

## CHAPTER 8

### CIRCULATION PLAN

*“Streets, which were the public realms of America, are now barriers to community life.”*

--Andres Duany

#### INTRODUCTION

The goal for circulation is to plan for a safe and efficient circulation system which will enhance pedestrian and bicycle movement and the ease of vehicular travel within the municipalities, given the limits of the existing system and natural and fiscal constraints.

The objectives for circulation are as follows:

- Coordinate land use and road improvement policies and projects.
- Preserve and improve the capacity of the existing roads within the area as future development occurs through cooperative efforts with developers and PennDOT as applicable.
- Promote new developments that incorporate the principles of Smart Growth. Review ordinances to ensure that new transportation infrastructure is appropriate designed for the type of development it will be serving.
- Monitor impacts on roadway capacity from new development and require developers to address projected increased traffic volumes in the road system by improving the existing system.
- Explore the potential of requiring Transportation Impact Fees in Lower Heidelberg Township.
- Promote coordinated access management programs along the road corridors within the area, to minimize the number of access points to the road system.
- Preserve the scenic road corridors within the area.
- Provide maintenance of the existing road system as warranted with the assumption that new/expanded roadway facilities will not happen any time soon.
- Recognizing that substantial traffic within the municipalities is generated outside the region, work with State, County, and other municipal officials to address areas of concern within the region.

- Facilitate pedestrian and bicycle access between residential areas, schools, community facilities and commercial & employment opportunities.
- Complete the existing sidewalk network where necessary to provide required network connectivity and maintain/improve that which already exists.
- Encourage and support the development of a network of pedestrian and bicycle trails, including shared bikeways and paved shoulders.
- Work with PennDOT to improve shoulders on state roads, particularly Route 422, to provide more bicycling opportunities. Assess the need for shoulder improvements on township roadways to provide even greater connectivity.
- Plan for a system of roads within future development areas to provide for convenient local circulation and access to primary routes of travel.
- Address existing deficiencies and safety concerns in the circulation system with landowners, PennDOT and developers as appropriate.
- Investigate ways of relieving congestion on area roadways, particularly Route 422, such as increased use of public transportation, traffic management policies along Route 422, and relationships of workplaces and residence-serving businesses and residences.
- Develop policies to discourage the use of streets in residential areas as shortcuts for externally generated through traffic.
- Improve access from Route 422 to south of the railroad tracks through grade separated crossings.
- Develop a Transportation Capital Improvements Program and budget to formally identify, quantify and address local roadway, non-motorized and bridge maintenance and funding issues.

## **Future Functional Classification of Roadways**

The future roadway classification is as follows:

**Arterial:** U.S. Route 422

**Major Collector:** Brownsville/Reber's Bridge Roads, Paper Mill Road, Sweitzer Road, State Hill Road, Green Valley Road, Faust Road, Gaul/Steely Road, Church Road, Fairmont Avenue/Elm Street, Wooltown Road, Point Road, Lincoln Drive, Werner Street, Krick Lane, Mountain Home Road, Wernersville Road, Fritztown Road, Hill Road, and the Galen Hall Road system. New additions to the existing major collector system include the route formed by the road through South Heidelberg Industrial Park

and Montello Road from Krick Lane to Fritztown Road and the elements of the southern alternative route including Belle Alto Road extended.

**Minor Collectors:** Gaul Road, Ruth Avenue, Sportsman Road (portion), Big Spring Road, Huntzinger Road, Furnace Road, Walters Avenue, South Church Road, Hill Road, Preston Road. New additions to the existing minor collector system include Balthaser Road, the connector road in Green Valley Estates from Green Valley Road to Faust Road, the connector road in Heidelberg Run West from Balthaser Road to Fritztown Road, and the connector road in Heidelberg Run East from Balthaser Road to Belle Alto Road.

**Local Access Roads:** All other roads.

### **Proposed Road Improvements**

Proposed road improvements are shown on the Future Transportation Plan.

#### ***Intersection or Bridge Improvements:***

- Galen Hall Road at Fritztown Road in Fritztown, where the alignment and sight distance of the intersection should be improved. There are proposals for realigning Galen Hall Road on the west side of Fritztown Road in conjunction with commercial development;
- At-grade crossing of the railroad at Krick Lane, where South Heidelberg is pursuing funding for a bridge to provide a separated grade crossing;
- Route 422 and Furnace Road intersection, where pavement markings should be revised to provide a separate left turn lane for westbound motorists. This can be done within the existing cartway.

#### ***Proposed Improvements to Existing Roads:***

- Widen Lincoln Drive to 40 ft., provide center left turn lane at intersection with Krick Lane;
- Provide traffic signal at intersection of Krick Lane and Lincoln Drive;
- Relocate Wernersville Road to intersect Lincoln Drive opposite Krick Lane;
- Widen Wernersville Road to 40 ft. with center left turn lane;
- Widen Mountain Home Road;
- Widen Mountain Home Road and Montello Road at intersection to provide turning lanes;
- Widen Krick Lane to 40 ft. and provide center left turn lane.

South Heidelberg Township has begun making these improvements.

In Lower Heidelberg Township and Spring Township, Reedy Road and the intersecting portion of Evans Hill Road has been realigned and a new bridge constructed.

### ***Proposed Roads***

The following proposed road segments are indicated in a conceptual manner. They are not planned for construction at this time, but would be addressed when land use was proposed to be changed and development plans prepared.

- Construction of a road segment between Wernersville Road where it crosses the Cacoosing Creek and a new road segment intersecting Fritztown Road in Spring Township. The alignment and construction in Spring Township will be coordinated between Spring Township and developers within Spring Township.
- Conceptual road segments to complete the southern alternative two-lane route, including Hospital Road and extension of Hospital Road to Furnace Road, and a connecting segment from Furnace Road to Belle Alto Road. This route would provide an alternate to congested Route 422 and attract pass through traffic on a route on the fringe of developed areas, thus having a lesser impact on residential. Any construction through Wernersville State Hospital property would be addressed only if the Hospital would close and an alternative use was proposed for the property.

Extension of Belle Alto Road from Hill Road to Furnace Road as the preferred route will require right-of-way taking just west of Hill Road, but appears to be feasible. It also should entail softening of the reverse curves near Slater Ave. If this route ends at Furnace Road, a signal may ultimately be desirable at Furnace Road and Route 422. If it is continued through the Wernersville State Hospital grounds, considerable road upgrade will be required, however the existing signal at Sportsman Road could be utilized. This would be a better long term solution. Lincoln Road could also be developed as an alternative route, however the fact that it adjoins a school complex makes it less desirable than the Belle Alto Road corridor.

Two road stubs have been shown in the northwest portion of South Heidelberg Township, one off of Texter Mountain Road and one at the Heidelberg Township boundary. If land west of Sportsman Road were ever developed for agribusiness, the construction of a road by the developer from Sportsman Road to the industrial area in eastern Heidelberg Township should be encouraged. Coordination should occur with Heidelberg Township and Robesonia Borough to determine whether extension to Freeman Street in Robesonia would be appropriate.

- A road through the South Heidelberg Industrial Park, which could be eventually extended to intersect Montello Road.
- Conceptual road system for the remainder of Green Valley Estates.

- The road through Heidelberg Run West connecting Balthaser and Fritztown Roads.
- A series of connecting roads within the future development areas of Lower Heidelberg and South Heidelberg Townships and Wernersville Borough, intended to link subdivisions together and to the existing area circulation system and provide a more extensive road system throughout developed areas (moving towards more of a grid system).
- Conceptual realignment of North and South Church Streets in Wernersville Borough. Such realignment is considered very desirable, but there are serious constraints, including lack of sufficient area north of Route 422 to construct the alignment and existing buildings south of Route 422 which would have to be removed. Opportunities to accomplish the realignment should be monitored in the future.
- Leslie Street extension (Saddlebrook). Based on topography, Leslie Street can easily be extended westward to Point Road, with one or two connection points. If two connections are made, one would be at the Borough/Township boundary, and could provide an alternate through route, eliminating two hard curves from the existing through route. Improvements should also be considered to the remaining portions of Point Road between the developed properties and Route 422.

### ***Improvements to Existing Areas of Concern***

The existing Traffic Circulation Conditions Map shows additional roadway concerns, including poor alignment, sight distance problems, areas of poor road condition, narrow streets, lack of a turnaround, vertical curvature concerns, and grade and intersection concerns. Each municipality should continue to work toward improvement of these areas through adoption of multi-year road improvement plans. The cooperation and contribution of developers should be sought when the areas of concern are along, within or affected by proposed developments.

### **Cooperation Amongst Municipalities**

While some road improvements will be handled on an individual municipality basis, cooperation of municipalities will be important, particularly along Route 422, where the impacts of development can affect congestion and the quality of life in all three municipalities.

Lower Heidelberg Township and South Heidelberg Township have recently cooperated in managing access to Route 422 in the vicinity of Sinking Spring Marketplace and the proposed 422 Shopping Center. Such cooperative efforts should continue.

Cooperation between Spring Township and Lower Heidelberg Township to address impacts of the Park Road Corridor and between Spring Township and South Heidelberg Township to address impacts of the Route 222 project are encouraged. In recognition of the increased traffic which can be expected in the area between Route 222 and 422, particularly in the Fritztown Road area and roads intersecting Fritztown Road, South Heidelberg Township has taken over

state roads, is bringing roads up to collector standards, and working to improve poorly aligned intersections. Access management strategies will be a key element in the future and must be encouraged.

Spring Township has installed a traffic signal at the intersection of Fritztown Road and Old Fritztown Road. This included widening Fritztown Road to provide a protected left turn lane. Spring Township is planning to require a realignment of Wernersville Road through the Lutz property when it is developed. This would provide a safer access point to Fritztown Road between Chapel Hill Road and existing Wernersville Road. Existing Wernersville Road would remain to service only adjacent properties. It could possibly be made one way northbound at Fritztown Road. Although Spring Township staff question its feasibility, it would be desirable to relocate Wernersville Road and/or Chapel Hill Road in such a way as to create one four-way intersection rather than two three-way intersections.

## **Scenic Roads**

Scenic roads are an important element within the circulation system within Southwestern Berks County and maintenance of a system of scenic roads will be encouraged. The Future Land Use Plan proposes concentrating most future growth in areas where development has already occurred, and proposes substantial agricultural preservation areas, and this will help maintain the scenic road system. In Rural Conservation areas developers will be encouraged to incorporate natural features and resources into an open space system within developments and to site homes with consideration of the natural features and resources.

The Townships should discuss whether it would be appropriate to adopt scenic road overlay zoning along scenic roads. Within such overlay areas, greater setbacks along the roads could be required, additional landscaping and screening requirements could be established, and design standards for siting of buildings could be established in order to minimize visual impacts of any development.

Discouraging intensive development along the scenic roads also has another benefit. This can lessen traffic volumes and driveway intersections along roads which are typically not suited for intensive traffic volumes. Since many of the scenic roads receive relatively lower amounts of traffic, consideration should be given to improving road shoulders and providing signage that promotes cycling on these roads. Signed bike routes or more formal bicycle lanes should be considered particularly where these roads connect residential with recreational areas.

## **Multi-Modal Facilities**

On the Circulation Plan, three conceptual multi-modal facilities are indicated: in the vicinity of the intersection of Krick Lane and Route 422, in the vicinity of the intersection of Werner Street with Route 422, and at Wernersville State Hospital. The multi-modal facilities are areas where several modes of travel come together. For instance, at the Wernersville State Hospital there is currently an informal, unofficial park and ride facility to which people could drive their cars, park, and then use the bus system which BARTA operates along Route 422. BARTA currently

operates a Park and Ride facility outside the planning area in Womelsdorf. The municipalities are interested in BARTA creating a formal park and ride facility within the region.

In addition to providing an interface between automobiles and the transit system, multi-modal facilities should provide connections of the bicycle and pedestrian modes with the transit system. The proposed trail system throughout Southwestern Berks County provides access to Krick Lane at Route 422, Werner Street at Route 422, and Wernersville State Hospital. People could use the trail system to walk or bicycle to the multi-modal facilities along Route 422 and at the Hospital and then ride the BARTA system.

To make such a system attractive and feasible, cooperation would have to occur among the municipalities, land owners, and BARTA. Some of the elements which would be necessary would be:

- BARTA maintain its recently expand service;
  - Well located stops;
  - Attractive and safe stops with shelters;
  - Connections to Park and Ride facility in Womelsdorf
  - Stops that are convenient to local users;
  - Pedestrian and bicycle routes to stops;
  - Bicycle racks and safe shelters for bicycles.
  - Bicycle carriers on buses

## **Mass Transit**

Congestion on Route 422 Corridor is a major concern. No major improvements to Route 422 are proposed by any governmental agency, so incremental steps will have to be taken to improve conditions along Route 422. One of those incremental actions is encouraging use of the BARTA bus system.

An objective will be to maintain recently expanded service. Elements in trying to maintain service will be well located stops, attractive and safe stops with shelters, connections to the transit hub in Reading, and bicycle and pedestrian routes to stops with bicycle shelters and racks. The trail system is designed to provide major developments, such as Green Valley Estates, Spring Meadows, Heidelberg Run East and West, Saddlebrook, Westgate and vicinity, Gaul Road future development, Hill Road area, and Phoebe Berks with access to Route 422.

As additional development occurs within the area, consideration should be given to providing a local circulator system, which could be mini-buses which would circulate throughout the area

and provide access to BARTA system along Route 422. The circulator could be planned in conjunction with the municipalities, BARTA, and area businesses. Areas which could be connected via the circulator system would be downtown Wernersville; western industrial/agribusiness area; Wernersville State Hospital; Krick Lane Industrial Park; Redners/Shur-Fine/422 Shopping Centers; and residential concentrations.

The Southwestern Berks County municipalities and surrounding municipalities should work with BARTA to encourage BARTA to provide adequate suburb-to-suburb bus routes serving major residential, employment and retail areas, with cooperation with and support from the local business community.

Providing park and ride systems should be encouraged. In the future, it may be appropriate to plan for a transit hub in Wernersville, or where sufficient land would be available along Route 422 if land could not be secured in Wernersville.

Future road and access road design in the future should consider accommodating potential bus traffic. As developments occur in areas where bus service is likely, provision should be made for pull-offs, stops and shelters and pedestrian access to the stops and shelters. The municipalities should require that any new development that occurs along Route 422 consult with BARTA early in the planning/design stage to ensure proper bus access if appropriate.

The use of carpooling throughout the area should be encouraged. Businesses within the area could take the lead in encouraging employees to carpool. Regional agencies such as Commuter Services of Pennsylvania serve as points of contact for coordinating ridesharing opportunities. The municipalities and local employers are encouraged to work with such agencies to promote car-and van-pooling.

## **Access Management**

Access management is and will continue to be a concern along all roads within the area, but particularly along Route 422, Fritztown Road, and the collector road system. The municipalities should work with PennDOT and Reading Area Transportation Study (RATS) to develop an access management plan for Route 422.

The major elements in access management include the following:

- Driveway design standards
- Reduce number of entrances to roads
- Traffic Impact Analysis where development is proposed
- Left turn lanes and right turn lanes constructed at road and driveway intersections
- Install medians
- Adequate parking lot/internal circulation design in developments
- Shared access to properties
- Interconnect properties developed along roads
- Service roads paralleling Route 422
- Improve intersection design/spacing



- Acceleration and deceleration lanes at access drives
- Signalized high volume driveways
- Control of access
- Direct development access roads to signalized driveways
- Prohibit inappropriate turning movements

## **Transportation Development Districts**

The Transportation Partnership Act (Act 47 of 1985 as amended) allows municipalities to create Transportation Development Districts to assist in the financing of transportation facilities and services. Roads, railroads, and public transit are eligible. If municipalities propose a district, property owners who represent more than 50 percent of the assessed valuation within a proposed district must be in favor of the district. The creation of the Transportation Development District allows municipalities to impose assessments upon benefited properties within the District to construct transportation improvements.

While the Transportation Development District approach may not be appropriate at the present time, the appropriateness of it along Route 422 in the future should be monitored.

## **Official Mapping**

The Pennsylvania Municipalities Planning Code, as amended, contains provisions for municipalities to enact an Official Map. This device formally and graphically displays the municipal list of improvements to be made. If a property that impacts a planned improvement becomes available, legal and time limits begin to apply in order for the municipality to acquire that parcel for the project. Further discussion on Official Mapping occurs in other chapters of this Plan.

## **Congestion Management Process**

Congestion management processes have been touched on previously. The major elements are:

- Employee trip reduction plans to increase average vehicle occupancy;
- Implementation of low-cost improvements such as signal timing, lane striping, shared access points, bicycle and pedestrian improvements;
- Increased transit use and availability;
- Creation of transportation management associations in which municipalities work with local business community in identifying travel demand reduction measures such as:
  - reducing vehicle concentrations at peak periods by staggering work hours;
  - encouraging commuting by carpool and public transit rather than by single occupancy vehicles;

- eliminating unnecessary commutes;
- funding informal para-transit/vanpool operations; and
- hiring a transportation coordinator to organize transportation alternatives.

As increased industrial and commercial development occurs within the 422 Corridor, the appropriateness of these strategies should be reviewed.

## **Impact Fees and Negotiated Financial Contributions**

South Heidelberg Township has a traffic impact fee system in place and has used it to collect fees to finance improvements to the road system. Neither Wernersville or Lower Heidelberg Township have a traffic impact fee system and should determine whether they wish to initiate such a system, either individually or jointly. Two possible districts should be investigated, one for future development in the Gaul Road area and one for development north of Wernersville. Other areas may benefit from this system, too.

Where traffic impact fee systems are not in place, financial contributions from developers for road improvements should be negotiated.

Developer-financed road improvements at existing intersections and along road segments could correct current deficiencies and mitigate traffic increases associated with new development.

## **Pedestrian Circulation**

Pedestrian circulation has been discussed previously, but inter-relationships with the street system must be mentioned. As streets are maintained and improved, walkability should be addressed, including the curb radii at intersections. Limiting radii at intersections to the minimum necessary to allow safe traffic flow can make intersections more pedestrian friendly. Pedestrian crossings at street intersections, particularly along the major trail routes within the area, should be facilitated through crosswalks, stop signs, limitation of cartway width and corner radii and the use of pedestrian buttons and cycles that signalize street intersections. Proper sidewalk maintenance and placement of missing sidewalk 'links' play huge roles in having a pedestrian transportation system that is available to and used by everyone.

## **Shoulder Improvements**

Developers should be required to improve shoulders along the frontages of their tracts when they develop. In addition, the Townships could take it upon themselves to improve shoulders along existing roads. Shoulders should be a minimum of 4 ft. wide, but should be the minimum width necessary to provide for trails in accordance with the guidelines in the Statewide Bicycle and Pedestrian Master Plan. Simple shoulder improvements go a long way in promoting bicycle commuting and short-trip use and are a valuable tool in congestion management, a good example of this idea is Belle Alto Road.

## Gateways

Gateways should be considered at the entrances to Southwestern Berks County along Route 422 and at the entrances to Wernersville. A gateway is an entrance corridor that defines the arrival point as a destination. Gateway planning concerns arranging the landscape and visual experiences to help create a sense of arrival at the destination and provide a positive image of the destination. The municipalities can work with property owners to enhance the entrances.

Along the length of Route 422, municipalities can work with property owners to enhance commercial areas through coordinated landscaping, signage, lighting, street furniture, paving materials, design of site improvements, building facades and window displays. When new development occurs, developers could be required to comply with performance and design standards which would require them to address these elements. When new parking facilities are constructed along Route 422, they should be landscaped, buffered and placed to the side, or preferably the rear of buildings.

Signage should be minimal, and appropriate to the character of the municipalities.

Property owners should be encouraged to maintain and improve properties, particularly those that may have negative impacts on surrounding properties. Where the rear of commercial properties face or abut residential properties, attention should be paid to the appearance of the commercial property and its impact on the residences.

Design guidelines addressing the following elements could also be applied within Wernersville and the villages throughout the area, such as State Hill and Fritztown.

- discouraging the use of drive-thru facilities
- encourage new development to be compatible with and integrated into existing streetscapes, by addressing:
  - maintaining appropriate siting patterns, such as setbacks of buildings on lots
  - respecting the massing (volume created by sections of the building) within the neighborhood
  - using materials of similar appearance and texture to those on existing attractive buildings
  - using similar architectural details as other buildings in the neighborhood
  - using similar numbers and spacing of windows and doors in the facade
  - Maintaining the scale and proportion of buildings near the building. Scale deals with the relationship of each building to other buildings in the area

and proportion deals with the relationship of the height to the width of a building and with the relationship of each part to the whole.

- Using similar roof shapes
- Maintaining similar footprints of buildings and rooflines (matching facade masses with existing buildings)
- Utilizing similar entry treatments to buildings
- Using similar building heights
- Having store fronts, upper facades, and cornices of commercial buildings compatible with existing buildings
- Using colors which are harmonious throughout the area

The use of coverage, density, intensity and yard bonuses for architectural treatments, building design, amenities, street furniture, open spaces and desired parking designs could be considered along Route 422 and in the villages. The intent of bonuses is to provide incentives to developers, not just regulation, to allow economic use of property.

## **Traffic Calming**

As development in the area occurs, and traffic volumes increase, there can be increased traffic flow on residential streets. It is hoped that some of the road system improvements detailed earlier in this plan will encourage through traffic to roads on the periphery of the residential areas. The other identified methods of accomplishing this include increased utilization of mass transit, internalized trips within the area (such as creation of the Village Commercial area abutting Heidelberg Run East), providing increased opportunities for pedestrian and bicycle traffic, supporting efforts to increase automobile occupancy rates and parking lot opportunities, and designing appropriate new road construction projects such as the "southern bypass". If those steps are not completely successful, traffic calming techniques can be considered.

The purpose of traffic calming is to manage movement through an area in a way that is compatible with the land usage in the vicinity of the road. Two fundamental principles of traffic calming are that **streets are not just for cars and that residents have rights**. Streets should be safe for pedestrians and local drivers and traffic should not adversely affect the quality of life along the streets.

The general methods of traffic calming include:

- Active speed reduction (construct barriers to traffic movements)
- Passive speed reduction (installation of signage)

- Streetside design (landscaping changes the appearance of the area and driver attitudes)
- Street design (smaller, narrow residential streets with on-street parking instead of wide-open boulevards)
- Regional planning efforts (external traffic directed to other routes)
- Opportunities for use of alternative modes (mass transportation, pedestrian, bicycle)

Regional planning efforts and opportunities to use alternative modes have been discussed. The methods available along local streets include active speed reduction, passive speed reduction and streetside design.

1. *Active Speed Reduction (Construct barriers)*

- a. Speed bumps and speed tables are raised areas in the street surface which extend across the width of the street. Speed bumps present liability and are also annoying to local residents. Speed tables, which are really raised pedestrian crosswalks, could be more successful. They would be most appropriate in areas with substantial pedestrian traffic.
- b. Changes in roadway surface - This could include rumble strips, milling, and special roadway surfaces. These techniques can increase noise in areas and raise objections by area residents.
- c. Intersection Diverters - This could involve a barrier placed across an intersection, typically to alter travel plans, such as permitting right turns only, to make travel through a neighborhood more indirect.
- d. Channelization - This could involve provision of pedestrian refuge areas, providing protected parking bays through landscaped islands, altering motor vehicle traffic movements, and restricting movements at intersections by narrowing the space available for vehicular movement.

The active controls require changes in driver behavior. While the active methods send the message that the street is not just for through traffic, the methods are costly, and likely to be viewed negatively by some of the local users of the streets.

2. *Passive Methods of Control*

- a. Traffic signs such as Do Not Enter, Stop, Not a Through Street, Local Access Only, No Trucks, or signs establishing speed limits, indicating one-way nature of street, or prohibiting turns.
- b. Traffic Signals

- c. Pavement markings, including crosswalks, edgelines, and use of different materials for pedestrian crosswalks
- d. Permitting on-street parking
- e. Speed watch

These methods have lower costs and can be applied to certain times of the day, if appropriate. However, signs are often ignored in usage, and enforcement is necessary.

### 3. *Changing Driver Attitudes Within Neighborhoods*

Building design, street design, street trees, landscaping, street furniture, lighting, paving, and land use can change the driver's perception of a road as not just an area to drive, but as a shared space with pedestrians and other occupants of the area. The intent is to have the driver recognize the street as not just a wide-open roadway designed for benefit of a car, but as a place where residents of a neighborhood will also be using the street. Any designs for streets should be compatible with the character of the neighborhood. Landscaping should be easy to maintain and not affect clear sight triangles.

#### *Implementation*

Prior to implementation of any traffic calming program, it is necessary to clearly identify the specific problems which are to be addressed, identify and evaluate the alternative techniques and their drawbacks, benefits, and cost; identify alternative traffic patterns that could result from implementation of the techniques and the effects of those patterns on other streets and neighborhoods; and involve citizens of the community in the evaluation and selection of techniques. Techniques should not detract from the character or attractiveness of a neighborhood.

#### *Primary Emphasis on Passive Techniques*

Primary emphasis should be given to the passive traffic calming techniques. The use of active traffic calming techniques should be employed only if passive techniques are not successful because of the cost and inconvenience to residents.

One area where traffic calming could be used would be on Fairview Street and Washington Avenue. Stop signs could be placed on these roads to discourage their use as a relief route from Route 422. Where stop signs have been placed on cross roads at intersections with these streets, stop signs could be moved to Washington and Fairview.

Signage could also be placed on streets to direct people to traffic signals at Route 422 to help discourage traffic through residential areas on streets on which people do not have to be.

One area where more active traffic calming could be considered is Route 422 within the Borough, where bumpouts could be considered at some street intersections. The bumpouts would physically protect parking and shorten the distance across the road for pedestrians.

### **Optimization of Traffic Signalization along Route 422**

In order to increase system capacity and reduce intersection delays, traffic signal timing along Route 422 should be kept current.

In 2008-2009 an upgraded closed-loop system of coordinated signals was installed along the corridor. All signals from PA 724 in Sinking Spring through Robesonia were grouped into a coordinated system that includes radio communication between them all to allow real-time adjustments based on existing traffic conditions. Currently there are several closed loop systems in operation within PennDOT District 5-0. The systems require hardware (vehicle detectors) in the field as well as computers, software and communication lines to a municipal office and to the PennDOT District Office. They will also require a consultant or employee trained to monitor the system. Although the system allows for real time signal timing adjustments, PennDOT policy currently allows timing adjustments to be made only by PennDOT. This inhibits the ultimate effectiveness of the closed loop system; however as these systems become more prevalent, we expect that PennDOT will respond with a more effective policy.

A traffic signal and turning lane should be considered for the Route 422-Furnace Road intersection. If installed, such a traffic signal could be an extension of the closed loop system in Wernersville.

### **Summarization of Route 422 Program**

The following elements have been discussed as means of improving traffic conditions and aesthetics along Route 422:

- Optimize traffic signalization
- Access management
- Encouragement of mass transit
- Improve the pedestrian and bicycle circulation system
- Providing multi-modal facilities
- Providing a southern alternative route.
- Require developer-financed road improvements including turning lanes, additional travel lanes and traffic signals
- Gateway and streetscape projects

- Improvements at Route 422-Furnace Road intersection
- Monitoring need for congestion management system strategies
- Monitoring need for Transportation Development District
- Coordinate with adjoining municipalities on both the western and eastern sides of the region to address traffic issues and strategies regionally, rather than by municipality. This would include working with Sinking Spring Borough's Route 422 Corridor Study.

### **Access to Interstate Route 78**

As industrial development occurs in the area, it is likely that there will be increased truck traffic from the Route 422 area to Interstate 78. The most likely route for this traffic is Route 422 to Route 419 in Womelsdorf, and Route 419 to I-78. There should be discussion among the Southwestern Berks County municipalities, Western Berks County municipalities and PennDOT regarding the need to upgrade Route 419 to assure that it can safely accommodate truck traffic.