Transportation Oriented Development

It is worth noting that via a forthcoming agreement with Gloucester County, a Park-and-Ride bus facility may be located at the northeast corner of Hurffville-Cross Keys Road and Fries Mill Road. This, if designed and marketed properly, should help to alleviate some of the automobile congestion within the Township -- specifically for commuters working within Philadelphia. This facility should be incorporated within the proposed Mixed-Use District that is being proposed on the land commonly referred to as the ACP (American Continental Properties) tract (the land bounded by Hurffville-Cross Keys Road, Fries Mill Road, the Cross Keys By-Pass and the Black Horse Pike).

This type of transportation facility could provide an added dimension to the proposed Mixed Use District as is being proposed. The real benefit could be the creation of critical mass (people/purchasing power) within this area via the very fact that such a transportation facility would be located here. Ultimately, a small version of a Transportation Oriented Development (TOD) could be established as a result. A TOD is generally a mixed-development that is interconnected to a bus or rail facility. It is not enough to simply have development located adjacent the transportation facility, but rather the development should be a part of the transportation facility. In this case, the parking lot could be designed within a larger development, thus serving two (2) needs. In fact, the parking lot could be comprised of slightly smaller scattered lots that encourage vehicular and pedestrian movement through the proposed district.

The general layout as proposed is more fully outlined within the Land Use Element of this Master Plan. It is recommended that, at minimum, an official plan be adopted by the Planning Board that preserves and maintains an interconnected transportation network within this tract of land to the streets that ties it to the remainder of the community -- any new development within this area should respect the street pattern that exists. Specifically, the roads leading from Wegman's, across Watson Drive, to the ACP Tract -- such should be continued within the Tract rather than terminated or altered within the Tract.

The vehicle trip reduction factor for development surrounding a Bus Transit Corridor, as proposed is noted in Figure 4, Transportation Impact Factors.

B. Non-Vehicular Transportation Alternatives

Establishing non-vehicular transportation routes throughout the Township consists of several approaches as follows:

1. Incorporating sidewalks into roadway design for consistent pedestrian access throughout the Township;

2. Adding bicycle lanes to existing streets and highways; and

3. Developing Greenways Corridors for use by bicycles, pedestrians, or a combination of wheeled vehicles and pedestrians.

C. Sidewalk Plan For Washington Township

Washington Township, upon the unfortunate accidental death of a Washington Township High School student while riding his bike on a narrow section of Hurffville-Cross Keys road near the entrance of Washington Lake Park in April, 2001, began the creation of a Sidewalk Trust Fund to begin to locate sidewalks in the most necessary areas throughout the Township.

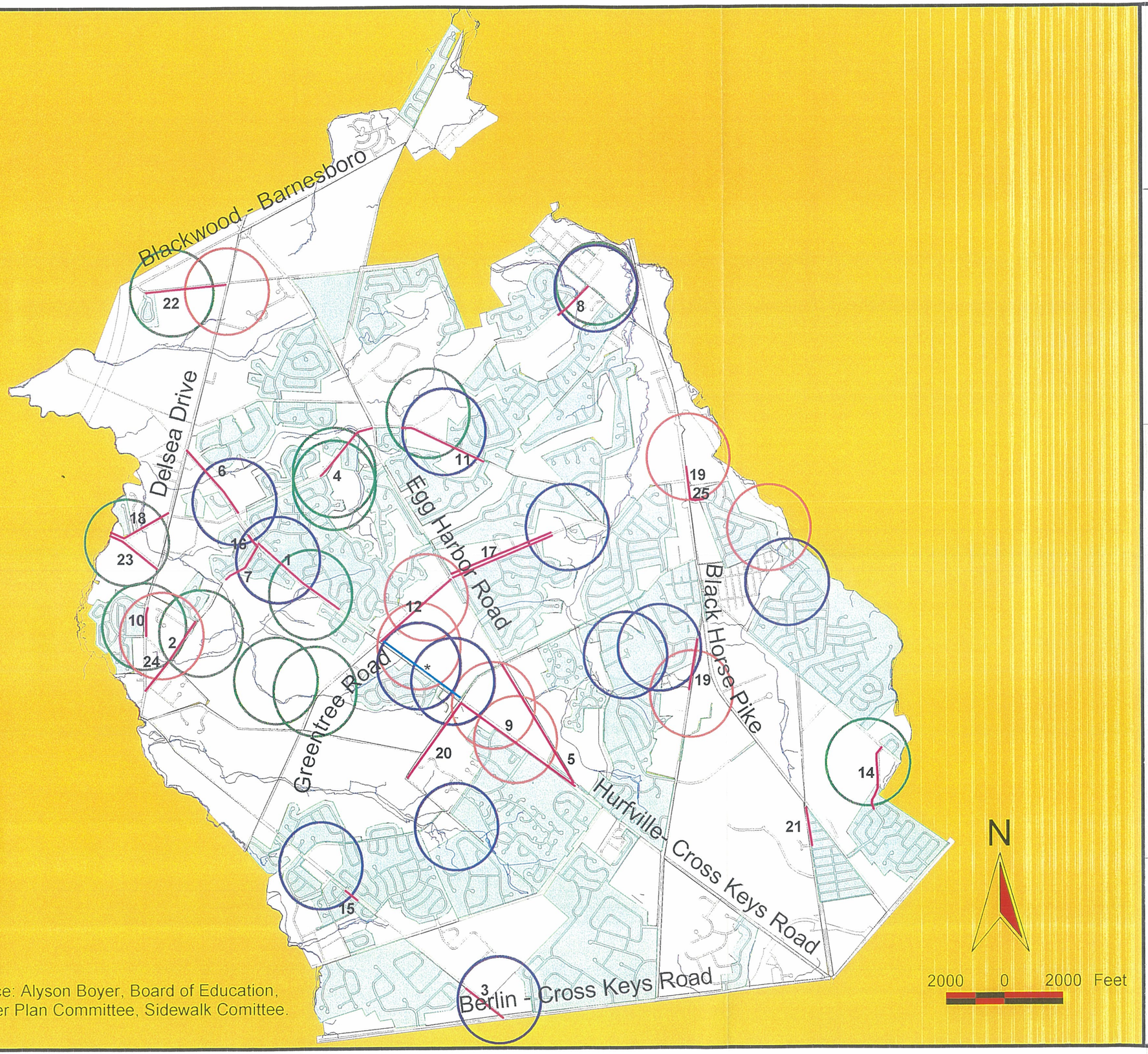
With the assistance of Alyson Boyer, a student who lobbied the Township Council for the program, and her diligent work toward the completion of the Sidewalk Plan, Figure 5 (see following page), illustrates the recommended locations for sidewalk implementation throughout the Township. As is noted, a radius of a ¼ mile around all municipal services buildings, parks, and schools is considered a priority location for sidewalk. Also noted on the Sidewalk Plan are the areas of the Township that currently have sidewalk and those areas that are void at the present time.

As of October 2002, the Sidewalk Trust Fund had amassed almost $50,000 to be utilized for sidewalk implementation. While this will not cover all of the sites recommended for receipt of sidewalk, it will begin this most important process. Additionally, the Planning Board and Zoning Board, through Ordinance revisions, has made sidewalk mandatory for every application that appears before both Boards. As such, while in the short term sidewalk implementation may appear random and scattered, over time the pieces will begin to interconnect. Finally, if an application appears before either Board that does not necessitate sidewalk, a contribution in lieu of sidewalk construction is required (for the length of right-of-way that any project occupies) in the amount of $21.84 per linear foot (hard and soft costs). The Governing Body must approve such contributions that will continue to supplement the Sidewalk Trust Fund.

All properties in the Township need to be accessible by pedestrians on the system of sidewalks along roadways. Wherever space permits, this sidewalk system will be enhanced by separation from the roadway by a landscape buffer planted with street trees space no more than twenty-five (25) feet on center. Where the roadway easement

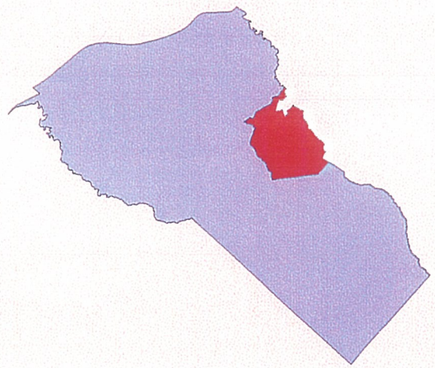
does not allow and adequate land is not available, the sidewalk may be constructed as an extension of the curb separating the roadway from pedestrian space.

Figure 5
Washington Township
Sidewalk Plan
Gloucester County, NJ



Source: Alyson Boyer, Board of Education, Master Plan Committee, Sidewalk Comittee.

- Sidewalk Plan
- Sidewalk to be Built by County
- 1/4 mile radius from schools
- 1/4 mile radius from parks
- 1/4 mile radius from municipal facility
- Existing Sidewalk
- No Sidewalk
- Sidewalk Target Areas (Prioritized 1 to 25)



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27 Gordon's Alley
Atlantic City, NJ 08401
March 2004

Also noted on the Sidewalk Plan, Figure 5 are the initial twenty-five (25) sidewalk priority sites as listed below:

Sidewalk – Ranking for Implementation

	Location	Points
*	Hurffville-Cross Keys Road (north side) between Greentree Road and Ganttown Road – missing sidewalk in front of high school.	16
	(to be constructed by the County)	
1	Hurffville-Cross Keys Road (north side) between Bunker Hill Road to Chestnut Ridge – connects Washington Lake Park and Chestnut Ridge to Heritage Valley	15
2	East Holly Avenue (west side) between Olmsted Drive and Densten Road – connects the development to the library and Holly Dell/Skater's Choice.	12
3	Pitman-Downer Road between Bunker Hill School and Derby Drive – connects developments to Bunker Hill School.	12
4	Hurffville-Grenloch Road (east side) between Egg Harbor Road and Langsley Drive – connects developments to CVS and other commercial/retail.	12
5	Egg Harbor Road (south side) between Ganttown and Hurffville Cross Keys Road – connects developments to the municipal building and Kennedy Hospital.	12
6	Hurffville –Cross Keys (north side) from Delsea Drive to Hurffville – Grenloch Road – connecting Hurffville School with residential homes	12
7	East Holly Avenue (east side) between Haines Mill Road and existing sidewalk (to the north) – connects developments with Chestnut Ridge School	11
8	Park Avenue (east side) between Woodbury-Turnersville Road and Grenloch Park – connects school and developments to Grenloch Park.	11
9	Hurffville-Cross Keys Road (south side) between Ganttown and Egg Harbor Roads – would run in front of commercial retail, seniors village, and hospital	11
10	Delsea Drive between Densten Raod and Holly Dell Drive	11
11	Hurffville Road (south side) between Hurffville-Grenloch Road and Wedgwood School – connects homes to the church, sports complex, and the elementary school.	10
12	Greentree Road (east side) between Hurffville-Cross Keys and Egg Harbor	10

	Roads – connects development to senior center, commercial retail, and the police station.	
13	Fries Mill Road between Georgetown Road and University Executive Campus – connects development to office/medical complex, senior complex and county health building.	10
14	Fairmount Drive between Concord Court and Johnson Road – connects homes to sports complex (Castle of Dreams) and commercial/retail on Rt. 42.	10
15	Pitman Downer Road (south side) between Comet Lane and Saturn Drive – connects development to Orchard valley School	10
16	Hurffville – Cross Keys Road (west side) between Hemlock Road and East Holly Road – connects development to Chestnut Ridge School	10
17	Greentree Road (both sides) between fire station and near Egg Harbor Road – connects homes to Bells School and commercial / retail on Egg Harbor Road	10
18	Lambs Road between Delsea Drive and Township Line – connects residential areas with park and retail area	10
19	Route 42 between Whitman Drive and NJ Transit Park & Ride (Friendly's) - connects Whitman Square homes to commercial / retail and bus stops on Rt. 42.	9
20	Chapel Heights Road between Hurffville – Cross Keys Road and Thies Road – connects residential areas with commercial areas and high school	9
21	Tuckahoe Road in area of Ardmore Avenue – connects portion of bike path with retail shopping center	9
22	County House Road (south side) between Delsea Drive and Aron's Circle – connects development to soccer complex and bus stops on Delsea Drive.	8
23	Bethel Mill Road – connects residential area to park	8
24	East Holly Road between Delsea Drive and Densten Road – connects residential areas to Township Library (and park)	8
25	Whitman Drive between Concord Court and Route 42 – connects development to commercial retail on Rt. 42.	5

Sidewalk Priority Ranking System

Each section of missing sidewalk was graded on all of the following points:

Proximity to Schools

a.	On school property and integral to student access	4 pts.
b.	Immediately adjacent to school and integral to student access	3 pts.
c.	Within ¼ mile of school and integral to student access	2 pts.
d.	Between ¼ and ½ mile of school and integral to student access	1 pts.
e.	Unrelated to school or typical student access to schools	0 pts.

Proximity to Parks

a.	On park property and integral to pedestrian access	4 pts.
b.	Immediately adjacent to park and integral to pedestrian access	3 pts.
c.	Within ¼ mile of park and integral to pedestrian access	2 pts.
d.	Between ¼ and ½ mile of park and integral to pedestrian access	1 pts.
e.	Unrelated to parks or typical pedestrian access to parks	0 pts.

Proximity to Municipal Services, Commercial or Retail Establishments

a.	On or within ¼ mile of municipal services (non-parks)	3 pts.
b.	Immediately adjacent to commercial or retail establishments	2 pts.
c.	Within ¼ mile of commercial or retail establishments	1 pts.
d.	Not near commercial or retail establishments	0 pts.

Current Status of Parcel Without Sidewalk

a.	Owned by Washington Township, School Board, WTMUA or Fire District	5 pts.
b.	Developed parcel privately owned	2 pts.
c.	Undeveloped parcel privately owned	1 pts.

Road Frontage of Parcel Without Sidewalk

a.	Missing sidewalk along NJ State Highway	5 pts.
b.	Missing sidewalk along County Highway	3 pts.
c.	Missing sidewalk along township road	1 pts.

Note:

- Cost of sidewalk (hard and soft costs) is ±$21.84 per linear foot
- Cost of 6" reveal curb (hard and soft costs) is approximately ±$16.70 per linear foot

Upon final confirmation of the existence or lack of 6" reveal curb, the aforementioned priority list may be altered -- locales with existing curb would unquestionably be less expensive to complete. However, such does not negate the importance of sidewalk implementation on any of the sites as noted. Additionally, such sidewalk implementation should be undertaken with the input of the Board of Education and/or the Parks Department, both of which were involved in the discussions regarding the priority list as noted.

The use and application for TEA-21 (Transportation Efficiency Act) Funds should be considered. Such funding would alleviate the sole use of Township funds for the further implementation of sidewalk expansion, bicycle lanes and Greenways Corridor trails system. The submission of the Greenways Corridor plan, as proposed herein, should easily qualify for this Federal funding.

D. Bicycle Lanes on Existing Roadways.

The Delaware Valley Regional Planning Commission (DVRPC), as part of the long range land use and transportation for the region, has produced a report entitled Southern New Jersey Bicycle and Pedestrian Mobility Plan. Such plan is an Element of the DVRPC Year 2020 Plan. The report's purpose is to promote and encourage cycling and walking as options to automobile travel. The bicycle component of the report uses existing and proposed bicycle facilities to develop a regional bicycle network. Pedestrian access is addressed through policy recommendations and design guidelines.

This report should be consulted in the preparation of an overall bicycle plan that functions to meet the needs of the residents of Washington Township, as well as those residents in adjacent townships -- the network would, ultimately, be regional and should be planned accordingly. Possible retrofitting measures for existing streets may be as follows:

- Along all roadways designated to become bicycle commuter routes, an additional lane no less than four (4) feet wide (without curb and gutters) or five (5) feet wide (with curb and gutters)[2] could be created on each side of the rightmost lane of two-way streets expressly for bicycles.

- All such lanes would be denoted with lettering restricting use to bicycles. Signs will be posted warning motorists to keep these bicycle lanes open and free of vehicles at all times. Motorcycles or other two-wheeled vehicles should be restricted from these bicycle lanes

All proposed additions to the existing rights-of-way would need to be approved as an overall Transportation Improvement Plan (TIP) that is completed in conjunction with the Township's Transportation Engineer, Public Works Department and in accordance with the County and State where appropriate. Bicycle lane guidelines, pursuant to industry standard, must be

[2] AASHTO Guide for the Development of Bicycle Lanes, 1991.

adhered to in an effort to provide adequate safety to all cyclists, pedestrians, and motor vehicle operators involved.

Cyclists using the specially designated bicycle lanes would be required to obey all rules of the roadway required of people operating motor vehicles. However, cyclists would be allowed to use other lanes of traffic when they are able to maintain a speed that makes their usage safe and avoids their being a hazard to themselves or to others.

E. Greenways Corridor

Washington Township has envisioned a Greenways Corridor concept where the linear parks, wetland areas (buffer/transitional zones), and necessary roads are all interconnected within the Township, affording residents an alternative to driving to move about the Township. Figure 6, Map of Greenways Corridor, illustrates a proposed linkage for such pedestrian/bicycle trails. Additional routes may be required upon further study and during the implementation process, however the plan, as depicted, allows residents to access the Township schools, parks, municipal offices, etc.

The Greenways Corridor is expected to be a pedestrian/bicycle trail that utilizes a minimum of 15'-0" width throughout the Township's wetland corridors. Beginning in 2000, the Planning and Zoning Boards have required, as part of site plan application, the dedication of a 15'-0" wide access easement from all property owners along wetland corridors. This easement would be within the buffer/transitional zone and would not negatively impact the streams or associated wetlands once an official trail is constructed. The continued enforcement of such easement is recommended in the future.

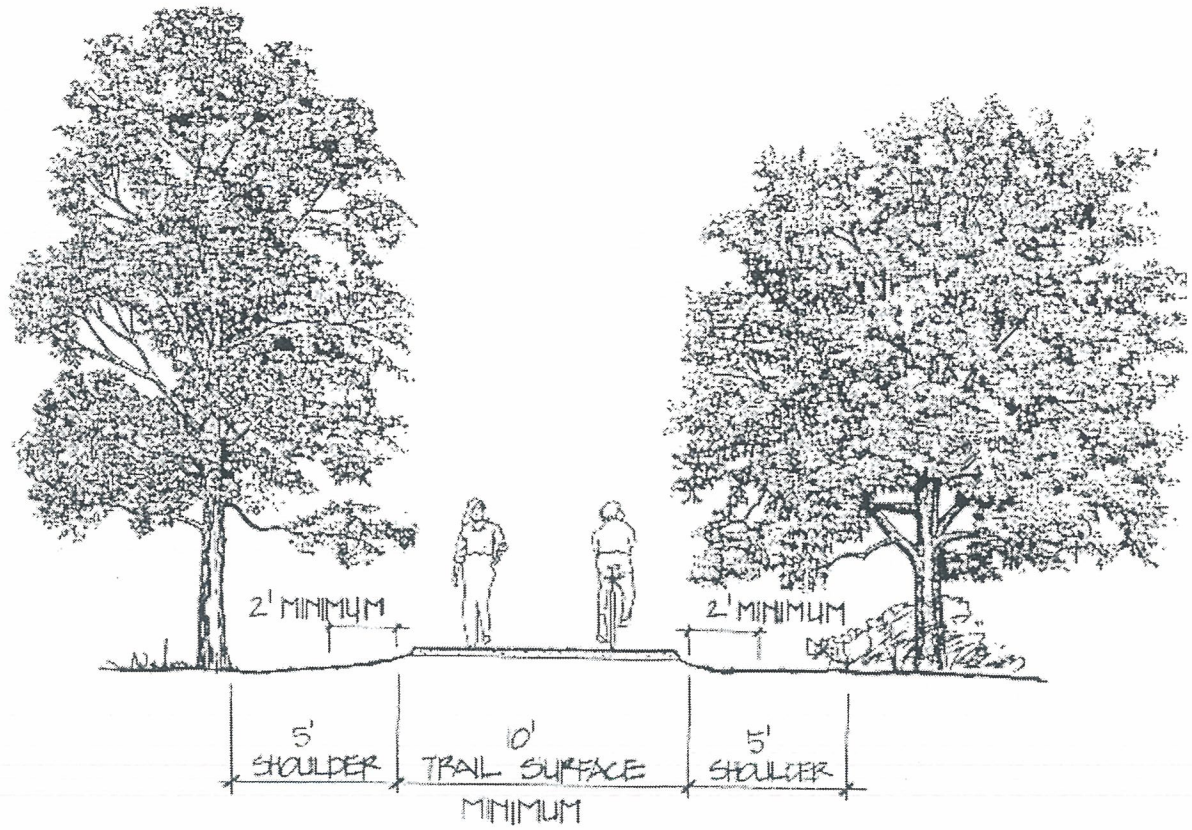


Figure 3.22: Recommended single tread width.

Source: Trails for the Twenty-first Century, 1993.

The New Jersey Department of Environmental Protection has been made aware of the Township's goals and has stated no objections to such endeavor. However, all planning for such Greenways Corridor must be conducted with full cooperation and approval of the NJDEP. This includes exact location of the proposed trail, surface material to be used, as well as plantings, lighting, benches, etc. proposed to be incorporated.

The Greenways Corridor will interconnect with existing vehicular roadways and the pedestrian sidewalk system. By using this Greenways Corridor for daily transportation, the cyclist and/or pedestrian will be relieving the roadways of a vehicle and added congestion while personally gaining an appreciation for the Township from a new perspective.

The Greenway Corridor will do more than provide a variety of access routes linking goods and services. It will be designed to attract users by adding views of wetlands and forests, streams and gardens, to the enjoyment of its users' daily lives. In order to be

successful, the construction of the corridor system must be economical, functional and durable. Construction challenges and suggested solutions are as follows:

1. Relatively flat terrain, adequate soil base: For areas where the soil is adequate to support a trail, a ten (10) foot wide and seven (7) inch deep channel will be dug and the soil compounded. An acceptable trail construction and finish might consist of a six (6) inch rock and rock dust base, vibrated to adequate resistance according to engineering specifications, and finished with a two (2) inch minimum asphalt surfacing material. The center of the trail will be crowned slightly with a slope to each side of up to two percent (2%) to keep water from pooling, and facilitate drying/clearing of the trail after rain or snow storms.

2. Wetlands, wetland buffers and other water challenges: Where there is potential for water covering the trail or where the soil lacks the stability to support a structurally ground-based trail, an elevated trail will need to be constructed. Concrete piers supporting treated wood columns, beams and boardwalk with guardrails will traverse wet areas, streams, gullies, or other problem areas, maintaining slopes of no greater than ten percent (10%) whenever possible. Treated wood decking will be placed perpendicular to the direction of travel, and boards will be spaced a minimum of one-fourth inch (1/4") apart to allow for proper drainage. Guardrails will have handrails at heights for use by people in wheel chairs and at thirty six (36) inches above grade.

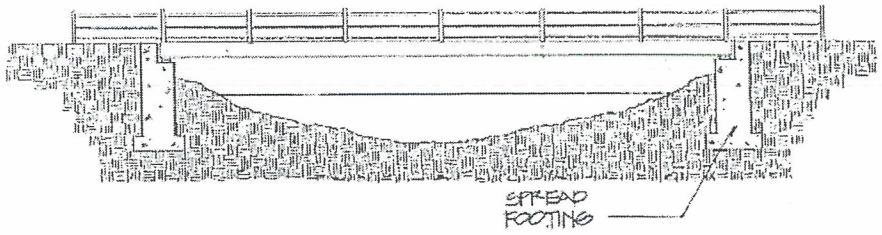


Figure 3.48: Trail bridge — spread footings.

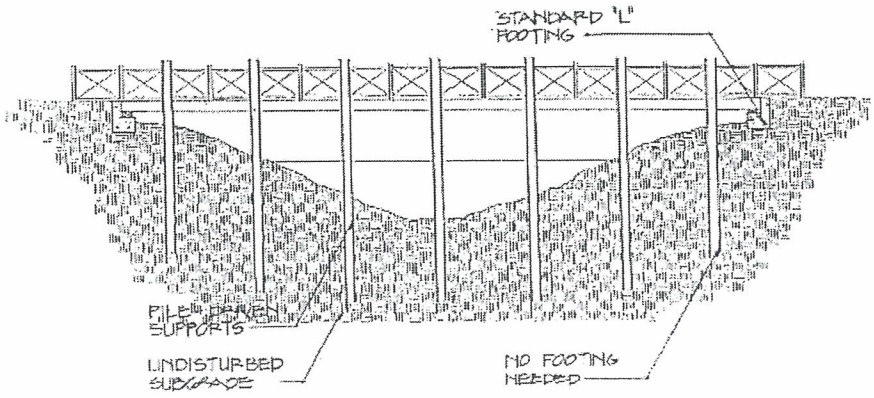


Figure 3.49: Trail bridge — pile driven supports.

Source: Trails for the Twenty-first Century, 1993.

3. Greenways Corridors in Urban Spaces: When a Greenways Corridor passes from a natural, rural setting into an urban area where greater usage and congestion is likely, decorative brick paving in patterns appropriate to the surrounding exterior theme is recommended. Patterns are encouraged to indicate increased usage and the necessity to be more cautious and aware of the potential for cycle/pedestrian collisions. Patterns in the brick also can identify the route through the urban area to a connecting naturalistic trail system.

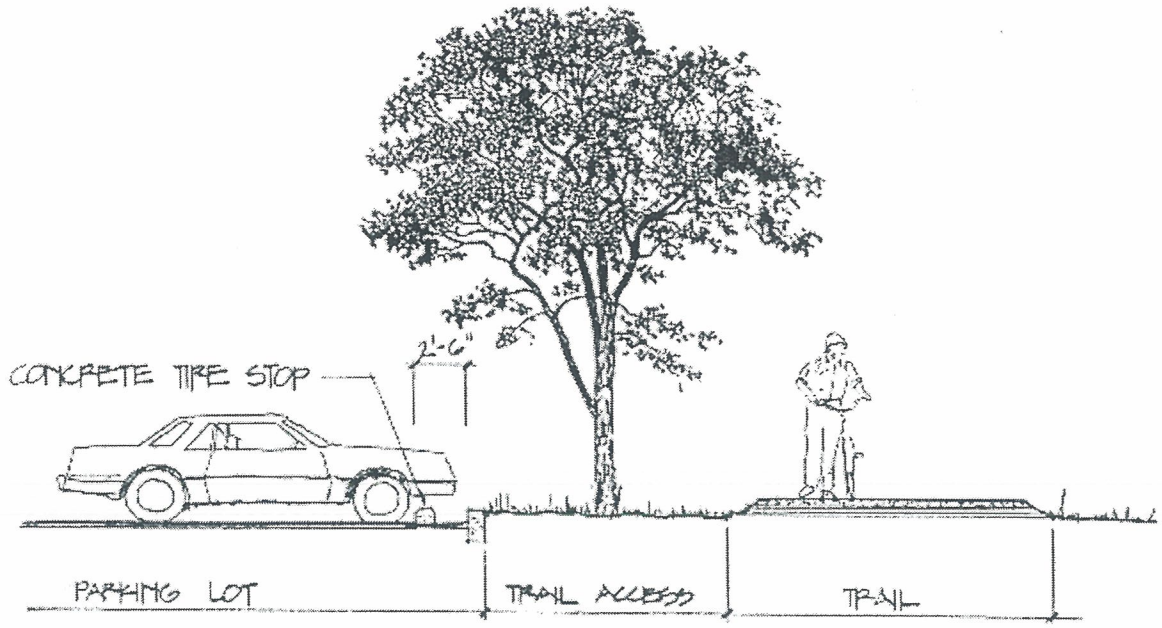


Figure 3.79: Trail section at a parking lot.

Source: Trails for the Twenty-first Century, 1993.

When pedestrians and bicyclists must share the same corridor or trail, and the width of the easement is fifteen (15) feet, the following design options are offered:

1. The Shared Asphalt Corridor: To facilitate bicycle usage, especially for commuting and as a transportation alternative, asphalt provides the smoothest, most durable finish. A width of ten (10) feet is adequate for one bicycle in each direction with adequate room for pedestrians. The additional five (5) feet of easement is recommended for landscaping.

2. Asphalt and Mulch Corridor #1: In order to provide a trail that is more economical to construct and with a defined zone for each use, a six (6) foot wide asphalt trail is recommended for bicycles. This allows two (2) bicycles traveling in opposite directions adequate space to pass one another without leaving the asphalt surface. On either side of the asphalt swath, a crushed stone or mulch strip two

(2) feet wide would allow for pedestrians to have a safe, non-bicycle space. The additional two and one half (2½) feet on either side is ideal planting space.

3. Asphalt and Mulch Corridor #2: Repeating the six (6) foot asphalt strip for bicycles, this approach concentrates a four (4) foot wide pedestrian trail on one (1) side of the dedicated bicycle zone. The additional five (5) feet of easement available for landscaping may be allocated differently along the trail. Where a bench is desired, the mulch may be extended five (5) feet on one side of the trail, with the other side of the trail located on the easement line. From this rest area, the ten (10) feet of asphalt and mulch may be centered on the easement, giving room for landscaping on both sides of the trail. Altering the treatment of the trail in a linear fashion adds variety and interest to the pedestrian/cyclist experience, and accentuates the curving, meandering feel of the trail.

In addition to acquiring the fifteen (15) foot wide access easement for the Greenways Corridor, all projects bordering on such corridors should be required to provide a fifteen (15) foot wide landscape strip bordering the easement. This landscape buffer area should be designed with a variety of vegetation of varying heights, textures, spring/summer/fall colors, winter characteristics, flowering and food for birds and butterflies. Where property owners wish to provide connector trails from the Greenways Corridor to their facility to encourage workers to use alternate means of transportation, the Township could grant the property owner a special benefit. Such a reward program should be further explored by the Township Administration.

When a Greenway Corridor passes through a residential area, homeowners may prefer to provide a landscape buffer to provide maximum privacy and security from the trail users. In such cases, decorative metal fencing set back a minimum of fifteen (15) feet from the corridor easement is recommended, in addition to ample landscaping on the corridor side of the fence.

F. Traffic Calming

The New Jersey State Development and Redevelopment Plan[3] recommends redesigning existing suburban roads to better accommodate pedestrians and bicyclists. Under Statewide Policy Category 19, which is entitled *Design*, it is recommended that existing areas be redesigned by:

1. Designing and/or redesigning corridors, including rivers, greenways, transit and roadways, to connect communities in ways that preserve rights of way, protect viewsheds, and encourage gateways and distinct transition between communities.

   Washington Township can achieve these goals by creating a better "streetscape" and by transforming existing streets to address the conventional street design

[3] Source: New Jersey State Development and Redevelopment Plan, 1 March 2001.

problems associated with many of Washington Township's existing street network.

For example, in Washington Township, like many American suburbs much of the streets are designed to accommodate the automobile driver while endangering the pedestrians and bicyclists. Steps should be taken along major and minor corridors within the Township to make them more pedestrian and bicycle friendly to reduce accidents, increase pedestrian traffic, and improve access to the proposed Greenways Corridor. The Township should:

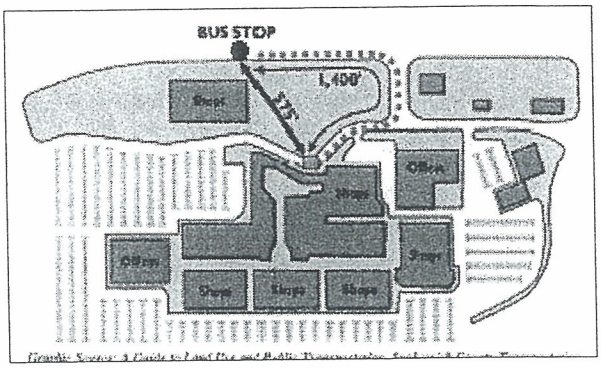
- Install sidewalks along the entire length of as many streets as possible in sections currently missing them. Priority should be given to those areas outlined on the Sidewalk Plan addressed earlier within this report.
- Install medians along major roadways, especially in and around the greenway corridor, and provide safe crossing areas for pedestrians and bicyclists.
- Reduce posted speed limits.
- Provide safe and accessible crossing points along roadways that are clearly demarcated.

2. Changing automobile-oriented environments to pedestrian- and transit supportive environments, and enhance pedestrian and bicycle safety through traffic calming and other techniques.

   Coordinate with New Jersey Transit to provide better "Stop-and Ride" facilities that promote walking and bicycling to these facilities to reduce the number of parking spaces required. The proposed "Park-and-Ride" facility to be located within the proposed Mixed Use District (corner of Fries Mill Road and Hurffville-Cross Keys Road) must be easily accessible to pedestrians/cyclists within the immediate area for commuting purposes.

   Development and redevelopment activity should be directed towards transit centers within the Township as Washington Township aims to increase the amount of office space and professional level jobs for existing Township residents, thereby reducing the number of residents who must commute long distances for employment.

Figure 7
Pedestrian Oriented Shopping Center Design



Source: Principles of Transit Supportive Development; Glatting, Jackson, Kercher, Anglin, Lopez, Rinehart, Inc.

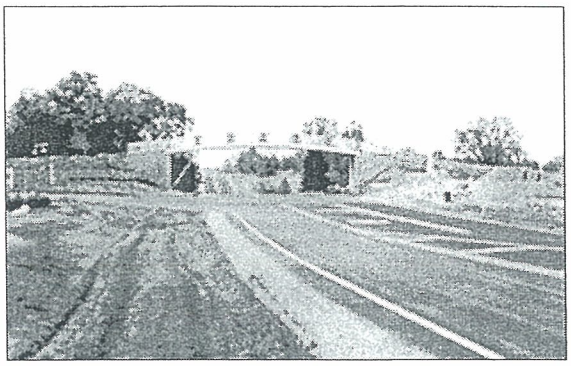
Figure 7 (above) is an example of how existing shopping centers and other types of developments, and those of the future, can be designed and/or redesigned in Washington Township to better accommodate pedestrians and bicyclists. By moving the buildings on site to the front of the property, while still including the same number of parking spaces, pedestrians and transit users are safer and less likely to be injured in an accident involving a motorist.

3. Increase connectivity where possible and appropriate, even if limited to pedestrian bicycle connections.

   Connections between and within existing subdivisions, shopping centers, and office parks should be provided for pedestrians, bicyclists and other recreationists. This will increase bicycle use between these areas and should also reduce traffic congestion throughout the Township.

4. Use pedestrian footbridges to connect missing links in the Greenways Corridor and other potential areas of high pedestrian use.

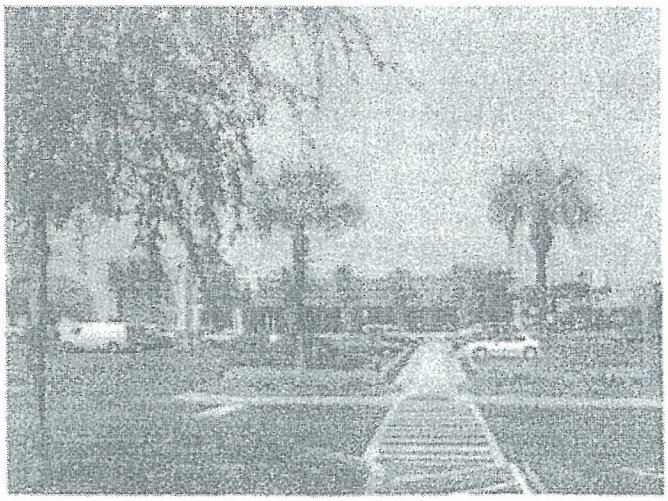
Figure 8
Pedestrian Footbridge Providing Linkage



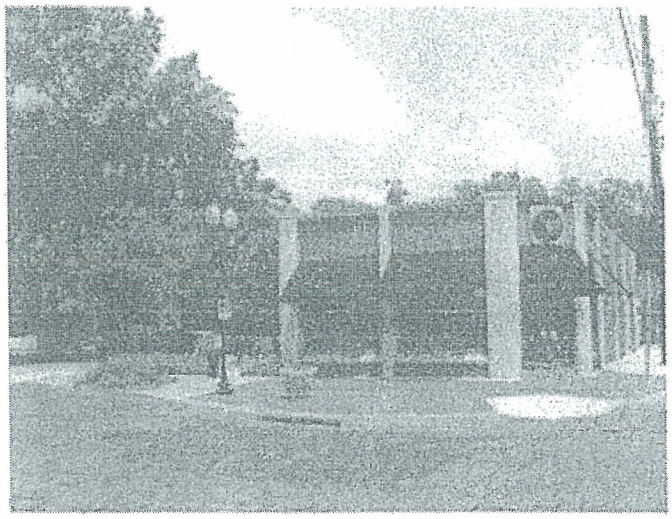
Source: Gateway Bridge, 2002

The sample footbridge shown in Figure 8 (above), can be applied to Washington Township in numerous areas to provide "missing" links in the pedestrian and greenway system.

5. Redesign internal circulation systems to create more pedestrian- and transit-oriented environments by adding sidewalks or walkways to link buildings, defining attractive, convenient and safe outdoor spaces, and other similar actions.



If large surface parking lots are necessary, walkways for through pedestrian traffic should be provided.



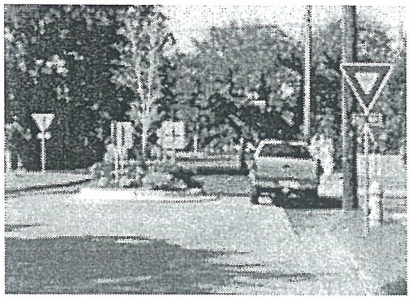
Placing parking beside buildings is one way to accommodate both automobile and pedestrian traffic comfortably.

Source: Safe Routes

6. Calm internal circulation systems by reducing street widths, allowing on-street parking, and selectively using traffic-calming devices such as neckdowns, speed tables, and other measures.

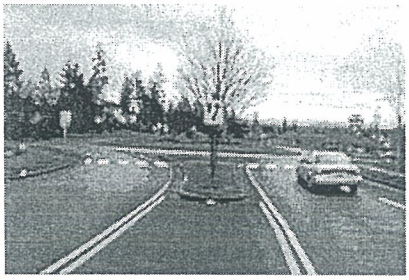
   Traffic calming measures can be implemented in Washington Township by using some of the methods shown in Figures 9-15, entitled *Traffic Calming Measures for Washington Township*.

Figures 9-15
Traffic Calming Measures for Washington Township



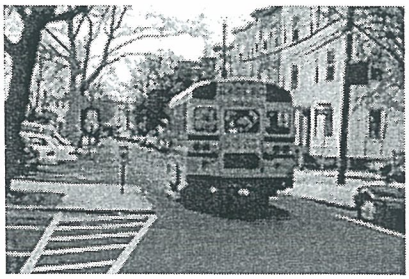
In a neighborhood, four-way stops can frequently be replaced by a **traffic circle**:

This one in Austin, TX has been tested with the city's biggest fire trucks. Roundabouts slow traffic and even out the flow so traffic moves more smoothly.



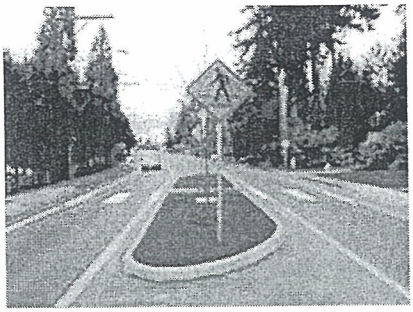
In higher traffic areas it may be appropriate to use **roundabouts**:

Bigger, more expensive but able to move a greater volume of traffic, roundabouts can replace traffic signals when properly designed.



Pedestrians love **curb extensions**:

In addition to giving pedestrians a shorter distance to cross at crosswalks, curb extensions tend to slow traffic as well.



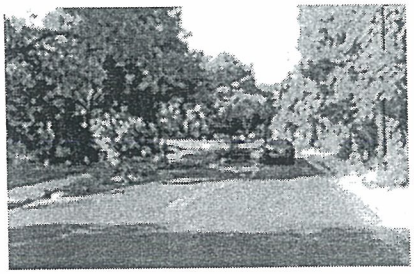
Creating a refuge for pedestrians in a busy street, use a **center island** (low-level landscaping):

Raising awareness of a crosswalk, protecting the pedestrians this center island also causes drivers to slow in this area.



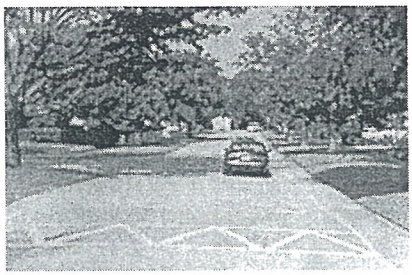
To change traffic patterns, try full or half street closure where appropriate:

Diverting and slowing traffic, half street closures still allow for the smooth flow of pedestrians and bicyclists.



One of the first things to try is a **chicane (slight offset in road)**:

Narrowing and slowing a neighborhood collector in Austin, TX, this chicane is graced with crepe myrtles.



Source: Safe Routes Texas

When all else fails, try **speed humps**:

This is a typical urban or suburban speed hump. This one is on a road that is 22 feet wide with very narrow bike/walk lanes painted on both sides. While generally not recommended, as a last resort, speed humps may be effective.

All of these policies recommended in the *New Jersey State Development and Redevelopment Plan* can be applied to Washington Township. By referring to Figure 16, entitled *Design and Redesign Standards for Existing and Future Streets*, the municipality will, over time, become a much more pedestrian and bicycle friendly community that will benefit from the proposed Greenways Corridor by allowing easier and safer access to the pedestrian/bicycle linkages. Applying these principles and guidelines will also improve the health, safety, and welfare of the citizens of Washington Township.

VI. Conclusion

The transportation planning process in the Township should be organized around a defined pattern of goals and objectives, which are then translated into implementation strategies. This document identifies a series of proposals that must be acted upon at a Planning Board and Governing Body level. In most cases, the Township must encourage and attempt to facilitate projects that are within the jurisdiction of higher authorities by:

- Assuring that transportation improvement funds are collected from future developers to initiate roadway modifications.
- Monitor actions of county and NJDOT recommendations resulting from development review.
- Underwrite the costs of conceptual designs for problem intersections that will enable the Township to advance improvements in county and state DOT jurisdictions by defining "with design," rather than words, what is needed. This strategy has worked in the past and should continue to produce in the future.
- Create, distribute and evaluate citizen survey recommendations.
- Evaluate and initiate police department recommendations for high accident intersection and street areas.
- Work with NJDOT to create a Corridor Access Management Plan for the Township -- focusing on the state arterial roads.
- Create a Township-wide Transportation Improvement Plan (TIP) incorporating detailed studies and analyses of significant traffic intersections.
- Incorporate Context Sensitive Design (CSD) into any state road planning.
- Implement non-vehicular alternatives throughout the Township to reduce traffic congestion and improve quality of life alternatives.

By incorporating such strategies as mentioned herein, the Township should be able to stay ahead of necessary improvements generated by any new development.

Beyond the existing automobile transportation network, it is important for the Township to look to the future of the community, where bicycle and pedestrians will have equal opportunities to move about the Township. This will involve redesign of roadways and implementation of additional sidewalk throughout the Township. However, this combined with the proposed Greenways Corridor, will provide the necessary not only alternative modes of transportation, but improved recreational and exercise options for the residents of the Township.