Transportation

Bloomfield Township transportation routes affect the movement of people, shape the character of the Township, and influence redevelopment trends. It is important to consider transportation when planning for the future to ensure these systems can support the goals, such as land use development. Transportation as it applies to Bloomfield Township includes not only the road system, but also pathways and transit. All modes of transportation are addressed in this section.

Public Streets

National Functional Classification: National Functional Classification (NFC) is a planning tool which federal, state and local transportation agencies have used since the late 1960's. The Federal Highway Administration (FHWA) developed this system of classifying all streets, roads and highways according to their function. The FHWA publication, **Highway Functional Classification: Concepts, Criteria and Procedures**, provides the basis for much of the following information.

- **Interstate:** Includes freeway and expressway routes that are intended to move traffic to regional, statewide, and out-of-state destinations. A segment of I-75 and the interchange with Square Lake Road is the only route in the Township designated as Interstate.

- **Principal Arterials:** Principal Arterials generally carry long distance, through-travel movements. They also provide access to important traffic generators, such as major airports or regional shopping centers. Telegraph Road, Woodward Avenue, Maple Road, Long Lake Road, and segments of Square Lake Road and Big Beaver Road are Principal Arterials in the Township.

- **Minor Arterials:** Are similar in function to Principal Arterials, except they generally carry trips of shorter distance and to lesser traffic generators. There are many road segments in the Township that are classified as Minor Arterials including Adams Road, Lahser Road, Franklin Road, Fourteen Mile Road and Quarton Road, and a portion of Square Lake Road, Cranbrook Road, Opdyke Road, Inkster Road and Wattles Road.

- **Collectors:** Collectors tend to provide more access to property than do arterials. Collectors also funnel traffic from residential areas to arterials. There are several road segments in the Township classified as Collectors, including portions of Squirrel Road, Kensington Road,

Hickory Grove Road, Lone Pine Road, Walnut Lake Road, and Inkster Road.

- **Local:** Local roads primarily provide access to property. These are all other roads identified on the map.

  Road Jurisdiction: As a Township, the majority of roads in Bloomfield Township are under the jurisdiction of the Road Commission for Oakland County. Telegraph Road (US-24) and Woodward (US-10) are under the jurisdiction of the State. As noted elsewhere in the Master Plan, the Township maintains a significant amount of these roads through a contractual agreement with the County. The County maintains the remaining road segments. The lack of jurisdiction over the roadways can create challenges because when significant improvement projects, such as widening and intersection improvements, are needed the Township must rely upon the County and State. As appropriate, the Township may need to advocate aggressively on behalf of its transportation improvement goals.

  Natural Beauty Road: There are two roads that have segments designated as a Natural Beauty Road. These are Wing Lake Road between Maple Road and Quarton Road and Echo Road between Long Lake Road and Lone Pine Road. The Natural Beauty Road designation is a component of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and is intended to identify and preserve exceptional, natural conditions within county and local road rights-of-way. To maintain this designation, these segments of Wing Lake Road and Echo Road must maintain a low speed limit, must meet specific maintenance requirements, and cannot be alerted or improved in a manner that would disturb the natural beauty characteristics. Development along these roads must also respect the natural beauty characteristics.

Traffic Counts: Traffic counts are also labeled on the Transportation Conditions Map. These are two-way counts taken at a typical time during the year. Traffic counts, congestion and the relationship between job location and home combine to determine Average commute time, shown in Figure 1. The Township's busiest streets are listed in Fugure 2.

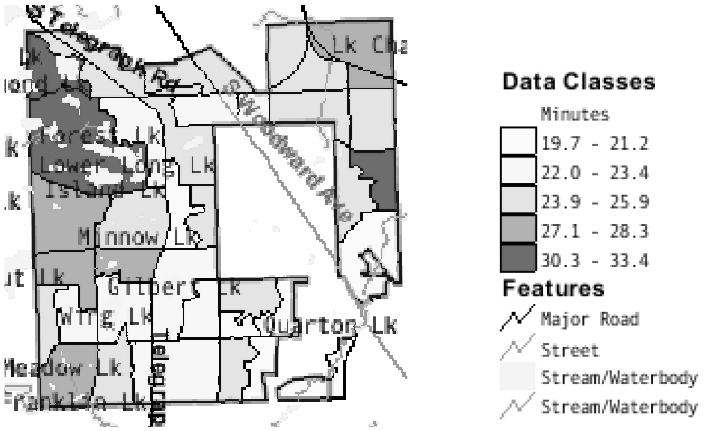


Figure 1: Typical home-to-work travel times by block group. Source: US Census, 2000.

Figure 2: Top Busiest Roadways in the Township (2004)		
Roadway	**Between**	**Average Annual Daily Traffic**
I-75	Squirrel and Adams	109,000
Telegraph	Maple and Quarton	80,100
Telegraph	Long Lake and Hickory Grove	70,500
Square Lake	Woodward and Opdyke	69,300
Woodward	South of Big Beaver	67,800

Safety Paths

Safety Paths refers to sidewalks and pathways that are to be used exclusively for walking, biking, rollerblading, and other modes of non-motorized travel. Providing a separate system for non-motorized travel is important to improve accessibility throughout the community, to promote a healthy lifestyle for its residents, and to help relieve congestion on the roads.

Currently, the Township provides a linked system of safety paths along segments of most major roads including Long Lake Road, Quarton Road, Franklin Road, Maple Road, Lone Pine Road, Adams Road, Square Lake Road, Woodward Avenue, Inkster Road, and Lahser Road. There is also a connected sidewalk system within the neighborhoods near Cranbrook and Maple Road. There are still remaining gaps in the system that the Township plans to gradually connect.

Oakland County is planning for a regional network of pathways. The County has developed design standards for these facilities – consistency with the Township's design standards should be examined. The

Township seeks to link to the regional pathway system as may be appropriate.

Transit

Transit service in Bloomfield Township and Metro Detroit is provided by the Suburban Mobility Authority for Regional Transportation (SMART) Program. This program allows local communities or groups to become partners with SMART and to share operating responsibility based on a community's specific needs. Within the Township there are three regular fixed line haul routes, which operate on a regular schedule and route. These routes are along Maple Road, Telegraph Road, and Woodward Avenue. A fourth route operates along the Opdyke and Adams Township borders in the far northeast quadrant of the community.

It is important to consider transit as a valuable asset to the transportation system because it offers an alternative to the private automobile, especially for those without an automobile, offering an affordable form of transportation. As the population ages, maintaining a strong transit system will grow increasingly important to assure the mobility of our senior population. Transit routes should continue to coincide with existing and planned key destination points in the Township including shopping nodes and community facilities along these routes. Transit-oriented design, which is an approach that assures pedestrian-friendly and bus-friendly locations and maneuverability, is encouraged.

Traffic along Telegraph Road near Long Lake Road (Source: LSL Planning)

Woodward Avenue. Traffic volumes along Woodward Avenue approach 70,000 vehicles on a typical day south of Big Beaver and 45,000 vehicles south of Square Lake. The Woodward/Square Lake intersection ranks high in accidents within the Township, but not when compared countywide. Crash severity here ranks relatively low. One way to help preserve the capacity and reduce crash potential is to continue coordination with MDOT to manage access points as land uses change. Where possible, existing driveways should be consolidated to reduce the number of access points, and driveways should be redesigned to permit vehicles to enter driveways with the least disruption to through traffic

along Woodward. Creating a Corridor Improvement Authority, perhaps in conjunction with other Woodward Avenue communities, would allow the use of tax increment financing for public improvements in a coordinated fashion.

Telegraph Road. Traffic volumes exceed 60,000 vehicles daily in the north to more than 80,000 in the south part of the Township. Accident rates at the Telegraph/Maple intersection rank second in the Township but fall significantly when considered countywide. At its intersection with Square Lake, accident rates rank in the Township's top ten and include one fatality in the last decade. As with Woodward Avenue, access management tools can provide the greatest benefit to aid capacity and traffic flow along the route.

Square Lake Road. With residential subdivisions located both north and south of Square Lake Road, this route's heavy traffic presents many challenges. Traffic volumes increase from west to east, with recent counts from 34,000 vehicles per weekday near Square Lake's intersection with Telegraph Road to 69,000 near I-75. Problems include noise infiltrating the residential neighborhoods and difficulty for residents to exit or enter their subdivisions during peak travel times.

Sound walls can be unattractive and other sound attenuation options should be investigated first, including extensive installation of mature evergreens to shield the view and, to limited degree, the traffic noise. Also, the evergreen solution is more in keeping with the objective of "greening" major roadways. As a major entry point to the Township, any possible solution must be considered carefully. A combination of berms and carefully designed sound walls, at least partly obscured by landscaping, should be studied.

Many congestion relief options exist that should be evaluated. Subdivision residents have the option of using somewhat circuitous parallel roadways that lead drivers indirectly to Square Lake. Also, signal timing alone may solve some of the problem within the corridor, but can sometimes merely move the problem away from one location and into others.

Providing directional left-turns at locations near Franklin Road and Woodward Avenue may have merit, as long as the design does not detract from the function of those key intersections. Both intersections have experienced relatively high accident rates within the Township (Franklin/Square Lake tops the list), but not when compared countywide. Directional left-turns, combined with offset signals, at Yorkshire Lane and Emerson Avenue offer another design for study. The Township should continue to work with MDOT to explore remedies for the increasing traffic congestion along Square Lake Road.

Long Lake Road and Maple Road. These arterials have traffic volumes of less than 30,000 vehicles per weekday. They serve a range of land uses relatively efficiently. Recommendations for these corridors depend more on site to site relationships and would encourage the application of access management tools and transit-oriented design techniques to enhance traffic flow. Because of the mix of residential and commercial land uses, sidewalk and bicycle paths can play an important role in linking neighborhoods with shopping opportunities.

Street and Corridor Character

Street width and scale, presence of on-street parking and sidewalks, block length, building setbacks, design speed, street trees and even pavement markings and signs all contribute to how the street functions and the perceptions of the driver. Driver perceptions can affect vehicle speed and the care used in driving. The character of the street corridor as viewed by the motorist also impacts the image of Bloomfield Township.

Successful commercial corridors should be free of unsightly clutter and be easy to navigate to find your destination. Streets in residential areas should make you intuitively drive at a low speed. In some cases, the road design elements in the Township reinforce the desired image. In other cases, improvements need to be considered. This Plan relies on a range of approaches to help ensure the future transportation system operates safely and efficiently, but also in context with the character of the Township.

Entryways. Entryway signage helps to attract and direct visitors, and serves to define the "edge" to a community. Bloomfield Township has several Primary Arterials and an Interstate, providing major access to the community. The number and locations of these routes combine with a jurisdictional boundary that can be somewhat confusing. It almost entirely surrounds the City of Bloomfield Hills and near Birmingham and Pontiac is somewhat irregular. The community may benefit from clarifying and establishing a unique identity through entryway treatments.

The entryway into the Township provides the visitors their first and sometimes strongest impression of the Township. It is a reflection of its residents and businesses. To maximize impact, attractive gateway should be constructed at the intersections of:

- Telegraph and 14 Mile
- Telegraph and Orchard Lake
- Woodward and south of Maywood

- Woodward and Alice
- Square Lake and east of Mulberry

Secondary "inbound" entryway treatment locations may include:

- Square Lake at Vhay
- Big Beaver at Adams
- Inkster at Maple
- Inkster at Long Lake
- Long Lake at Adams
- Maple east of Cranbrook

These points represent where the heaviest traffic flow takes place around the Township's edge. Entryway treatments would highlight Bloomfield Township for the greatest numbers of people with aesthetically appealing signage and plantings. Large broad plantings that sweep around the entryway and open it up visually can create a sense of grandeur that reflects the current and future Bloomfield Township.

Wayfinding. Way-finding quite literally refers to 'finding your way around' and can apply to finding your way around the downtown, to Township Hall, or to neighborhoods. A comprehensive wayfinding system is recommended in order to improve accessibility for residents, visitors, and workers of Bloomfield Township. Typically, wayfinding is provided by a consistent signage system that points travelers in the direction of their destination. It is important that all these signs look the same because the sign becomes a "brand" and the user quickly learns what to look for to find the next piece of information. Entryway treatments previously discussed are also a form of wayfinding because it indicates arrival to the destination.

Transportation Management

In addition to street improvements, the Township can help manage traffic through a variety of tools that reduce vehicle trips or lessen their impact. Land use arrangements that shorten the length of vehicle trips can also help, as achieved with mixed use and multi-use structures. Also, every driveway eliminated or redesigned will help preserve capacity and reduce the potential for crashes. Current streets may be able to operate better with new technology, such as signals that respond to actual traffic conditions. Collectively, all of these ideas can help address the Township's future transportation needs. Some specific transportation management tools are discussed below.

Traffic Impact Analysis. A tool to help ensure that traffic impacts are properly evaluated is to require a traffic impact study in certain situations. Generally, a traffic impact study should be required for a rezoning or

project that would generate traffic above a specified threshold. In Michigan, the typical standard is at 50 or more directional (one-way) trips in the peak hour or 500 trips expected in an average day. In reviewing these reports, use established sources such as the Institute of Transportation Engineers (ITE) Trip Generation Manual or "Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities."

A well prepared traffic impact study will also address site access issues, such as the potential to share access or use service drives. The study should analyze options to mitigate traffic impacts, such as changes to access, improvements to the roadway, or changes to the development. In some cases, the developer can assist in funding improvements to help offset the impacts of the project.

- **Access Management.** Access management involves comprehensive controls on the number, spacing and placement of commercial driveways along major arterials. Numerous studies in Michigan and nationally demonstrate access management can reduce the potential for crashes, and help preserve the street's ability to carry traffic. Fewer driveways also create more attractive and pedestrian friendly roadways.
- **Number of Access Points.** The number of driveways allowed along major streets affects traffic flow, ease of driving, and crash potential. Every effort should be made to limit the number of driveways; and encourage access off side streets, service drives, frontage roads, and shared driveways. Those developments which generate enough traffic or have sufficient frontage to consider allowing more than one driveway should locate these second access points on a side street or shared with adjacent uses where practical.
- **Driveway Spacing from Intersections.** The minimum distance, on the same side of the street, between a driveway and an intersecting street should be 150 feet along a major arterial. This would allow a driveway to be placed mid-block on a short 300 foot block to be shared by two adjacent uses. On longer 600 foot blocks, this would allow for up to three or more driveways per block. At major intersections where there are long vehicle queues, such as Square Lake and Woodward, greater driveway spacing should be provided such as 200 feet. Where driveways are located closer to intersections, they should be restricted to right turn only.
- **Driveway Spacing from Other Driveways.** Minimum and desirable driveway spacing requirements should be determined based on posted speed limits along the parcel frontage, traffic conditions, sight distance and in consideration of the amount of traffic a particular use is expected to generate. Minimum spacing between two commercial driveways should be 150 feet, but can be varied upon specific findings and in consideration of published traffic engineering

manuals such as the AASHTO Greenbook. Where it can be demonstrated in redevelopment projects that pre-existing conditions prohibit adherence to the minimum driveway spacing standards, the driveway spacing requirements could be modified, but the driveway spacing should not be less than 60 feet.

- **Alternative Access.** Frontage drives, rear service drives, shared driveways, and connected parking lots should be used to minimize the number of driveways, while preserving the property owner's right to reasonable access. Along commercial corridors, rear yard parking lots should be shared and alleys or rear service drives used to connect adjacent commercial sites.

Traffic Calming

Residents expect low volumes of traffic and low speeds within neighborhoods. Because of the orientation and significant lengths of many residential streets in Bloomfield Township, this may be especially challenging. For example, residents using the "parallel" residential streets north and south of Square Lake Road may boost traffic volumes and speeds. In such cases, traffic calming measures may help keep speeds at an appropriate level.

Traffic calming measures cause drivers to slow-down and be more attentive. Traffic calming is a way to visually and physically impede speeding in residential areas. The physical change in the road parameters and the psychological change in the "feel" of the road reduce the speed of vehicles. Some of the common traffic calming measures described below may be appropriate in certain situations in the Township after considering a number of factors such as traffic volumes, cost, maintenance, and impact on emergency access.

Example of a choker design.

- **Speed Humps.** Vertical constraints on vehicular speed and are designed according to a safe vehicle speed (15 to 20 mph). They are raised areas that extend across the width of the pavement and range between 2-4 inches in height and 14-22 ft in length. Specifications on speed hump design are site specific and dimensions are unique to each location.
- **Speed Tables**. Vertical constraints, similar to speed humps, constructed with a table or flat portion in the center. They can create

a street environment that is pedestrian friendly by being used in combination as a raised crosswalk. They provide visual enhancement, reduce vehicle speed and enhance the use of non-motorized transportation.

- **Street Narrowing, Slow Points, or Chokers.** Curb modifications, channelization, and sometimes landscaping features that narrow the street to a minimum safe width. They are often installed at intersections to reduce speed and/or redirect traffic. They provide larger areas for landscaping, enhance the neighborhood, facilitate loading and unloading and optimize the pedestrian crossing locations.
- **Angle Points or Chicanes**. Curbed horizontal deflections in the path of vehicle travel. They are built along the edge of travel-way similar to street narrowing treatments. They use physical obstacles and parking bays, and are staggered so drivers must slow down in order to maneuver through the street. Trees are often used at the slow point to restrict driver vision and create a feeling of a "closed" street.
- **Boulevard Slow Points or Channelization.** Center located islands that divide the opposing travel lanes at intersections or at mid-blocks, pedestrian refuge treatments and the other standard forms of intersection traffic control islands. These are aimed at reducing speeds while enhancing the pedestrian crossing points and safety.
- **Intersection Diverters.** Features that partially close an intersection to limit the allowable turning movements and divert traffic. They are used to convert an intersection into two unconnected streets, each making a sharp turn. This alters traffic flow patterns and limits the ability of vehicles to cut-through residential neighborhoods.
- **Street Closures.** Street closures are an option, but are highly constrictive and affect the network traffic flow by eliminating neighborhood traffic from cutting through.
- **Perimeter Treatments**. Visual and physical treatments used to communicate a message to drivers entering a residential neighborhood. Traffic signs, intersection narrowing, boulevards, textured pavement surfaces such as brick and landscaping features are often used to create this effect. Entry treatments are used to increase driver awareness to changes in roadway environment.

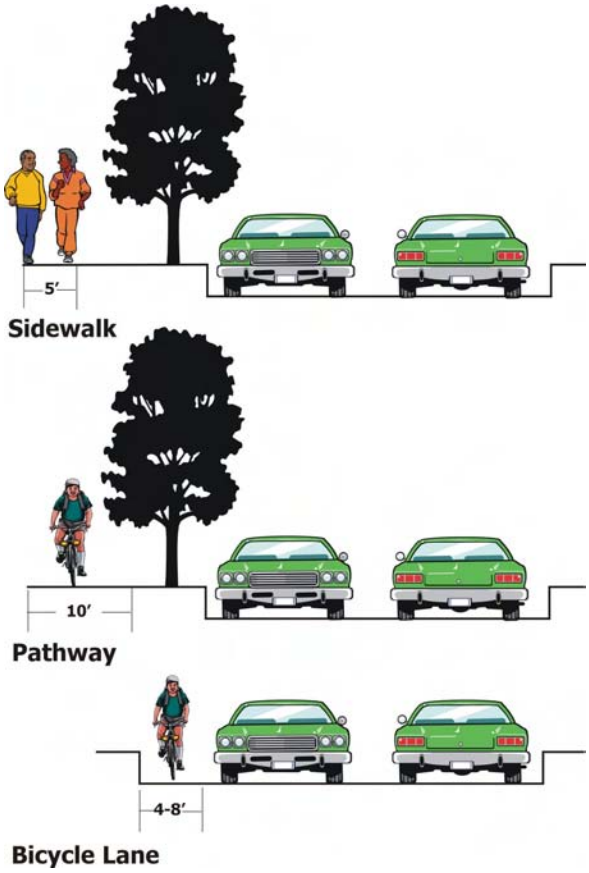
"Retrofitting" traffic calming measures may be appropriate for existing situations in some neighborhoods. Implementation of a traffic calming program should involve the following:

- Traffic calming measures should be examined from an area-wide traffic calming perspective.
- Traffic calming measures should be used as speed controls rather than volume controls to prevent the diversion of through-traffic to parallel residential streets.

- It is important to highlight the presence of traffic calming measures by landscaping and treating the street edges. These measures complement the engineering design by softening the appearance of speed humps and enhancing the appearance of more aesthetic measures such as chicanes and traffic circles. Also, landscaping measures can enhance engineering measures and make them more effective and safer by highlighting their presence.
- Traffic calming devices should be designed in coordination with emergency services to ensure that safe emergency vehicle access is maintained to all areas. Details such as mountable curbs and gutters can often help resolve access problems.
- A risk management program should be implemented to minimize liability issues through proper location, design, signage, marking and lighting of traffic calming devices.

Nonmotorized Paths

Pathways and sidewalks provide an additional mode of transportation for residents for short trips, provide recreation opportunities, improve connections throughout the Township, help reduce a sense of isolation for many, and can even help reduce traffic volumes to some degree when connections are short and attractive. The Township may consider formally designating bike lanes along key routes. Each type of pathway is briefly described below:



- **Sidewalks**. A 5-foot wide concrete surface along one or both sides of a public street for the purpose of providing for pedestrian circulation. Walkways are normally separated from the street by a distance of 10 feet or more.
- **Multi-Modal Paths**. Pathways can accommodate higher volumes of pedestrians than sidewalks and more appropriate for other types of travel such as joggers and bicyclists. The federal standard for all new pathways is ten foot in width.

- **Bike Lane.** A portion of a street designated for exclusive use by bicyclists distinguished from the automobile travel lanes by paint stripes, signs or other similar devices. A bike lane is 4 to 8 feet wide.

The Township can improve the pedestrian environment and safety in a number of ways. In addition to ensuring a comprehensive system of sidewalks, pathways, and bike lanes, the Township can accommodate non-motorized transportation by:

- Improving signalization specifically for pedestrian crossings.
- Ensuring curb ramps at all corners.
- Installation/improvement of crosswalks at intersections and mid-block.
- Consistent maintenance of facilities to fix cracks, holes and other issues.
- Requiring site plans be designed to ensure the pedestrian will feel comfortable walking within a site or to neighboring properties.
- Reducing vehicle speeds to create a more walkable pedestrian friendly environment in appropriate locations.

In some cases, the Township will need to work with Oakland County to achieve these changes.

Public Transit

SMART currently provides fixed route bus service along Woodward Avenue, Telegraph Road and Maple Road. Land use decisions by the Township should consider enhancing the transit friendly environment through adoption of Transit-Oriented Development (TOD) standards, especially within and near Commercial Core Areas. TOD strategies help to create a more livable and walkable community. This consists of land use patterns that promote travel by transit, bicycle, walking and ridesharing; and concentrating mixed use development at transit centers and along transportation corridors. Strategies require a land use pattern and a pedestrian network which provides access and mobility between living and working environments. Elements of TOD include:

- Development of a highly desirable community with cultural amenities, easy walking distance to goods and services, access to regional and local trail systems, and the opportunity to live and work in the same area.
- Heightened sense of community through increased pedestrian activity and development at a more human scale.
- Clustered development with transit access offering better access to goods and services.
- Enhanced marketability of new development and enhanced property values.

- Stronger intermodal connections, providing opportunities for pedestrians and bicyclists to better link with transit and the regional trail system.
- Increased economic development opportunities in attractive commercial and employment locations.

Design of development along transit routes can support transit by increased intensity of development, improved pedestrian connections and appropriate locations of buildings, and parking. Sites should be designed so that multiple buildings are oriented to each other and focus towards pedestrian connections to transit stops. Surface parking should be located to the sides and back of buildings in a manner that still offers convenient vehicle parking without becoming the dominant feature of the site.

Transportation Implementation

The actions listed in the table on the following page will help the Bloomfield Township implement the transportation recommendations. For ease of use it is organized in a table format. Each section of the table is divided into three categories: Action, Priority and Responsibility to help focus attention on the most important and most effective strategies. Although successful implementation will involve effort from the entire community, the third column identifies key responsibility.

Action	Priority	Responsibility
Where possible, access management techniques should be employed such as the consolidation or redesign of existing driveways to permit vehicles to enter driveways with the least disruption to through traffic.	On going	PBD DPW PC EESD
Require a traffic impact study for any rezoning or project that would generate traffic above a specified threshold.	On going	PBD PC
Continue to coordinate with MDOT, Oakland County, SEMCOG, adjoining communities, and other jurisdictions for improvements to roads.	On going	DPW PBD EESD
Develop a comprehensive traffic calming program to provide more walkable neighborhoods and streets, especially along roads that may parallel busy arterials.	On going	PBD DPW EESD
Encourage non-motorized transportation by improving pedestrian crossings, signalization, curb ramps, consistent maintenance of facilities, requiring site plans be designed to accommodate pedestrians, and reduce travel speeds to create a more walkable environment.	On going	DPW PBD EESD
Conduct a study of noise abatement and congestion relief options along Square Lake.	Short term	EESD, PBD
Pursue stronger entryway image development for main corridors to the Township.	Mid term	PBD
The Township should continue to work with MDOT to explore remedies for the increasing traffic congestion along Square Lake Road.	Short term	PBD
Implement a Township-wide and commercial core way-finding program.	Mid term	PBD
Consider the development of bike lanes along key routes.	Mid term	EESD PBD
Conduct a study of appropriate bike path locations (as part of Parks and Recreation Study).	Short term	EESD PBD
Work in collaboration with the SMART bus system to provide attractive bus stop locations and transit oriented development, as appropriate.	Long term	PBD DPW

PC= Planning Commission, PBD= Planning & Building Department, DPW=Department of Public Works, EESD=Engineering & Environmental Services Department

*To a greater or less extent the Township Board may be involved in all of the above implementation.