

TRANSPORTATION

INTRODUCTION

Transportation System

A sound transportation system includes adequate and well-maintained roads, available public transportation, safe and convenient pedestrian access, and bicycle routes. However, few communities are able to achieve this ideal level of service. This is particularly true in small, less populated communities with limited budgets. In other words, local municipalities must evaluate transportation needs, set priorities, and garner all available resources to make improvements. It is also important to remember that there is a direct correlation between land use and transportation needs. As residential and commercial land is developed, more and more people use the roads, and the roads become congested for longer periods of time. This is particularly true for rush hours. In response, roads are improved to address the traffic congestion, the adjoining land becomes easier and more lucrative to develop, and more traffic is generated.

Access - Mobility

Each highway, road or street in a community plays a specific role for the movement of traffic and it is useful for planning purposes to classify roads according to the particular function each serves. In general terms, the functional classification of a road is based largely on two factors -- access and mobility -- and typically, as access declines mobility increases. For example, Interstate Route 84 clearly serves a different function than does a street in a residential subdivision. Although the I-84 and private street example compares streets at the opposite ends of the road classification hierarchy, it clearly depicts the relationship between access and mobility. Traffic on Interstate 84, a limited access highway, travels over long distances at high rates of speed. On the other hand, traffic using a residential street with unlimited access from individual properties moves at minimum speeds to reach roads that connect the residential community with other areas in both municipalities and the region at large.

TRANSPORTATION GOAL AND OBJECTIVES

Transportation Goal: Establish and maintain an adequate circulation system to safely and efficiently move people and goods.

Safe and well maintained roads are vital to all communities, serving not only as the means of travel within the community, but as the direct link to the region and beyond. Interstate 84, Route 6, Route 390, Route 402 and Route 507 provide easy access to and from the Township, and will certainly foster continued development. Local officials must plan carefully to ensure adequate funding for the improvement and maintenance of locally-owned roads. Land use management tools must consider the capacity of roads, directing commercial and higher density development to areas served by roads capable of carrying increased traffic and the trucks necessary to serve resort and other commercial establishments.

Circulation - Planners typically talk about "circulation" rather than transportation because circulation (getting around) is the goal of the citizens they serve, whereas transportation is just a method of achieving that goal. A good circulation plan includes more than streets and roads – it includes means of pedestrian and bicycle circulation and, in many communities, some form of mass transportation.

Although good circulation plans involve more than roads, the starting point for an existing conditions analysis of circulation is a map of streets and highways in the community.

Source: *Community Planning, an Introduction to the Comprehensive Plan*, p. 80.

Objectives:

Classification **Inventory and classify according to function all public roads and bridges, and assess maintenance and safety concerns and the improvements needed.**

- Road Task Force - Participate in the Pike County Road Task Force to address regional traffic impacts and highway improvement needs.
- Planning - Actively participate in all County and PennDOT highway planning programs.
- Improvements Program - Develop a local road and intersection maintenance and capital improvements program.

Local Actions **Develop a coordinated Township program to maintain an adequate capacity of the road network.**

- Development Location - Limit higher density and higher traffic impact development to areas with adequate highway capacity.
- Parking and Access - Require adequate off-street parking and loading, limit curb cuts, and require well designed access points.
- New Development - Maintain up-to-date standards for construction of new subdivision roads.
- Road Linkages - Include the consideration of through road connections as part of the development review process.
- Road Dedication - Continue the policy of not accepting development roads for public dedication unless the road serves a clear benefit that accrues to the public as a whole and not only residents of the development.
- Official Map - Using an official map, establish and reserve public street alignments and adequate rights-of-way for planned street improvements.

Pedestrians and Bicyclists **Consider the needs of pedestrians and bicyclists in all transportation planning.**

EXISTING CONDITIONS AND ACTIONS

Highway Classification Factors As previously noted, access, how traffic enters the traffic stream, and mobility, the physical capability of the road to carry traffic, are the key determinants of a road's functional classification. However, several other road and network characteristics also affect the functional classification of a road. Traffic volume in relationship to the physical design of the road, including lane and shoulder width, right-of-way alignment and surface treatment, is important to its classification. Generally, as a community develops, roads are improved to meet the increased traffic demands, with specific routes moving higher in the functional classification as they are improved.

However, in areas of rapid growth and associated traffic increases, the amount of traffic carried by specific roads may increase to the point of exceeding the road's

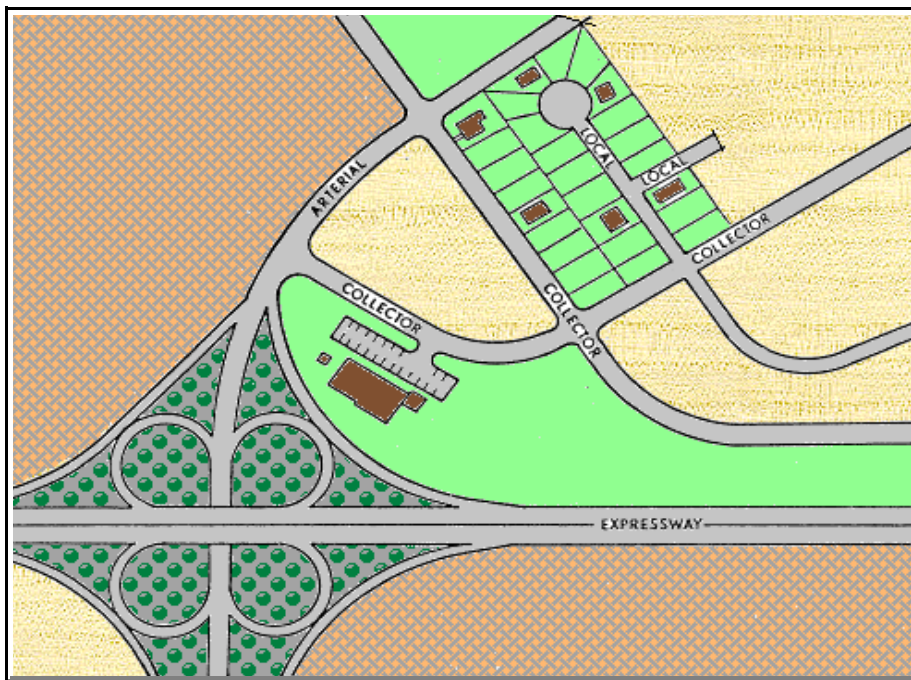
capacity. The road, in terms of traffic, may be serving as an arterial route, but may not have been physically upgraded from a minor collector or local road. In urban areas, mass transit and non-capital approaches such as ride sharing and staggered work hours are promoted as a means of reducing traffic congestion as an alternative to upgrading roads. In a community such as Palmyra Township, where much of the traffic is not related to travel to work but to vacation homes and recreation, such solutions are likely impractical.

A road's location and relationship to other roads in the intra-community and inter-regional highway network may also help define the road's classification. Those roads which provide direct and convenient connection to arterial routes and expressways typically develop into roads which carry increasing amounts of traffic. Conversely, interchanges for expressways are normally located to provide connection with those roads in a community which historically have developed into arterials and collectors. Traffic flow problems and declines in level-of-service on routes connecting areas of the municipalities and routes providing access to the region are directly related to the capacity of collector and arterial roads. As traffic increases on the collectors and arterials, where access to abutting properties has historically not been limited to any significant degree, increasing traffic congestion can be expected. Also resulting from such access by adjoining residential and commercial properties and intersecting streets are the safety problems associated with increased congestion.

Highway Functional Classification

The nomenclature used for a *Highway Functional Classification* also differs from one jurisdiction to another throughout the Commonwealth and the United States. Road classification in metropolitan and suburban areas is often very complex, with the various categories of roads being divided into subcategories based on land use type served and the designation of specific traffic volumes. The nomenclature for classification being used for Palmyra Township is based on the type and density of the land uses served by the road and the volume of traffic on the road. The relatively

small-scale commercial development interwoven with the residential development pattern in the rural setting warrants a more simplified highway classification system for the Township. While simplified, this classification will meet the needs for identification of problem areas and needed improvements, and for long-range planning. The designation of the Highway Functional Classification for roads serving the Township includes *expressway*, *arterial highway*, *collector road* and *local road*. A description of each classification follows and, the *Highway Functional Classification Figure*, provides an illustration, and the *Highway Classification and Annual Average Daily Traffic Figures* provide an overview of the road system.



Highway Functional Classification

Expressway

- Provides interregional and interstate connections
- Designed for unrestricted, high speed (55+ mph) mobility of traffic
- Limited access only – no direct access from private property
- Provides highest level of mobility
- Intersects with selected arterial or collector routes by means of interchanges
- Carries highest volumes of automobile and truck traffic with longer trip lengths



Interstate 84, running east and west through Palmyra Township and Pike County, is the only expressway in Pike County. Township access is at the Exit 26, Route 390 Interchange. Since its completion in the late 1970's, I-84 has played a central role in shaping the growth and development of all of Pike County. The ease of access provided for visitors and new residents has certainly contributed to the level of residential development and will continue to facilitate travel to nearby urban centers.

Arterial Highways

- Provides connection between commercial and population centers in the region
- Provides connection between the municipalities and adjoining communities, counties and states
- Carries larger volumes of traffic at relatively high speeds (45-55 mph)
- Serves a mix of local and through traffic
- Carries low volumes of through truck traffic
- Provides moderate to high levels of mobility
- Access limited only by PennDOT highway occupancy permits and local zoning and subdivision ordinances



Arterial highways in the Township include four state highways:

State Route 6: a major east/west corridor in the Commonwealth which runs through the north section of the Township. Route 6 runs west through Pennsylvania to the border with Ohio and east to New York.

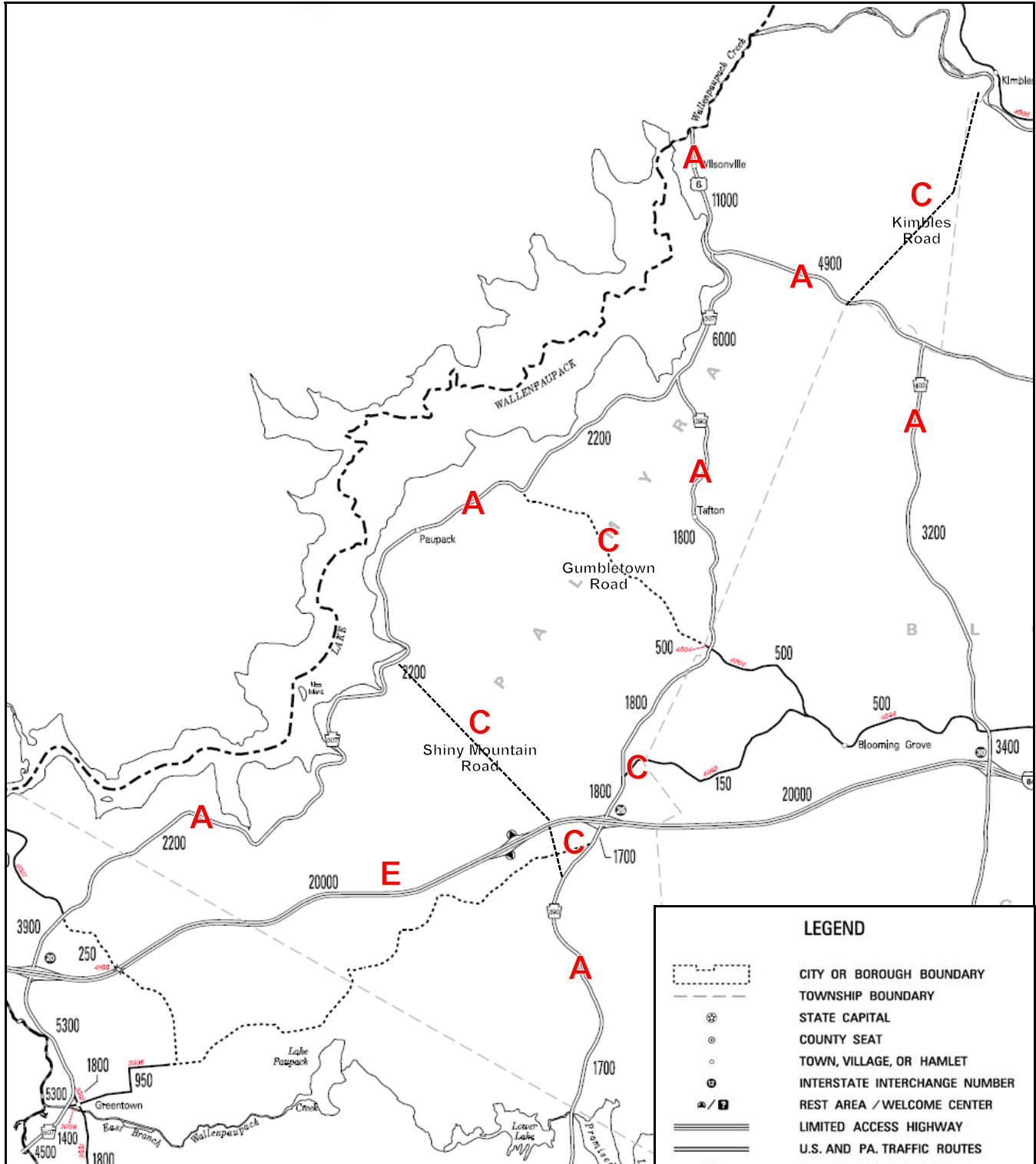
State Route 390: carries traffic from its northern terminus at State Route 507 south through Palmyra Township and Greene Township into Monroe County.

State Route 402: a north/south route connecting Route 6 on the north and running through Palmyra Township, Blooming Grove Township, Porter Township and Monroe County to its connection with Route 209 in Marshalls Creek. Route 402 carries traffic between Pike County and areas of New Jersey and the Lehigh Valley and south in Pennsylvania.

State Route 507: parallels Lake Wallenpaupack carrying traffic from Route 6 in the north, south through Green Township and Wayne County to its connection to I-380 at Gouldsboro.

Collector Roads

- Collects traffic from local streets for connection of residential areas to commercial and activity centers and arterials
- Serves moderate levels of traffic at reduced speeds (35-45 mph)
- Serves more locally oriented traffic and few through trips
- Carries primarily only “local delivery” truck traffic
- Access from smaller and more numerous properties
- Access limited only by local municipal and PennDOT highway occupancy permits and local zoning and subdivision ordinances
- Provides reduced levels of mobility



Highway Classification and Average Annual Daily Traffic
 (E=Expressway, A=Arterial, C=Collector)

LEGEND

- CITY OR BOROUGH BOUNDARY
- TOWNSHIP BOUNDARY
- STATE CAPITAL
- COUNTY SEAT
- TOWN, VILLAGE, OR HAMLET
- INTERSTATE INTERCHANGE NUMBER
- REST AREA / WELCOME CENTER
- LIMITED ACCESS HIGHWAY
- U.S. AND PA. TRAFFIC ROUTES
- STATE ROUTE AND NUMBER
- STATE MAINTAINED BRIDGE
- OTHER ROADS
- TRAFFIC VOLUME NUMBER

VOLUMES SHOWN ARE 2003 ANNUAL AVERAGE DAILY TRAFFIC BASED ON THE MOST CURRENT COUNT INFORMATION AVAILABLE.

Collector roads in the Township include:

Shiny Mountain Road (T-390): connects Route 507 and Route 390 and carries traffic to I-84 and south on Route 390.

Kimbles Road (T-367): connects Route 6 to Lackawaxen Township.

Gumbletown Road (T-413): connects Route 507 to Route 390 and continues into Blooming Grove Township as Blooming Grove Road.

Old Greentown Road (T-351): section between Shiny Mountain Road and Route 390 connecting to I-84.

Egypt Road (SR 4002) : provides a connection for primarily residential traffic between Blooming Grove Road and Route 390.

Local Roads

All other public roads in the Township not classified as expressways, arterials or collectors are considered local roads.

- Provides connection of residential properties and communities and less populated areas to collectors
- Serves lowest levels of traffic at slowest speeds (less than 35 mph)
- Provides high level of access from smaller residential parcels or areas with little development
- Carries local trips only with no through trips
- Carries minimal truck traffic for local deliveries

Public Roads in Palmyra Township

The total length of public roads in the Township is 45.36 miles, with 18.23 miles of Township roads and 27.13 miles of PennDOT-owned routes, including I-84. (See the *Public Road Mileage Table*.) Local municipal road mileage in Pike County ranges from a low of 6 miles in Porter Township to a high of 43 miles in Lackawaxen Township.

The Township-owned roads are part of the State Liquid Fuels Programs which provides state payments to the municipalities for road maintenance and reconstruction based on population and miles of roads meeting PennDOT specifications. However, the Liquid Fuels Funds comprise only a small part of the Township road maintenance budget and do not nearly cover the cost of long term maintenance and replacement.

Traffic Volume

It is obvious that traffic on the roads in the Township and all of Pike County have been increasing significantly in association with the rapid development. Annual average daily traffic (AADT) volumes provide an overview of the traffic flow in the Township for planning purposes. PennDOT conducts traffic counts on state roads, and the counts do provide an means of assessing the overall traffic conditions. Traffic counts for 2007 for all state roads in the Township, reported as annual average daily traffic (AADT), are shown on the *Highway Classification and Annual Average Daily Traffic Figure*.

An important point to remember is that AADT does not reflect daily and seasonal traffic volumes which can far exceed AADT. The proportionate increase in daily and seasonal counts can be significant, exacerbating any congestion far beyond what is found on the average day.

As would be expected, I-84 carries the highest traffic volume, counted at 20,000 in the Township, which is relatively low when compared to many other expressways. Traffic volumes on arterials are highest on Route 6 and on Route 507. Between Route 507 and the Wayne County line, Route 6 carries an AADT of 11,000 vehicles, reflecting the school traffic, business traffic and the east/west connection. AADT is 6,000 vehicles on Route 507 between Route 6 and Route 390, a combination of Route 507 south traffic and Route 390 south traffic.

Traffic volumes on Township roads are not available, but given the limited development served by the roads, traffic volumes are not excessive. In fact, traffic volumes on most Township roads is relatively low, with Shiny Mountain Road carrying the highest volume because it serves as a connection to I-84 for many of the residential developments in the Township.

Road Network Level-of-Service

The traffic carrying capacity of a community's road network, and the intersections associated with the network, to handle the existing and future traffic volumes generated by development is the key element for providing safe and efficient traffic flow. Those land uses which generate larger volumes of traffic should logically be located in the areas of a community served by roads with greater carrying capacity. For example, commercial establishments generate more traffic than a single family residence and should be located on routes which have sufficient capacity to serve the use.

The capacity of a highway or road typically decreases as the service area of the route declines. For example, the capacity of I-84 is obviously significantly greater than any arterial highway, which in turn have a greater capacity than collector roads, with the lowest capacity associated with local roads. The capacity of a rural, two lane highway is dependent on a number of design variables such as lane and shoulder widths, volume of trucks and terrain. Level-of -service is calculated using peak hour traffic volume. The peak hour is that time when traffic volume is heaviest and this most often occurs on weekends in a rural/recreation area. The peak flow of vehicles during the busiest quarter-hour of the day is compared with the adjusted flow rate standard for each level-of-service.

Local roads, because of the limited service and low traffic volumes, are not considered in terms of capacity. The quality of traffic service is discussed in terms of level-of-service (LOS). There are six levels of service ranging from LOS A through LOS F, with LOS A representing free flowing traffic and LOS F representing a total breakdown in the traffic flow or *bumper to bumper* traffic.

Level-of-Service in the Township

Obviously, the state routes serving as the collector and arterial roads in the Township carry the greatest volumes of traffic, with Township roads serving primarily residences and more remote areas of the community. The roads in the Township continue to adequately carry even peak volumes of traffic without serious delays and declines in LOS, with no significant change expected in the near term. Travelers on roads and intersections in the Township typically do not experience any significant delays. Such delays would indicate that a road is approaching its capacity and reaching an unacceptable level of service. This does not mean, however, that all roads in the Township are in optimum condition, and that particular problem areas and safety concerns need not be addressed. Problem intersections and road segments are discussed in a later section.

Land Use Planning Considerations

The traffic carrying capacity of a community's road network, and the intersections associated with the network, to handle the existing and increasing traffic volumes generated by development is the key element for providing safe and efficient traffic flow. Those land uses which generate larger volumes of traffic should logically be located in the areas of a community served by roads with greater carrying capacity. For example, commercial establishments generate more traffic than a single family residence and should be located on routes which have sufficient capacity to serve the use.

Need for Regional Transportation Planning

Given that traffic is an issue that transcends municipal and state boundaries and effects all the municipalities in Pike County, the County Planning Office should take the lead role in coordinating and promoting the idea of regional traffic planning. This should include the affected municipalities (in Pennsylvania and New Jersey), the County Planning Commission, the Pike County Road Task Force, PennDOT, NJ DOT and the Joint Toll Bridge Commission. This will require a long term commitment of significant staff time and effort. However, without such commitment the problem will simply intensify with no real plan or solution.

PUBLIC ROAD MILEAGE		
Palmyra Township Roads		
Name	T - #	Miles
Old Greentown Road	351	3.34
Bartelson Road	355	0.98
Kimbles Road	367	2.98
Bear Run Road	369	1.16
Cromwell Avenue	371	0.60
Burns Hill Road	388	0.67
Shiny Mountain Road	390	3.16
Ansley Road	392	0.34
Coutts Road	393	0.24
Pellet Road	394	0.52
Dirk Road	398	0.47
Spinnler Point Road	398	0.28
Lynn Hill Road	400	0.28
Hendeershot Road	406	0.03
Eade Avenue	407	0.16
Riverside Drive	408	0.10
Manly Road	409	0.16
no name	410	0.03
Gumbletown Road	413	2.58
Buehler Lane	414	0.15
Township Total		18.23
Penn DOT Road Total		27.13
Public Road Total		45.36

Township Roads -- Condition and Future Plans

All of the roads owned and maintained by Palmyra Township are in overall good condition with all but 4 miles of the total 18.23 miles paved. Old Greentown Road west of Shiny Mountain Road and part of Bear Run Road are gravel, but are maintained in good condition. The Township Road supervisor reported that only a few areas of Township roads require improvement such as surface restoration, shoulders and drainage.

The community survey asked several questions related to Township road maintenance:

Quality of Maintenance:

10% excellent; 58% good; 27% fair; 5% poor

Importance of Maintenance:

2% not imp.; 5% somewhat imp.; 44% imp.; 50% very imp.

Spending Township Funds on Road Improvements:

39% add or increase; 60% continue as is; 1% decrease

The Board of Supervisors identified routine maintenance, re-paving as necessary, improving shoulders and drainage as important, with no particular concerns about widening or reducing steep grades. The Township will focus on the maintenance and improvement of existing local municipal roads and plans no major realignment or widening projects. Funding for road maintenance is taken from the general fund and the Liquid Fuels Fund, and no shortfalls are anticipated to meet the maintenance needs. The Township will also monitor the effectiveness of new materials and practices and use such innovations to best advantage. Good examples are plastic culverts and plastic head walls.

New Road Construction and Public Dedication

Palmyra Township is not likely to undertake any new road construction. Roads and intersections serving new residential developments will be constructed by developers in accord with the applicable Township and State standards. If determined beneficial to the overall public good, these roads can be accepted for public dedication by the Township, and provided such roads meet PennDOT standards, the State Liquid Fuels Fund allocation would increase. The annual payment from the state is based on the municipal population and the amount of road miles maintained.

However, the long term cost of the maintenance of public roads falls far short of the funds received from Commonwealth for liquid fuel funds and the taxes typically collected from residential development. Local officials must carefully weigh the long term maintenance costs against the local tax revenues generated by development and increased state funding before accepting private roads for dedication . The policy in Palmyra Township has been not to accept roads for dedication and this policy will be continued.

Condition of State Roads

Improved maintenance, improved drainage, resurfacing and identified intersections are the primary concerns on state roads. Although the municipalities have no direct control over state roads (the roads that carry the most traffic at higher speeds and present the most critical safety concerns) this *Plan* identifies a number of concerns which must be monitored:

- Correction of dangerous intersections
- Surfacing restoration
- Increasing volumes of traffic
- Speed limit enforcement
- Adequate maintenance
- Improved signs for hazards and traffic control

The community survey asked two questions related to state road maintenance:
Quality of Maintenance:
 7% excellent; 54% good; 28% fair; 11% poor
Importance of Maintenance:
 1% not imp.; 5% somewhat imp.; 41% imp.; 54% very imp.

Should the condition of these routes deteriorate due to lack of maintenance, or if PennDOT does not make improvements in anticipation of traffic volume increases over the long term, the capacity and level-of-service could degenerate. The municipalities should work with PennDOT and the Pike County Planning Commission to identify the most critical state route improvement needs in the municipalities and work to have the improvements programmed by PennDOT on their Twelve-Year Transportation Program (TYP).

Specific Areas of Concern

State Route 390: Improvements are critical to prevent deterioration and sustain long term function of the Route which carries increasing traffic.

- Poor drainage, roadway flooding, winter ice.
 - Just south of Fairview Deli
 - Near Grampa’s Woods entrance
 - One-half mile south of Shiny Mountain Road
- Widening
- Re-alignment

State Route 507: poor drainage, roadway flooding, winter ice.

- Near Dirk Road and intersection with Spinnler Point Road
- Intersection with State Route 390
- Near Lake Service auto repair shop
- Hemlock Grove Commercial Center access

Intersections

- Route 390 and Route 507 - very poor vertical and horizontal alignment and very poor sight distance. Needs realignment to T-intersection and grade reduction.
- Route 6 and Atlantic Avenue - traffic congestion associated with bus traffic at school opening and closing times. Need for improved traffic management.

Bridges

Palmyra Township owns and maintains two bridges - one on Old Greentown Road which crosses Kleinhans Creek and one on Kimbles Road which crosses the railroad. Both bridges are in good condition and each has a weight limit of 80 tons. Non-state owned bridges with spans of 20 feet or more must be inspected every two years in accord with PennDOT requirements, and the inspections for local and county bridges are conducted by engineers retained by the Pike County Board of Commissioners. Any identified maintenance issues are address by the Township for its two bridges. All other bridges in the Township are the responsibility of the County or PennDOT.

Subdivision Roads

New road construction in the Township is associated with residential development. The subdivision and land development ordinance sets standards for road layout, design, and construction. Roads in subdivisions in Palmyra Township are owned and maintained by private communities.

Specific actions for new subdivision roads include:

- Maintain up to date standards in the Subdivision and Land Development Ordinance for new development roads.
- Review road construction standards to ensure adequacy for public safety and eliminate excessive requirements to minimize the consumption of resources for construction and long term maintenance.

Airports, Railroads and Public Transportation

Given the regional nature of airport and railroad development and required support, this *Comprehensive Plan* calls for no specific action to be taken by the Township with regard to air and rail service. Direct local municipal provision of public transportation is not feasible and no action is anticipated other than participation in regional transportation planning efforts.

- Area residents rely on regional airports in Pennsylvania, New York and New Jersey for major commercial carrier service.
- The Stourbridge Railroad follows the Lackawaxen River through Palmyra Township. The line was sold by the Lackawaxen-Honesdale Shippers Association to Paul Brancato in 2008, a principal in Ideal Steel Supply Corp. The flood-damaged rail trestle, which spans the Wallenpaupack Creek between Hawley and Palmyra Township at Cromwelltown, has been restored for the resumption of rail

service. Although the line passes through the Township there is little potential for rail service because of the location in Cromwelltown with poor access.

- The Shortline Bus Company provides limited service in Pike County.

Public transportation in rural communities is generally limited by low population density, the cost of providing the service, and uncertainty of public acceptance and use. In short, the cost is too high in relation to the potential revenue from the users of the system, and without public subsidy, it is simply not feasible. In addition, even in areas where the public subsidy has been provided, use of public transport is low given long trips and limited schedules, and the historic reliance on automobiles in rural areas. A recent study conducted by the Pike County Area Agency on Aging confirmed this by concluding that a fixed route bus service in the County is not financially feasible. The Agency continues to provide van service for senior citizens and handicapped residents.



Bicycle Routes

Bicycle PA is the name for a network of cross-state bicycle routes that guide the bicycle tourist across the Commonwealth. The routes generally use existing highways that have been identified as desirable roads for bicycling. In some cases, the route uses improved rail trails to bypass difficult sections. *Bicycle PA Route Y* runs along Route 6 in the Township and then along the Kimbles Road and the Tow Path Road to the Roebing Bridge. *Route Y1* follows Route 6 to Milford. Any transportation planning should consider the establishment of additional bicycle routes.

Other Actions

- Participate in the PennDOT Customer Advisory Board to communicate concerns to PennDOT.
- Continue to work with the Pike County Road Task Force and PennDOT officials to discuss highway improvement needs and prioritize and promote specific improvement projects.
- Work with local legislators, the County and PennDOT to schedule studies to identify improvements to correct identified road and intersection deficiencies.
- Complete and update annually a detailed Township road inventory and evaluation to identify needs and develop an improvements schedule within normal budgetary process, and to identify potential capital projects.
- Maintain an up-to-date road occupancy ordinance setting standards for driveway access to Township roads and for stormwater and utility improvements within the road right-of-way and require the issuance of a highway occupancy permit by the Township for any access or drainage work along Township roads.