

**HOPEWELL TOWNSHIP
CIRCULATION PLAN ELEMENT**

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CIRCULATION PLAN ELEMENT

Introduction

Hopewell Township's Circulation Plan Element of the Master Plan is prepared in accordance with the Municipal Land Use Law, N.J.S.A. 40:55D-28b:

- (4) A circulation plan element showing the location and types of facilities for all modes of transportation required for the efficient movement of people and goods into, about, and through the municipality, taking into account the functional highway classification system of the Federal Highway Administration and the types, locations, conditions, and availability of existing and proposed transportation facilities, including air, water, road, and rail;

The Circulation Plan Element responds to the proposals outlined in the Land Use Plan Element, as well as the regional context in which Hopewell is located. It also addresses the Master Plan's goal and objectives for circulation and transportation.

Hopewell Township's goals and objectives for vehicular, pedestrian and alternative forms of transportation in the Township are designed:

- To create a circulation plan sufficient to accommodate planned development.
- To encourage proactive planning and regulation to ensure the adequacy of transportation facilities for planned future development, including the establishment of appropriate street design standards, the establishment of public/private partnerships for funding mechanisms, the coordination of transportation modes to accommodate changing commuter patterns, and the establishment of park and ride facilities and shuttle service.
- To coordinate with other municipalities, governmental bodies and corporate partners for a regional approach to transportation that respects and enhances the character of the community.
- To de-emphasize further highway development or extension into agricultural or scenic areas.
- To develop alternative routes in congested areas to improve safety.
- To establish transportation policies and programs that improve connections among housing, employment and commercial uses, including provisions for vehicular and pedestrian travel and bicycle paths.

- To promote transit alternatives in new and existing development to reduce traffic congestion, including ride shares, buses, mass transit, taxis, car/van pools, dial-a-ride, telecommuting and flextime.
- To control development in rural areas so that traffic will not exceed the capacity of the existing rural road network and historic bridges to provide safe, efficient and convenient traffic movements based on rural road service standards designed to maintain the character of the community.
- To recognize that roadways are public lands that deserve aesthetic design consideration as well as efficient movement of vehicles, and to carefully preserve view sheds and plan entrances to the Township because they represent a visitor's first impression of the Township.
- To promote the design and development of roadway improvements necessary to serve existing population and employment sectors of the Township.
- To encourage transportation funding for maintenance of the existing transportation system, rather than encouraging the development of new systems in rural areas.
- To establish highway access management plans for arterial highways.
- To provide for reverse frontage or service roads along congested or hazardous roadways.
- To minimize the impacts of transportation systems on the environment, including air and noise pollution.

To create this Element a background document was prepared. The background document includes the analysis of existing conditions and facilities which comprise the circulation network in the Township. This analysis addresses regional influences, roadway jurisdiction, existing road functions, street right-of-way widths, traffic accidents, road and bridge conditions, traffic counts, available rail and bus services, bicycle paths and trails, pedestrian systems and the transportation plans of Mercer County, Delaware Valley Regional Planning Commission and New Jersey Department of Transportation (Appendix A). In contrast, this Circulation Plan Element is the document that puts forward policies, programs, investments and plans to meet the objectives of the Master Plan.

Transportation Policies

The proposed actions in this Element are guided by the objectives of the Master Plan and the definition provided in the Municipal Land Use Law (MLUL). But beyond these factors many municipalities establish more specific policies which foster the municipality's actions in implementing the recommendations of the Element.

The Planning Board has identified the following six policies to guide this Element:

1. Preserve pavement widths. The intent is to minimize new impervious surfaces for environmental and aesthetic benefits. If not necessary to widen a road to advance an improvement then do not widen. Widening should only have a positive benefit.
2. Minimize impervious surface. The Planning Board advocates that new roadway design in the Township should maximize groundwater recharge by limiting impervious surfaces. Examples may be the elimination of curbs in certain instances in favor of swales, and the use of porous pavement on low intensity driveways and roads.
3. Advance safety improvements as required. Safety is of paramount importance, but these improvements should be analyzed in the context of all variables. (e.g. congestion, environmental impact, aesthetics, traffic calming, etc.)
4. Employ traffic calming measures when appropriate. Traffic calming devices can have significant benefits, but only should be utilized as part of a comprehensive plan.
5. Context Sensitive Design. The Planning Board supports the State's continued use of Context Sensitive Design in working with residents on mobility improvements in the Township. Context Sensitive Design (CSD) is an approach to planning and designing transportation projects based on active and early partnerships with communities. The Congestion Relief and Transportation Trust Fund Renewal Act signed into law in July 2000 requires the NJ DOT to have a CSD program. CSD involves a commitment to a process that encourages transportation officials to collaborate with community stakeholders so the design of the project reflects the goals of the people who live, work and travel in the area. Such collaboration results in creative and safe transportation solutions
6. "Freight on Rail". The Planning Board supports "Freight on Rail". The thrust of this policy is to get goods off roads and onto railways as an important step in developing a more sustainable distribution system, especially regarding trash and hazardous materials.

Roadway System

The system of roadways within a municipality is a significant part of the land use planning process, since it provides residents with their most basic means of making contact with their community. The Circulation Plan Background provided information on the jurisdiction of roads, street right-of-way widths and the incidents of accidents. This information as well as the plans of various jurisdictions and the Township's objectives and policies has been analyzed in order to determine those situations where the present

roadway system appears to be deficient or challenging; thereby helping to form the basis for recommendations.

Functional Classification

One of the requirements of the Municipal Land Use Law in constructing the Circulation Plan Element is to “take into account the functional highway classification system of the Federal Highway Administration (FHWA).” Each of the roadways in Hopewell Township performs a different function in the overall transportation network, and for purposes of planning is classified in three major types – arterial, collector or local.

Arterials

Arterials are vehicular rights-of-way with the primary function of carrying traffic in a continuous route across or through an area. Arterials are typically a principal part of the road network for through traffic flow, taking traffic from collector streets that serve neighborhoods and connecting to freeways, expressways or other limited access highways. Arterial roads also may be divided into principal and minor. Principal arterials are usually interstate such I-95 and other major highways that form an interconnected network of continuous routes serving regional corridors having the highest traffic volumes and the longest trip lengths (Routes 31 and 29). Minor arterials interconnect with and augment the principal arterial system, and include Routes 546 and 579.

Collectors

Collectors are roads that carry traffic between arterials and local streets as well as provide access to abutting properties. In Hopewell collectors are divided into primary or major and secondary or minor. The major or primary routes are those that carry higher volumes and are further divided into urban and rural. Quite often a road can be an urban minor arterial in the urban zone and changes to a rural major collector, as is the case with Route 579. The secondary or minor collector is the more typical collector type road connecting local streets with arterials or primary collectors.

Local

Local streets or roads provide the primary function of access to abutting properties. Usually fronted with single family units, these streets typically have low speeds and low traffic volumes. The local road system contains the largest amount of roadway in the Township, but a significantly small amount of traffic volume.

The Circulation Plan Background Report presents the functional classification that was developed by the FHWA in 2004 based on the 2000 census. Table 1 identifies the 2004 functional classification compared to the 1994 system (See Figure 4). There are a number of significant changes, many of which are a result of the increased development that has taken place over the last decade in the Township. The most significant change is

the decrease in the number of municipal roads as part of the classification. These changes are mostly likely a reflection of the Township's land use decisions and policies during the decade. Several Rural Minor Collectors were eliminated, such as Church Road, Titus Mill Road and Woosamonsa Road, and a similar number of Urban Collectors, such as Denow Road, Stephenson Road and Van Brunt Road, also were declassified.

TABLE 1
Comparison of 1994 and 2004 Federal Functional Classification

| Roadways | 1994 | 2004 |
|---|--|--|
| Interstate 95 | Urban Interstate | Urban Interstate |
| Routes 31 & 29 | Urban Principal Arterials | Urban Principal Arterial |
| Route 518 | Rural Major Collector | Rural Major Collector |
| Route 546 | Urban Minor Arterial | Urban Minor Arterial |
| Route 569 | Rural Major Collector | Urban Collector/ Rural Major Collector |
| Route 579 | Urban Minor Arterial & Rural Major Collector | Urban Minor Arterial & Rural Major Collector |
| Route 611 Scotch Road | Urban Minor Arterial | Urban Minor Arterial |
| Route 623 Pennington-Harbourton Road | Rural Major Collector | Rural Local |
| Route 624 Pennington-Rocky Hill Road | Rural Major Collector | Rural Major Collector |
| Route 625 Elm Ridge Road | Rural Major Collector | Rural Major Collector |
| Route 631 Ingleside Road | Urban Collector | Urban Collector |
| Route 637 Jacobs Creek Road | Urban Minor Arterial | Urban Collector |
| Route 654 Pennington-Hopewell Rd. | Rural Major Collector | Rural Major Collector |
| Bull Run Road | Urban Collector | Urban Collector |
| Burd Road | Rural Major Collector | Rural Local |
| Church Road | Rural Minor Collector | |
| Crusher Road | Rural Major Collector | Rural Local |
| Denow Road | Urban Collector | |
| Federal City Road ¹ | Urban Minor Arterial | Urban Minor Arterial |
| Harbourton-Rocktown Road (579) | Rural Major Collector | Rural Major Collector |
| Hopewell-Wertsville Road | | Rural Minor Collector |
| Moore's Mill-Mount Rose Road | Rural Minor Collector | |
| Pennington-Rocky Hill Road (Municipal portion) | Rural Major Collector | Rural Major Collector |
| Pennington-Titusville Road | Rural Major Collector | Urban Collector ² |
| Pleasant Valley Road | Rural Minor Collector | Rural Local |
| Reed Road | Urban Collector | Urban Collector |
| Scotch Road | Rural Major Collector | Urban Collector ³ |
| Stephenson Road | Urban Collector | |
| Titus Mill Road | Rural Minor Collector | |

¹ Phase I from I-95 overpass to Bull Run Road

² From Scotch Road to Route 31

³ From Route 546 to Pennington-Titusville Road

| | | |
|-----------------|-----------------------|--|
| Van Brunt Road | Urban Collector | |
| Woosamonsa Road | Rural Minor Collector | |

Source: New Jersey Department of Transportation 1994 and 2004 Functional Classification System and Hopewell Township 2001 Road Inventory, Van Cleef Engineering Associates

Improvement Plans, Programs and Studies

State Highway System

The federal Transportation Equity Act for the 21st Century (TEA-21) requires that each state develop one multimodal Statewide Transportation Improvement Program (STIP) for all areas of the state. In New Jersey, the STIP consists of a listing of statewide line items and programs, as well as the regional Transportation Improvement Program (TIP) projects, all of which were developed by the three Metropolitan Planning Organizations (MPOs). (The Township is within the DVRPC region.) The TIPs contain local and state highway projects, statewide line items and programs, as well as proposed public transit projects.

This STIP conforms to and in many cases exceeds the specific requirements of the federal regulations:

1. It lists the priority projects programmed for each year of the first three years of the planning period.
2. It is fiscally constrained. Specifically, "planned federal aid expenditures" cannot exceed "projected revenues".
3. It contains all regionally significant projects regardless of funding source.
4. It contains all projects programmed for federal funds.
5. It contains, for information, state funded projects.
6. It contains expanded descriptive information (MPO, County, Municipality, Milepost, Sponsor and Program).

For federal fiscal years 2004 (beginning October 1, 2003) through 2006, there were a number of projects in the 2003 STIP, including the Van Dyke Road Bridge over the Trenton Branch; the Washington Crossing-Pennington Road Bridge over Conrail; the Route 31 and Route 518 Intersection Improvements; Route 29 Guiderail; and, Route 29 Roadside Enhancements. In the 2005 STIP for federal fiscal years 2006 through 2008 there are no projects specific to the Township, although there are some funds for the County to do minor improvements and restriping, generally reflecting the lack of funding and the emphasis on urban areas. The lack of funding jeopardizes the implementation of the Scenic Byways Management Plan for Route 29, which involved the acquisition of easements, removal of billboards and signs, and the encouragement of bicycle use to enhance the scenic qualities and enjoyment of Route 29.

The implementation of the Scenic Byways Management Plan is supported by the Planning Board, and the Planning Board recommends the inclusion of County and local

roads within the Route 29 Byway system. These are roads that intersect with Route 29 and share the rural character of Route 29, where pedestrian and bikeway improvements should be considered. Specific roads include the following:

1. Route 546
2. Maddock Road
3. Church Road
4. Pleasant Valley Road

Each of these recommendations extends from Route 29 and terminates at Bear Tavern Road (Route 579).

The Planning Board also recommends that the NJDOT coordinate its Byway efforts with the National Park Service and NJDEP. In 2000 the Delaware River and several segments of its Pennsylvania tributaries were designated as a Wild and Scenic Rivers. An example of a coordinating group is the Rivers, Trails and Conservation Assistance Program, also known as Rivers and Trails or RTCA, that works with community groups and local and State governments to conserve rivers, preserve open space, and develop trails and greenways. Rivers and Trails works in urban, rural, and suburban communities with the goal of helping communities achieve on-the-ground conservation successes for their projects.

Route 31

Building on work undertaken by the Planning Board and Master Plan Advisory Committee on Route 31 and the Mayor's Task Force on Traffic and Trucking, Hopewell Township and the Boroughs of Pennington and Hopewell initiated a study to analyze and possibly develop a shared community vision for the future character of Route 31. The main objective of the project was to identify ways of preserving parts of Route 31's character that are particularly valued by residents without creating a corridor of strip development with heavy traffic which would lose the "Main Street" character through Pennington and the Township.

With the involvement of the State and the County the study produced a number of recommendations which are supported by the Planning Board. Understanding that Route 31 is a State highway that extends from the City of Trenton and stretches through Hunterdon and Warren Counties, the consultant in the Route 31 Design Study, based on workshops and written comments, recommended:

- Preserve and enhance the existing character of Route 31's different segments by making this the character bench mark for all future improvements or development.
- The priority should be to keep through traffic on Route 31 rather than displacing it onto local or County roads.

- Prevent incremental development of an unbroken corridor of strip development dominated by vehicles and so sprawling as to require their use. Instead create nodes of development separated by protected intervals of open space, fields, woods and views that incorporate watershed drainages and existing or proposed trail linkages.
- Increase slow but steady traffic throughput as opposed to excessive speed to screaming stop conditions.
- Prioritize improvement or elimination of the many extended areas of dangerous conflicts in turning movements.

Beyond these conclusions by the consultant, the Planning Board makes the following recommendations:

- Route 31 between the Pennington Circle and I-95 should be evaluated for a three-lane roadway with median strips and turning lanes.
- Work with NJDOT to alter Route 31 south of North Main Street to create a pedestrian friendly “Main Street” for access to Pennington Borough and the school complex. Create single lane movement with a turning lane which have islands at specific intervals to act as a portion of a cross walk. Using buildings and trees close to the street will assist in giving the area a pleasing human scale features associated with the road will assist in calming through traffic.
- Any new roadway design for Route 31 should try to preserve and incorporate existing mature street trees in the area to the greatest extent possible. This is particularly true of Segment 1 from I-95 to the Conrail overpass where forms of residential development are set further back from the road. Careful attention in these areas can work the existing tree rows into areas of proposed future verges or street tree belts, thereby preserving a very important element of this area’s visual character. The removal of overhead utility lines should also be implemented.
- Lobby NJDOT to consolidate and eliminate curb cuts wherever possible along Route 31. Cooperate with them on the development of Highway Access Plan for Route 31.
- Work with NJDOT to redesign Pennington Circle to eliminate safety and speeding problems.
- Encourage NJDOT to work toward improvements at Route 31 and West Delaware Avenue by the creation of a roundabout or pedestrian overpass or tunnel.
- The Planning Board recommends safe, clear and convenient pedestrian crossings along Route 31.
- Preserve future right of way to provide bicycle lanes along Route 31.

- Parallel access/service roads should be considered to increase safety.

The NJDOT currently is undertaking a study of Route 31 south of the Pennington Circle, which is the least safe road segment in the Township, titled the “N.J. Route 31 Integrated Land Use Transportation Planning Study”.

County System

The Circulation Plan Background Report identifies the 19 County-maintained roadways in Hopewell Township. Several are significant 500 series routes (500 series County roads are inter-county; 600 series County roads are intra-county) which originate or terminate in other Counties beyond Mercer. A good example is County Route 579, which extends from Ewing Township to Bloomsbury in Hunterdon County.

Although a 500 series road, Route 579 is an example of roadway with split jurisdiction. Mercer County maintains Bear Tavern Road (Route 579) from the Ewing Township line to 497 feet northeast of Harbourton-Mt. Airy Road. The balance, approximately 2 miles, is maintained by Hopewell Township.

This is not the only case in the Township where there is a change in jurisdiction between the Township and County along a single road. Blackwell Road is a case where the Township maintains approximately 2 miles then the County assumes a portion (Route 632) of approximately 1,000 feet northeast of Pennington-Lawrenceville Road; and, Pennington-Rocky Hill Road (Route 624), which is a County road to Titus Mill Road and then a municipal road to the Montgomery and Princeton Townships border.

To overcome this jurisdictional confusion the Planning Board suggests that the Township explore equitable swaps with the County for these and possibility other roads. The advantages to the Township include the following:

- The reduction in major improvements that the Township might not desire.
- The elimination or reduction of truck traffic on certain roads.
- The implementation of traffic calming measures.

County Initiatives

The County’s Growth Management Plan was adopted by the County Planning Board in 1989. It has incurred incremental updating over the years, but it contains a number of projects involving County Routes in the Township which have been abandoned, such as the Pennington Bypass. In light of the age of the document the Planning Board is advocating that the Mercer County Planning Board develop an updated Plan which includes all of the County initiatives.

Two major Mercer County initiatives are the I-95/295 Transportation Development District (TDD) and the Access Management Code for County Roads. The TDD dates back to 1992 when it was approved by the New Jersey Department of

Transportation. The TDD is generally bounded by Pennington-Lawrenceville Road (Route 546) to the north, Federal City Road to the east, Upper Ferry Road to the south, and Scotch Road to the west. It impacts Ewing, Hopewell and Lawrence Townships.

The TDD plan identifies transportation infrastructure improvements that will be needed within the District to support anticipated development. The transportation goals of the TDD are to maintain acceptable traffic flows, protect quality of life for existing residents and make alternatives to single occupancy auto more attractive. The plan describes how these goals are achieved. It prioritizes the improvements and allocates a public and private sector share of the improvement costs. In addition, it established a trip based fee to be collected. The TDD plan is slated to be updated in 2006.

Although the Township sits on the Joint Planning Process Committee it has been at odds with the County about certain improvements on County roads. For example, the Township is proposing to maintain two-lane rural highways which are reflected in its transportation policies to maintain roadway widths and to reduce impervious surfaces. The Planning Board specifically supports the Township opposition to certain improvements to County Roads within the district, especially County Route 546.

The other initiative is the Access Management Code for County Roads. The goal of access management is to encourage the safe and efficient flow of traffic. This goal is achieved through the regulation of driveways, medians, median openings and traffic signals. Good access management results in fewer accidents, increased capacity and reduced travel time. Access management allows roads to handle more cars without decreasing the level of service, and reduces the need for new roads.

Mercer County is the first county to advance this concept for its highway system, which is authorized by the State Highway Access Management Act, P.L. 1989, c. 32. The County access code is being developed through a public process and will build on previous codes and adapted to address specific local needs and concerns. The Hopewell Township Planning Board is determined to work with the County in the implementation of its access management program for County roadways. By working with the County on this project the Township is interested in seeing the code applied to certain municipal roadways which function as Urban Collectors and Rural Major Collectors, for example Reed Road and Pennington-Rocky Hill Road.

Municipal System

Hopewell Township maintains approximately 133 miles of roadway. This mileage is spread out over 284 different roadways and segments.⁴ Right-of-ways vary from 60 feet (Denow Road) to 20 feet (Detour Avenue) with the majority 50 feet in width. The surfaces or cartways are mostly bituminous concrete. Oil and stone surfaces are found throughout the Township. An inventory of Township roads was conducted by Van Cleef

⁴ Certain roadways are divided into two or more segments based on type of construction and type of maintenance required or when they were last resurfaced.

Engineering Associates, which provides individual information and maintenance history for each municipally owned road (See Appendix A).

The most significant contribution to understanding the municipal and county road network was the formulation of the Hopewell Valley Traffic Management Coalition (HVTMC). This group was comprised of business, civic and local officials who formed to address traffic problems in the Township. As part of their effort a survey of the major employers in the Township, including Merrill Lynch, Jannsen and Bristol Myers Squibb, was conducted. Over 2,500 employees completed an on-line survey which traced their commuting patterns through 60 intersections. These data allowed the HVTMC to determine projected levels of service and intersection or roadway improvements.

The results of this effort are the basis for identifying traffic reduction strategies, roadway improvements, critical intersection improvements, a revised municipal classification and a monitoring program. The “Summary Report – Hopewell Valley Traffic Management Coalition, Volumes 1 and 2”, dated August 2005, is incorporated by reference into this document. The data in the HVTMC Report are a guide for future transportation improvements with the Township.

Traffic Reduction Strategies

Traffic reductions strategies are methods to reduce the number of vehicle trips on roadways. These strategies include a variety of techniques ranging from carpooling to the more complicated and costly mass transit options. The Greater Mercer Transportation Management Association (GMTMA) served as an excellent partner in the HVTMC and continually suggested ideas to reduce trips.

The traffic survey that was created as part of the HVTMC efforts incorporated many questions that focused on the desire of drivers in regard to options that would reduce trips. The questions in the survey specifically were geared toward the constraints on drivers that might prevent them from otherwise using methods that would reduce vehicle trips. The results of the traffic survey create inputs into the traffic model to analyze the benefits of trip reduction strategies to determine if the improvements suggested below are required after implementation of the specific strategy. The primary strategies suggested by the study are the following:

- Carpooling
- Van/Ride Share
- Mass Transit – Public Transportation/Private Transportation
- Employer incentive programs for vehicle trip reduction

Roadway Improvements

The HVTMC efforts revealed that existing roadways are of sufficient capacity to not require specific widening or the addition of lanes. No specific roadway

improvements were identified as part of the study outside of intersection improvements, although limited upgrades along existing roadways may be required.

A focus of the HVTMC was to manage traffic so that traffic volumes will not exceed the capacity of existing roadways. Another focus was to permit growth and utilize existing traffic patterns to avoid unnecessary roadway improvements. In order to achieve this, it will be necessary to perform limited upgrades along routes identified as the existing routes used by existing employee traffic volumes with Hopewell Valley destinations. These include but are not limited to Old Mill Road, Federal City Road between Old Mill Road and Route 546, Blackwell Road and Route 579 (Bear Tavern Road Harbourton-Rocktown Road).

Intersection Improvements

The following intersections will require improvements to meet demands from projected 2007 traffic volumes (See Figure 2 for proposed roadway and intersection improvements):

- Blackwell Road (Route 632) at Federal City Road
- Washington Crossing-Pennington Road (Route 546) at Scotch Road (Route 611)
- Pennington-Lawrenceville Road (Route 546) at Blackwell Road (Route 632)
- Scotch Road at Merrill Lynch North Drive
- Route 29 at Washington Crossing-Pennington Road (Route 546)
- Route 31 at Titus Mill Road
- Pennington-Rocky Hill Road (Route 624) at Hopewell-Princeton Road (Route 569)
- Scotch Road at Merrill Lynch South Drive
- Federal City Road at Bull Run Road
- Pennington-Lawrenceville Road (Route 546) and Federal City Road-Stephenson Road
- Pennington-Rocky Hill Road (Route 624) at Old Mill Road
- Pennington-Rocky Hill Road (Route 624) at Elm Ridge Road
- Washington Crossing-Pennington Road (Route 546) at Merrill Lynch Driveway
- Carter Road (Route 569) at Elm Ridge Road
- Route 31 at Diverty Road.

Municipal Classification System

Figure 1 establishes the municipal classification system for local roads. The roads that are identified as Primary Local streets serve a collector function in the Township. All other municipal streets are considered local roads. This terminology is consistent with the classification system utilized in the Land Use and Development Ordinance.

Monitoring

The monitoring program is a key component of measuring the success of the strategies applied in traffic reduction and the road and intersection improvements made to

the system. Certain indicators are required to maintain a successful monitoring system. The following program is recommended:

1. Establish a comprehensive system of conducting traffic counts and the reporting of accidents to the Planning Board.
2. Maintain and update the employee survey.
3. Add the Board of Education and other nonresidential tenants to the survey.
4. Develop a series of indicators and utilize the existing character of Route 31's different segments as a base for the establishment of future improvements.
5. Evaluate effectiveness of transportation management strategies using HVTMC model and updated traffic counts.
6. Use updated traffic counts to determine appropriateness of background growth projections vs. actual growth

Bridges and Culverts

Most bridges and culverts are maintained by the County and the State. In the case of Mercer County, there is a policy of not owning or maintaining any culvert that has an opening of less than 20 square feet, so a number of structures are maintained by the Township. The Planning Board is very supportive of the Township's efforts of inspecting and properly regulating structures such as bridges, culverts and other drainage facilities. This is especially important in the establishment of weight limits on certain facilities.

Another important aspect of bridges is the historic value they bring to the Township, especially in enhancing the rural character the Township seeks to maintain. NJDOT, using the services of a consultant, surveyed all bridges built before 1947 to assess eligibility for listing in the National Register of Historical Places. The survey was mandated by the 1987 Surface Transportation and Uniform Relocation Assistance Act.

Historic contexts had to be developed for the survey. Then, using the National Bridge Inspection Standards' definition of a bridge as a structure at least 20 feet long, the consultant collected data on 2,064 bridges in New Jersey and recommended eligibility for approximately 250.

Staff from the NJDOT's Environmental Services and the Federal Highway Administration's New Jersey Division Office reviewed these recommendations. The New Jersey State Historic Preservation Office also commented on the survey. The original survey was conducted in 1995 but was modified in 2001.

The following 18 structures were surveyed in Hopewell Township. Table 2 provides the street name, stream crossing, construction date and State/federal historic designation eligibility for each structure.

**Table 2
Hopewell Township Historic Bridge Data**

| Name | Crossing | Construction Date | Eligibility |
|--|-----------------------------|--------------------------|-----------------------|
| 1. Hunter Road | Moores Creek | 1889 | Eligible ⁵ |
| 2. Pennington-Harbourton Rd. | Jacobs Creek | 1915 | Not Eligible |
| 3. Mine Rd. | Stony Brook | 1885 | Eligible |
| 4. Old Mill Rd. | Stony Brook | 1937 | Not Eligible |
| 5. Federal City Rd. | South Branch of Stony Brook | 1907 | Not Eligible |
| 6. Stony Brook Rd. | North Branch of Stony Brook | 1915 | Not Eligible |
| 7. Van Dyke Rd. | North Branch of Stony Brook | 1915 | Not Eligible |
| 8. NJ 29 | Moores Creek | 1832 | Eligible |
| 9. NJ 31 | Branch of Stony Brook | 1927 | Not Eligible |
| 10. NJ 31 | Branch of Stony Brook | 1929 | Not Eligible |
| 11. Co. Route 546 | Railroad | 1930 | Not Eligible |
| 12. Van Dyke Rd | Railroad | 1918 | Not Eligible |
| 13. Co. Route 518 | Stony Brook | 1928 | Not Eligible |
| 14. Co. Route 518 | Stony Brook | 1905 | Not Eligible |
| 15. Co. Route 518 | Bedens Brook | 1933 | Not Eligible |
| 16. Bear Tavern Rd. | Jacobs Creek | 1882 | Eligible |
| 17. Jacobs Creek Rd | Ewing Creek | 1926 | Not Eligible |
| 18. Washington Crossing-Pennington Rd. | Woolseys Creek | 1923 | Not Eligible |

With one structure in an historic district and one which has been locally designated, the Board recommends that the Township and the Historic Preservation Commission seek designation of the other two eligible structures.

Another important bridge in the Township is the Washington Crossing Bridge, which is a toll supported structure maintained by the Delaware River Joint Toll Bridge Commission (DRJTBC). The superstructure of the existing bridge, which connects Route 546 in Hopewell with PA Route 532 in Upper Makefield Township, Pennsylvania, was built in 1904. The bridge is a six-span double Warren truss structure, with a total length of 877 feet. The substructures, composed of rubble stone-faced masonry, are from the original construction in 1831. The open steel grid deck provides a clear roadway width of 15 feet between steel channel rub-rails. The downriver side of the truss supports a cantilevered, wood planked pedestrian sidewalk.

⁵ Part of Pleasant Valley Historic District

The flood of August 19, 1955 did considerable damage to the bridge. The bridge underwent an extensive structural rehabilitation in the fall of 1994. Many truss members were replaced with new fabricated galvanized steel. Floor system members and the open steel grid deck were replaced in the first three bays of each end span. All remaining structural steel was blast cleaned metallized and painted. A new wooden sidewalk was installed and renovations were made at both approaches to the bridge. The bridge is currently restricted to a 15-mile per hour speed limit, a 3-ton weight limit, and an 8 ft. vertical clearance.

The Planning Board supports the DRJTBC in its effort to maintain the Washington Crossing Bridge. The Board opposes any efforts to widen or alter the present bridge because the approaches are so close to a historic area, and the Board recommends it be maintained for pedestrian use.

Pedestrian Mobility

In the 2000 Census the Township of Hopewell had a total of 24 persons walking to work. This represents about a third of one percent of the population 16 and over included in the Township's resident work force. This is in stark contrast to the 83% that drive alone to their place of employment.

Part of the issue in Hopewell is the pedestrian system. The Township is mainly defined by the roadway network and the primary system of walking is along shoulders along streets, or along the few sidewalks. Because of its rural land use patterns there also are a limited number of sidewalks in the Township. Brandon Farms provides the largest concentration of sidewalks in the Township.

Despite the underdeveloped, existing pedestrian system, the Board offers the following recommendations to increase pedestrian mobility:

- Advance the inclusion of pedestrian friendly design elements in development and redevelopment plans
- Encourage land use patterns and walking environments that are safe and secure, and thereby reduce pedestrian deaths and injuries
- Identify Crossroads of the American Revolution through the use of signage
- Support programs to educate the public on the rights and responsibilities of pedestrians and the need for more pedestrian-friendly circulation systems in the Township
- Support government policies and funding initiatives that favor walking

The Planning Board has the authority to require the installation of sidewalks “in locations determined by the planning board to be in the interest of public safety and proper pedestrian circulation considering the probable volume of pedestrian traffic, the adjoining street classification where sidewalks parallel streets, school bus stops, recreation areas, schools, and the general type of improvement intended” (§17-104a). Considering this fact a recommendation of the Board is to advance a sidewalk program/plan as set forth in §17-104a. based on road classification and intensity of development. The Board also must consider the RSIS classification when acting on development applications.

As mentioned earlier in the section on the Route 31 Design Study, the Planning Board recommended safe, clear and convenient crossings along Route 31. The following are the specific recommendations of the Board:

- a. From the new Hopewell Crossing Shopping Center across Route 31 to the west.
- b. From Blackwell Road (CR 546) to Washington Crossing-Pennington Road across or around the “Circle”. (This recommendation is dependent on the development of a sidewalk plan for the area and future road design.)
- c. At Ingleside Road/Route 31.
- d. Most importantly, at the West Delaware and Route 31 intersection to allow safe pedestrian and bicycle crossings from the Pennington Borough core to the school and library core to the west of Route 31. This could be on grade with crosswalks whose materials extend the sidewalks across Route 31 and where adequate refuge islands are provided. If this is not possible then the Township should explore either an aesthetically designed overpass or even an underpass if it could be well lit, safe and deal with drainage problems at this low point intersection.
- e. At North Main Street and Route 31, in a way that creates refuges and also creates an attractive northern gateway to Pennington Borough via Main Street.
- f. From Titus Mill Road across Route 31 to the west if possible utilizing the railroad crossing. This is important to link the Stony Brook-Millstone Watershed Association farm and open space area with any new conservation land and beyond to the existing and proposed County Open Space network further to the west.

Bikeways

The bicycle is a low-cost and effective means of transportation that is quiet, non-polluting, extremely energy-efficient, versatile, healthy and fun. Bicycles also provide low-cost mobility to the non-driving public, including the young. In addition, pedestrian and bicycle routes can be designed to accommodate both forms of transportation. The

intent in recommending both pedestrian and bikeway plans is to ensure that the dual function is accommodated.

The State also has made a commitment to advance bicycling through technical assistance and funding. For example, the Statewide Bicycle and Pedestrian Master Plan is developing an inventory of bikeway locations in the State, but more importantly is fleshing out a list of priority locations for bicycle and pedestrian improvements, and is requiring opportunities for improving the bicycle or pedestrian compatibility of existing projects.

Within Hopewell a significant trail exists in the Delaware & Raritan Canal State Park. This 30 mile multi-use trail provides an excellent crushed stone surface for walking, mountain biking, horseback riding and hiking. The State has been promoting this system by making available a tour guide of the system for cyclists. This system can be altered by tying into another recreational biking facility in the Township at Washington Crossing State Park. The park provides a 3-mile paved surface for bicycling and hiking as well as connections to a picnic area, playground, nature center and museum.

Another State initiative in the Township is the “Last Covered Bridge Ride”. Using a tour guide for cyclists the route starts in East Amwell Township and extends approximately nine miles through the Township before concluding in Princeton Township.

At the local level the Lawrence Hopewell Trail (LHT) is a joint effort of the municipalities, Bristol Myers Squibb (BMS), Environmental Testing Service (ETS), the County, non-profit groups and the public to create a 20-mile loop in the two Townships. The trail would link the BMS and ETS campuses with the open space network using both off-street bicycle paths and on-street bicycle lanes. Lawrence Township and BMS have recently dedicated segments of the trail. The Township is also pursuing a pedestrian and bicycle link between the Boroughs of Pennington and Hopewell. The Planning Board supports these efforts, and emphasizes that pedestrian and bicycle paths should be designed to accommodate both forms of transportation.

Considering State initiatives to promote bicycling by providing technical and financial aid, the Planning Board recommends that the Township prepare a bicycle plan. The plan should link schools, public institutions, open space, recreational facilities, commercial activities, employment centers and neighborhoods. The plan should identify compatible streets and roadways for bicycle lanes and other segments for bicycle paths. The plan should suggest signage and recommend parking arrangements at public, commercial and employment locations. The plan also could include a financing element for the development of the system that is off existing roadways and other improvements.

Transit Opportunities

While there is no direct rail service to Hopewell Township, passenger service is provided on the Northeast Corridor, with stations in Princeton Junction, Princeton, Hamilton Township and Trenton. Frequent service is provided to Newark and mid-town Manhattan, with connecting service to and via the Port Authority Trans Hudson (PATH) lines, to Hoboken. Rail service to Philadelphia is provided on the R3 line and the R7 operated by the Southeast Pennsylvania Transportation Authority (SEPTA), The R3 has a station in Ewing Township (West Trenton) and Yardley, Pa. The R7 runs out of Trenton.

Commuter bus service within the Township is provided by New Jersey Transit with service between Pennington and Trenton via Route 31 and between Lambertville and Hamilton Township via River Road (Route 29). The latter service is limited to peak hour operations, but does provide a rail connection at Hamilton Station on the Northeast line and West Trenton for the R3 line. There is very limited peak hour service provide to the Berwind property from the Princeton area provided by New Jersey Transit.

Transportation Demand Management

Prompted largely by the worsening traffic conditions during the development surge in the mid-1980's, and the enactment of the Clean Air Act Amendments in November 1990, transportation demand strategies (TDMs) emerged as an important focus for reducing the quantity and impact of automobile traffic. As the name indicates, TDMs are alternative strategies designed to reduce the number of trips between residences and work places. They are typically implemented through a comprehensive traffic reduction ordinance (TRO), which establishes the goals and procedures as well as strategies.

Managing transportation demand is a complex undertaking as it involves not only a concerted administrative effort but also a fundamental change in personal habits. Since TROs involve an attempt to remove trips as well as to spread them, changes to commuting habits are inevitable, including the reduction of single-occupancy vehicles. Quantitative measurements to evaluate compliance with the goals of a TRO include the percent reduction in peak hour trips, percent participation rates, average peak hour vehicle ridership, and vehicle trip reduction to a desired level of service.

Greater Mercer Transportation Management Association

Hopewell Township is a member of the Greater Mercer Transportation Management Association. Greater Mercer TMA is a non-profit partnership of the public and private sectors, dedicated to reducing traffic congestion and improving mobility in and around Mercer County by providing a variety of commuter programs and services.

Greater Mercer TMA was established in 1984. Its members are large and small employers, local governments, authorities and state agencies who share the commitment to providing transportation choices through a multi-modal, balanced, transportation system.

Greater Mercer TMA offers its members a wide variety of services. The services include publications, such as the TMA's bi-monthly newsletter, which keeps employer representatives informed on the latest in transportation issues, and the publication *Crossroads*, which is a comprehensive, easy to read manual of step-by-step procedures for implementing and administering various transportation programs and services available to employees. The GMTMA also provides professional services, such as helping large employers, corporate centers, local and state government, community based organizations and non-profits establish and manage shuttle services. The organization also designs, conducts and analyzes a survey that will identify trends and opportunities for commute options such as ridesharing, transit or non-motorized transportation. In addition, the Greater Mercer TMA provides commuter services, such as programs like "Home Free", which is Greater Mercer TMA's guaranteed ride home program for eligible commuters who carpool or vanpool, take transit, or bike or walk to work and need an emergency ride home; and, "vanbuck\$" which is an empty seat subsidy program that gives groups of employees financial assistance when forming a new vanpool or to keep an existing vanpool on the road.

The Municipal Assistance Program provides selected Mercer County and member municipalities with technical assistance and support to implement demand management strategies or support strategies in areas with 'hot spot' congestion, rapid growth, safety or accessibility problems, or which offer little or no alternatives to automotive travel.

Specific services offered by Greater Mercer TMA include: bike/pedestrian facility planning, grant writing assistance, transit studies and grant assistance, park and ride assistance, municipal or neighborhood surveys, school and community events to promote commute options, and municipal workshops. The workshops for municipal officials address such topics as:

- TDM friendly municipal ordinances
- Transit oriented design
- Bikeable and walkable communities
- Traffic calming techniques and policies

Mercer County T.R.A.D.E

Another transportation demand service available in Hopewell is Mercer County T.R.A.D.E. The purpose of Mercer County T.R.A.D.E. (Transportation Resources to Aid the Disadvantaged and Elderly) is to provide a safe, efficient and economical para-transit service to all eligible Mercer County residents by trained drivers and staff. T.R.A.D.E provides transportation services to transportation-disadvantaged Mercer County residents

who are: senior citizens (60+) or persons with disabilities or economically disadvantaged. Trips are either subscription trips to employment, dialysis, nutrition sites, rehabilitation sites, radiation, etc. which are provided on an ongoing basis; or, demand response trips to doctors' appointments, out-patient clinics, beauty parlors, or shopping, which are provided on an as-needed basis.

Transit Demand Recommendations

The Planning Board can advance the adoption of traffic reduction plans by nonresidential developers to implement alternative strategies designed to reduce the number of trips between residences and work places. These may include:

- a. Ridesharing-park and ride, vanpools/carpools, vanpool/carpool lots (e.g. the NJDOT yard at Bear Tavern Road and Interstate 95 in Ewing Township)
- b. Flextime/compressed workweeks
- c. Shuttle services
- d. Subsidized transit and ridesharing
- e. Preferential parking
- f. Amenities for bicyclists and pedestrians
- g. Telecommuting

An example of such a project in Hopewell Township is the Hopewell Shuttle, which provides peak-hour commuter rides for Merrill Lynch employees between the Hamilton Rail Station and the Merrill Lynch Campus in Hopewell Township. The service is free – but riders must show their employee ID to ride.

Aviation

Hopewell Township physically is the home of a basic service airport, Twin Pine Airport. It is impacted by a non-hub commercial service airport, Trenton Mercer Airport (TTN) and the Princeton Airport in Montgomery Township, Somerset County.

The State Airport Systems Plan (SASP) identifies the primary role of TTN as a scheduled service airport. Scheduled service airports are intended to support commercial airline activities. Where capacity constraints do not limit, this functional level can also support general aviation activities including corporate/executive operations, personal business operations, recreational activities, and flight training.

Princeton Airport is a privately-owned, public use facility serving the Central Jersey region with a variety of services and products which meets the needs of the general aviation consumer – the pilot, the airplane owner, and the corporate user. The airport is located on Route 206 in Montgomery Township, Somerset County, on the border of Princeton, Mercer County. Whether the user is a corporate helicopter servicing the Route 1 corridor, a pilot flying a medivac aircraft or a charter pilot bringing visitors to Princeton University, the airport accommodates the traveling public. SASP identifies it as a General Service airport, which is intended to support smaller corporate aircraft, such as twin-engine aircraft, and the operation of general aviation aircraft for business and pleasure. This functional level is intended support a variety of uses, such as business, pleasure, and training, while providing the majority of the system’s operational and storage capacity for single- and multi-engine piston aircraft.

Three miles northeast of TTN is the basic service airport of Twin Pine. This facility is located on Route 546 and bases 28 aircraft. Two thirds of its usage is local general aviation; the balance is transient general operations. It has a turf runway of 2,200 by 100 feet. It has one business at the field, which provides flight training, aircraft rental, aerial tours and charters. The SASP identifies it as a Basic Service airport, which include facilities with paved or turf runways that support small single- and twin-engine general aviation aircraft. This functional level offers limited facilities and services.

The Planning Board is concerned about the growth and expansion of airports and the impacts they have on residents, quality of life and water quality. Therefore the Board opposes airport expansions that could adversely affect the quality of life.

Goods Movement

Moving freight, such as raw materials and finished products, is an area of increasing importance in New Jersey. Businesses, jobs and consumers all rely on it. The key is to devise regional goods movement strategies that will facilitate the flow of freight and minimize the impact on local communities like Hopewell Township. Freight movement by trucks through Hopewell Township is a significant issue. In 2001 legislative representatives were successful in enacting legislation which banned trucks over 13 tons from Route 29, the State’s only designated scenic corridor.

The State is taking steps to restrict large trucks (102-inch wide) to the “National Network” of highways in the state. These restrictions will not obstruct commerce in the State. All trucks doing business in the State of New Jersey will have access to all N.J. based businesses. The crucial difference is that the large trucks not doing business in New Jersey will be prohibited from using state and county highways. Given New Jersey’s high population density, high traffic density and older highway infrastructure, it is only natural that truck safety and truck routing issues would be more of a concern in New Jersey than they would be in most other less densely settled states. Route 31 though is an important link in the New Jersey’s access network to the national network (I-78 and I-95).

The Planning Board is quite concerned about the impact that trucks have on the community. The Board would like the elimination of not only 102” trucks in the Township but also 96” trucks, and strongly supports the utilization of freight on rails to get goods off roads and onto railroads. This would be the first step in building a more sustainable distribution system.

Another recommendation of the Board is its desire to see Township police expanding the inspection of trucks. Also, the Board is supportive of legislation which redefines local deliveries. The Board believes that local deliveries and pickups can be made by local businesses, but trucks should return to the National Network by the shortest route possible. A final recommendation from the Board is the development of a Truck Route Plan. The present Truck Route is depicted in the following table from the background document.

**Table 3
Truck Routes**

| Route | Extent |
|--|---|
| Route 31 | Ewing Twp – East Amwell Twp. |
| Washington Crossing-Pennington Road- Co. Route 546 | River Dr.- Lawrence Twp. |
| Scotch Road- Co. Route 611 | Ewing Twp- Washington Crossing- Pennington Road |
| Pennington-Hopewell Road- Co. Route 624 | Route 31-Hopewell Borough |
| Lambertville-Hopewell Turnpike Co. Route 518 | West Amwell Twp.- Hopewell Borough |
| Hopewell-Rocky Hill Road- Co. Route 518 | Hopewell Borough-Montgomery Twp. |
| Hopewell-Princeton Road- Co. Route 569 | Hopewell Borough-Pennington –Rocky Hill Road |

Source: Truck Route and Ratings, Van Cleef Engineering, October 2002, modified in 2003

Implementation Plan

The development of the Circulation Plan requires the development of an implementation strategy. The three areas of implementation should focus on investments, regulations and assessment of success.

Investments

While the Planning Board recognizes the ultimate authority of the Township Committee in fiscal matters, the Board can provide advice to the Committee through the following methods:

- The development of an official map. The Municipal Land Use Law (N.J.S.A. 40:55D-32) in Article 5 authorizes the Township Committee to adopt by ordinance an official

map which reflects an appropriate provision of the municipal master plan. The map is deemed conclusive with respect to the location and width of streets, public drainage ways and the location of flood control devices and public areas, whether or not such streets, ways, basins or areas are improved or unimproved. Identification of certain improvements which require additional ROW or the consumption of land such as a bicycle path should be mapped on the official map. This then becomes a means of apprising property owners of the Township's plans for certain areas so there is no conflict if the owner wishes to improve his/her property before the Township acts on its plans for that area.

- A capital improvement program as authorized by Article 4 of the Municipal Land Use Law (N.J.S.A. 40:55D-29). With Township Committee authorization the Planning Board may prepare a program of municipal improvement projects over a term of at least six years. The program may encompass projects currently being undertaken or those in the future that may involve Federal, State, County and other public funds. It also should be classified by its urgency. This is a good method of programming desirable improvements from the Circulation Plan.

Regulations

Another method of implementing the Circulation Plan recommendations is through the review and approval process of subdivisions and site plans. The recommendations in this area are:

- The standards for right-of-way width, cartway width and traffic lanes contained in the Land Use and Development Ordinance should be revised. The standards currently provide for wide and over-developed roadways, which are not in keeping with the objectives of the Plan.
- The recommendations of the Summary Report of the Hopewell Valley Traffic Management Coalition should be incorporated into the development review and approval process.
- Reexamine existing spatial standards, architectural standards and design guidelines for the Route 31 Corridor, including signage.
- Integrate new standards following the detailed guidelines for different segments of the Route 31 Corridor included in Chapter 5 of the Route 31 Design Guidelines report into appropriate portions of the Zoning Code.
- Create incentives for more human oriented, streetscape type development and more appropriate development types, architectural scales and building/road relationships
- Create incentives and expedited permitting for those site plans which encourage coordinated planning, linkage, and through access easements between multiple property owners.

- Explore whether Pennington Borough and Hopewell Township should encourage a community initiative to create what in some states is called a “specific plan” for the Segment 2 area of the Route 31 corridor plan north and south of West Delaware and west of the Conrail tracks. This involves the entire community of property owners, residents, business people and municipal staff in developing an approved plan for an area involving multiple ownerships where if any one owner comes in with a proposal that meets the requirements of the plan then they are assured of incentives and an expedited and predictable approval process.

Monitoring

To determine the success of the Circulation Plan and capital improvement program a monitoring system should be developed. An implementation monitoring program identifies the adjustments and changes that may be required in the Circulation Plan’s recommendations. Targets and indicators are a method for monitoring implementation. Benchmarks could be the existing character of the different segments of Route 31 for all future improvements or development. The recommendations on monitoring by the HVTMC, as well as the continued analysis of accident locations, traffic levels and levels of service, play an important role in the ongoing analysis of circulation conditions.

Appendix A

CIRCULATION PLAN BACKGROUND REPORT

Introduction

Hopewell Township's goals and objectives for vehicular, pedestrian and alternative forms of transportation in the Township are designed:

- To create a circulation plan sufficient to accommodate planned development.
- To encourage proactive planning and regulation to ensure the adequacy of transportation facilities for planned future development, including the establishment of appropriate street design standards, the establishment of public/private partnerships for funding mechanisms, the coordination of transportation modes to accommodate changing commuter patterns, and the establishment of park and ride facilities and shuttle service.
- To coordinate with other municipalities, governmental bodies and corporate partners for a regional approach to transportation that respects and enhances the character of the community.
- To de-emphasize further highway development or extension into agricultural or scenic areas.
- To establish transportation policies and programs that improve connections among housing, employment and commercial uses, including provisions for vehicular and pedestrian travel and bicycle paths.
- To promote transit alternatives in new and existing development to reduce traffic congestion, including ride shares, buses, mass transit, taxis, car/van pools, dial-a-ride, and flextime.
- To control development in rural areas so that traffic will not exceed the capacity of the existing rural road network and historic bridges to provide safe, efficient and convenient traffic movements, based on rural road service standards designed to maintain the character of the community.
- To recognize that roadways are public lands that deserve aesthetic design consideration as well as efficient movement of vehicles, and to carefully preserve viewsheds and plan entrances to the Township because they represent a visitor's first impression of the Township.

- To promote the design and development of roadway improvements necessary to serve existing population and employment sectors of the Township.
- To encourage transportation funding for maintenance of the existing transportation system, rather than encouraging the development of new systems in rural areas.
- To establish highway access management plans for arterial highways.
- To minimize the impacts of transportation systems on the environment, including air and noise pollution.

The inventory and background contained in this report represents the analysis of existing conditions and facilities, which comprise the circulation network in the Township. This analysis addresses regional influences, roadway jurisdiction, existing road functions, street right-of-way widths, traffic accidents, road and bridge conditions, traffic counts, available rail and bus services, bicycle paths and trails, pedestrian systems and the transportation plans of Mercer County, Delaware Valley Regional Planning Commission and New Jersey Department of Transportation.

Regional Influences

In 1995, Congress designated a nationwide total of more than 160,000 miles of roads as the National Highway System (NHS). The purpose of the NHS is to provide an interconnected network of principal travel routes that serve major population centers, international border crossings, ports, airports, public transportation and other intermodal facilities; meet national defense requirements; and, serve interstate and interregional travel. The NHS was created to provide for the continued maintenance and repair of those roads most important for both commercial and defense-related purposes. The system consists of the entire Interstate Highway System plus other urban and rural principal arterial roadways. Dedicated funding is provided for these roads of national significance. The urban interstate of I-95 and the principal arterial highways of Route 29 and Route 31 in Hopewell Township are part of this system.

These highways have a significant regional influence on the circulation system of the Township. Route 31 provides north-south mobility. From the north Route 31 provides access to the employment centers in the Township. It also offers access into Hunterdon and Somerset Counties and eventually to two significant Interstate highways (I-78 and I-287). Southward it serves as a major link with employment in Trenton and Ewing Township. Traffic volumes range from 28,000 vehicles a day in the southern portion to 15,000 vehicles a day in the north as it enters Hunterdon County.

In addition, Route 31 is one of the five interchanges with Interstate-95, which supply access for the Township to part of the major north-south interstate system, connecting the major population and employment centers of the East Coast. Although I-95 sits at the southern edge of the Township it performs a major role in accessing the region and

influencing development within the Township. I-95 provides access north to the employment rich Route 1 corridor, and eventually connects with the New Jersey Turnpike. I-95 also connects to Interstate 295 towards the Camden metropolitan area, and to Interstate 195 extending to coastal New Jersey. To the south I-95 crosses the Delaware River and continues on to Philadelphia. Traffic volumes range from 55,000 to 65,000 vehicles a day.

Route 29 serves as a scenic connection with Trenton and the most western lands along the Delaware River of Ewing and Hopewell Townships while terminating in northern Hunterdon. Its scenic beauty has resulted in its designation as the State's first scenic corridor. While identified as a principal arterial in the State's classification system, it also serves to an extent as "Main Street" for areas of the Township such as Washington Crossing and Titusville.

Route 31 also serves as a Main Street as it flows through the western edge of Pennington Borough. This function is extremely complicated by the fact that, with the opening of Interstate 287 through Bergen County into New York, Route 31 has become the main route of preference for truck traffic connecting with I-95.

While there is no direct passenger rail service to the Township, service is provided on the Northeast Corridor, with stations in Princeton Junction, Princeton, Hamilton Township and Trenton. These stations provide frequent service to Newark and mid-town Manhattan, with connecting service to the Port Authority Trans Hudson (PATH) lines in Hoboken. Rail service to Philadelphia is provided on the R3 line operated by the Southeast Pennsylvania Transportation Authority (SEPTA), which has stations in Ewing Township and Trenton.

Commuter bus service within the Township is provided by New Jersey Transit, with service between Pennington and Trenton via Route 31 and between Lambertville and Hamilton Township via River Road (Route 29). The latter service is limited to peak hour operations, but does provide a rail connection at Hamilton Station on the Northeast line and West Trenton for the R3 line.

Trenton Mercer Airport (TTN) is a non-hub commercial service airport owned and operated by the County of Mercer, New Jersey. The airport terminal is located in Ewing Township, Mercer County; however, a small portion of vacant property extends into Hopewell Township. A Federal Aviation Administration designated primary commercial service airport, TTN provides facilities for limited scheduled commercial air carrier service and, in addition, serves as the home base for the corporate flight departments of several Fortune 500 companies, the United States Marine Corps, and the New Jersey Air National Guard. Other air service is accommodated by Philadelphia International Airport and Newark International Airport. Access to Philadelphia International Airport via I-95 is excellent, and Newark International Airport is accessible by Routes 31 and 202 to I-78.

Roadway Jurisdictions

There are four levels of roadway jurisdiction in the Township, including State, County, municipal and private. The primary highway system consists of the Interstate 95 and State highway routes 29 and 31. Roadway jurisdiction is depicted on the Jurisdiction of Roads map (Figure 3).

The secondary highway system includes most of the County road network and a few municipal streets serving inter-municipal traffic. The County road system in the Township consists of both 500 series roads, which are inter-county roads, and 600 series roads, which are intra-county roads. The County roads in the Township include the following, by County Route number and local names:

1. Route 518-Lambertville-Hopewell Road (west of Hopewell Borough)
2. Route 518-Hopewell-Rocky Hill Road (east of Hopewell Borough)
3. Route 546-Washington Crossing-Pennington Road (west of Route 31)
4. Route 546-Pennington-Lawrenceville Road (east of Route 31)
5. Route 569-Carter Road (south of Mt. Rose)
6. Route 569-Hopewell-Princeton Road (north of Mt. Rose)
7. Route 579-Bear Tavern Rd. (south of Pennington-Harbourton Road)
8. Route 579-Trenton-Harbourtown Rd. (north of Pennington-Harbourton Road)
9. Route 611-Scotch Road (to Route 546)
10. Route 612-Marshall's Corner-Woodsville Road
11. Route 623-Pennington-Harbourton Road
12. Route 624-Pennington-Rocky Hill Road (to Titus Mill Road)
13. Route 625-Elm Ridge Road
14. Route 631-Ingleside Avenue
15. Route 632-Blackwell Road
16. Route 637-Jacob's Creek Road
17. Route 640-Pennington Road
18. Route 647-Nursery Road
19. Route 654-Pennington-Hopewell Road

The New Jersey Department of Transportation 2004 Straight Line Diagrams categorize some of these roadways as urban minor arterials (Washington Crossing-Pennington Road, Pennington-Lawrenceville Road, Bear Tavern Road and Scotch Road). Others are categorized as urban collectors (Ingleside Avenue and Nursery Road) and rural major collectors (Lambertville-Hopewell Road) or rural local roads (Blackwell Road).

The remaining roadways in the Township are under municipal jurisdiction or are privately owned and maintained. There are a number of local roads that provide major circulation functions within the Township. For example, Pennington-Rocky Hill Road serves as a rural major collector, Pleasant Valley Road serves as a rural minor collector, Bull Run Road performs an urban collector function and a portion of Federal City Road acts as an urban minor arterial.

Existing Road Functions

In addition to classification by roadway jurisdiction, roadways commonly are classified by function (Figure 4). As indicated in the 1989 New Jersey Transportation Plan, Volume 1 (N.J. Department of Transportation), "The functional classification system is used to indicate the degree to which a facility provides mobility or land access or a combination of the two. Those roads, which are designed to provide the greatest degree of mobility and uninterrupted flow, are the Interstate and other principal arterials. Those roads designed to provide access to individual land uses are local roads and streets. In-between the two are minor arterials and major and minor collectors. Collector roads generally provide medium speed movements of vehicles from the local road system to the arterial system and for short distance movements through and between small communities."

Although there is not a direct relationship between the jurisdictional ownership and functional classification of a highway, generally the higher functional roads fall under State jurisdiction and the lower functional roads fall under local ownership. However, this generality is complicated by the fact that each level of government tends to view the function of a road from its own unique perspective. Thus, the comparability of functional road classification systems is compromised.

To illustrate this point, Table 4 provides the functional classification system by jurisdiction (State, county or municipal). The Table only identifies those roadways which have a status of arterial or collector. This does not include the approximately 103 miles of local roadway that are not classified in the Federal Highway Administration (FHWA) functional classification system.

The Township is required to consider the functional classification system in its transportation planning, as the Municipal Land Use Law (MLUL) indicates that a Circulation Plan Element must take into account the functional highway classification system of the FHWA.

TABLE 4
Comparison of Functional Classification by Roadway and Jurisdiction

| Roadways | Level of Government | | |
|---|---------------------|--|---------------------------|
| | Hopewell Township | Mercer County | New Jersey |
| Interstate 95 | | | Urban Interstate |
| Routes 31 & 29 | | | Urban Principal Arterials |
| Route 518 | | Rural Major Collector | |
| Route 546 | | Urban Minor Arterial | |
| Route 569 | | Rural Major Collector | |
| Route 579 | | Urban Minor Arterial & Rural Major Collector | |
| Route 611 Scotch Road | | Urban Minor Arterial | |
| Route 623 Pennington-Harbourton Road | | Rural Major Collector | |

| | | | |
|---|-----------------------|-----------------------|--|
| Route 624 Pennington-Rocky Hill Road | | Rural Major Collector | |
| Route 625 Elm Ridge Road | | Rural Major Collector | |
| Route 631 Ingleside Road | | Urban Collector | |
| Route 637 Jacobs Creek Road | | Urban Minor Arterial | |
| Route 647 | | Urban Collector | |
| Route 654 Pennington-Hopewell Rd. | | Rural Major Collector | |
| Bull Run Road | Urban Collector | | |
| Burd Road | Rural Major Collector | | |
| Cherry Valley Road | Rural Major Collector | | |
| Crusher Road | Rural Major Collector | | |
| Federal City Road | Urban Minor Arterial | | |
| Pennington-Rocky Hill Road (Municipal portion) | Rural Major Collector | | |
| Pennington-Titusville Road | Rural Major Collector | | |
| Pleasant Valley Road | Rural Minor Collector | | |
| Reed Road | Urban Collector | | |
| Scotch Road | Rural Major Collector | | |

Source: New Jersey Department of Transportation 2004 Functional Classification System and Hopewell Township 2001 Road Inventory, Van Cleef Engineering Associates

Street Right-of-Way Widths

The right-of-way (ROW) widths of streets in Hopewell Township are reflective of the time period when they were established and, to some degree, the purpose they serve. The larger ROW widths of the Interstate and State highways reflect their position in the hierarchy of streets, while the smaller rights-of-way (33 feet) are on streets in the Township's largely rural sections. More recent subdivisions have the 50-foot ROW typical of the subdivision standard for local streets.

Table 5 summarizes the ROW widths for all public streets in the Township.

TABLE 5
Right-of-Way Widths

| | |
|------------|--|
| 1000'-600' | Interstate 95 |
| 100' | Route 31 (Yard Rd. – Circle) |
| 70' | Main Street |
| 66' | Rt. 31 (518-Yard Rd. & Circle-Ewing Twp. Line), Bear Tavern Rd. (Co. Rt. 579), Hopewell-Lambertville Rd. (Co. Rt. 518), Hopewell-Rocky Hill Rd. (Co. Rt. 518 Spur), Marshall Corner-Woodville Rd. (Co. Rt. 612), Pennington-Harbourton Rd. (Co. Rt. 623), Scotch Rd. (Co. Rt. 611) |
| 60' | Washington Crossing-Pennington Rd. (Co. Rt. 546), Pennington –Lawrenceville Rd. |

| | |
|-----|--|
| | (Co. Rt. 546), Blue Ridge Rd., Brandon Rd. West, Denow Rd., Flower Hill La., Meadowbrook Farm Rd, Nedsland Ave., Park Lake Ave., Stephenson Rd., Timberlane Dr. North, Van Brunt Rd. |
| 58' | North Main St., Pennington-Titusville Rd. Phase II |
| 57' | Birch St., Maple La., Oak St. |
| 51' | East Welling Ave. |
| 50' | Elm Ridge Rd. (Co. Rt. 625), Ingleside Rd. (Co. Rt. 631), Alta Vista Dr., Apachee Dr., Applewood Dr., Aqua Ter., Arida Dr., Avalon Rd., Bailey Dr., Beech St., Beechtree La., Beechwood Dr., Benjamin Tr., Benson Rd., Bethany Ave., Blackfoot Rd., Blue Spruce Dr., Bonner Ct., Borroughs Ave., Bradford La., Bramble Dr., Brandon Rd., Brewster Ct., Brigham Way, Brookside Dr., Carey St., Caroline Dr., Cedar Brook Ter., Cedar Dr., Chase Hollow Dr., Cherokee Dr., Cheyenne Dr., Chicory La., Clarke Ct., Cleveland Rd. West, Coach La., Coburn Rd., Conanat Way, Continental La., Corrine Dr., Cortland Ave., Cotswald La., Coventry La., Creek Rim Dr., Crest Ave., Crestview Dr., Curliss Ave., Darrow Dr., Dionis Ct., Diverty Rd., Donovan Rd., Stanford Ct., Drummon Dr., East Acres Dr., East Prospect St., East Shore Dr., Eastern Ave., Elden Way, Echo Hill Dr., Ethan La., Fabian Pl., Fabrow Dr., Fairway Dr., Fanning Way, Fisk Ct., Flower Hill Dr., Flower Hill Ter., Flower Hill La., Forrest Blend Dr., Forrest Central Dr., Forrest Edge Rd., Forrest Hill Rd., Foster Rd., Fox Run Rd., George Washington Dr., Glenwood Dr., Grace Hill Ct., Grand View Ave., Grange Rd., Grenloch Dr., Harbourton Ridge Dr., Harrison Ave., Hart Ct., Harvest Dr., Haver St., Hedgecroft Dr., Henly Pl., Hessian Hill Dr., Hester Ct., Honey Brook Dr., Honey Lake Dr., Hope St., Hopewell-Wertsville Rd. Phase III, Hopkinson Ct., Howard Way, Hunters Ridge Rd., Independence Way, Jamieson Dr., Jefferson Pl., Johnstone Dr., Kentsdale Dr., Kunkel Ct., Lake Baldwin Dr., Larchmont Ct. Lewis Brook Dr., Linden La., Long Way, Lynnbrook Dr., Madaket La., Madison Ave., Manley Rd., Masters Way, McKonkey Way, Meadow La., Meadows Ct., Merrick Pl., Michael Way, Moorehead Rd., Morgan Ave., Morningside Ct., Morningside Dr., Morris Dr., Murphy Dr., Nathaniel Green Rd., Navesink Dr., Nelson Ridge Rd., Nobadeer Dr., North Star Ave., North Woods Dr., Old Scotch Rd., Orchard Ave., Overlook Rd., Palmer Rd., Patterson Ave., Penn View Dr., Pierson Dr., Pine Tavern Ct., Plymouth St., Pond View La., Red Maple St., Relgate Way, River Knoll Dr., Roosevelt Ave., Rosedale Way, Rumson Ct., Rustic Dr., Scotch Rd., Search Ave., Shara La. East, Shara La. West, Short Way, Sioux Rd., Skyfield Dr., Skyview Dr., Spring Hollow Dr., Spring Hollow Dr. West, Stanford Rd. East, Stanford Rd. West, State Park Dr., Stockton Rd., Stout Rd., Tanglewood Dr., Temple Ct., The Kings Path, Timberbrook Dr., Timkak La., Todd Ridge Rd., Tree Farm Rd., Tyburn La., Valley View Rd., Viewpoint Dr., Voorhees Way, Washington Ave., Weldon Way, Welwyn Ct., West Shore Dr., Westcott Blvd., Western Pine St., White Birch St., Willow Creek Dr., Woodlawn La., Woodmere Way, Wycoff Dr., |
| 46' | Butterfoss Ave., Cedar La., Wildwood Way, Wrick Ave. |
| 45' | Autumn Ridge Road, Drummers Lane, Gatehouse Road, Kestrel Lane, Smoke Rise Road |
| 40' | Grant St., Kent Dr., Wilfred Ave. |
| 36' | Mercer St., River Dr. |
| 35' | Lafayette Ave. Phase I, Lafayette Ave. Phase II |
| 33' | Rt. 29, Pennington-Hopewell Rd. (Co. Rt. 654), Hopewell-Princeton Rd. (Co. Rt. 569), Nursery rd. (Co. Rt. 647), Pennington-Rocky Hill Rd. (Co. Rt. 624), Barry Rd., Cleveland Rd. East, Federal City Rd. Phase I, Goat Hill Rd., Hansen Pl., Hanson's Corner. Ingleside Ave., Old Mill Rd., Old Pennington-Lawrenceville Rd East, West Scotch Rd., Woodens La |
| 30' | Brookside Ramble |
| 26' | Rivera Ave., Trimmer Ave. |
| 20' | Coleman La., Detour Ave. |

| | |
|----------|--|
| Variable | Aunt Molly Rd., Bayberry Rd., Blackwell Rd. East & West, Bull Run Rd., Burd Rd., Cherry Valley Rd., Church Rd., Crusher Rd., Dublin Rd., Dunwald La., Feather Bed La., Federal City Rd. Phase II, Federal City Rd. Phase III, Fern Ridge La., Fiddlers Creek Rd., Harbourton-Mount Airy Rd., Harbourton-Rocktown Rd. Phase I, Harbourton-Rocktown Rd. Phase II, Harbourton-Rocktown Rd. Phase III, Harbourton-Woodville Rd., Hopewell-Amwell Rd., Hopewell-Wertsville Rd. Phase I, Hopewell-Wertsville Rd. Phase II, Jacobs Creek Rd., Lupin La., Maddock Rd., Mine Rd., Minnetown La., Moores Mill-Mount Rose Rd., Mountain Church Rd., New Rd., Old Washington Crossing-Pennington Rd., Pennington-Rocky Hill Rd. Phase I, Pennington-Rocky Hill Rd. Phase II, Pennington-Rocky Hill Rd. Phase III, Pennington-Rocky Hill Rd. Phase IV, Pennington-Titusville Rd. Phase I, Pennington-Titusville Rd. Phase III, Pleasant Valley Rd., Pleasant Valley-Harbourton Rd., Poor Farm Rd., Postley La., Province Line Rd. Phase I, Province Line Rd. Phase II, Province Line Rd. Phase III, Reed Rd., Reservoir Rd., Search Ave., Somerset St., Stony Brook Rd., Sunset Dr., Tara Way, Timberlane Dr. South, Titus Mill Rd., Valley Rd., Van Dyke Rd., Vannoy Ave., Wargo Rd., Woosamonsa Rd., Yard Rd. |
|----------|--|

Traffic Accidents

The Bureau of Accident Records in the NJDOT compiles an annual summary list of motor vehicle accident locations, including data on the total number of accidents, fatal accidents, and accidents involving personal injury and property damage. The data presented in Table 6 addresses the period from 1998 to 2001 for I-95 and Routes 29 and 31, and Figure 5 identifies the number of accidents by location. Figure 6 depicts the overall number of accidents for other roads in the Township for the same 4-year period. Table 7 shows the data for County and Township roadways.

TABLE 6
State Highway Accident Locations 1997 To 2000

| Roadway | Location | Accident Information | | | | |
|----------------------|-------------------------|----------------------|------|------|------|-------|
| | | 1997 | 1998 | 1999 | 2000 | TOTAL |
| <i>Interstate 95</i> | Mile markers 2.37-5.59 | 47 | 46 | 54 | 34 | 181 |
| <i>Route 29</i> | Mile marker 10.47-11.97 | 9 | 6 | 6 | 11 | 32 |
| <i>Route 29</i> | Mile marker 11.97-13.11 | 12 | 12 | 8 | 16 | 48 |
| <i>Route 29</i> | Mile marker 13.11-14.85 | 2 | 7 | 10 | 14 | 33 |
| <i>Route 29</i> | Mile marker 14.85-17.03 | 7 | 23 | 9 | 13 | 52 |
| <i>Route 31</i> | Mile marker 4.72-4.95 | 13 | 7 | 18 | 17 | 55 |
| <i>Route 31</i> | Mile marker 4.95-6.24 | 38 | 87 | 84 | 71 | 280 |
| <i>Route 31</i> | Mile marker 6.24-7.65 | 9 | 14 | 27 | 16 | 66 |
| <i>Route 31</i> | Mile marker 7.65-8.14 | 13 | 17 | 23 | 32 | 85 |

| | | | | | | |
|----------|----------------------------|----|----|----|----|----|
| Route 31 | Mile marker 8.14-9.28 | 7 | 19 | 11 | 22 | 59 |
| Route 31 | Mile marker 9.28-10.28 | 9 | 16 | 16 | 4 | 45 |
| Route 31 | Mile marker 10.28-12.27 | 19 | 33 | 14 | 17 | 73 |

Source: Summary of Accident Rates on State Highways in Route and Milepost, NJDOT 1997-2000

There are several discernible trends and occurrences that bear noting. Overall, the number of accidents occurring on Route 29 has increased annually. On Route 31 the segments with the highest accident frequencies involve inappropriate or no control devices. They are Diverty Road, the Pennington Circle, Pennington Market, the light at Pennington-Titusville Road and the light at Route 518 and Route 31.

Table 7 provides a listing of municipal and county roadways and the number of accidents per segment of roadway for all roadways with four or more accidents in the four-year period. Significant county roadways for accidents are:

1. County Route 546
2. County Route 579
3. County Route 518

Each of these roadways is an urban minor arterial or rural major collector functioning as through routes in and out of the Township.

Significant Township roadways for accidents are Federal City Road and Bull Run Road, which are an urban minor arterial and urban collector, respectively. Other roads with frequent accidents are Pennington-Titusville Road, Pennington-Rocky Hill Road and Cherry Valley Road. Again, each of these roadways serves as a major rural collector to locations outside the Township or for access into the Township.

TABLE 7
County and Municipal Accident Locations 1998-2001⁶

| Roadway | Accident Information | | | | |
|--------------------|----------------------|------|------|------|-------|
| | 1998 | 1999 | 2000 | 2001 | Total |
| Blackwell Road | 2 | 3 | 1 | 2 | 8 |
| Brandon Road | 3 | 0 | 1 | 0 | 4 |
| Bull Run Road | 5 | 3 | 2 | 3 | 13 |
| Cherry Valley Road | 5 | 1 | 8 | 2 | 16 |
| Church Road | 2 | 1 | 0 | 1 | 4 |
| Cleveland Road | 1 | 0 | 2 | 2 | 5 |
| CR 518 | 38 | 28 | 40 | 40 | 126 |
| CR 546 | 40 | 47 | 62 | 52 | 201 |
| CR 569 | 21 | 17 | 18 | 14 | 70 |
| CR 579 | 26 | 26 | 37 | 43 | 132 |

⁶ Table does not contain accidents on private property (for example, parking lots).

| | | | | | |
|----------------------------|----|----|----|----|----|
| CR 611 | 11 | 16 | 10 | 21 | 58 |
| CR 612 | 3 | 5 | 8 | 2 | 18 |
| CR 623 | 4 | 7 | 6 | 9 | 26 |
| CR 624 | 8 | 4 | 10 | 5 | 27 |
| CR 625 | 7 | 7 | 3 | 12 | 29 |
| CR 640 | 4 | 0 | 1 | 3 | 8 |
| CR 647 | 2 | 1 | 3 | 8 | 14 |
| CR 654 | 5 | 4 | 17 | 17 | 43 |
| Denow Road | 0 | 2 | 1 | 1 | 4 |
| Dublin Road | 1 | 0 | 4 | 2 | 7 |
| Federal City Road | 9 | 2 | 8 | 5 | 24 |
| Harbourton Rocktown Road | 2 | 1 | 2 | 5 | 10 |
| Harbourton Woodsville Road | 2 | 1 | 1 | 2 | 6 |
| Harbourton -Mt Airy Road | 1 | 1 | 1 | 6 | 9 |
| Hopewell-Amwell Road | 2 | 2 | 2 | 2 | 8 |
| Hopewell Wertsville Road | 3 | 2 | 2 | 2 | 9 |
| Old Mill Road | 1 | 1 | 1 | 2 | 5 |
| Pennington Rocky Hill Road | 3 | 5 | 5 | 4 | 17 |
| Pennington Titusville Road | 10 | 9 | 10 | 14 | 43 |
| Pleasant Valley Road | 1 | 3 | 6 | 1 | 11 |
| Province Line Road | 3 | 2 | 0 | 3 | 8 |
| Reed Road | 2 | 4 | 0 | 3 | 9 |
| River Drive | 1 | 3 | 0 | 1 | 5 |
| Stony Brook Road | 1 | 2 | 1 | 2 | 6 |
| Timberlane Drive | 0 | 1 | 0 | 3 | 4 |
| Titus Mill Road | 3 | 3 | 3 | 3 | 12 |
| Van Dyke Road | 1 | 1 | 2 | 0 | 4 |

Source: NJDOT Raw Data Accident Records

Table 8 provides a snapshot of the three month period when most accidents occur. The time period from October through December has the highest number of accidents, accounting for 30% or more of those that occur annually.

TABLE 8
Accidents by Time of Year

| | 1998 | 1999 | 2000 | 2001 |
|-------------------------|------|------|------|------|
| Winter (Jan/Feb/Mar) | 117 | 151 | 179 | 169 |
| Spring (Apr/May/Jun) | 174 | 138 | 151 | 153 |
| Summer (Jul/Aug/Sep) | 148 | 145 | 129 | 111 |
| Fall (Oct/Nov/Dec) | 195 | 189 | 199 | 204 |
| Annual Total | 634 | 623 | 658 | 637 |

Source: NJDOT Raw Data Accident Records

Finally, Table 9 compares information from the 1992 Master Plan on accidents in terms of fatalities and injuries with the time period 1998 to 2001. Table 10 compares the same time periods by jurisdiction of roadways and for specific roadways.

TABLE 9
Accident Comparison 1987-1990 and 1998-2001 - Total, Fatalities and Injuries

| | 1987-1990 | | | 1998-2001 | | |
|----------------------|--------------|------------|--------|--------------|------------|--------|
| | 4-Year Range | | | 4-Year Range | | |
| | Number | % of Total | Avg. % | Number | % of Total | Avg. % |
| Total # of accidents | 1878 | 469 Avg. | NA | 2552 | 638 Avg. | NA |
| # with fatalities | 0-6 | 0-1% | 1% | 0-4 | 0-0.6 | 0.3% |
| # with injuries | 117-167 | 25-36% | 31% | 136-204 | 21 -32% | 26 % |

TABLE 10
Accident Comparison 1987-1990 and 1998-2001- Roadway Jurisdiction and Location

| Location | 1987-1990 | | | 1998-2001 | | |
|-------------------|--------------|------------|--------|--------------|------------|--------|
| | 4-Year Range | | | 4-Year Range | | |
| | Number | % of Total | Avg. % | Number | % of Total | Avg. % |
| I-95 | 24-34 | 4-6% | 6% | 34-54 | 5.2-8.7% | 6.7% |
| Route 31 | 95-118 | 19-24% | 22% | 179-194 | 27-30% | 30% |
| Route 29 | 24-60 | 5-11% | 9% | 33-54 | 5.3-8.2% | 7.3% |
| Co. Rt. 518 | 26-42 | 5-9% | 7% | 28-40 | 4.5-6.3% | 4.5% |
| Co. Rt. 654 | 13-25 | 3-5% | 4% | 4-17 | 0.6-2.7% | 1.7% |
| Co. Rt. 546 | 44-65 | 8-14% | 11% | 40-62 | 6.3-9.4% | 7.9% |
| State Highways | 164-202 | 35-38% | 36% | 267-287 | 41-45% | 44% |
| County Highways | 185-203 | 37-43% | 39% | 162-227 | 26-36% | 31% |
| Township Roadways | 91-129 | 19-23% | 22% | 77-89 | 12-14% | 13.2% |
| Private Property | 12-14 | 2-3% | 2% | 39-104 | 6-17% | 12% |

Source: NJDOT Raw Data Accident Records

As demonstrated in the Tables, as the Township's population and employment have grown, accidents have increased by more than 35%. There has been a reduction in fatalities, injuries and accidents on municipal and county roadways, but there has been a significant increase in the number of parking lot and other private property accidents.

Road Conditions

In 2001, Van Cleef Engineering Associates performed a detailed inventory of 132.88 miles of municipal roads. This analysis assessed each section of municipal roadway in terms of its points of origin and termination, its length, current conditions, master plan information including classification, proposed right-of-way and proposed cartway. Using this information, the Township was divided into five sections for purposes of description, as follows:

1. Area North of 518,
2. Area South of 518 and East of Route 31 and North of Pennington-Rocky Hill and Elm Ridge Roads,
3. Area South of Pennington-Rocky Hill and Elm Ridge Roads and East of Route 31,
4. Area West of Route 31 and East of Route 579, and
5. Area from the River to Route 579.

In the area north of Route 518 (Table 11), the Township maintains approximately 14 miles of municipal roadway, or 11% of the total municipal system. Over nine miles is oil and stone with the balance in bituminous concrete, except for Somerset Street extending out of Hopewell Borough, which is a dirt (gravel) road. All new roadways are in bituminous concrete (i.e. The Kings Path and Longfield Farms).

**TABLE 11 - Road Conditions and Location
Area North of 518**

| Area | Road | Condition | Mileage |
|-----------------|---|-----------------------------------|---------|
| | Feather Bed La. | Oil/stone | 1.06 |
| | Hopewell-Wertsville Rd. | Bituminous Concrete and Oil/stone | 2.28 |
| | Minnietown La. | Oil/stone | 0.26 |
| | Hopewell-Amwell Rd. | Oil/stone | 2.4 |
| | Mountain Church Rd. | Bituminous Concrete | 1.22 |
| | Dunwald La. | Oil/stone | 0.42 |
| | Benson Rd. | Bituminous Concrete | 0.55 |
| | Somerset St. | Gravel | 0.04 |
| | Stony Brook Rd. | Oil/stone | 2.1 |
| | The Kings Path | Bituminous Concrete | 0.28 |
| | Van Dyke Rd. | Bituminous Concrete and oil/stone | 2.46 |
| | Eastern Ave., Grand View Ave. (Portion undeveloped), North Star Ave., Reservoir Rd. | Bituminous Concrete and Oil/stone | 0.9 |
| Longfield Farms | Long Way, Short Way | Bituminous Concrete | 0.47 |

In the area south of Co. Rt. 518, north of Pennington-Rocky Hill and Elm Ridge Roads and east of Route 31 (Table 12), there are approximately 35 miles, or 26% of the municipal system. The roadways are mostly bituminous concrete in this area accounting for almost 85% of the surfaces. A major portion of system is found within developments, such as Elm Ridge Park (8.94 miles), Princeton Farms (2.08), Hopewell Hunt (1.52 miles), Willow Creek (0.67 miles) and Applewood (0.4).

**TABLE 12 -Road Conditions and Location
Area South of 518 and East of Route 31 and North of Pennington-Rocky Hill
and Elm Ridge Roads**

| Area | Road | Condition | Mileage |
|----------------|--|-----------------------------------|---------|
| | Cedar Dr., Crestview Dr., Echo Hill Dr., Fairway Dr., Timberbrook Dr., Tyburn La., Viewpoint Dr., | Bituminous Concrete and oil/stone | 1.22 |
| | Cherry Valley Rd., Pennington-Rocky Hill Rd. | Bituminous Concrete | 2.88 |
| | Cleveland Rd. East, Cleveland Rd. West | Bituminous Concrete | 1.14 |
| | Coventry La., Overlook Rd., Spring Hollow Dr., Spring Hollow Dr. West | Bituminous Concrete | 0.87 |
| | Crusher Rd. | Oil/stone | 1.96 |
| | Lake Baldwin Dr. | Bituminous Concrete | 0.7 |
| | Mine Rd. | Bituminous Concrete and oil/stone | 0.83 |
| | Moore's Mill-Mount Rose Rd. | Bituminous Concrete and oil/stone | 1.79 |
| | Province Line Rd. | Bituminous Concrete | 3.3 |
| | Sunset | Bituminous Concrete | 0.23 |
| | Titus Mill Rd. | Oil/Stone | 2.0 |
| | Wargo Rd. | Bituminous Concrete and oil/stone | 1.22 |
| Mount Rose | Cotswald La., Nelson Ridge Rd., Stout Rd. | Bituminous Concrete | 1.57 |
| Elm Ridge Park | Alta Vista Dr., Aqua Ter., Arida Dr., Beechtree La., Blue Spruce Dr., Cedar Brook Ter., East Acres Dr., East Shore Dr., Honey Brook Dr., Honey Lake Dr., Meadow La., North Woods Dr., Red Maple St., Rustic Dr., Skyfield Dr., Tara Way, West Shore Dr., Western Pine St., White Birch St., Woodlawn La., Bayberry Rd. | Bituminous Concrete | 8.94 |
| Applewood | Applewood Dr. | Bituminous Concrete | 0.4 |
| Willow Creek | Voorhees Way, Willow Creek Dr. | Bituminous Concrete | 0.67 |
| Hopewell Hunt | Bailey Dr., Caroline Dr., Morris Dr. | Bituminous Concrete | 1.52 |
| | East Prospect St. | Oil/stone | 0.08 |

| | | | |
|------------------|---|---|------|
| North Pennington | Hansen Pl. (Unimproved), Hessian Hill Dr., Jamieson Dr., Jefferson Pl., Lewis Brook Dr., Main St., Meadowbrook Farm Rd., Moorehead Rd., Murphy Dr., North Main St., Tree Farm Rd. | Gravel and Bituminous Concrete, Oil/stone | 1.49 |
| Princeton Farms | Bradford La., Conanat Way, Darrow Dr., Drummon Dr., Ethan La., Howard Way, Palmer Rd., Weldon Way, Westcott Blvd. | Bituminous Concrete | 2.08 |

Approximately 17% of the municipal system is found in the area south of Pennington-Rocky Hill and Elm Ridge Roads and east of Route 31 (Table13). This area accounts for approximately 23 miles of roadway, in which there are limited areas of oil and stone surfaces, with some roadways that are unimproved paper streets. A significant number of housing developments are found in this area, such as Indian Village (1.08 miles), Brandon Farms (10.4 miles), Blackwell Farms (0.63 miles), Oak Ridge (0.77 miles) and Princeton Farms (2.08 miles). Finally, in this area are a number of roadways extending out of Pennington Borough to the east.

**TABLE 13 - Road Conditions and Location
Area South of Pennington-Rocky Hill and Elm Ridge Roads and East of Route 31**

| Area | Road | Condition | Mileage |
|-----------------|---|-----------------------------------|---------|
| | Beech St., Crest Ave. (only partially improved), Orchard Ave., Plymouth St. | Bituminous Concrete and oil/stone | 1.27 |
| | Blackwell Rd. East | Oil/stone and Bituminous Concrete | 0.81 |
| | Blackwell Rd. West | Bituminous Concrete | 1.21 |
| | Bramble Dr., Brigham Way (only partially improved) | Bituminous Concrete | .12 |
| | Bull Run Rd. | Bituminous Concrete | 0.6 |
| | Federal City Rd. | Bituminous Concrete | 2.59 |
| | Flower Hill Dr., Flower Hill La., Flower Hill Ter. | Bituminous Concrete | 0.42 |
| | Old Mill Rd. | Oil/stone | 0.68 |
| | Rosedale Way | Bituminous Concrete | 0.36 |
| Indian Village | Apachee Dr, Blackfoot Rd., Cherokee Dr., Cheyenne Dr., Sioux Rd. | Bituminous Concrete | 1.08 |
| Brandon Farms | Avalon Rd., Bonner Ct., Brandon Rd., Brandon Rd. West, Brewster Ct., Carey St., Chicory La., Coburn Rd., Denow Rd., Donovan Rd., Fabian Pl., Fanning Way, Fisk Ct., Foster Rd., Grange Rd., Haver St., Hedgecroft Dr., Henly Pl., Hester Ct., Hope St., Kentsdale Dr., Kunkel Ct., Larchmont Ct., Manley Rd., Masters Way, Meadows Ct., Navesink Dr., Old Pennington-Lawrenceville Rd East, Rumson Ct., Stanford Rd. East, Stanford Rd. West, Stephenson Rd., Temple Ct., Van Brunt Rd., Welwyn Ct., Wycoff Dr. | Bituminous Concrete | 10.4 |
| Blackwell Farms | Beechwood Dr., Shara La. East | Bituminous Concrete | 0.63 |

| | | | |
|-----------------|--|-----------------------------------|------|
| Oak Ridge | Benjamin Tr., Merrick Pl., Shara La. West | Bituminous Concrete | 0.77 |
| Pennington East | Curliss Ave., East Welling Ave., Linden La., Madison Ave., Maple La., Oak St., Penn View Dr., Pierson Dr., Roosevelt Ave., Birch St., Woodmere Way | Oil/stone and Bituminous Concrete | 2.25 |

The fourth area, the section west of Route 31 and east of Route 579, is shown on Table 14. This area contains approximately 36 miles of roadway, which represents approximately 27% of the local system. Over one-third of the system in this area is oil and stone.

**TABLE 14- Road Conditions and Location
Area West of Route 31, and East of 579**

| Area | Road | Condition | Mileage |
|-----------------------------------|--|-----------------------------------|---------|
| | Burd Rd., Scotch Rd., West Scotch Rd. | Bituminous Concrete and Oil/stone | 2.06 |
| | Chase Hollow Dr., Fox Run Rd. | Bituminous Concrete | 0.59 |
| | Timberlane Dr. North, Timberlane Dr. South | Bituminous Concrete | 0.77 |
| | Skyview Dr. | Oil/stone | 0.2 |
| | Coach Lane | Bituminous Concrete | 0.3 |
| | Poor Farm Rd. | Oil/stone | 1.27 |
| | Dionis Ct., Nobadeer Dr. | Bituminous Concrete | 0.36 |
| Washington Crossings Park Estates | Continental La., McKonkey Way, Nathaniel Green Rd., State Park Dr. | Bituminous Concrete | 1.36 |
| | Dublin Rd. | Oil/stone and Bituminous | 1.36 |
| Cooper's Corner | Elden Way, Lynnbrook Dr. | Bituminous Concrete | 0.18 |
| | Glenwood Dr., Morningside Ct., Morningside Dr., Pine Tavern Ct. | Bituminous Concrete | 0.83 |
| | Harbourton Ridge Dr. | Bituminous Concrete | 0.53 |
| | Harbourton-Mount Airy Rd. | Oil/stone | 1.69 |
| | Harbourton-Rocktown Rd. | Bituminous Concrete | 2.01 |
| | Harbourton-Woodsville Rd. | Oil/stone | 2.94 |
| | Hunters Ridge Rd. | Bituminous Concrete | 0.44 |
| | Madaket La. | Bituminous Concrete | 0.21 |
| | Michael Way | Bituminous Concrete | 0.59 |
| | New Rd. | Bituminous Concrete and oil/stone | 1.24 |
| | Old Scotch Rd. | Oil/stone | 0.36 |

| | | | |
|------------------|--|---|------|
| | Pennington-Titusville Rd | Bituminous Concrete and oil/stone | 3.09 |
| | Clark Ct., Hart Ct., Independence Way, Stockton Rd. | Bituminous Concrete | 1.25 |
| Baldwin's Corner | Corrine Dr., Harvest Dr., Ingleside Ave., Johnstone Dr., Search Ave., Vannoy Ave. (Boundary with Pennington) | Bituminous Concrete | 1.70 |
| | Reed Rd. | Bituminous Concrete | 1.3 |
| | Woosamonsa Rd. | Oil/stone | 3.1 |
| | Yard Rd. | Oil/stone | 1.15 |
| Bear Tavern | Fabrow Dr., George Washington Dr., Grenloch Dr., Hanson's Corner, Hopkinson Ct., Old Washington Crossing-Pennington Rd., Relgate Way | Bituminous Concrete and Oil/stone | 1.59 |
| | Brookside Dr., Grace Hill Ct., Pond View La., Tanglewood Dr., Todd Ridge Rd. | Bituminous Concrete | 2.88 |
| | Diverty Rd. | Oil/stone | 0.61 |

The final area is located from the Delaware River to Route 579, which includes approximately 23 miles or 17% of the local system. Over half of the roadway surfaces are oil and stone. There also are a handful of dirt roads (gravel).

**TABLE 15 - Road Conditions and Location
Area from the River to West of Route 579**

| Area | Road | Condition | Mileage |
|--|--|---|---------|
| | River Dr. | Oil/stone and gravel | 1.36 |
| Titusville (North of Church Rd.) | Bethany Ave., Butterfoss Ave., Cedar La., Fern Ridge La., Fiddlers Creek Rd., Wildwood Way, Wrick Ave. | Bituminous Concrete and Oil/stone | 2.62 |
| Titusville | Detour Ave., Mercer St. | Gravel | 0.1 |
| | Valley Rd. | Oil/stone | 1.89 |
| | Barry Rd. | Oil and stone | 0.49 |
| | Church Rd. | Oil/stone | 1.8 |
| | Creek Rim Dr. | Bituminous Concrete | 0.28 |
| | Forrest Blend Dr., Forrest Central Dr., Forrest Edge Rd., Forrest Hill Rd., Lupin La. (private lane-partially maintained), River Knoll Dr. | Bituminous Concrete and Oil/stone | 1.56 |
| | Jacobs Creek Rd. | Oil/stone | 1.34 |
| | Maddock Rd. | Bituminous Concrete and Oil/stone | 0.99 |
| | Pleasant Valley Rd. | Oil/stone | 4.26 |
| | Pleasant Valley-Harbourton Rd. | Oil/stone | 1.81 |
| Titusville (South of Church Rd.) | Blue Ridge Rd., Grant St., Nedslan Ave., Park Lake Ave., Rivera Ave., Trimmer Ave., Valley View Rd. | Bituminous Concrete | 1.49 |

| | | | |
|---------------------|--|--|------|
| Washington Crossing | Borroughs Ave., Cortland Ave. (partially undeveloped), Harrison Ave. (partially undeveloped), Lafayette Ave., Morgan Ave., Patterson Ave., Postley La. (private-partially maintained), Washington Ave., Wilfred Ave. | Bituminous Concrete and Oil/stone and gravel | 2.38 |
| Moore's Station | Goat Hill Rd., Woodens La. | Oil/stone and gravel | 0.56 |

Traffic Counts

The Bureau of Transportation Data Development in the NJDOT maintains records of average annual daily traffic (AADT) on roads throughout the State. The Delaware Valley Regional Planning Commission likewise conducts traffic counts at various locations throughout the Township. Mercer County conducts counts on County routes, and Hopewell Township has embarked on conducting counts on its network. Table 16 indicates traffic counts on roads in Hopewell Township, with their locations depicted on Figure 7. While termed average annual daily traffic, these data usually represent the count from a single day in the identified year.

Traffic counts are provided for I-95 along its whole length in Mercer County. The counts from Mileposts 3.52 to 5.64 are most representative of the traffic along the Township's southern border, and show that the peak traffic on I-95 occurs near Federal City Road.

TABLE 16
Traffic Counts on Roads in Hopewell Township 1991-2001

| Route/Street | Milepost | Location of Average Annual Daily Traffic Count | Year | Average Annual Daily Traffic |
|--------------|----------|--|------|------------------------------|
| <i>I-95</i> | 1.17 | | 1999 | 50,690 |
| <i>I-95</i> | 3.52 | Reed Road | 2000 | 56,300 |
| <i>I-95</i> | 5.64 | Federal City Road Interchange | 2000 | 64,600 |
| <i>I-95</i> | 7.57 | Route 546 Franklin Corner Rd. | 2000 | 56,889 |
| <i>I-95</i> | 8.50 | | 1999 | 44,005 |
| 29 | 10.51 | Jacob's Creek | 2000 | 11,762 |
| 29 | 10.70 | River Knoll Dr. | 1998 | 12,643 |
| 29 | 14.80 | Fiddler's Creek | 1999 | 9,708 |
| 29 | 16.40 | Valley Rd. | 2000 | 12,571 |
| 31 | 4.90 | Traffic light at I-95 | 1994 | 13,740 |
| 31 | 5.27 | Crest Ave. | 1991 | 27,760 |

| | | | | |
|--|------|---|------|--------|
| 31 | 5.5 | Diverty Road | 1994 | 26,870 |
| 31 | 5.8 | Between Diverty Road and Pennington Circle | 1994 | 26,610 |
| 31 | 6.0 | Pennington Circle | 2000 | 25,171 |
| 31 | 6.24 | Stream | 1994 | 21,650 |
| 31 | 6.44 | Search Ave. | 1991 | 19,380 |
| 31 | 6.67 | Ingleside Ave. | 1996 | 26,510 |
| 31 | 10.5 | North of Marshall's Corner-Woodville Rd. | 1999 | 15,449 |
| 31 | 11.5 | South of Co. Rt. 518 | 1995 | 14,780 |
| 518 | 9.09 | Van Dyke Rd. | 1999 | 6,348 |
| 546 | 0.38 | Washington Crossing | 1998 | 6,678 |
| 546 | 6.59 | Municipal Line with Lawrence Twp. | 1998 | 9,085 |
| 579 | 5.80 | Co. Rt. 546 | 2000 | 7,368 |
| 579 | 8.90 | My. Airy Rd. | 1998 | 5,818 |
| 611 <i>Scotch Road</i> | 2.29 | Nursery Rd. | 2000 | 9,732 |
| 637 <i>Jacobs Creek Road</i> | 2.12 | Stream | 1997 | 1,290 |
| 647 <i>Nursery Rd.</i> | 1.07 | Stream | 1999 | 1,777 |
| 654 <i>Pennington-Hopewell Road</i> | 0.49 | Co. Rt. 612 Marshall's Corner | 1997 | 7,002 |
| <i>Reed Road</i> | 0.47 | Diverty Rd. | 1998 | 2,817 |
| <i>Reed Road</i> | 1.32 | I-95 (Ewing) | 2000 | 4,208 |
| <i>Pleasant Valley Road</i> | 1.73 | Between Hunter Rd. and Barry Rd. | 1999 | 452 |
| <i>Federal City Road</i> | 0.93 | Between Bull Run Rd. and I-95 | 2000 | 14,560 |
| <i>Harbourton-Rocktown Road</i> | | Co. Rt. 518 | 2000 | 5,126 |
| <i>Hopewell-Wertsville Road</i> | | Minnietown Lane | 2000 | 3,751 |
| <i>Feather Bed Lane</i> | | Between Van Dyke & Hopewell-Wertsville | 1998 | 265 |
| <i>Bayberry Road</i> | | Between Honey Lake and Pennington-Rocky Hill Road | 1999 | 303 |
| <i>Poor Farm Road</i> | | Between Woosamonsa Harbourton-Woodville Road | 1997 | 1,372 |

Aviation

Hopewell Township is the home of a basic service airport, Twin Pine Airport. It is impacted by a non-hub commercial service airport, Trenton Mercer Airport (TTN), and the Princeton Airport in Montgomery Township, Somerset County.

State Airport Systems Plan

In 2000, the NJDOT Division of Aeronautics selected a team comprising Wilbur Smith Associates (WSA), Clough Harbour & Associates, DY Consultants and Reichman Frankle Inc. to analyze the current system of public-use airports.

The State Airport Systems Plan (SASP) is a multi-year project that comprised two phases. Major elements of the first phase of the SASP included the following:

- Collecting data (compilation of existing data sources)
- Conducting public participation activities
- Regional informational meetings
- Newsletter
- Strategic Advisory Committee (SAC)
- Web page
- Coordination with ongoing state transportation plan(s)
- Forecasting statewide aviation activity
- General aviation trends
- Aggregate activity indicators (registered aircraft, based aircraft, operations)
- Identifying the functional role of each airport within the system
- Measuring the performance of each airport relative to its functional role
- Preparing an overview of the adequacy of the state airport system

The goal of Phase I of the SASP, conducted in the spring of 2001, was to examine the existing airport system and identify adequacies and deficiencies in the system by evaluating measurable performance standards. The first phase of analysis culminated in a "report card" on New Jersey's aviation system. Areas of the State that are underserved were identified; in addition, regions that have several airports providing a duplication of services were identified.

In November 2001 a Recommended Plan was released. The Plan defined the State aviation system, and stratified a system of airports around the State. This stratification was based on four factors:

1. Volume of aviation activity and type of aviation demand served,
2. Perceived flexibility of the airport to be expanded in future years,
3. Proximity of the airport to major population and business centers, and
4. Historic investment made in the airport's infrastructure.

Utilizing these criteria the system was broken into four categories:

1. Scheduled service
2. Advanced service
3. General service
4. Basic service

Phase II of the SASP identified and recommended specific projects to help individual airports adequately realize their functional role within New Jersey's airport system.

Other specialty studies were conducted in conjunction with Phase II of the SASP. These specialty studies included:

1. System-wide economic impact study
2. Evaluation of runway safety areas at 34 airports
3. Land use compatibility guidelines
4. Airport Directory

As a response to these recommendations, in 2002 the System-wide Economic Impact Study and Airport Directory were undertaken.

The new SASP forecasts that the number of based aircraft in New Jersey is predicted to increase from 4,218 in 2000 to 4,848 by 2020, an average annual growth rate of 0.65%. Statewide airline operations (flights) within the system are projected to 2.39 million in 2020, an average annual growth rate of 0.94%.

Again, the SASP identifies the primary role of TTN as a scheduled service airport. Scheduled service airports are intended to support commercial airline activities. Where capacity constraints do not limit, this functional level can also support general aviation activities, including corporate/executive operations, personal business operations, recreational activities and flight training.

TTN is owned and operated by the County of Mercer. The airport terminal is located in Ewing Township; however a small portion of the property extends into Hopewell. Originally TTN was constructed in 1942 on approximately 440 acres and was leased to the U.S. Navy until 1952. Since that time it has acquired an additional 732 acres, paved and extended two runways, and constructed a terminal building and additional taxiways, aprons, airfield lighting, navigational aids and utilities for the airfield.

TTN's operations includes one commercial carrier, two flight schools, charter service, the New Jersey State Police, the New Jersey Air National Guard and a variety of private corporation aircraft, including such companies as Amerada Hess, GG Aircraft, Johnson and Johnson, Pfizer, Bristol Myers Squibb, Dow Jones and Merck & Co. In 1999, TTN had a total of 154,489 aircraft arrivals and departures and 64,695 passengers enplaned.

In November 2002 a final environmental assessment for proposed development at TTN was presented to the Federal Aviation Administration. The proposed project evaluated in this environmental assessment consisted of several elements, including

terminal building development and related actions (i.e., upgraded apron, additional automobile parking, and terminal access road realignment), taxiway improvement, and a snow removal equipment storage and maintenance building. The assessment addressed a 2005 Build Alternative 1, which calls for a two-gate, 44,000 square foot terminal as opposed to a four-gate, 64,000 square foot terminal, which was the County's original preference.

The 2005 Build Alternative 1 was addressed in light of the FAA concerns about potential noise impacts, air quality impacts and indirect impacts of a larger terminal facility. A citizen's group known as People Limiting Airport Noise and Expansion (PLANE, Inc.), involving many Hopewell residents, opposes the expansion or renovation of Trenton-Mercer Airport terminal until the environmental issues of noise pollution, safety, traffic and quality of life to the surrounding communities have been assessed and resolved. Some of the issues raised by PLANE, Inc are that the County has not disclosed how much the proposed airport expansion will cost (the airport currently has a \$1 million annual deficit and Shuttle America had a two-thirds drop in passengers from a year ago, resulting in a single route); the air quality in Mercer County has been graded an "F" by an American Lung Association study; and, there are 11 schools within the region that are in the approach paths of aircraft from TTN main and crosswind runways.

Three miles northeast of TTN is the basic service airport of Twin Pine. Located on County Route 546 and Federal City Road, this facility bases approximately 28 aircraft and has a turf runway of 2,200 by 100 feet. Two-thirds of its usage is local general aviation, and the balance is transient general operations. It has one business at the field which provides flight training, aircraft rental, aerial tours and charters.

Princeton Airport is a privately-owned, public use facility serving the Central Jersey region with a variety of services and products intended to meet the needs of the general aviation consumer--the pilot, the airplane owner, and the corporate user. The airport is located on Route 206 in Montgomery Township, Somerset County, on the border of Princeton, Mercer County. Whether the user is a corporate helicopter servicing the Route 1 corridor, a pilot flying a medivac aircraft or a charter pilot bringing visitors to Princeton University, the airport accommodates the traveling public.

Princeton Airport, which started as Newhouse Flying Service in 1929, is a General Service Facility in the New Jersey State Airport System Plan. General Service airports are intended to support smaller corporate aircraft, such as twin-engine aircraft, and the operation of general aviation aircraft for business and pleasure. This functional level is intended to support a variety of uses, such as business, pleasure, and training, while providing the majority of the system's operational and storage capacity for single- and multi-engine piston aircraft. Princeton offers hangars, flight school (Raritan Valley Flying School), maintenance and parts service.

After ten years of planning, Princeton Airport's major improvements were completed in 2001. The facility has doubled in size to 100 acres. A new 3500' by 75' paved runway was completed in August 2001, and the New Jersey Division of Aeronautics celebrated the construction of the first new runway in the State in over 30 years. To

brighten the airport at night, a new pilot-controlled lighting system was installed, making the airport much more visible. Princeton Airport is located in a noise sensitive area. Anyone wishing to operate a turbojet powered, fixed wing aircraft and land at Princeton Airport is, for safety and noise abatement reasons, required to contact the airport management for instructions.

Route 31 Design Study

Building on work undertaken by the Planning Board, Master Plan Advisory Committee on Route 31 and the Mayor's Task Force on Traffic and Trucking, Hopewell Township and the Boroughs of Pennington and Hopewell initiated a study to analyze and possibly develop a shared community vision for the future character of Route 31. The main objective of the project was to identify ways of preserving parts of Route 31's character that are particularly valued by residents without creating a corridor of strip development with heavy traffic, which would lose the "Main Street" character of Route 31 through Pennington and the Township.

Some of the important recommendations advanced by the study include:

1. Preserve and enhance the existing character of Route 31's different segments by making this the character benchmark for all future improvements or development.
2. The priority should be to keep traffic on Route 31 rather than displacing it onto local or County roads.
3. Prevent incremental development of an unbroken corridor of strip development dominated by vehicles and so sprawling as to require their use. Instead create and maintain distinct, compact nodes of development (neighborhoods, the "Center") separated by protected intervals of open space, fields, woods and views that incorporate watershed drainages and existing or proposed trail linkages.
4. Work to give the Route 31 south of Pennington Point the character of a pedestrian friendly "Main Street" or Boulevard using buildings and trees close to the street to give a pleasing human scale and to calm through traffic. It should not be a high-speed conduit for through traffic that cuts the community apart and requires screening and separation from the surrounding neighborhoods.
5. Increase slow but steady traffic throughput as opposed to excessive speed to screaming stop conditions. In this context three or four lane solutions with medians planted with trees could add extra capacity without increasing pedestrian/vehicle safety conflicts. Work to generally lower maximum speed to 35 m.p.h. with transition zones off of I-95 and down to intersections, circles, roundabouts, turning lanes, etc.

6. Preserve existing residential scale (and affordable) housing stock located directly on Route 31 from I-95 to Diverty Road and from the “Circle” north to the Railroad Overpass. Consolidate and eliminate curb cuts wherever possible in these stretches. Commit to adding no new curb cuts that are not consolidations in these areas.
7. Work to create clear and attractive gateways to Pennington Borough and its Central Business District off of the Route 31 corridor at the West Delaware intersection, especially for those traveling Route 31 for the first time or unfamiliar with the area. Pennington does not want its “face” on the road to be an uncoordinated and undervalued area of strip malls (although it does want it to be its contact area for regional vehicular traffic and high volume uses). The current area between the Conrail tracks and Route 31 to the west should be redeveloped over time to form a mixed-use center that is much more integrated into and part of the Main Street, Pennington core. Rather than providing competition to the Main Street businesses, this area could accommodate a central parking structure that would add commercial vitality and increase walk-in trade throughout the entire core.

This kind of opportunistic and uncoordinated strip is also at odds with encouraging a walkable and bikeable village area that incorporates both sides of Route 31 from Pennington Main Street in the east to the Schools and Library in the west. Enabling these alternative means of transit and a form of development that is compact enough to work with them will do its part in reducing congestion on the Route 31 corridor.

8. It is imperative to create a safe crossing at the Route 31 and West Delaware intersection. This could be on grade with crosswalks and adequate refuge islands. If this is not possible then there was much interest in the community in exploring either an aesthetically designed overpass or an underpass if it could be well lit, safe and deal with drainage problems at this low point intersection. As the area between the Conrail tracks and Route 31 (and including the former landfill site) is redeveloped as a mixed use area - possibly incorporating a garage and a new Pennington Station for future commuter train use – there may be possibilities for combining an overpass with a second floor “gallery” or “sky walk” connecting the second floors of businesses along West Delaware from the Conrail tracks west over Route 31 to the businesses and educational core of schools and library to the west. In this long term scenario the use of public elevators in the new garage or as part of new buildings closer to the Route 31 R.O.W. should be explored as an alternative to the long and divisive ramps necessary to reach an overpass deck height of 15 feet above the road while still meeting accessibility requirements.
9. In all areas of Route 31 it is imperative to limit new curb cuts and to consolidate old ones. In Segment 4 from Route 518 to the Trap Rock RR overpass this primarily involves limiting new residential curb cuts onto Route 31 and encouraging coordinated rear access lanes connecting to existing side roads instead. From 84 Lumber south all the way to I-95 this means continuous linked parking lots between neighboring commercial/retail as well as separate frontage or reverse frontage roads.

“Through access easements” should be required to link side and rear parking lots and service areas of different businesses and ownership parcels.

10. Investigate a divided “boulevard” approach , possibly combined with roundabouts as an alternative to a concrete Jersey Barrier median and excessive traffic lights as has been done further to the north.
11. The need for safe, clear and convenient Pedestrian Crossings was identified as of critical importance. From south to north these include:
 - From the new Hopewell Crossing shopping center across Route 31 to the west.
 - From Blackwell Road to Washington Crossing-Pennington Road across or around the “Circle”.
 - At the Ingleside Road/ Route 31 intersection.
 - Most importantly as mentioned above, at the West Delaware and Route 31 intersection to allow safe pedestrian and bicycle crossings from the Pennington Borough core to the school and library core to the west of Route 31.
 - At Pennington Point to link the Pennington Point East and West in a way that creates refuges for slow crossers and also creates an attractive northern gateway to Pennington Borough via N. Main Street or, possibly, Knowles Road.
 - From Titus Mill Road across Route 31 to the west. This is important to link the Stony Brook-Millstone Watershed Association farm and open space area with potential new conservation land near the Trap Rock Quarry and beyond to the existing and proposed County Open Space network further to the west.
 - At the Route 518 and Route 31 intersection at the extreme northern edge of the corridor, including provision for a trail crossing coming in from the west of Route 31 and along the southern edge of the wetlands south of the intersection and continuing east of Route 31.
12. The Borough and Township together with the large corporate employers in the area should make it a priority to link the proposed new 20 mile Lawrence Hopewell bike trail into the area between West Delaware Ave. and Broemel Place. Facilities for safe and convenient bicycle parking should be provided. This will bring commercial vitality to the whole area and help emphasize a single, unified “Center” stretching from the schools west of Route 31 all the way to the a Main Street core in Pennington.
13. Evaluate creating a low impact bicycle and walking trail link to the peripheral loop from a Stony Brook Crossing and through the area south of Lewis Brook to new or improved crossings of the Conrail tracks at either Broemel Place, West Delaware or

in between the two and connecting to the redeveloped former landfill site. It would be critical to do this in such a way as not to degrade the environmental quality of Lewis Brook.

14. Control signage with good and clear standards and bylaws supporting coordinated systems that give business owners an effective and attractive way to advertise closer to the traveled way without depending on large parking lots in front of the building as a form of advertising or on large signs at the face of deeply set back buildings.
15. Re-examine existing spatial standards, architectural standards, and design guidelines for the corridor. Integrate new standards following the detailed guidelines for different segments of the Route 31 Corridor included in Chapter 5 into appropriate elements of the Hopewell and Pennington Master Plans and Zoning Codes.
16. Adopt standards and guidelines that discourage the predominance of new drive-through establishments in an area where everyone acknowledges existing traffic congestion and safety problems. Create incentives for more streetscape development and more appropriate development types, architectural scales and building/road relationships.
17. Create incentives and expedited permitting for those site plans which encourage coordinated planning, linkage, and through access easements between multiple property owners. Explore whether Pennington Borough and Hopewell Township should encourage a community initiative to create what in some states is called a “specific plan” for the Segment 2 area north and south of West Delaware and west of the Conrail tracks. This involves the entire community of property owners, residents, businesspeople and municipal staff in developing an approved plan for an area involving multiple ownerships where if any one owner comes in with a proposal that meets the requirements of the plan then they are assured of incentives and an expedited and predictable approval process.
18. Any new roadway design for Route 31 should try to preserve and incorporate existing mature street trees in the area to the greatest extent possible. This is particularly true of Segment 1 from I-95 to the Conrail overpass where the existing R.O.W. might have to be widened, most probably along the west side of the roadway from I-95 to the Circle to allow new forms of residential development set further back from the road. Careful attention in these areas can work the existing tree rows into areas of proposed future verges or street tree belts, thereby preserving a very important element of this areas’ visual character.

Goods Movement

"Freight or Goods Movement" encompasses a wide spectrum of commodities, including such things as manufactured goods, agricultural and raw materials, various fuels and petrochemicals, as well as waste and recyclable products. The volume of goods,

and the way in which they are transported into, out of, and through New Jersey, combine to play a fundamental role in defining the state's economic and industrial character. Freight in New Jersey moves in a variety of ways -- by truck, rail, and air, as well as by ship to and from the state's ports.

New Jersey serves its citizens, and the rest of the nation, as a freight gateway at the center of the Northeast Corridor and a major conduit to the industrial Midwest. A hub for both interstate and international commerce, New Jersey is one of the few states on the Atlantic Seaboard that has successfully integrated growth in air, rail, maritime, and trucking into an expansive and diversified economic engine. New Jersey's maritime ports, airports, and distribution centers feed, clothe, and otherwise provide for the needs of more than 75 million people.

New Jersey's most active port facility is the Port Newark/Port Elizabeth complex. Handling in excess of 2.5 million containers per year, the Port Authority of New York and New Jersey projects a doubling of this volume to five million containers within the next ten years, and yet again to ten million by the year 2040. Farther south, the Port of Philadelphia and Camden handles a significant volume of break-bulk (non-containerized) cargo, with strong markets in iron and steel, fresh fruit and paper and projected increases in the future as well.

With growth in port commerce and air cargo continuing to spiral, there is an ever-increasing focus on New Jersey's roadway system, and its capacity to handle these increased traffic flows. Trucking continues to be the predominant mode of goods movement through New Jersey. While only 2% of all goods arriving or circulating throughout the region travel by rail, the recent acquisition of Conrail by Norfolk Southern and CSX Railroads may promote greater use of rail capacity through more competitive rail freight service.

Regional Considerations and Recommendations

The planning process places new emphasis on moving highway, rail, marine, and airfreight efficiently to and from the State and region. In addition, facilities in which freight is moved from one mode to another will be supported by public investment. Planning for these improvements will take place with the advice of the goods movement community. Incorporating the impacts of E-commerce will be essential in future planning.

Policies and strategy possibilities are:

1. Increase the level of public and private investment in transportation facilities that promote freight movement and economic development.
 - Encourage joint public/private programming of transportation improvements.

- Creatively apply public transportation programs and funds to maximize the effectiveness of goods movement.
 - Program and integrate needed freight movement projects into the Transportation Improvement Program.
 - Institute small-scale improvements through the Freight Forward program. (*Freight Forward* has been instituted by transportation agencies to benefit freight carriers and shippers in the Delaware Valley. The program centers on "small cap" projects, which can be easily and quickly implemented. Examples are: fixing a pothole; resurfacing a highway/railroad grade crossing; installing a directional sign; increasing turning radii; retiming traffic signals; striping pavement; and improving a railroad siding.)
2. Identify and build improvements which facilitate the flow of goods.
- Use the Delaware Valley Goods Movement Task Force to support and direct planning efforts.
 - Collect, analyze, and share goods movement data and trends leading to good planning and public education.
 - Identify needed improvements through the management systems, corridor and other technical studies, and NHS connector evaluations.
3. Improve the safety of operating conditions for the flow of goods
- Provide adequate rest areas.
 - Improve safety of highway/railway grade crossings and, where feasible, eliminate crossings.
 - Protect resident quality-of-life while pursuing goods movement objectives.

Freight movement by trucks through Hopewell Township is a significant issue. In 2001 legislative representatives were successful in enacting legislation which banned trucks over 13 tons from Route 29, the State's only designated scenic corridor. Route 31 is another link in the New Jersey's access network to the national network (I-78 and I-95).

State Actions

The State is taking steps to restrict large trucks (102-inch wide) to the "National Network" of highways in the state. These restrictions will not obstruct commerce in the state. All trucks doing business in the State of New Jersey will have access to all N.J. based businesses. The crucial difference is that the large trucks not doing business in New Jersey will be prohibited from using state and county highways. Given New Jersey's high population density, high traffic density and older highway infrastructure, it is only natural that truck safety and truck routing issues would be more of a concern in New Jersey than they would be in most other less densely settled states. Since 1983, the New Jersey Department of Transportation has adopted, readopted and updated its regulations

restricting the travel of the Federal STAA mandated 102-inch and double trailer trucks. New Jersey is now the nation's most prescriptive and restrictive state for large truck routing regulations. The purpose is to enhance safety while still providing for the delivery and distribution of goods and services. This "leadership" position has resulted in New Jersey being sued in Federal Court, to overturn New Jersey's large truck routing regulations, by the American Trucking Association (ATA). The American Trucking Association, Inc., and USXpress, Inc., a Tennessee based trucking company, suit in the United State District Court for New Jersey is challenging the statute and regulations, which restrict interstate through trucks wider than 96 inches to National Network highways.

Hopewell Township Truck Routes

Figure 8 identifies the truck routes in Hopewell Township. The list originally was prepared in 2002 and modified in 2003. All roadways within the Township are restricted to trucks except for local deliveries and are restricted to four-ton limits.

The following Table identifies the legal truck routes within the Township:

**TABLE 17
Truck Routes**

| Route | Extent |
|---|---|
| Route 31 | Ewing Twp – East Amwell Twp. |
| Washington Crossing-Pennington Road - Co. Rt. 546 | River Dr. - Lawrence Twp. |
| Scotch Road - Co. Rt. 611 | Ewing Twp - Washington Crossing-Pennington Road |
| Pennington-Hopewell Road - Co. Rt. 624 | Route 31 - Hopewell Borough |
| Lambertville-Hopewell Turnpike - Co. Rt. 518 | West Amwell Twp.- Hopewell Borough |
| Hopewell-Rocky Hill Road - Co. Rt. 518 | Hopewell Borough - Montgomery Twp. |
| Hopewell-Princeton Road - Co. Rt. 569 | Hopewell Borough - Pennington –Rocky Hill Road |

Source: Truck Route and Ratings, Van Cleef Engineering, October 2002

Roads and structures with restricted weight limits are:

- | | |
|---------------------------------|------------------|
| 1. Jacob’s Creek Road | structure 214.02 |
| 2. Stony Brook Road | structure 234.9 |
| 3. Stony Brook Road & Mine Road | structure 230.4 |
| 4. Aunt Molly Road | structure 250.02 |

Travel to Work

To assist in evaluating the needs of residents in terms of mobility it is important to have a snap shot in time of where they work and how they get there. One method of doing this is to look at the survey conduct by the U.S. Census Bureau for “Journey to Work”.

Table 18 provides an analysis of where Hopewell residents work and a comparison of these data to the County. In reviewing the percentages Hopewell is comparable in terms of place of work between the Township and the County except for working within the municipality of residence, which sees a difference of over 10% between the Township and the County’s other municipalities.

TABLE 18
Place of Work for Workers 16 and Over

| | Hopewell Township | | Mercer County | |
|------------------------------------|-------------------|-------|---------------|-------|
| Total | 7,435 | 100% | 163,257 | 100% |
| Worked in state of residence | 6,634 | 91.2% | 148,860 | 89.2% |
| Worked in county of residence | 4,847 | 68.9% | 112,449 | 65.2% |
| Worked in Hopewell | 1,130 | 25.7% | | 15.2% |
| Worked outside county of residence | 1,787 | 22.3 | 36,411 | 24% |
| Worked outside state of residence | 801 | 8.8% | 14,397 | 10.8% |

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

Table 19 addresses the means of transportation to work for workers. The automobile in the Township and the County are the means of choice. A difference is seen to some extent in the percentage that carpool, with twice as many County residents as Township residents carpooling. In terms of public transportation the percentages are similar, with the most significant means being the railroad. Finally, in the County 4.5% walk to work versus less then 1% in the Township, but in the Township almost 6% work at home as opposed to a little over 3% in the County.

TABLE 19
Means of Transportation to Work for Workers 16 Years and Over

| | Hopewell Township | | Mercer County | |
|--------------------------|-------------------|-------|---------------|--------|
| Total | 7,435 | | 163,257 | |
| Car, truck or van | 6,603 | 88.8% | 137,680 | 84.4% |
| Drove alone | 6,194 | 83.3% | 119,742 | 73.3% |
| Carpooled | 409 | 5.5% | 17,938 | 10.9% |
| Public Transportation | 326 | 4.4% | 11,236 | 6.9% |
| Bus or trolley | 52 | 0.7% | 4,664 | 2.9% |
| Streetcar or trolley car | 7 | 0.09% | 36 | .02% |
| Subway or elevated | 0 | 0% | 157 | .25% |
| Railroad | 248 | 3.3% | 6,122 | 3.75% |
| Ferryboat | 0 | 0% | 4 | 0.002% |

| | | | | |
|----------------|-----|-------|-------|-------|
| Taxicab | 19 | 0.26 | 253 | 0.55% |
| Motorcycle | 7 | 0.09% | 90 | 0.06% |
| Bicycle | 0 | 0% | 804 | 0.49% |
| Walked | 24 | 0.32% | 7,349 | 4.5% |
| Other means | 37 | 0.50 | 937 | 0.57% |
| Worked at home | 438 | 5.9% | 5,161 | 3.16% |

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

In the Washington to Boston corridor it is common when asked how far something is to have it responded to in terms of time rather than distance. Table 20 reflects this behavior by looking at travel time to work.

Approximately 65% of Hopewell residents have a 20-minute or more commute to their place of employment. This is in contrast to the County percentage of 55%. In both the Township and the County, the ranges of 15 to 24 minutes contains the largest cohorts. In Hopewell it accounts for approximately 32% versus the County figure of 37%.

TABLE 20
Travel Time to Work for Workers

| | Hopewell Township | | Mercer County | |
|----------------------|-------------------|--------|---------------|--------|
| Did not work at Home | 6,997 | | 158,096 | 100% |
| Less than 5 minutes | 128 | 1.83% | 4,790 | 3.03% |
| 5 to 9 minutes | 451 | 6.45% | 15,818 | 10.01% |
| 10 to 14 minutes | 757 | 10.82% | 24,337 | 15.39% |
| 15 to 19 minutes | 1,116 | 15.95% | 27,191 | 17.20% |
| 20 to 24 minutes | 1,525 | 21.80% | 24,347 | 15.40% |
| 25 to 29 minutes | 408 | 5.83% | 8,978 | 5.68% |
| 30 to 34 minutes | 770 | 11.00% | 17,268 | 10.92% |
| 35 to 39 minutes | 171 | 2.44% | 3,412 | 2.16% |
| 40 to 44 minutes | 129 | 1.84% | 4,156 | 2.63% |
| 45 to 59 minutes | 579 | 8.27% | 9,974 | 6.31% |
| 60 to 89 minutes | 500 | 7.15% | 9,792 | 6.19% |
| 90 to more minutes | 463 | 6.62% | 8,033 | 5.08% |

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

Another way to view travel time to work is to consider means of travel, as shown on Tables 21. In looking at the Township, only when trips extend an hour or more is there some significance in the use of public transportation. In comparing the Township to the County, while the increase of public transportation corresponds directly with the increase in travel time, County residents who use public transportation for a commute of 60 or more minutes approaches 40%, in contrast to 24% for Township residents. The average travel time for a Township worker is approximately 31 minutes as opposed to the County average of approximately 27 minutes. For those who use public transportation, the average travel time for Township residents is 76 minutes compared to the County figure of 27 minutes.

TABLE 21
Travel Time to Work by Means of Transportation
and Aggregate Travel Time in Minutes for Township

| | Hopewell Township | Percentage of Travel Time by Mode | Percentage of Total Travel Time | Number of Minutes per Trip |
|--------------------|-------------------|-----------------------------------|---------------------------------|----------------------------|
| Total | 6,997 | | 100 | 31 |
| Under 30 minutes | 4,385 | 62.7% | 31.5% | 15.6 |
| Public transit | 40 | 0.9% | 0.2% | 12.6 |
| Other means | 4,345 | 99.1% | 31.2% | 15.6 |
| 30 to 44 minutes | 1,070 | 15.3% | 15.8% | 32 |
| Public transit | 55 | 5% | 0.9% | 34.8 |
| Other means | 1,015 | 94.9% | 14.9% | 31.9 |
| 45 to 59 minutes | 579 | 8.3% | 12.7% | 47.5 |
| Public transit | 0 | 0% | | 0 |
| Other means | 579 | 100% | 12.7% | 47.5 |
| 60 or more minutes | 963 | 13.8% | 40% | 90.2 |
| Public transit | 231 | 24.0% | 10.3% | 96.8 |
| Other means | 732 | 76.0% | 29.7% | 88.1 |

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

TABLE 22
Travel Time to Work by Means of Transportation and Aggregate Travel Time
in Minutes for County

| | Mercer County | Percentage of Travel Time by Mode | Percentage of Total Travel Time | Number of Minutes per Trip |
|--------------------|---------------|-----------------------------------|---------------------------------|----------------------------|
| Total | 158,096 | | 100 | 27.1 |
| Under 30 minutes | 105,461 | 66.7% | 34.3% | 13.9 |
| Public transit | 1,989 | 1.9% | 0.8% | 16.1 |
| Other means | 103,472 | 98.1% | 33.5% | 13.9 |
| 30 to 44 minutes | 24,836 | 15.7% | 18.8% | 32.4 |
| Public transit | 1,405 | 5.7% | 1.1% | 32.4 |
| Other means | 23,431 | 94.3% | 17.7% | 32.4 |
| 45 to 59 minutes | 9,974 | 6.3% | 10.9% | 46.9 |
| Public transit | 766 | 7.7% | 0.8% | 47.0 |
| Other means | 9,208 | 92.3% | 10.1% | 46.9 |
| 60 or more minutes | 17,825 | 11.3% | 36% | 86.5 |
| Public transit | 7,076 | 39.7% | 15.3% | 92.3 |
| Other means | 10,749 | 60.3% | 20.7% | 82.6 |

The impact of work trips on traffic congestion also relates to the distribution of the trips. Table 23 displays this information for Hopewell workers and compares them to their counterparts in the County. In reviewing the Table, almost 60% of Hopewell work trips take place between the hours of 7 to 9 am versus a County figure of 46% for the same time period. These data indicate that County trips are spread more widely throughout the day.

TABLE 23
Time Leaving Home To Go To Work for Hopewell Township and County Workers

| | Hopewell Township | % of Total Township Trips | Mercer County | % of Total County Trips |
|--------------------|-------------------|---------------------------|---------------|-------------------------|
| Total | 6,997 | | 158,096 | |
| 12:00am to 4:59am | 69 | 1.0% | 2,983 | 1.9% |
| 5:00am to 5:29am | 105 | 1.5% | 2,821 | 1.8% |
| 5:30am to 5:59am | 157 | 2.2% | 4,135 | 7.1% |
| 6:00am to 6:29am | 479 | 6.9% | 10,777 | 6.8% |
| 6:30am to 6:59am | 621 | 8.9% | 15,584 | 9.9% |
| 7:00am to 7:29am | 1,321 | 18.9% | 23,344 | 14.8% |
| 7:30am to 7:59am | 1,224 | 17.5% | 27,157 | 17.2% |
| 8:00am to 8:29am | 1,216 | 12.6% | 23,775 | 15.0% |
| 8:30am to 8:59am | 740 | 10.6% | 13,895 | 8.8% |
| 9:00am to 9:59am | 348 | 5% | 9,820 | 6.2% |
| 10:00am to 10:59am | 120 | 1.7% | 3,688 | 2.3% |
| 11:00am to 11:59am | 84 | 1.2% | 1,936 | 1.2% |
| 12:00pm to 3:59pm | 253 | 3.6% | 8,802 | 5.6% |
| 4:00pm to 11:59pm | 260 | 3.7% | 9,379 | 5.9% |

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

Mercer County Transportation Plan

Mercer County Growth Management Plan – Highways

The Mercer County Growth Management Plan was adopted in January 1986. As part of its overall plan the County has developed functional plans for transportation, recreation, water quality management and other County responsibilities. In 1989 a Growth Management Plan for Highways was developed and adopted by the Mercer County Planning Board. This Plan only addresses highways, and sets forth immediate and long range intentions for physical improvements, including those to State highways, County arterials and collectors and certain existing roads to be reclassified as local roads.

There have been several amendments to this plan, most recently in January 2000. Some of the amendments included the East Windsor Traffic and Infrastructure Impact Analysis in 1992, the Allentown Regional Transportation Study in 1993 and the Transportation Development District for the I-95/295 Corridor in 1992. The most recent in 2000 was the addition of the Robbinsville-Mercer County College Connector in Washington Township.

The improvements recommended in the 1989 Plan are for State and County highways. The following State recommendations involve Hopewell Township either directly or indirectly.

1. Widening of I-95/295 and the Scudders Fall Bridge to a full six lanes.

2. The proposed interchange between I-95 and the Pennsylvania Turnpike in Bucks County to serve as an alternative into New Jersey in Burlington County to join the Turnpike and eliminate traffic using Scudders Fall Bridge and Route 1 to connect with the Turnpike in New Brunswick.

The following are County improvements from the 1989 plan which impact Hopewell Township.

1. Hopewell Bypass – This realignment of Co. Rt. 518 around Hopewell Borough would extend south of the Borough in the Township from Van Dyke Road to Aunt Molly Road while intersecting with Hopewell-Rocky Hill Road (Co. Rt. 654) and Hopewell-Princeton Road.
2. Rosedale Road-Route 31 Connector – In Hopewell Township this improvement uses Blackwell Road and would require the realignment of Blackwell and Federal City Road.
3. Pennington Bypass – The bypass Involving County Route 624 (Pennington-Rocky Hill Road) and 640 (South Main Street) was eliminated in the Plan in 1994.
4. Denow Road Extension – This would involve a connection from the Federal City interchange at I-95 to Scotch Road utilizing existing Denow and a new alignment.
5. Scotch Road Extension – This involves extending Scotch Road over a new alignment south into Ewing Township in the vicinity of the West Trenton rail Station.
6. Bear Tavern Road – This involves a bridge replacement and elimination of a sharp curve on Bear Tavern where it crosses Jacob’s Creek.
7. Harbourton-Rocktown Road – This involves the County acceptance of the street, thus extending Route 579 to the Hunterdon County line.

Transportation Development District Plan for the I-95/295 Corridor

Mercer County’s Transportation Development District (TDD) was the first to be approved in the State of New Jersey. It was developed in response to the development pressures in a relatively undeveloped area of the County. In late 1988, Mercer County initiated a comprehensive land use/transportation study designed to determine the appropriate development densities and infrastructure needs for the I-95/295 Corridor. This area, which included Hopewell, Lawrence and Ewing Townships, was under considerable development pressure. Mercer County officials, in anticipation of this future development, decided to provide a mechanism which could effectuate the necessary infrastructure improvements. The study process involved a cooperative effort between the County, municipalities and landowners. The resulting report, prepared by Wallace, Roberts and Todd and titled Comprehensive Development Plan and Infrastructure Impact Analysis for the Mercer County I-95/295 Corridor (WRT Study), formed the basis for the Transportation Development District and its accompanying plan. The TDD Plan was approved by the New Jersey Department of Transportation in October

of 1992, and in November of 1992 the Mercer County Board of Chosen Freeholders adopted Ordinance No. 92-17 to effectuate its implementation.

The current version of the TDD uses 1990 as a base year and has a horizon year of 2010. It describes the present conditions (1990) and future projections for the area. The overall goal of the TDD is to manage growth and coordinate and finance transportation infrastructure improvements in a regional growth area.

The TDD includes the area bounded by Pennington-Washington Crossing Road (Rt. 546) to the north, Federal City Road to the east, Upper Ferry Road to the south, and lots fronting on the west side of Scotch Road to the west.

The TDD plan identifies transportation infrastructure improvements that will be needed in the District to support anticipated development. The transportation goals of the TDD are to maintain acceptable traffic flows, protect quality of life for existing residents and make alternatives to single occupancy auto more attractive. The plan describes in detail how these goals are to be achieved, prioritizes the improvements and allocates a public and private sector share of the improvement costs. In addition, the TDD established a trip-based fee, which is collected from applicants in the designated area.

On April 2, 1990, New Jersey Department of Transportation (NJDOT) designated the I-95/295 Corridor in Hopewell, Ewing and Lawrence Townships as a Transportation Development District pursuant to NJSA 27:1C-1 *et seq.*, June 26, 1989. This action sets the Development Assessment Liability date at April 2, 1990.

Under the law, counties in cooperation with NJDOT may establish Transportation Development Districts (TDDs) to assess development fees for transportation improvements. Any development receiving preliminary approval after the Development Assessment Liability date is subject to the fee. The fee must be "reasonably related to the added traffic growth attributable to the development..." The fee structure was determined through a Joint Planning Process, which involved representatives of all levels of government and the private sector. This Joint Planning Process produced a Transportation Improvement Plan, which identified needed transportation improvements, established a fee formula and identified public resources available. This plan was adopted by the Mercer County Board of Chosen Freeholders and approved by NJDOT in 1992.

In 1994 an amendment was adopted concerning the manner in which right-of-way credits are calculated. In 1997, there was an amendment to address the increase in intensity at the Merrill Lynch site, which reduced the trip-based fee. Recognizing the significant changes in the TDD since it was proposed, the County in 2000 proposed updating and revising the TDD. After discussing the amendment with the affected municipalities the County formally submitted the amendment application in January 2001.

The County has retained a consultant to update and revise the Plan. The Joint Planning Process Committee was reconvened to assist in the effort. The update/revision is expected completion is the end of the year.

Mercer County Access Management Project

Mercer County is in the process of developing a County access code. The County access code will apply to roads under County jurisdiction, and will address the safety and efficiency concerns on roads under County jurisdiction. The County access code will be developed through a public process and will build on previous codes and adapted to address specific local needs and concerns.

The goal of access management is to encourage the safe and efficient flow of traffic. This goal is achieved through the regulation of driveways, medians, median openings and traffic signals. Good access management results in fewer accidents, increased capacity and reduced travel time. Access management allows roads to handle more cars without decreasing the level of service, and reduces the need for new roads.

Access management not only improves safety and traffic flows, it can decrease the costs associated with access accidents. Each year in the United States 11 million vehicles are involved in access accidents; 2.8 million people are injured; and 900,000 passengers are injured, 300,000 of which are children under 15 years. The cost (losses) of access related accidents are estimated at \$90 billion.

Access management regulates traffic movement by limiting the number of places where cars can cross. Each intersection of different driving movements is called a conflict point. Conflict points frequently occur at intersections, driveways on busy roads, or places where drivers make left hand turns across traffic. The more conflict points present on a road, the greater the number of accidents on the road. Access management reduces the number of conflict points and separates the remaining points so drivers have to deal with only one conflict at a time. This allows drivers more space to anticipate and react to conflicts.

Conflict points are controlled through permits for access to a main road, by road improvements, which result in better design, and by cooperation between local governments to plan for the safe development of their roads. New Jersey adopted the State Highway Access Management Code in April of 1992. This code applies the principles of access management to all State roads. It also allows County and municipal governments to work with the Department of Transportation to develop local access management plans. When the municipal, county and state institutions work together to develop access management plans or policy, the results are more likely to be coherent and effective. Access management must fit into the overall picture of planning, zoning and land use in order to achieve its goals. When the different levels of government agree on common goals and work together to develop plans, the overall planning process is more integrated. As more communities adopt access plans, the effects of good access management are seen across the State.

At present, two access management plans for State roads are being developed in Mercer County. The one in Hopewell Township for Route 31 involves design guidelines and access management. The Township is working with the State to address the present conditions and future vision of Route 31. The other is for Route 33 in Washington Township. When these plans are completed, decision makers will have the information and tools necessary to direct the development of well-managed roads for their Township.

Transportation Choices 2025

The NJDOT has a statutory requirement to prepare a new State Transportation Plan every five years. The most recent of these is Transportation Choices 2025.

Transportation Choices 2025 is both a process and a plan. It uses dynamic and interactive tools, including a web site, to involve the public in updating New Jersey's last long-range transportation plan, which was produced in July 1995 (Transportation Choices 2025). The updated plan sets forth transportation policies, strategies, and programs to guide New Jersey's transportation agencies for the next twenty-five years. The New Jersey Department of Transportation and NJ Transit, working closely with other state transportation organizations, regional agencies, and the public, developed the plan.

Transportation Choices 2025 is designed to:

- Update the State's vision, goals and objectives for its transportation system,
- Highlight current areas of concern,
- Anticipate future problems,
- Develop strategies to address both current and future problems, and
- Provide New Jerseyans with the best transportation system possible.

In addressing municipal governments, the Plan sets the following goals for 2010:

1. Build 2,000 miles of bicycle paths.
2. Empower counties so they can coordinate and expand community-based transit services.
3. Work with communities to create “transit villages” around rail stations that will maximize existing transportation services.

West Trenton Line

To meet the evolving transportation needs of New Jersey residents, NJ Transit has committed to many projects and identified potential new projects that would serve New Jersey and the metropolitan region. Table 24 provides a list of Committed Projects on the

NJ Transit Capital Improvement Program and Candidate projects which NJ Transit is committed to study.

**TABLE 24
NJ Transit Capital Improvement Projects**

| Committed Projects | Candidate Projects |
|--|--|
| Hudson-Bergen Light Rail | Access to the Region's Core |
| Secaucus Junction | West Shore/Northern Branch/Bergen-Passaic Light Rail (Formerly Cross County)/Sports Complex Rail Spur |
| Newark City Subway Extension | Newark-Elizabeth Rail Link MOS3 (Union County Light Rail) Union County Cross-Country |
| Newark-Elizabeth Rail Link MOS1 | Newark-Elizabeth Rail Link MOS2 |
| Southern New Jersey Light Rail Transit System | Monmouth-Ocean-Middlesex |
| Montclair Connection | Cape May Seashore Lines |
| | West Trenton Line |
| | New York Susquehanna & Western Railroad |
| | Lackawanna Cutoff |
| | Southern New Jersey Light Rail Transit System Capitol Extension |

One of the Candidate projects, the West Trenton Line, specifically impacts Hopewell Township. This project involves restoring commuter rail service for 21 miles on the West Trenton Line between Ewing Township, in Mercer County, and Bridgewater Township in Somerset County, where the line would connect with the existing Raritan Valley Line providing service into Newark.

The proposed project would include track and signal improvements, new stations, parking facilities, a train storage yard and acquisition of additional rail rolling stock. The projected estimate for the project is \$195 million. It is considered a Candidate Project, so construction of the project is not funded at this time. The Environmental Assessment is underway. Public open house information sessions were held in Mercer and Somerset

counties in March 2000. The next milestone will be the completion of the Environmental Assessment, expected in 2006.

Construction of the project would provide a new transit option in central New Jersey. There are two projected stations that impact the Township's circulation system. One is off of I-95 and the other is in Hopewell Borough.

Route 29 Scenic Byway

Route 29 is New Jersey's first designated Scenic Byway under a federal program that helps to preserve scenic corridors. Approximately 35 miles long, and bordering the Delaware River, the Route 29 Scenic Byway stretches from the historic areas of Trenton to the rural landscapes of Hunterdon County.

The US Department of Transportation recognizes certain roads as National Scenic Byways based on their archaeological, cultural, historic, natural, recreational and scenic qualities. There are 72 designated byways in 32 states. Route 29 is New Jersey's first and only Scenic Byway. It was designated by NJDOT through a plan it developed in conjunction with the Office of State Planning. The Scenic Byways Management Plan for Route 29 was completed in 1997.

The goals of the National Scenic Byway program are to expand public awareness of these corridors; improve the quality of the byways; provide quality locations for recreational endeavors; and to foster state and local partnerships with the federal government.

Many counties and municipalities have embarked on scenic corridor programs and have designated roadways of their own. One of the most comprehensive programs was that undertaken by Somerset County in 1992. There the County developed a set of criteria, surveyed their roadway system and designated roadways as scenic corridors. Several municipalities have incorporated scenic corridors or sites within their Master Plans and have developed standards to govern them through their land development regulations.

Delaware Valley Regional Planning Commission

The Delaware Valley Regional Planning Commission (DVRPC) is the Metropolitan Planning Organization (MPO) for the nine-county region of the Philadelphia area. Created in 1965, DVRPC is an interstate, intercounty and intercity agency that provides continuing, comprehensive and coordinated planning to shape a vision for the future growth of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery Counties, as well as the City of Philadelphia, in Pennsylvania; and Burlington, Camden, Gloucester and Mercer counties in New Jersey. DVRPC provides technical assistance and services; conducts high priority studies that respond to the requests and demands of member state and local governments; fosters cooperation among various constituents to forge a consensus on diverse regional issues;

determines and meets the needs of the private sector; and practices public outreach efforts to promote two-way communication and public awareness of regional issues and the Commission.

Each year, DVRPC oversees over \$1.4 billion in transportation investments (\$312 million for New Jersey). It evaluates and approves proposed transportation improvement projects. During the next three years it will develop and maintain a transportation improvement program covering some 200 projects in New Jersey at the value of \$936 million with \$506 million going to highways and \$430 million in transit going to DRPA/PATCO and New Jersey Transit.

DVRPC is the only MPO which maintains a land use plan and a transportation plan. The latter is required by US Department of Transportation as outlined in the Transportation Equity Act of the 21st Century (TEA-21). The land use element of the DVRPC 2025 Plan provides a vision of the region's future growth and development; determines regional plan consistency in order to locate and implement future transportation facilities and services; provides guidance and direction for municipal, county and state agencies to make infrastructure and conservation protection investments; and serves as the foundation for developing the region's Transportation Improvement Program (TIP), the short-range capital program of all federally funded transportation projects. The 2025 Regional Transportation Plan for the Delaware Valley provides a vision and a comprehensive long-range blueprint for moving people and goods safely and efficiently. It also advances and supports the region's land use plans and policies, and proposes strategies to carry out those policies. Further, it lists specific transportation improvement projects that are consistent with the policies. Some projects are nearing construction, while others are planned and may change before they reach the construction phase. The Transportation Plan also lists sites of congestion or other problems that require study.

The Regional Transportation Plan establishes corridors. Hopewell is within Corridor 9, which corresponds to Route 31 extending from south to north between Trenton and Hopewell. Within the Township, the Plan identifies various transportation recommendations. Those pertinent to Hopewell Township are:

1. Preserve right of way for future improvements and widening along Route 31 and county roads.
2. Business/Industrial parks should study, develop and implement TDM measures.
3. Provide for goods movement traffic on NJ Route 31 by improving the pavement performance and geometrics of roadway.
4. Develop a carpool/vanpool task force for those workers who reside in Hopewell/Pennington and work in Trenton/Princeton.

5. Remove difficult, unsignalized circles and provide a continuous travel flow along Route 31 within the study area.
6. Improve the roadway surface on Route 546.
7. Propose a bicycle route around Hopewell to reduce local traffic congestion.
8. Preserve future right-of-way to provide bicycle lanes along Route 31.

Bicycle And Pedestrian Circulation Considerations

The 1992 Circulation Plan Element failed to address bicycle and pedestrian mobility in Hopewell Township. The only reference was a recommendation for covering open ditches along some of the Township's rural roads to "provide a safer pavement width for motor vehicles while not changing the character of the road while eliminating a potential hazard for pedestrians, cyclists, and drivers of motor vehicles in the process".

Conversely, the 2002 Hopewell Township Master Plan includes the following objective:

"To establish transportation policies and programs that improve connections among housing, employment and commercial uses, including provisions for vehicular and pedestrian travel and bicycle paths."

To advance this objective, there are a number of resources available to the Township at the State, regional, county and local level. The following is a summary of these resources.

New Jersey Bicycle and Pedestrian Master Plan

The New Jersey Department of Transportation has made a commitment to encourage bicycling and walking in New Jersey. This commitment devotes resources to bicycle and pedestrian planning initiatives designed to improve the bicycle and pedestrian compatibility of the State's transportation network. The State's ultimate goal, beyond the scope of this project, is to develop an integrated statewide system of bicycle and pedestrian facilities and infrastructure.

The Department of Transportation completed Phase One of the Statewide Bicycle and Pedestrian Master Plan in June 1995. This established a vision and a set of targets for the future of bicycling and walking in the State.

Phase Two of the Master Plan updates the goals of the 1995 Plan and provides the following:

- An inventory of existing bicycle facilities,
- A list of priority locations for bicycle and pedestrian improvements, and
- Opportunities for improving the bicycle or pedestrian compatibility of existing projects.

Phase Two of the Master Plan will provide the Department with a database of existing, proposed and potential bicycle and pedestrian facilities throughout the State, which can be displayed on maps and be easily maintained. The Department has established a Project Management Team to guide the progress and products of the plan. The Project Management Team is composed of professionals from the Department, from each of the State's three Metropolitan Planning Organizations, and from the consulting team.

A Technical Advisory Committee (TAC), established by the Department and composed of State, regional, county and nongovernmental organizations interested in planning for bicycle and pedestrian travel, reviews the analytical methods and overall progress of the Master Plan.

A Year 2000 survey conducted on walking and cycling provides some important factors in planning and designing pedestrian and bicycling facilities. The factors include those that influence individuals to walk such as, sidewalk presence, condition and separation from traffic and why individuals cycle such as, convenience to a destination, recreation or scenic value and personal safety.

NJDOT Bicycle Resource Project

The Voorhees Transportation Policy Institute (VTPI), a unit of the Alan M. Voorhees Transportation Center, Edward J. Bloustein School of Planning and Public Policy, and the Center for Advanced Infrastructure and Transportation – Local Technical Assistance Program (CAIT-LTAP), both of Rutgers, The State University of New Jersey, under the authorization of NJDOT, have developed The New Jersey Pedestrian and Bicycle Resource Project. The project is in the process of establishing an information clearinghouse and technical resource center to identify significant bicycle and pedestrian policies, planning activities, implementation and construction of projects throughout the State, and also nationwide and internationally. It provides advisory assistance to NJDOT and other public agencies and organizations on pedestrian and bicycle topics and issues. Additionally, the project provides educational resources and directed research on the most current and challenging issues confronting the development and construction of bicycle and pedestrian compatible infrastructure. It is expected that this project will ultimately lead to effective policies and the development of efficient, safe and practical pedestrian and bicycle facilities and give New Jerseyans more travel options and an even better place to live and work.

Bicycle Compatible Roadways and Bikeways and Pedestrian Compatible Planning and Design Guidelines

Provisions for bicycling, with its potential for providing economically efficient transportation, became an important policy goal of ISTEA. The Secretary of Transportation was directed to conduct a national study that developed a plan for the increased use and enhanced safety of bicycling and walking. The National Bicycling and Walking Study - Transportation Choices for a Changing America presents a plan of action for activities at the Federal, State and local levels for meeting the following goals:

- To double the current percentage (from 7.9 percent to 15.8 percent) of total trips made by bicycling and walking; and
- To simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes.

The potential for increasing the number of bicycle trips is evident in the National Personal Transportation Survey, which shows that more than 25 percent of all trips are one mile or less, and 40 percent are two miles or less. Almost half are three miles or less and two-thirds are five miles or less. Approximately 53 percent of all people live less than two miles from the nearest public transportation route. New Jersey residents have become aware of the energy, efficiency, health and economic benefits of bicycling for transportation and recreational purposes. In 1995, the NJDOT completed a statewide plan that established policies, goals and programmatic steps to promote safe and efficient bicycling for transportation and recreation in New Jersey. Through an extensive outreach effort, residents established a statewide vision for the future of bicycling and walking for all communities in New Jersey:

“New Jersey is a place where people choose to bicycle and walk. Residents and visitors are able to conveniently walk and bicycle with confidence and a sense of security in every community. Both activities are a routine part of transportation and recreation systems.”

In order to achieve this vision for New Jersey, and to enable people in every community of the State to bicycle with confidence and a sense of security, it is necessary to plan and provide appropriate facilities that will accommodate, encourage and promote bicycling. The manuals provide direction regarding how appropriate facilities for bicycling and walking should be provided.

New Jersey Pedestrian Task Force

Established in 1999, the NJ Pedestrian Task Force is a coalition with members from public, private and advocacy organizations that are concerned about the safety of the walking public in New Jersey. The group meets on a bimonthly basis at the Edward J. Bloustein School of Planning and Public Policy (Rutgers University) to discuss topics

related to pedestrian safety, mobility and access; and, serve as an advisory body to State, County and civic organizations. Their goals are:

1. To educate the public on the rights and responsibilities of pedestrians and the need for more pedestrian-friendly circulation systems.
 - a. Form a Pedestrian Task Force Bureau of topical speakers to present at upcoming conferences within the state.
 - b. Create a greater awareness of the existing resources for planning and implementing pedestrian-friendly transportation projects.
 - c. Promote educational venues that focus on pedestrian and/or human powered travel modes, traffic calming and safety measures.

2. To advance the inclusion of pedestrian friendly design elements in development and redevelopment plans.
 - a. Monitor performance of pedestrian projects and programs statewide.
 - b. Review and provide commentary on the AASHTO Pedestrian Guide currently under development.
 - c. Promote revisions to the Residential Site Improvement Standards (RSIS) and input to the Commercial Site Improvement Standards (CSIS) to create more walkable developments.
 - d. Sponsor awards for those who protect and/or enhance the pedestrian environment, through engineering, advocacy, design, or education.

3. To support government policies and funding initiatives that favor walking.
 - a. Recommend, monitor and support legislation that extends pedestrian rights, enhances the pedestrian environment or legitimizes walking as a transportation mode.
 - b. Recommend, monitor and support legislation that would require any project utilizing Transportation Trust Fund monies to include bicycle and pedestrian accommodations.
 - c. Recommend, monitor and support legislation that includes dedicated resources for pedestrian friendly transportation planning and projects.
 - d. Encourage state, county and municipal governing bodies to adopt pedestrian friendly programs and design standards.
 - e. Facilitate the coordination between public agencies and others in the implementation of pedestrian friendly projects and programs.
 - f. Support citizen advocacy groups that encourage local governments to adopt policies and programs that support walking.
 - g. To nurture favorable community attitudes towards walking.
 - h. Design and propose a new specialty motor vehicle license plate, such as "Share the Road" tags.
 - i. Organize a statewide effort to support "Walk Our Children To School Day" and the "Kids Walk-to-School" program within New Jersey.

- j. Develop and support additional public involvement programs that can encourage walking in the community.
4. To encourage land use patterns and walking environments that are safe and secure, and thereby reduce pedestrian deaths and injuries in the state.
 - a. Propose changes to the NJ Drivers Training Manual and driver education programs.
 - b. Disseminate information regarding tools that engineers and planners can use to make the walking environment safer.
 - c. Promote the use of traffic calming measures.
 - d. Encourage improved reporting and analysis of pedestrian crash data.

Southern New Jersey Bicycle and Pedestrian Mobility Plan

DVRPC as part of its 2020 planning process developed the Southern New Jersey Bicycle and Pedestrian Mobility Plan. The Bicycle and Pedestrian Mobility Plan covers the four counties located in southern New Jersey, including Mercer. The plan contains information about prevailing policies towards bicycles and pedestrians. It also provides information about current bicycle and pedestrian use, an inventory of existing and proposed bicycle and pedestrian facilities, and goals and objectives for improving bicycle and pedestrian conditions. This information provides the foundation for creating the Proposed Southern New Jersey Year 2020 Bicycle Network.

Bicycle Clubs

Advocates are an important component of any effort to initiate and establish bikeways within a community. According to NJDOT there are several bicycle clubs within and around Hopewell Township. Some of these organizations are:

- Century Road Club of America in Princeton
- Jaeger Wheelmen Club in Ewing
- Mercer-Bucks Cycling Club in Pennington
- Princeton Freewheelers
- Summit Cycling Club in Titusville

Use of Sidewalks and the Residential Site Improvement Standards

Ongoing national debate over methods to reduce costs of housing construction has focused on all types of required improvements, including sidewalks. Where sidewalks were once considered an automatic requirement in new residential developments, the costs of construction and the impervious coverage impacts have been cited as reasons to minimize sidewalk construction.

The "Guide for Residential Design Review" (Moskowitz & Lindbloom, 1976) notes, "Apart from the need for sidewalks for circulation and safety, sidewalks can be an important element in the recreational system of a community. They serve as walking and biking trails for all age groups ... and are also the primary informal and unsupervised recreational system for preschoolers ... (and) should be required as part of any large scale residential development." Others have gone even further, stating, "Sidewalks are a more important recreational facility than playgrounds" (Site Planning, Lynch & Hack, 1984). Finally, the State Development and Redevelopment Plan echoes this message by stating "New Jersey's communities are healthy, active communities where adults and children are living active, healthy lives because exercise and walking are a vital part of their daily lives. Communities are designed to promote walking and cycling for transportation and recreation".

It is generally accepted that sidewalks should be provided along streets used for access to schools, parks, shopping and transit stops (Model Subdivision and Site Plan Ordinance, NJDCA, 1987). The model ordinance also notes that "... sidewalk requirements should be based on the street classification system and on density of development as measured in terms of lot size, lot frontage or number of housing units per acre."

The model ordinance noted that street classification is particularly important to safety since traffic volumes and speeds increase as roads assume higher traffic circulation functions. Density affects the extent of pedestrian movements to be generated, and in higher density developments sidewalks are important for both convenience and safety.

Additional factors cited in the model ordinance in determining sidewalk locations are major pedestrian generators, the existing sidewalk system and probable future development. The model ordinance also provides the following guidelines for sidewalk placement. "Requirements for sidewalks vary depending on road classification and intensity of development".

Since the last Master Plan update, the Residential Site Improvement Standards Act (N.J.S.A. 40:55D-40.1 et seq., or RSIS) was adopted by the Legislature and signed into law. The act was largely based on the work found in the Model Subdivision and Site Plan Ordinance, NJDCA, 1987. The act authorized the establishment within the Department of Community Affairs of a committee charged with the responsibility of developing uniform standards that would be adhered to by municipalities in approving residential site improvements. These standards have been approved by the Commissioner of Community Affairs and been adopted in the New Jersey Administrative Code (N.J.A.C. 5:21-1-8).

The code covers a number of features such as water supply, sanitary sewers, stormwater management and streets and parking. The standards also address sidewalks. According to N.J.A.C 5:21-4.5, sidewalks and/or graded areas shall be required, depending on road classification and intensity of development. Sidewalks are required either on one side or both in the case of residential access roads, neighborhood streets, minor collectors and major collectors. Graded areas are required on rural streets or lanes as well as in the case of low intensity minor collectors and residential access roads. Exceptions from these rules are available only to municipalities that receive a waiver.

Delaware & Raritan Canal State Park

Within Hopewell, a significant trail exists in the Delaware & Raritan Canal State Park. This 30 mile multi-use trail provides an excellent crushed stone surface for walking, mountain biking, horseback riding and hiking.

With the designation of the parallel Route 29 as a Scenic Byway, there are improvements programmed for Route 29 which will complement the Canal State Park and likely increase its usage.

Washington Crossing State Park

Another recreational biking facility in the Township is Washington Crossing State Park. The park provides 3-mile paved surface for bicycling and hiking as well as connections to the D&R Canal, picnic area, playground, nature center and museum.

Transportation Demand Management

Prompted largely by the worsening traffic conditions during the development surge in the mid-1980's, and the enactment of the Clean Air Act Amendments in November 1990, transportation demand strategies (TDMs) emerged as an important focus for reducing the quantity and impact of automobile traffic. As the name indicates, TDMs are alternative strategies designed to reduce the number of trips between residences and work places. They are typically implemented through a comprehensive traffic reduction ordinance (TRO), which establishes the goals and procedures as well as strategies.

Managing transportation demand is a complex undertaking as it involves not only a concerted administrative effort but also a fundamental change in personal habits. Since TROs involve an attempt to remove trips as well as to spread them, changes to commuting habits are inevitable, including the reduction of single-occupancy vehicles. Quantitative measurements to evaluate compliance with the goals of a TRO include the percent reduction in peak hour trips, percent participation rates, average peak hour vehicle ridership, and vehicle trip reduction to a desired level of service.

TDM strategies that are typically permitted as alternatives in a TRO include the following:

1. Ridesharing-park and ride, vanpools/carpools, vanpool/carpool lots
2. Flextime/compressed workweeks
3. Shuttle services
4. Subsidized transit and ridesharing
5. Preferential parking

6. Amenities for bicyclists and pedestrians
7. Telecommuting

Greater Mercer Transportation Management Association

Hopewell Township is a member of the Greater Mercer Transportation Management Association. Greater Mercer TMA is a non-profit partnership of the public and private sectors, dedicated to reducing traffic congestion and improving mobility in and around Mercer County by providing a variety of commuter programs and services.

Greater Mercer TMA was established in 1984. Its members are large and small employers, local governments, authorities and state agencies who share the commitment to providing transportation choices through a multi-modal, balanced, transportation system.

Greater Mercer TMA offers its members a wide variety of services. The services include publications, such as the TMA's bi-monthly newsletter, which keeps employer representatives informed on the latest in transportation issues, and the publication "Crossroads", which is a comprehensive, easy to read manual of step-by-step procedures for implementing and administering various transportation programs and services available to employees. The GMTMA also provides professional services, such as helping large employers, corporate centers, local and state government, community based organizations and non-profits establish and manage shuttle services. The organization also designs, conducts and analyzes a survey that will identify trends and opportunities for commute options such as ridesharing, transit or non-motorized transportation. In addition, the Greater Mercer TMA provides commuter services, such as programs like "Home Free" which is Greater Mercer TMA's guaranteed ride home program for eligible commuters who carpool or vanpool, take transit, or bike or walk to work and need an emergency ride home; and, "vanbuck\$" which is an empty seat subsidy program that gives groups of employees financial assistance when forming a new vanpool or to keep an existing vanpool on the road.

The Municipal Assistance Program provides selected Mercer County and member municipalities with technical assistance and support to implement demand management strategies or support strategies in areas with 'hot spot' congestion, rapid growth, safety or accessibility problems, or which offer little or no alternatives to automotive travel.

Specific services offered by Greater Mercer TMA include: bike/pedestrian facility planning, grant writing assistance, transit studies and grant assistance, park and ride assistance, municipal or neighborhood surveys, school and community events to promote commute options, and municipal workshops. The workshops for municipal officials address such topics as:

- TDM friendly municipal ordinances
- Transit oriented design

- Bikeable and walkable communities
- Traffic calming techniques and policies

An example of a project in Hopewell Township is the Hopewell Shuttle, which provides peak-hour commuter rides for Merrill Lynch employees between the Hamilton Rail Station and the Merrill Lynch Campus in Hopewell Township. The service is free but riders must show their employee ID to ride. As a result of the work of the GMTMA and the HVTMC the shuttle service recently was expanded to include Janssen employees.

Mercer County T.R.A.D.E.

Another transportation demand service available in Hopewell is Mercer County T.R.A.D.E. The purpose of Mercer County T.R.A.D.E. (Transportation Resources to Aid the Disadvantaged and Elderly) is to provide a safe, efficient and economical para-transit service to all eligible Mercer County residents by trained drivers and staff. T.R.A.D.E provides transportation services to transportation-disadvantaged Mercer County Residents who are: senior citizens (60+) or persons with disabilities or economically disadvantaged. Trips are either subscription trips to employment, dialysis, nutrition sites, rehabilitation sites, radiation, etc. which are provided on an ongoing basis; or, demand response trips to doctors' appointments, out-patient clinics, beauty parlors, or shopping, which are provided on an as-needed basis.