A. Background

Historically, transportation corridors have directed patterns of development and they continue to play a fundamental role in the quality of life and economic prosperity of any community. The connectivity among residential areas, recreational and commercial centers, and industrial hubs is often a central factor to the quality of life for residents and is a determining factor for employers in choosing new business locations. Perhaps the most obvious is the aspect of industrial and heavy manufacturing land uses that rely on regional transportation networks to move freight and other goods. Such intense development uses require accessibility to rail, regional highways, waterways, and airports, which often generates noise, air quality, traffic, and/or safety concerns that are not compatible with residential uses.

The ability to move people and goods from one location to another in a manner that is effective, efficient and safe is one of the primary goals of transportation planning. Future transportation planning for Greene County will be most affected by its existing road network and the desired future development scenario specific for each area of the County. Commonly accepted practices directing state and regional policies today favor compact, cluster type development that reduces the length of roadways and cost of supporting infrastructure. According to the Institute of Transportation Engineers (ITE), a Transportation Plan should address "local, regional, and state mobility and development objectives, as well as federal air quality standards, to improve the quality of life (p. 23. 2003)." Such a lofty goal necessitates the involvement of many levels of partnerships—municipal officials, metropolitan planning organizations, councils of governments, county planning agencies, state transportation departments, conservation districts, etc. Ultimately, the transportation plan should incorporate issues of "connectivity, accessibility, mobility, and multi-modal travel options" (ITE, 2003).

The ITE identifies the following parameters for the connectivity, mobility and multi-modal travel (ITE, 2003):

- Connectivity is what makes an area accessible and mobile, both of which affect the overall quality of life, but also there must be a compatibility with local and system-wide objectives.
- Accessibility is the ease in which people can reach their destinations.
- Mobility is the ability of people to freely and easily travel to their destination.
- Multi-modal travel is a concept that incorporates many transportation elements into one cohesive system. Common modes of travel that are often identified in a multi-modal approach include pedestrian, bicycle, public transit, freight, water, and aviation as well as automobiles and trucks.

The ITE has also issued the following goals in relation to "Smart Growth" initiatives:

1. Pursuing compact, efficient land-use patterns to maximize transportation efficiency and improve neighborhood environment;
2. Improving multi-modal mobility within developed areas;
3. Improving the accessibility within existing built-up areas;
4. Making the most efficient use of transportation infrastructure; and
5. Supporting smart growth through pricing and sustainable funding.

The Smart Growth concept, applied in this manner, seeks to integrate all modes of transportation with land use planning in an effort to improve mobility and foster well-planned communities (Transportation Research Board, 1996). Incorporating these concepts into transportation planning has created a new way of thinking that has shifted from the traditional, cost-benefit and utility paradigm to a more inclusive approach that also encompasses aspects of aesthetics, access management, and the health of the social and economic character of a community. In March of 2008, PennDOT and the New Jersey Department of Transportation partnered to develop the Smart Transportation Guidebook. The goal is to integrate the planning and design of transportation systems in a manner that fosters development of sustainable communities.

Transportation planning is legislated through acts passed by the United States Congress, including the Clean Air Act Amendments (CAAA) of 1990, and most recently the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The CAAA requires planners to explore modes of travel other than personal vehicles to improve air quality and meet the population's transportation demands. SAFETEA-LU is in effect from August 10, 1995 to September 30, 2009 and includes guaranteed funding for highways, highway safety and public transportation totaling $244.1 billion, which represents the largest surface transportation investment in the nation's history. SAFETEA-LU requires an emphasis on improving mobility and increasing the number of options available for moving people and goods. Transportation planning has to be multi-modal and inter-modal. In addition, transportation plans and programs must conform to fiscal and air quality requirements, and incorporate a proactive public participation process.

Existing Studies

Greene County Comprehensive Plan: Part I - Background Analysis and Part II – Final Report (1979)

The comprehensive plan focused on regional location analysis; physical features and existing land use; population and economy; housing analysis; thoroughfares; and community facilities. The background study found that the steep topography and poor access has inhibited development; that a substantial amount of developable land along the County roadways is classified as flood hazard areas; and that the County's road system is underdeveloped. The final report recommended that the County encourage planned growth at efficient densities for the development of new utilities, roads, and community facilities; locate new development in areas with suitable topography, access to utilities, and access to employment; and foster coordination between various planning and administrative bodies in the county to avoid conflicts between land use, transportation, housing, utilities, services, conservation, and community facilities.

2035 Transportation and Development Plan for Southwestern Pennsylvania

The Southwestern Pennsylvania Commission (SPC) is responsible for long-range transportation planning of the region. The most recent plan is the "2035 Transportation and Development Plan for Southwestern Pennsylvania." The Long Range Plan is updated every three years and targets transportation projects that are "waiting in line" for funding.

Transportation Resources

Transportation planning and programming for Greene County is coordinated at the regional and state level through the Southwestern Pennsylvania Commission (which serves as the County's Metropolitan Planning Organization) and PennDOT, the state transportation agency. PennDOT also serves as the design, construction and maintenance agency for all state and some federally owned transportation facilities. Also, all dedicated transportation funds are directed through PennDOT.

Southwestern Pennsylvania Commission

The Southwestern Pennsylvania Commission (SPC) is the federally-designated Metropolitan Planning Organization (MPO) for a ten-county region of Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland Counties and the City of Pittsburgh. The responsibilities of a MPO include the planning and prioritizing of all state and federal transportation funds allocated to the region. Therefore, SPC, in cooperation with PennDOT, the Greene County Board of Commissioners, and other SPC Planning Partners, is responsible for conducting the transportation planning process for the region. In addition, SPC has a role in assisting Planning Partners with aviation, rail, ports, trails, and other modes. SPC also serves as the Local Development District (LDD) and Economic Development District for Southwestern Pennsylvania (as designated by the U.S. Appalachian Regional Commission and the U.S. Department of Commerce), to establish regional economic development priorities.

SPC approves funding for projects, through coordination with its planning partners by establishing priority needs on the federal and state highway systems. Funding is decided through the SPC Transportation Improvement Program (TIP). The TIP is a four-year budgeting tool that directs federal and state highway funding based on specified project schedules and budgets. The program does not typically include any roadways under local ownership and maintenance control. The SPC TIP is updated biannually in conjunction with the State TIP and the Twelve Year Transportation Program (TYP) of PennDOT.

Project costs often have to be amended between the TIP cycles due to new information discovered through environmental studies, engineering design, increases in construction costs, or market changes. The capacity to complete transportation projects in a timely manner is directly related to the number and size of the projects that are being advanced and the amount of federal and state gas tax revenue available to the TIP. Often, construction costs outpace transportation revenues thereby creating a situation where there is more priority regional transportation projects with project costs in excess of the revenues dedicated in the TIP.

To change the TIP, each cost increase has to be offset by removing funding from another TIP project to keep the program in financial balance. Thus, the TIP is a dynamic document

that requires constant attention to meet the changing needs of a large and diverse region. The current SPC TIP is the "2007-2010 Transportation Improvement Program for Southwestern Pennsylvania." Testimonies for the 2009-2012 TIP were recently heard and SPC is now soliciting applications for candidate transportation projects to be considered for funding under the Congestion Mitigation and Air Quality (CMAQ) Improvement Program in the 2009-2012 TIP. The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of the national ambient air quality standards (NAAQS) for ozone, carbon monoxide (CO), and particulate matter (PM). The Waynesburg Borough Signal Retiming Project is the only eligible project in Greene County on the current TIP for CMAQ funds

Pennsylvania Department of Transportation (PennDOT)

Greene County is included under the PennDOT Engineering District 12, which also oversees state related transportation projects in Fayette, Washington, and Westmoreland Counties. District 12 is responsible for over 3,715 miles of highway, more than 103 miles of interstate and 2397 state bridges. PennDOT cooperates within the framework of SPC to establish priorities for transportation projects.

Pennsylvania Act 120 (1970) established the Department of Transportation; State Transportation Commission and the Twelve Year Transportation Program. The Act requires PennDOT to "prepare and submit every even numbered year prior to the first day of September, to the State Transportation Commission for its consideration, a program which it recommends to be undertaken by the Department of Transportation during the following twelve fiscal years." The State Transportation Commission, PennDOT, MPOs (Metropolitan Planning Organization) and LDDs (Local Developmental District) conduct public involvement activities to identify candidate projects for consideration in the upcoming program cycle. The MPOs, LDD's and PennDOT share candidate lists of highway, bridge and transit projects for possible inclusion into the new program. MPOs and LDDs meet individually with PennDOT to review all candidate projects and to negotiate/resolve any remaining issues. A public comment period is completed prior to the final determination of the program. PennDOT provides a schedule for the new program update, procedural guidance and financial guidance to the members within each transportation district.

PennDOT has established the Agility Program to help local governments, school districts, fire companies, and public utilities with special projects related to transportation needs. Activities can include boom mowing, street sweeping, bridge cleaning, meeting facilities, graphics, and storage. PennDOT also works to remove litter and beautify roadways. Keep PA Beautiful is a PennDOT program that organizes volunteers to pick up trash and litter. PennDOT sponsors an annual clean up day, which is held the last Saturday in April.

Transportation Enhancements and Home Town Streets & Safe Routes to School are cost reimbursement programs operated by PennDOT that provides funding to federal or state agencies, county or municipal governments, school districts or non-profit organizations for

transportation related projects. Eligible projects include, among others, pedestrian and bicycle trails; scenic easements / historic sites; landscaping or other beautification projects; preservation of abandoned railway corridors. Enhancements applications are typically accepted every two years (in odd years) through a process administered by PennDOT and SPC, however SPC does not anticipate conducting another funding cycle for these programs until at least the fall of 2009. The current focus of SPC and its Planning Partners is delivery of previously awarded projects.

Transportation Snapshot

The road network in Greene County has not changed much since 1978, with Interstate 79, State Route 21, and State Route 88 continuing to be the major thoroughfares in the County. Besides Interstate 79, State Route 21 between Waynesburg and Fayette County remains the most heavily traveled road. The traffic on this road is a result of both local Waynesburg traffic and "through" traffic, or motorists using State Route 21 to access Interstate 79. The 1979 Comprehensive Plan called for the widening of State Route 21 and a by-pass to be constructed around Waynesburg. While these two projects were listed on PennDOT's Twelve Year Transportation Program, neither has come to a reality. The population has remained steady and therefore there has been only moderate pressure to upgrade the existing road network.

The Greene County Department of Economic Development staff conducted municipal outreach interviews with township and borough officials in the summer of 2008. The municipal officials noted four main issues that they feel are imperative to the future of transportation in Greene County. They first noted the importance of run-off water and its impact on the roads. Recent storms with heavy rains have caused road deterioration in many spots of the county. The second issue noted by municipal officials is the increase of heavy hauling on local roads. The heavy hauling causes many hardships for local residents: dust and dirt, cracked and broken pavement, noise, and safety concerns. The third issue that officials are dealing with directly is the rising costs of equipment and materials within their townships and with limited budgets. The Bid Price Index (BPI) has increased over 80 percent from 2003 to 2008 and local officials are finding out that they need to find creative ways to secure funding for equipment and materials. It will be important for planners to focus on these issues as they development transportation projects into the future.

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B. Data & Analysis

Regional Transportation Network & Road Classifications

The Pennsylvania Department of Transportation (PennDOT) classifies all road systems within the Commonwealth according to the federal functional classification system developed by the Federal Highway Administration (FHWA). Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide (http://www.fhwa.dot.gov/planning/fcsec2_1.htm). The classification of a roadway relates to its basic relationship to traffic levels of service and land access. For instance, Arterials provide a higher level of service and a greater degree of access control, while Local Roads provide the highest level of access to adjacent properties but provide a much lower level of service. Collector roadways provide a balance between mobility and land access. For the purposes of the Greene County Comprehensive Plan, PennDOT Functional Classifications will be used to describe the roadway inventory (PennDOT, 2009). The road network is shown graphically in *Figure 5-1: Transportation Network*.

Interstate Highways

The federal interstate system in Pennsylvania meets the federal interstate geometric and construction standards for future traffic demands. This designation is one of the highest classifications of roadways and provides the highest level of service at the highest speed for the longest uninterrupted distances (PennDOT, 2007). Designed to be the safest, all-weather highway network in the United States, the interstate system was originally designed for national defense.

Interstate 79

I-79 in Greene County (Mackin, 2005)

Interstate 79 (I-79) is a limited access, Interstate Highway that traverses Greene County in a north to south direction and provides regional connections south to Morgantown and Charleston, West Virginia; and north to Pittsburgh and Erie, Pennsylvania. Interstate 79 enters the northern edge of Greene County in Washington Township and exits at the southern border in Perry Township for a total distance of 21.9 miles of interstate roadway in Greene County.

Interchange access points along I-79 are at State Route 221 and U.S. Route 19 in Washington Township, State Route 21 in Franklin Township, S.R. 2018 in Whiteley Township at Kirby, and S.R. 2009 in Perry Township at Mount Morris. There is one Welcome Center, the Kirby Welcome Center, located along I-79 in Whiteley Township just north of Exit 1.

Kirby Welcome Center (Mackin, 2004)

The Pennsylvania Tourism Signing Trust administers the PA Logo Signing Program for PennDOT. The program was established to provide logo signing along interstate highways and other freeways for gas, food, lodging, camping services, and general attraction destinations. The cost to the Participant is based on the number of mainline, ramps and/or trailblazers required to direct motorist from the interstate or limited access highway to the entrance of the facility. The cost to participate is paid up-front when adding the logo to an existing sign. Specific criteria exist for each of the services. More information on the program along with applications to participate can be found online at: www.palogo.org.

Other Principal Arterials

Other Principal Arterials provide statewide or interstate travel between metropolitan and urbanized areas. They provide integrated movements without stub connections. Design of the roadway usually consists of two (2) or more 12-foot lanes with 8-10 foot shoulders with speeds typically ranging from approximately 45-65 miles per hour. State Route 21, between I-79 and the Fayette County border, is classified as an Other Principal Arterial; a total of 12.9 linear miles.

Minor Arterials

Minor Arterials link cities, larger towns and other traffic generators to provide integrated interstate and inter-county service. Minor arterials are spaced at proper intervals consistent with population density. Design of the roadway usually consists of two (2) 12-foot lanes with 8-10 foot shoulders and with speeds typically ranging from approximately 35-45 miles per hour. State Route 88, State Route 21 (between I-79 and the West Virginia border), and State Route 188 are classified as Minor Arterials; a total of 57.4 linear miles.

Rural Major Collector

Major collectors are highways or streets that provide connections within towns by distributing trips to small areas or neighborhoods. They provide for a greater amount of mobility and land access and are intended to convey traffic from medium travel distances (generally greater than one mile) and serve motorists between local streets and arterial roads. The design of major collectors usually consists of two (2) 12-foot lanes with 8-10 foot shoulders and design speeds of approximately 35 miles per hour or greater. The roadways that are classified as a Rural Major Collector include US Route 19, State Route 18, State Route 218, State Route 221, S.R. 1004, S.R. 1011, S.R. 2003, S.R. 2010, S.R. 2011, S.R. 2016, S.R. 2017, S.R. 2018, S.R. 3001, S.R. 3007, S.R. 3009, S.R. 3012, S.R. 3013, S.R. 3014, S.R. 3016, S.R. 3018, S.R. 3020, S.R. 3022, S.R. 4012, and S.R. 4015; a total of 212.2 linear miles.

Rural Minor Collector

Rural Minor Collector roads enable moderate quantities of traffic to move between arterial and local roads. These roadways provide for an equal amount of mobility and land access, providing access to adjacent properties. Rural Minor Collector roads are usually designed with two (2) 12 foot lanes and 4-10 foot shoulders and design speeds of approximately 30 miles per hour. Within Greene County, some of the Minor Collector roads are Ackleys Creek Road, Nebo Ridge Road, Wagon Run Road, Pink Bank Road, Dunkard Creek Road, Taylortown Road, Oak Forest Road, Swarts Road, Castile Run Road, and Bobtown Road; a total of 81.2 linear miles.

Local Roadways

The principal function of a local roadway is to provide direct access to adjacent properties. Local roads are intended to provide mobility within a particular neighborhood, or to one of the other road types. Local roads are usually designed to be 20-22 feet wide (one lane in each direction) with 2-8 foot shoulders and design speeds of approximately 25 miles per hour. Local Roads can include lesser four digit state routes, County roads, township roads, and other municipally owned roadways. Greene County has 1,130.7 linear miles of local roads.

Roadway Mileage & Demand

Table 5-1: Mileage Jurisdiction (2007) provides an understanding of the roadway network of Greene County as compared to the SPC Region. There are 1,516.3 linear miles of roadway within the political boundaries of Greene County, which is the lowest linear mileage of roadways of all other counties in the SPC Region, with the exception of Lawrence. The majority of roadways in Greene County are owned and maintained by the local municipalities while PennDOT owns approximately one-third of the roads.

Table 5-1: Mileage Jurisdiction, Linear Miles, 2007

	Land Area (sq. miles)	PennDOT (Linear miles)	Other Agencies	Turnpike	Toll Bridges	Local Municipal	Total
Allegheny County	730.2	1,180.5	6.7	38.6	0.0	4,574.8	5,800.6
Armstrong County	654.0	657.3	14.1	0.0	0.0	1,149.2	1,820.6
Beaver County	435.3	604.1	23.6	24.4	0.0	1,034.4	1,686.5
Butler County	788.6	654.3	44.2	4.4	0.0	1,591.5	2,294.4
Fayette County	790.1	758.6	14.7	6.2	0.3	1,301.7	2,081.5
Greene County	575.9	573.7	13.5	0.0	0.0	929.1	1,516.3
Indiana County	829.5	798.7	29.7	0.0	0.0	1,262.5	2,090.9
Lawrence County	360.5	385.3	2.7	17.4	0.0	791.5	1,196.9
Washington County	857.1	1,094.0	10.9	21.0	0.0	1,747.1	2,873.0
Westmoreland County	1,022.6	1,201.7	34.6	54.4	0.0	2,366.1	3,656.8

Source: PennDOT, Bureau of Planning and Research 2007

The number of linear roadway miles affects the County in terms of federal reimbursement of Liquid Fuels tax revenues and in regards to the level of service needed for maintenance and to address safety needs. Table 5-2: Travel Highway Functional Classification (2007) displays the Federal and Non-Federal Aid levels based upon the Daily Vehicle Miles of Travel (DVMT) per functional classification. Greene County has the lowest DVMT in the SPC Region. Greene County receives federal aid for 800,455 linear miles of roadways, which is also the lowest in the SPC Region.

Table 5-2: Travel Highway Functional Classification, 2007

	Allegheny County	Armstrong County	Beaver County	Butler County	Fayette County	Greene County	Indiana County	Lawrence County	Washington County	Westmoreland County
Federal Aid Daily Vehicle Miles of Travel (DVMT)										
Interstate	5,706,487	0	355,683	1,001,296	0	445,138	0	280,522	2,194,706	2,226,905
Other Freeway/ Expressway	2,491,365	98,441	652,430	160,080	275,044	0	49,783	30,932	165,921	655,190
Other Principle Arterial	6,797,028	553,376	1,031,450	1,128,736	1,034,042	105,865	911,550	769,199	906,589	2,228,640
Minor Arterial	5,094,800	517,676	830,666	1,219,265	409,929	249,452	484,375	428,457	1,229,769	1,821,932
Total Federal Aid DVMT										
	20,089,680	1,169,493	2,870,229	3,509,377	1,719,015	800,455	1,445,708	1,509,110	4,496,985	6,932,667
Non Federal Aid DVMT										
Major Collector	2,234,769	201,578	517,584	614,296	558,576	219,422	399,212	404,662	666,371	1,262,571
Minor Collector	14,025	76,674	58,902	126,814	98,897	24,666	92,952	39,857	148,377	129,991
Local	3,281,317	272,501	630,954	579,388	568,495	228,228	376,115	271,651	844,664	1,303,525
Total Non Federal Aid DVMT										
	5,530,111	550,753	1,207,440	1,320,498	1,225,968	472,316	868,279	716,170	1,659,412	2,696,087
Total DVMT										
	45,709,471	2,889,739	6,947,898	8,339,252	4,663,998	2,073,226	3,759,695	3,734,390	10,653,382	16,561,421

Source: PennDOT, Bureau of Planning and Research 2007

Table 5-3: Greene County and SPC Region – DVMT 2007 displays the comparison of daily vehicle miles traveled (DVMT) per functional classification between Greene County and the SPC Region. Within Greene County, almost half of the DVMT are on Other Principal Arterials, which is State Route 21 between I-79 and Fayette County; while the next highest percentage of DVMT is on I-79. The remainder DVMT is split between Minor Arterials, Major Collectors, and Local Roads. Just over 62 percent of DVMT in Greene County receive federal aid. Greene County accounts for just over two percent of DVMT within the SPC Region.

Table 5-3: Greene County and SPC Region - DVMT 2007

	Greene County			SPC Region
DVMT by Functional Classification	VMT	% of Greene Co VMT	% of Regional Total	VMT
Interstate	445,138	35.0%	3.65%	12,210,737
Other Freeway/ Expressway	0	0.0%	0.00%	4,579,186
Other Principal Arterial	105,865	8.3%	0.68%	15,466,475
Minor Arterial	249,452	19.6%	2.03%	12,286,321
Major Collector	219,422	17.2%	3.10%	7,079,041
Minor Collector	24,666	1.9%	3.04%	811,155
Local	228,228	17.9%	2.73%	8,356,838
All Roads	1,272,771	100.0%	2.09%	60,789,753
Federal Aid Total	800,455	62.9%	1.80%	44,542,719
Non Federal Aid Total	472,316	37.1%	2.91%	16,247,034

Source: PennDOT, Bureau of Planning and Research 2007

Annual Average Daily Traffic (AADT) AADT is the typical daily traffic on a road segment for all the days in a week, over a one-year period. PennDOT collects traffic data at approximately 30,000 sites statewide on various collection cycles: annually, every three or five years, depending on priority of the highway system (PennDOT website, 2008). Traffic volume represents total traffic, BOTH directions per road segment. Table 5-4: Greene County Traffic Volume (2007) depicts the traffic volume along major roadways in 2007.

Table 5-4: Greene County Traffic Volume, 2007

Interstate 79	Washington County to West Virginia Border	14,000
US 19	Washington County to Ruff Creek	600
US 19	Ruff Creek to Waynesburg	2,600
I-79 Exit 19 Ruff Creek (east)	S.R. 221 between I-79 & Lippincott	2,000
S.R. 221	Lippincott to S.R. 188	2,100
I-79 Exit 19 Ruff Creek (west)	S.R. 221 between I-79 & Ruff Creek	2,000
S.R. 221	Ruff Creek to Washington County	400
I-79 Exit 14 Waynesburg (east)	S.R. 21 between I-79 & Baileys Crossroads	8,100
S.R. 21	Baileys Crossroads to Paisley (S.R. 88)	9,300
S.R. 21	Paisley to Fayette County	9,400
S.R. 188	I-79 to Jefferson	6,600
S.R. 188	Jefferson to Dry Tavern (S.R. 88)	3,400
I-79 Exit 14 Waynesburg (west)	S.R. 21 between I-79 & Morrisville	17,000
S.R. 188	I-79 to Morrisville	5,600
S.R. 21 / US 19	Morrisville to Waynesburg	11,000
S.R. 21	Waynesburg to West Waynesburg	9,500
S.R. 218	Waynesburg to White Barn	3,100
S.R. 218	White Barn to West Virginia	1,100
S.R. 21 / S.R. 18	West Waynesburg to Rogersville	5,300
S.R. 21	Rogersville to Wind Ridge	2,900
S.R. 21	Wind Ridge to West Virginia	1,900
S.R. 18	West Waynesburg to Nineveh	2,000
S.R. 18	Nineveh to Washington County	1,600
S.R. 18	Rogersville to Holbrook	2,600
S.R. 18	Holbrook to Nettle Hill	1,300
S.R. 18	Nettle Hill to West Virginia	900
I-79 Exit 7 Kirby (east)	S.R. 2018 / S.R. 2011 between I-79 & Garards Fort	2,000
I-79 Exit 7 Kirby (west)	S.R. 2018 between I-79 & Kirby (US 19)	1,200
US 19	Waynesburg to Kirby	500
US 19	Waynesburg to Mount Morris	350
I-79 Exit 1 Mount Morris (east)	S.R. 2009 between I-79 & Bald Hill	800
I-79 Exit 1 Mount Morris (west)	S.R. 2009 between I-79 & Mount Morris	4,600
US 19	Mount Morris to West Virginia	2,000
S.R. 88	Washington County to Dry Tavern	5,700
S.R. 88	Dry Tavern to Carmichaels	4,900
S.R. 88	Carmichaels to Paisley (S.R. 21)	6,100
S.R. 88	Paisley to West Point Marion (Fayette County)	4,000

Source: PennDOT Greene County 2007 Traffic Volume Map, published 2009

As shown in Table 5-4, the following holds true for 2007 traffic volumes in Greene County:

- S.R. 21 between I-79 and Morrisville is the most heavily travelled roadway in Greene County, with a traffic volume in 2007 of 17,000.
- I-79 has the second highest traffic volume, at 14,000.
    - Exit 14 / Waynesburg experiences the highest traffic volume (25,100)
    - Exit 1 / Mount Morris experiences the second highest (5,400)
    - Exit 19 / Ruff Creek comes in third (4,100)
    - Exit 7 / Kirby is last (3,200)
- S.R. 21 / US 19 between Morrisville and Waynesburg has the third highest traffic volume, at 11,000.
- Traffic volumes on S.R. 21 east of I-79 remain fairly constant to the Fayette County border.
- Traffic volume on S.R. 21 significantly decreases past West Waynesburg.
- US 19 is not that heavily travelled, except between Ruff Creek and Waynesburg (2,600)
- Traffic volume S.R. 88 remains fairly constant throughout Greene County.

With this information, an analysis can be made regarding roadway demand and the daily traffic trips to various geographic destinations. This data can also be used to predict potential for residential and business growth. Therefore, county officials can coordinate with SPC and PennDOT to direct funding to high volume areas to mitigate for traffic impacts that may occur from additional new development.

Transportation Improvements

Transportation Improvement Program

The 2009-2012 Transportation Improvement Program for Southwestern Pennsylvania (2009-2012 TIP) identifies the priority highway and transit improvements programmed for advancement from October 1, 2008 through September 30, 2012 (federal fiscal years 2009-2012).

The 2009-2012 TIP specifies the priorities for the region and includes reasonable estimates of both available funds and anticipated project expenditures. The TIP lists all transportation projects that intend to use federal funds, as well as non-federally funded projects that are regionally significant. Individual improvement projects must be included on the 2009-2012 TIP to become eligible for federal funding. Not all projects are individually identified however, as small scale projects may be grouped into project line items by project type, to permit fluidity in program implementation. The list of projects is multi-modal, including highway.

The TIP is authorization to seek funding. A project's presence in the TIP represents a critical step in the authorization of funding to a project. It does not, however, represent a

commitment of funds, an obligation to fund, or a grant of funds. Nor is the TIP a final schedule of project implementation. The time frame shown in the TIP is the best estimate at the time of TIP development, which is six to nine months prior to the beginning of the first fiscal year of the TIP period. Projects quite often cannot maintain that schedule and are reprogrammed to later years, (SPC, 2008).

Each project on the 2009-2012 TIP is listed in Table 5-5: Transportation Improvement Summary (Greene County Projects), listed by funding and year completed. Greene County is earmarked for $78,019,234 in the 2009-2012 TIP. The majority of the projects in Greene County are either bridge rehabilitation or bridge replacement projects. Greene County has to continue to lobby for the projects that are listed on the TIP but are not fully funded.

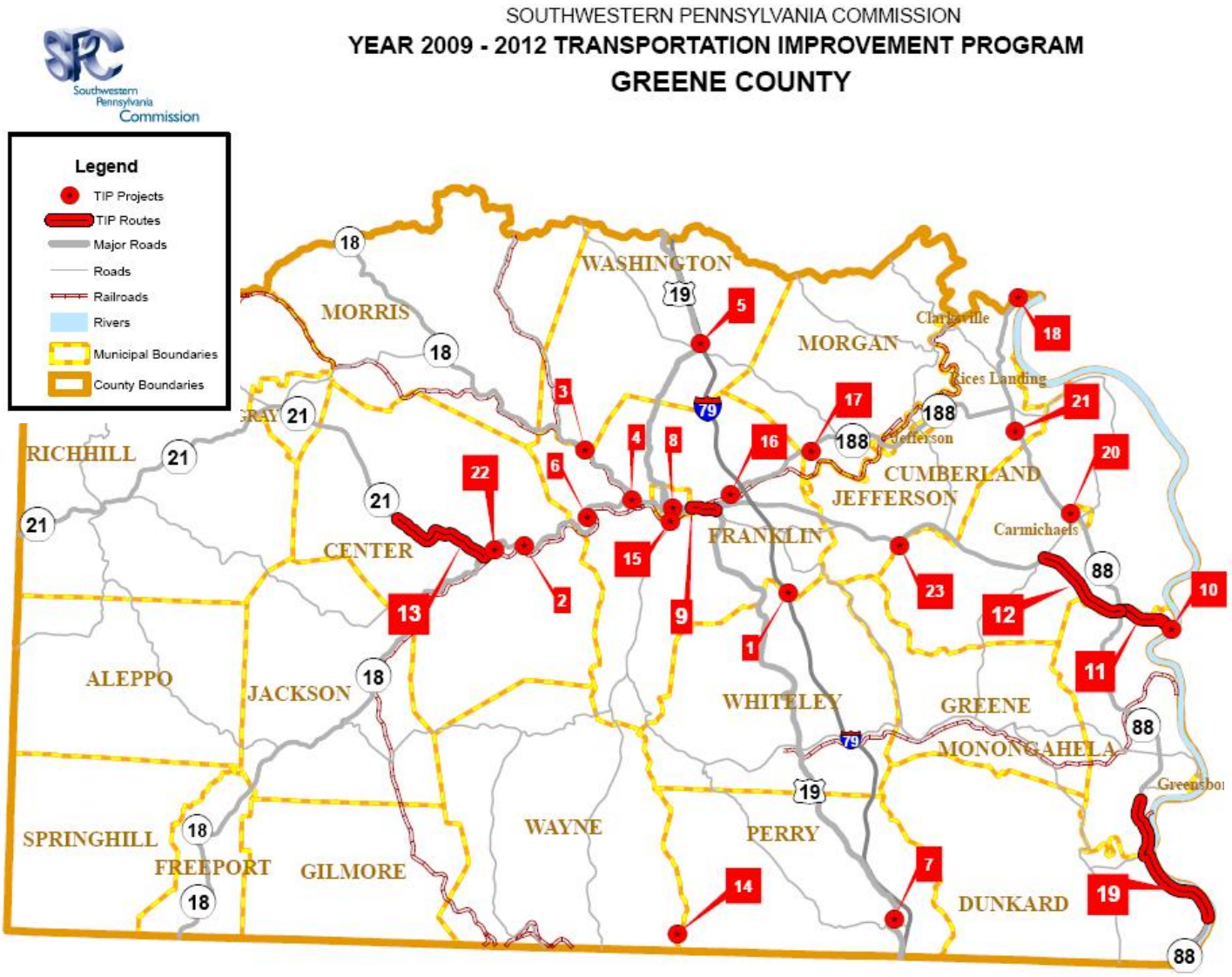

Table 5-5: Transportation Improvement Summary 2009-2012 (Greene County Projects)

Map #	Project	Type	Location	Est. Year of Construction	Est. Total Project Cost
1	Tower Road Bridge	Bridge Rehabilitation	I-79	2012	$6,649,293
2	Ten Mile Creek Bridge 2	Bridge Replacement	Center Township (SR 18)	2010	$2,797,520
3	SR 18 over Garners Run	Bridge Rehabilitation	SR 18	2010	$1,119,040
4	Brown's Creek Bridge	Bridge Rehabilitation	Franklin Township	2011	$2,444,480
5	Boyd Run Bridge	Bridge Rehabilitation	SR 221	2009	$1,058,000
6	Eastview Bridge	Bridge Replacement	Franklin Township (SR 18)	2011	$1,155,040
7	US 19 over Dunkard Creek	Structure Replacement	Perry Township (US 19)	2010	$3,203,200
8	Waynesburg Signal Update	Signal Improvement	Franklin Township (US 19)	2010	$468,000
9	Morrisville Corridor	AQ project, transportation study, reconstruction, widening, lane additions	Waynesburg Borough (US 19)	Final Design - 2010	$31,861,742
10	Masontown Bridge Roadway	Highway Reconstruction	Cumberland Township (SR 21)	2012	$3,000,000
11	Paisley to Masontown Bridge	SR 21 Highway Restoration	Cumberland Township (SR 21)	2009	$4,763,200
12	Junction Deli to Paisley	SR 21Betterment Improvements	Cumberland Township (SR 21)	2012	$3,262,106
13	PA 21: SR 4017 to PA 18	SR 21Betterment Improvements	Center Township (SR 21)	2012	$2,648,105
14	Rudolph Run Bridge	Structure Replacement	Perry Township (SR 2001)	2009	$1,645,000
15	SR 218 Structure	Bridge Replacement	Franklin Township (SR 218)	2011	$9,854,001
16	Jefferson Road Bridge II	Bridge Replacement	Franklin Township (SR 188)	2010	$4,759,999
17	Children's Home Bridge	Bridge Replacement	Morgan Township (SR 188)	2009	$2,582,000
18	SR 88 Ten Mile Creek Bridge	Bridge Rehabilitation	Jefferson Township (SR 88)	2010	$7,555,000
19	Pt Marion to Dilliner	SR 88 Betterment Improvements	Dunkard Township (SR 88)	2010	$3,785,600
20	SR 88 over Muddy Creek	Bridge Replacement	SR 88	2012	$2,682,974
21	Dry Tavern Bridge	Structure Replacement	Jefferson Township (SR 21)	2009	$1,829,000
22	SR 21 Bridge #1	Bridge Replacement	Center Township (SR 21)	2009	$2,140,000
23	Muddy Creek Bridge	Bridge Rehabilitation	Cumberland Township (SR 2013)	2011	$1,170,000
0	District 12 ITS Line Item	ITS Projects District Wide	Waynesburg Borough	Pre-engineering 2009-2012	$6,431,800
0	Branch of Browns Creek Bridge	Bridge Rehabilitation		2011	$1,137,040
0	SR 18 Bridge #3 over Branch of Browns Creek	Bridge Rehabilitation		2011	$1,155,040
0	Greene County Local Bridges	Local Bridge Line Item	Greene County	Pre-engineering 2009-2011	$1,900,000
			Total Funding		$79,019,324

Source: SPC, 2008

The TIP is updated biannually in conjunction with the state's Twelve Year Transportation Program. A project must appear on the TIP before it can receive financial support. The Southwestern Pennsylvania Commission in conjunction with their member Agencies or Counties has established Public Participation Panels (PPP) for each county to update the TIP. The PPP's primary purpose is to take public testimony on transportation project and convey them in a logical manner to the State Transportation Commission. John Kendralla, co-chairman of the Greene County Public Participation Panel presented the following testimony of transportation needs for the 2009-2012 Transportation Improvement Program (TIP) to the State Transportation Commission on August 29, 2007. The order of the transportation needs is not meant to convey a prioritization, with the exception of Point Marion Bridge, which is Greene County's top priority project. The other transportation needs will advance in the design process as programmed funding and scope of work allow.

1. *The number one priority transportation project presented by Greene County is the replacement of the Point Marion Bridge. The County is in support of District 12's efforts to provide a "right size" design for the new bridge and urge its speedy completion. This bridge is an integral part of the direct route traveled daily by hundreds of Greene County residents who are employed or seek medical services in West Virginia.*
2. *The County, as well as a number of residents of the county, advocate for the completion of the S.R. 218 / Morgan Street Grade-Separated Crossing of the Norfolk Southern Railroad line in Franklin Township and Waynesburg Borough. PennDOT has coordinated closely with the county through the design process for this project and the county supports their efforts to advance this project to construction in 2008.*
3. *The Greene County Commissioners continue to advocate strongly for additional funding to advance the replacement of the Masontown Bridge and complete associated improvements on S.R. 21 between Uniontown and Waynesburg.*
4. *In 2006, the County Commissioners responded to the public outcry to alleviate congestion in the Morrisville area of Franklin Township. They appealed to PennDOT to consider "right-sizing" in Morrisville and narrowly focus on two bridge structures in the project area – the Norfolk Southern Railroad Bridge over S.R. 21 and the Freedom Bridge which carries S.R. 21 over Ten Mile Creek. Following a meeting with Senator Stout, Representative DeWeese, the County Commissioners, representatives from Norfolk Southern Railroad and staff from PennDOT District 12, we strongly urge that the "right-sizing" alternatives for these two bridge projects be programmed and advances through design and construction as soon as possible. The alleviation of the congestion in this area is critical to the advancement of numerous economic development projects, including the major retail shopping complex being constructed in Franklin Township.*
5. *The County Commissioners are requesting consideration for assistance to alleviate a serious transportation problem which is associated with flooding from Jackson Run at the intersection of Woodland Avenue and S.R. 21. This is just one area of concern because state routes and principal arterials have experienced numerous episodes of severe flooding which have had a profound impact on the delivery of emergency*

services and safe travel for our citizens and caused substantial financial losses and property damage to businesses located along state highway corridors. The Commissioners feel that PennDOT, working closely with the county, can correct this particular problem area. They also request the support of District 12 as they seek solutions for stormwater management and flood control planning that impacts state highway corridors throughout the county.

6. *Another unfortunate situation that beleaguers Greene County is the combination of excessive rainfall and transient soils. Our municipalities are fighting an uphill battle to repair slides that have created unsafe situations along a number of our narrow, winding and steep township roads. The Commissioners respectfully request engineering support and a modified formula that will increase the municipal Liquid Fuels Allocations for those municipal governments plagued by these slide situations.*
7. *Congressman Jack Murtha has spearheaded an effort for the designation of a federal earmark to allow for special attention to the Realignment of Route 21 in Cumberland Township. The County is requesting that District 12 work with the county to develop an alternative alignment that allows for S.R. 21's uninterrupted dominant flow of traffic through that area and reconfigures the township road intersections for improved safety and operation. This project will optimize the opportunity to provide a gateway to the Carmichaels area and will enhance the development interest on adjoining properties which include the site of the former Buckeye Coal Company Mine.*
8. *During last year's TIP Update, testimony was heard from residents of western Greene County describing a serious problem with a curve on S.R. 18, Browns Creek Road, in Morris Township between Nineveh Road and Route 4019, Andrew Road. Substandard roadway geometry on the curve, coupled with an increase in truck traffic in the area from both coal trucks and tractor trailers, have created a dangerous situation at this location. The commissioners urge District 12 to work with affected residents and Morris Township officials to advance short and long term safety improvements in this area.*
9. *Two of the Interstate 79 Interchanges in Greene County are in need of attention. The county, through its Economic Development Department, is advancing a planning effort in partnership with Perry Township to improve safety, traffic flow, signage and aesthetics at the Mt Morris Interchange. This project will further the development efforts at the Meadow Ridge Business Park, located along S.R. 2009 in Perry Township.*
10. *The Ruff Creek Interchange also commands attention as the county advocates for the construction of the programmed Park N Ride facility at the interchange, the critical next step for the enhancement of development opportunities in this area.*
11. *Transportation Enhancement – Hometown Streets/Safe Routes to School funding has supported a number of efforts in Greene County and the Commissioners now wish to address the need for additional funding through this source. The Greene River Trail continues to be a priority of the Board of Commissioners, strongly supported by the communities where the presence of the trail has or will provide benefit. The next phase of this project will also provide major accomplishment in efforts to enhance river town tourism and recreational opportunities to create the quality of life for which we strive.*

12. *The county expresses its appreciation for the recent grant award for the Waynesburg Streetscape, Phase 1 which will complement current downtown Waynesburg Revitalization efforts, working with the Borough, Waynesburg Prosperous and Beautiful, (the Main Street project) and the Blue Print Community Team. Construction is anticipated in 2008. We expect to request funding for the second phase of the streetscape project in the next grant round.*
13. *Also in Waynesburg Borough, but separate from the Streetscape project, local residents are concerned about the timing and interconnection of the traffic signals on High Street (Route 21) in the business district. Their concerns have not fallen on deaf ears. We respectfully request that a study be conducted to evaluate the timing and condition of the traffic signals in the Borough of Waynesburg.*
14. *As part of the retail development taking place in Franklin Township, widening for a left turn lane is anticipated at the intersection of Rolling Meadows Road and Murtha Drive. Program dollars are needed to construct the improvements, which will allow for two full access points to the retail development and relieve traffic congestion on Route 21.*
15. *Last, but by no means least, the County respectfully requests funding to continue the Local Bridge Program over the life of the 2009-2012 TIP. This small rural county contains 500 miles of roadway and over 500 bridges, 85 of them county owned, including seven covered bridges. This extraordinary responsibility falls on the shoulders of commissioners who recognize the need to sustain the infrastructure already in place, emphasizing the need to reconstruct a minimum of five local bridges annually.*

Transportation Enhancement Program (TE)

Rather than listing projects from the Transportation Enhancement Program (TE), the Hometown Streets Program (HS) and the Safe Routes to School Program (S.R.TS) individually in the 2009-2012 TIP, the TIP includes line items that will be drawn down on a first-come, first-served basis as project sponsors are ready to proceed, as long as the funds are available in the line item. The projects that have been determined to be eligible to use the line item funds are identified in the following project lists. The eligible federal funding amount is identified for each project. These projects have previously been approved for federal funding through the Transportation Enhancements and/or Hometown Streets / Safe Routes to School Programs.

The only project eligible in Greene County is the Nathaniel Greene Trail (Greensboro Borough), which was selected in 1994. The project is eligible for $428,000 of federal transportation enhancements monies.

2035 Transportation and Development Plan for Southwestern Pennsylvania

The "2035 Transportation and Development Plan for Southwestern Pennsylvania" is the means for linking the goals of the region with the purposes and uses of the federal and state funding sources. The 2035 Plan contains a transportation financial plan which identifies funding that is anticipated to be available from 2007 to 2035 and that will be committed to deliver projects or programs within the Southwestern Pennsylvania region. Intergovernmental planning processes coordinated by SPC and resulting in the Long Range Transportation Plan (LRTP) and the Transportation Improvement Program (TIP) are the means for defining the projects that will receive the available funding. PennDOT is the largest implementing agency and recipient of program funding. Additionally, SPC member counties, local governments, transit authorities, and non-profit agencies, each produce transportation projects and deliver services using state and federal revenues. Projects are selected based on eligibility for the funding programs, their ability to meet program and regional goals, and their priority relative to other similar projects. Greene County participated in this process by providing testimony to SPC through their public outreach program, "Project Region," to identify transportation projects that are in need of funding (SPC, 2007).

Projects listed in the plan for Greene County include the Point Marion Bridge Replacement Project and the US 19 Morrisville Corridor. Construction of the Point Marion Bridge began in December of 2007 and is expected to be completed in November of 2009. The contract amount is $20,971,655.40. The new bridge will be just upstream from the existing bridge which will remain open during construction, with no detour. The typical bridge section will be two 11' lanes, with 3'-6" shoulders and a 10' sidewalk.

The Morrisville Corridor Project is estimated to cost a total of $31,861,742, of which $936,000 is included on the TIP to fund final design (including a transportation study, reconstruction, widening, and lane additions for US 19 in Waynesburg Borough) in 2009 and 2010. Greene County will need to continue lobbying for additional funding for the construction of the project.

All projects included on the 2009-2012 TIP must be drawn from, or be consistent with, the "2035 Transportation and Development Plan for Southwestern Pennsylvania." The TIP is the mechanism for the implementation of the transportation goals, objectives and strategies of the 2035 Plan.

County Liquid Fuels

Funding for County roadway and bridge construction and maintenance is generated through the Liquid Fuels Tax collected by the Commonwealth of Pennsylvania. The County Liquid Fuels Tax Act of 1931 provides all counties, which are in compliance with PennDOT guidelines, with semi-annual allocations in June and December of each year. One-half cent of the tax collected on each gallon of liquid fuels is allocated to a special fund known as the Liquid Fuels Tax Fund for distribution to counties. The Act provides

that these funds be used for road and bridge construction, reconstruction and maintenance projects, or may be allocated to their political subdivisions for these same purposes. In order to receive the Liquid Fuels Tax Fund, each county must submit an annual report showing the receipt, expenditure and encumbrances for the preceding 12 months ((PennDOT Bureau of Municipal Services, 2003). Examples of what County Liquid Fuels Tax Funds may be expended for include:

1. Construction, reconstruction, maintenance, and repair of public roads/ streets or bridges for which the County or Municipality is legally responsible.
2. Costs of property damages resulting from road and/or bridge construction, reconstruction or maintenance.
3. Purchase of right-of-way for road and/or bridge construction, reconstruction or maintenance.
4. Compensation of viewers for services in eminent domain proceedings involving roads, highways, and bridges.
5. Interest and principal payments on road or bridge loans and bonds, or sinking fund charges for such bonds becoming due within that current calendar year.
6. Any road or bridge work by order of the Public Utility Commission.
7. Culverts and drainage structures.
8. Acquisition, maintenance, repair, electrification, and operation of traffic signs and traffic signal control systems at intersections and/or railroad crossings.
9. Street lighting in excess of taxes, bridge and interchange lighting.
10. Minor equipment, equipment rentals, or repair parts for road maintenance vehicles.
11. Road drags and snow fence.
12. Purchase of PennDOT approved materials.
13. Major Road and Bridge Equipment (equipment costs in excess of $4,000.00).
14. County Engineer's salary and benefit costs for road or bridge work.
15. Debris removal from the roadway and its gutters and shoulders.
16. Erection of street name signs, traffic directing signs and traffic signal control systems.
17. Brush removal to improve sight distance.
18. Lane and crosswalk painting and marking.
19. Cleaning of inlets and culverts.
20. Certain structures such as salt storage sheds or buildings built to house county or municipal owned road equipment.
21. Engineering Fees (fees in excess of 10% of the total contract price must be documented and justified to the satisfaction of the Department).
22. Curb ramps to provide access by individuals with disabilities.
23. Drive way grade adjustments due to construction or reconstruction.
24. Liability insurance for road and bridge equipment and vehicles when the named beneficiary is the entity's Liquid Fuels Tax Fund.
25. Administrative costs to a maximum of 10% of that year's total allocation, including benefits, overhead, and other administrative charges for county employees directly involved in activities covered by the Act.
26. Indirect engineering and transportation planning costs.
27. Ferry boat operations, where applicable.

28. Appraisal fees for infrastructure assets.
29. Curbs that are part of the drainage system.

Municipal Liquid Fuels

Funding for road maintenance and construction at the local municipal level is also generated through a Liquid Fuels Tax. The Liquid Fuels Tax Act 655, dated 1956 and as amended, provides all municipalities other than counties, which are in compliance with PennDOT guidelines, with annual allocations on April 1 of each year from the State's Motor License Fund. The amount of this fund for municipalities is based on: 20% of 11 1/2 cents of the Liquid Fuels Tax Receipts; 20% of 35 mills of the Oil Franchise Tax, Section 9511 (c) of the Vehicle Code; and, $5,000,000.00 (Act 68 of 1980) under Section 9301 of the Vehicle Code, plus 12% of Act 26 of 1991, Oil Company Franchise Tax plus 12% (38.5 mills) of Act 3 of 1997, Oil Company Franchise Tax.

The allocation of these funds to municipalities is based on the ratios of mileage and population of the municipality to the state totals, and the revenues must be used on the roads and streets for which the municipalities are legally responsible. That is, 50% of the funds are distributed based on a municipality's proportion of local road mileage to the total local road mileage in the state, and 50% on the proportion of a municipality's population to the total population of the state.

To qualify for the annual liquid fuels tax allocation a municipality must prepare and submit its annual reports and make its deposits and payments or expenditures in compliance with the Act. The Act provides that these funds be used for road and bridge construction, reconstruction and maintenance projects (PennDOT Bureau of Municipal Services, 2003). Examples of what Municipal Liquid Fuels Tax Funds may be expended for include:

1. Construction, reconstruction, maintenance, and repair of public roads or streets, including curb ramps from a road to provide access by individuals with disabilities, bridges, culverts and drainage structures for which they are legally responsible.
2. Advertising costs for competitive bidding requirements of projects, materials and equipment purchases.
3. Attorney and other legal fees required for road and bridge projects.
4. The purchase of road machinery and road equipment that costs in excess of $4,000 (subject to the limit of 20% of the annual Liquid Fuels Tax Allocation) and the repair, maintenance, and insurance for this equipment when the named beneficiary is the entity's Liquid Fuels Tax Account.
5. Minor equipment, equipment rentals, and repair parts for road maintenance vehicles.
6. Acquisition, maintenance, repairs and operation of traffic signs, street signs, traffic signals and control systems, including metric conversion signs.
7. Electricity for signals and streetlights.
8. New Products for low volume local roads, with prior approval of District Municipal Services Representatives.
9. Small tools, road drags and snow fences.

10. Debris removal from the roadway and its gutters and shoulders.
11. Brush removal to improve sight distance.
12. Lane and crosswalk painting and marking.
13. Road Materials approved by department specifications.
14. Salary and benefit costs of road crews or employees performing work on municipal roads.
15. Contracts for rented equipment needed for roadwork described above.
16. Salt storage buildings. NOTE: Does not include plumbing, heating or electricity.
17. Bank Loan and Bond Issues used exclusively for highway purposes.
18. Payment of Engineering Fees (fees in excess of 10% of the total project cost must be documented and justified to the satisfaction of the Department).
19. Guide rail and pipe in accordance with department specifications.
20. Purchases of surplus equipment from the Commonwealth and Federal Governments.
21. Purchases of materials and equipment from State Contracts (piggy-back purchases), Councils of Governments and other purchasing consortiums.
22. Traffic calming activities in accordance with Pub 383, dated January 2001.
23. Traffic and engineering studies.

Bridges

Bridges in Greene County are of two types: grade separation for highways and railroads, and waterway crossings. Bridges are critical to the full use of a transportation network. Bridges must comply with the following general criteria to satisfy their functional part of a transportation system and the class of roadway being carried:

- Adequate waterway opening
- Vertical grade clearance
- Pavement and shoulder width aligned with roadway function
- Parapet impact strength
- Deck drainage
- Load sufficiency rating and support both dead and live loads

Bridges failing to satisfy these criteria become functionally inadequate and limit the highway networks' ability to serve the public. The most serious inadequacy is loss of structural strength that limits a bridge's ability to carry the desirable loads. When a bridge becomes structurally inadequate, the bridge must be posted for a lower safe load, or closed, if a safe load is less than three tons. A typical ambulance is seven tons, school busses 12 to 15 tons, fire engine 15+ tons, and delivery trucks 5+ tons. The only vehicles permitted on a three-ton posted structure are automobiles and small pick-up trucks. A three-ton posting is a hardship on the quality of life for residents and businesses using the posted structure. Closed structures cause a greater hardship on residents by denying access or forcing lengthy detours. Posted and closed bridges cause safety, inconvenience, and restricted mobility problems for residents, motorists, and public service (fire, police, utility, and parcel delivery).

As of February 2007, PennDOT listed three closed bridges, of which two are county owned bridges and one is owned by PennDOT.

- Township Road 684 Bridge over Muddy Creek (87 feet long)
- Township Road 568 Bridge over Ten Mile Creek (123 feet long)
- S.R. 2001 Bridge over Rudolph Run (55 feet long)

In addition to the three closed bridges, there were 74 posted bridges in the County, of which 45 are owned by Greene County, one is owned by Dunkard Township, one is owned by Perry Township, one is owned by Wayne Township, and 25 are owned by PennDOT. The combined total of 77 posted and closed bridges are affecting safety and quality of life for County residents. These bridges must be programmed for rehabilitation and/or replacement to make the highway network, which is vital to motor vehicle dependent Greene County, a whole transportation system. Funding for bridge rehabilitation is available from federal, state, and county budgets. Bridges that meet federal criteria for length, traffic volume, and sufficiency rating can qualify for 80 percent federal, 15 percent state, and five percent local funds for bridge rehabilitation and/or replacement. Bridges not meeting federal criteria may qualify for state funds at 80 percent state and 20 percent local funds.

Greene County receives approximately $125,000 annually from liquid fuel taxes that has historically been allocated for bridge repair and replacement. Liquid fuels revenue for bridge replacement and rehabilitation is inadequate in addressing the continuous deterioration of Greene County's bridge infrastructure. This is the primary reason 77 bridges are either posted or closed in Greene County.

Pennsylvania Act 26, signed into law August 5, 1991, specifies criteria for funding county-owned bridges based on county unemployment rates. The legislation provided for increasing the Oil Franchise Tax and designating funding for various road and bridge project categories, which included the allocation of 2 percent to County Bridges. Act 26 has effectively provided sufficient funds to cover the 100 percent of the costs of bridge replacements. On June 14, 1999, the Program Management Committee (PMC) approved the following programming and budgeting requirements based on the 1998 county unemployment rates:

1. A bridge must be included in an approved Bridge Bill or Capital Budget and programmed on the appropriate MPO/LDD Transportation Improvement Programs.
2. A bridge must be included in the Commonwealth's Twelve Year Transportation Program.
3. Act 26 funds and all other transportation funds will be made available only for project phases(s) included in the first four years of the Twelve Year Transportation Program.

The dedication of funding to County Bridges was intended to use state funds in lieu of local funds for the replacement or rehabilitation of county-owned bridges in "poor counties" and to preserve covered bridges. All County-owned covered bridges are eligible for Act 26 Funds. All other County-owned bridges are eligible only if both of the following criteria are met:

1. The County's unemployment rate is within the top quartile of the state.
2. The County's revenue/expenditure ratio must indicate financial distress.

In Southwestern Pennsylvania, Fayette County and Greene County are both included in Act 26. To access Act 26 funds, a written request must be submitted to the PennDOT District Office (District 12 governs both counties) and the bridge project must meet all programming and budgeting requirements. The Pennsylvania Public Utilities Commission (PUC) will review the written request and determine if the project meets eligibility criteria and programmatic requirements. Approval by the PUC results in no cost to the county as all bridge project funds are either 100 percent state funded or a blend of state and federal dollars.

A structure over eight feet is eligible for state funding while federal standards for a bridge are those structures that are 20 feet in length or more. Local bridges that qualify for funding receive 80 percent state with a 20 percent local match or 80 percent federal, 15 percent state, and 5 percent local funds. Act 26 funds will replace the local share (either 5 percent or 20 percent) on County-owned bridges. Therefore, while Act 26 is enacted, municipalities should petition their County Government to accept qualified local structures as County Bridges until Act 26 is repealed or modified to the point or condition that Fayette and Greene Counties no longer are eligible for a no-cost status for their bridges. This action will permit both local and county bridges that qualify to be 100 percent funded with state or federal funds to be rehabilitated or replaced at no cost to either the local or county entities.

Road Landslides

In 2005, PennDOT District 12 noted that the landslide problem in Greene County was the most severe it had been in 20 years. Located in the Waynesburg Hills Section of the Appalachian Plateaus Province, Greene County, along with Washington County and portions of Allegheny, Fayette, and Westmoreland Counties, experiences the highest susceptibility to landslides. The most common types of landslides associated with the geologic setting in and around Greene County include earth flows, debris flows, slumps, and rockslides, (Delano and Wilshusen, 2001).

Hurricane Ivan in 2004 and heavy rainfall in January of 2005 combined for over 10 inches of rainfall, which was above average for the region. There were 307 landslides documented in Greene County in 2005 that were in need of repair and 146 landslides after January 2005; the locations of which are depicted in *Figure 5-2: Landslides*. The landslides caused six road closures, 48 road encroachments and 120 soil movements on local road systems. On state roads, landslides caused another 13 road closures, 125 lane restrictions, ground movement on 265 roads, and 33 catastrophic embankment failures. Currently, there is no revenue stream in place for municipalities to make the necessary repairs.

Table 5-6 provides cost estimates for all landslides reported in Greene County after January of 2005.

Table 5-6: Landslide Damage - Cost Estimates

Municipality	PennDOT Estimates (May 05)	Local Road Estimates (Sept 05)	Municipality	PennDOT Estimates (May 05)	Local Road Estimates (Sept 05)
Center	$1,774,070	$873,200	Richhill	$1,123,500	$239,164
Franklin	$455,600	$195,500	Whiteley	$224,500	$224,500
Morris	$1,432,300	$1,193,952	Dunkard	$386,000	$164,255
Perry	$833,800	$962,275	Gilmore	$389,800	$112,500
Morgan	$663,750	$86,000	Monongahela	$0	$55,000
Washington	$373,500	$282,500	Wayne	$208,500	$45,000
Jefferson	$584,300	$244,500	Freeport	$65,000	$65,000
Jackson	$382,500	$241,880	Springhill	$770,000	$318,000
Aleppo	$618,650	$460,226	Cumberland	$990,000	$340,000
Total:	$10,820,170	$6,103,452			

Source: PennDOT (2005), Greene County (2005)

To prevent landslides from incurring high costs associated with repairs to roads, infrastructure, buildings, etc., the County and municipalities need to work together in education, awareness, and proper planning to anticipate and avoid problem areas. Local governments may adopt landslide consideration as part of their local zoning and building codes to address this problem. While the costs of extra planning and construction modifications can be higher, the overall cost will be less when potential landslide-prone areas are avoided.

Scenic Byways

PennDOT initiated the Pennsylvania Byways Program in 2001 as a way to preserve and promote unique resources throughout the Commonwealth. PA Byways are designated by PennDOT at the request of local communities, who wish to highlight cultural, historical, recreational, archaeological, scenic, and natural qualities. The intent of the program is as follows:

- Support local planning efforts to achieve byway designations
- Protect and enhance the visual quality of designated routes
- Maintain byway resource qualities along designated routes
- Educate residents and visitors about the history and culture of the Commonwealth
- Promote tourism and enhance economic development potential on designated Pennsylvania Byways

There are no designated Pennsylvania Byways located in Greene County. Regional examples include the National Road (US Route 40) in Washington, Fayette and Somerset Counties and the Laurel Highlands Scenic Byway (Routes 711 and 381) in Washington and Fayette Counties. In Greene County, a few organizations have expressed interest in designating US 19, S.R. 21 and S.R. 88 as Pennsylvania Byways, citing the scenic ride between Ruff Creek and Waynesburg along US 19 (alternate route to Waynesburg from the north); historical sites and landmarks along S.R. 21 (Greene County Historical Museum, covered bridge, Waynesburg Historic District, etc.); and the recreational qualities along S.R. 88 (Greene River Trail, Greensboro Trail, Warrior Trail, boating, etc.) as supporting evidence. The first step in designating a PA Byway is for the sponsor to submit the PA Byways Interest Form to PennDOT, which is reviewed by PennDOT District 12, the Southwest Pennsylvania Commission (SPC), and the Pennsylvania Department of Community and Economic Development (DCED). After review, a site evaluation will be conducted and a letter will be sent to the sponsor detailing observations made and indicate whether the applicant is ready to move forward with the next step of preparing the application.

Since both S.R. 21 and S.R. 88 are classified as Federal Aid Primary (FAP) roadways, new outdoor advertising would be prohibited if these roads were designated as PA Byways. A local ordinance would be required from each municipality along the corridor that specifies how the placement of new signs, displays, or devices will be prohibited on the byway in conformance with 23 U.S.C. 131 (s). No outdoor advertising that is visible from the main-traveled way of the byway is allowed, except official signs and notices, signs advertising the sale/lease of property on which they are located, signs advertising activities conducted on the property on which they are located, and directional signs to points of interest that conform to the national standards.

Pennsylvania Byways must be nominated by a government entity and all the municipalities and counties through which the byway passes must pass resolutions and letters of support for the designation. In addition, letters of support may be submitted by local legislators, regional planning agencies, and tourist promotion agencies. Therefore, local support for the designation of US 19, S.R. 21 and/or S.R. 88 as Pennsylvania Byways must be established prior to any action by a governmental entity.

Bicycle Access & Trails

Bicycling has become extremely popular throughout the United States and in Pennsylvania. Funding for a wide variety of pedestrian and bicycle projects improvements is administered through SPC, PennDOT and other regional planning partners through the Transportation Enhancements and Hometown Streets/Safe Routes to School Programs. This funding is a 10 percent set aside from the federal Surface Transportation Program.

Greene County is fortunate to have a variety of pedestrian and bicycle paths and trails, as depicted on *Figure 5-1: Transportation Network*. More information regarding existing and proposed pedestrian and bicycle projects can be found in the *Greene County Comprehensive Recreation, Parks, and Trails / Greenways Plan* which was adopted in 2008 as a companion to this document.

BicyclePA Route A

BicyclePA Routes are signed routes that direct long distance bicyclists along state roadways with improved shoulders and other features designed for bicycle riders. In some cases, these routes divert from existing roadways onto improved rail trails to bypass difficult sections. U.S. Route 19 doubles as BicyclePA Route A and traverses Greene County in a north-south direction through Waynesburg.

BicyclePA Route A – Greene County (Mackin, 2004)

BicyclePA Route A is one of seven officially designated bicycle routes located in Pennsylvania. The bikeway is 199 miles, beginning in Greene County at the Pennsylvania / West Virginia border and ending at Lake Erie in Erie County, PA. Of the 199 total miles, 26.2 are located within Greene County. The northern portion in Greene County is generally flat while the southern half is gently rolling to hilly. While the BicyclePA routes are designed to serve the transportation needs of the long distance bicyclist, they are not necessarily intended for use as local recreational rides.

Greene County Bicycle Paths

The Greene County Tourist Promotion Agency publishes a bicycling map for the County that depicts six bicycle rides of varying degrees of difficulty. The bicycle paths vary in length and each ride provides access to areas of beautiful. All six bike rides are located along public roadways, as noted below (mileage was calculated using GIS):

1. Waynesburg Workout Ride (13.8 miles)
2. The Road to Prosperity (32.4 miles)
3. Crucible Cruise (12.4 miles)
4. The Ryerson Roundabout (18.7 miles)
5. The Brave Ride (30.7 miles)
6. Mt. Morris to the Mon (43.8 miles)

Greene River Trail

Just over four miles, the Greene River Trail was constructed along an abandoned railroad line that parallels the Monongahela River along the County's eastern border. The trail is owned and maintained by the Greene County Board of Commissioners through the Greene County Department of Recreation. The trail begins at the Greene Cove Yacht Club in Jefferson Township at the Washington County line and ends south of Rices Landing Borough. The Greene River Trail has a twelve-foot wide, smooth crushed gravel surface used for walking, jogging, and bicycling. The trail is adjacent to the Monongahela River with fencing along portions of the trail. Trail access points are located at the Greene Cove Yacht Club and in Rices Landing. The next section will extend the trail through the Dilworth and Crucible mine properties and cost approximately $500,000.

Greene River Trail (Mackin, 2004)

Future plans to extend the trail to Nemacolin will increase the length of the trail to a total of 9.3 miles and include a section from Nemacolin south through the western side of the Hatfield Ferry Power Plant to State Route 21 near the Miner's Monument. This will provide

the potential for a trail to cross the Masontown Bridge and link to the Sheepskin Trail and the Great Allegheny Trail. Fayette County supports the development of a bike / pedestrian route along the Masontown Bridge. Plans also include the eventual extension of the trail on a new proposed S.R. 88 bridge across Ten Mile Creek and linking to Washington County.

Warrior Trail

Warrior Trail is a 45-mile trail that crosses the County in an east-west fashion from Greensboro on the Monongahela River to the border of Marshall County, West Virginia. The trail is located approximately five miles north of the West Virginia border along a ridge top for its entire length, never crosses a body of water, and crosses through Monongahela Township, Dunkard Township, Greene Township, Whiteley Township, Perry Township, Wayne Township, Jackson Township, and Aleppo Township. Beyond Greene County, the Warrior Trail extends to its western terminus on the Ohio River in Flint Ridge, near the town of Zanesville, Ohio. The trail runs. The trail is recognized as one the Major Greenway Corridors in Pennsylvania by the Department of Conservation of Natural Resources (DCNR). It is estimated that the trail has been in use for over 5,000 years and was first used by Native Americans to obtain supplies of flint from the Flint Ridge area in Ohio. The Warrior Trail is located entirely on private property and is marked with yellow paint blazes. The trail is partially maintained by the Warrior Trail Association and trail users hike at their own risk. In December of 2006, the Warrior Trail Association celebrated the 40th anniversary of the trail.

Catawba Path

The Catawba Path runs from New York through Pennsylvania in a north-south direction. The path cuts through the eastern portion of Greene County, connecting Uniontown in Fayette County to Morgantown, West Virginia. The path then continues on to the Carolinas, Kentucky and Tennessee. The Greene County portion of the Catawba Path is approximately 17.2 miles long, traversing through Rices Landing Borough, Cumberland Township, Greene Township, Dunkard Township, Whiteley Township, and Perry Township. It is important to note that the path is neither marked nor maintained; the only indication of it in Greene County is a sign marked "Catawba Path" on an overpass along I-79 near Mount Morris in Perry Township.

Ryerson Station State Park Trails

Ryerson Station Park, located in Richhill Township in western Greene County, is owned and operated by the Pennsylvania DCNR. has 11 miles of hiking / cross-country skiing trails throughout the park that are open all year round. The trails include the Pine Box Trail, Polly Hollow Trail, Three Mitten Trail, Iron Bridge Trail, Sawdust Trail, Bluebird Trail, Lazear Trail, Orchard Trail, Tiffany Ridge Trail, Fox Feather Self-Guided Trail, and a six-mile unnamed snowmobile trail

Upper Mon Water Trail

The Upper Mon River Water Trail (UMWT) is a 65-mile section of the Monongahela River that begins in Fairmont, West Virginia and ends at the Washington County border where Ten Mile Creek empties into the Monongahela River. The trail is recognized by DCNR as one of the Major Greenway Corridors in Pennsylvania. The trail is a project of the Morgantown Area Chamber of Commerce Vision 2020 and the Monongahela River Recreation and Commerce Committee. A map of the trail can be found online at http://www.monriversummit.org/UMWT/.

Proposed Connector Trails

Trails that connect to population centers such as Waynesburg, Carmichaels, and Greensboro are lacking in the County. As this is currently the County's biggest need in regard to trails, two Connector Trails, the Greensboro Trail and Canoe Launch and Central Waynesburg Trail, are being discussed in addition to extensions to the Greene River Trail.

Greensboro Trail and Canoe Launch

The Greensboro Trail and Canoe Launch project consists of a trail extending approximately 1-mile north along the Monongahela River, from former Lock No. #7, along Water Street, to Second Street, to Diamond Street, extending along the road shoulder to Mon-View Community Park. Greensboro Borough received a $500,000 trail grant and is under contract with a firm to perform the necessary engineering and design work. The key components of the project include providing for a safe and economical trail design, including providing for adequate and safe road crossings, trail access facilities and improved road shoulders, drainage, and providing for a non-motorized boat-canoe launch facility in the vicinity of the former Ferry Boat Landing site at State Route 2014 (County Street). The proposed trail provides a possible connection to the Warrior Trail.

Central Waynesburg Trail

The proposed Central Waynesburg Trail project is in its infancy but the proposal is to develop a hiking and biking trail along Ten Mile Creek from the Waynesburg University fields at East View to EverGreene Technology Park. The trail would connect Central Greene High School, the Greene County Fairgrounds, the Greene County Airport, the Greene County Historical Museum, the proposed Wal-Mart development site, and other recreation and community sites. A project committee has been established to examine the potential of this trail. The next step is to acquire funding to conduct a feasibility study.

Proposed Water Trails

Whitewater streams, designated as those that can be used as a recreation source for kayaking and boating, include Ten Mile Creek, Dunkard Creek, Whiteley Creek, and the Monongahela River. While the Monongahela River has already been designated as a water trail, the Greene County Comprehensive Recreation, Parks, and Trails/Greenways Plan recommends the other three streams for designation as water trails, particularly along Ten Mile Creek from Waynesburg to the Monongahela River in Washington County. The plan notes that local sponsors and feasibility studies would be needed.

Transit

Within the SPC Region there are ten mass transit providers serving Lawrence County, Butler County, Armstrong County, Indiana County, Beaver County Allegheny County, Westmoreland County, Washington County, and Fayette County. Greene County has no Mass transit provider. While residents noted the need for public transportation throughout the planning process, the County's sparse population and the cost to provide this service are inhibiting factors.

Mountain Line Transit Authority is the largest public transit operator in West Virginia and based in Morgantown. The "Grey Line" bus route provides service from downtown Morgantown to Westover, Fairmont, Clarksburg, downtown Pittsburgh, and the Pittsburgh International Airport. In February of 2007, representatives from Greene County met with Mountain Line Transit to discuss the possibility of adding a stop to the Grey Line at the Greene County Airport. This would allow both residents and students at Waynesburg University to travel to the Greyhound Station in the City of Pittsburgh and the Pittsburgh International Airport. Fees would be approximately $20 to the Greyhound Station and $25 to the Pittsburgh International Airport. Reservations could be made online at http://www.busride.org/ and buses are wheelchair accessible and disabled and senior friendly.

Park-n-Rides

Table 5-7: Means of Transportation to Work provides an overview of how Greene County residents get to work. As Greene County does not offer public transit, the majority of people drive to work. Approximately 11 percent of workers in the County carpool, despite there not being a formal Park-n-Ride located in Greene County. Park-n-Rides provide an essential sub-component of the transportation system as it relates to the reduction of passenger vehicles on area roadways. Greene County Human Services provide over 49,000 trips per year for disabled and seniors.

Table 5-7: Means of Transportation to Work

Total:	14,878
Car, truck, or van:	13,758
Drove alone	12,124
Carpooled	1,634
Public transportation:	22
Bus or trolley bus	20
Streetcar or trolley car	0
Railroad	2
Bicycle	0
Walked	500
Other means	111
Worked at home	487

U.S. Census Bureau; Census 2000

There is an informal Park-n-Ride located on Lippencott Road just off the Ruff Creek Interchange on I-79. The site is privately owned and has roughly 20,000 square feet of gravel surface.

Freight

Freight service is characterized by the distribution of large amounts of goods by highways, rail, water, and air. The economic value of the product being shipped, its weight or bulk, and the time sensitivity of its delivery schedule determine the most efficient mode of shipping. Low value, high bulk products such as coal, or aggregate materials used in construction are frequently shipped by barge, the most cost effective method of shipping. Products such as automobiles and other large consumer goods are often shipped by rail, also a cost effective means of transporting large bulky products. Extremely valuable, low bulk items such as computer component, or time sensitive materials such as cancelled checks, or parts for emergency repairs, are frequently shipped by air. Trends for freight service include “just in time” delivery. Such methods place an emphasis on timely delivery for business operations with low storage capacity. Such a method requires an efficient transportation network and the well-planned coordination of freight centers from which to transfer goods from one transportation mode to another. Connectivity is the key for freight centers as it reduces the dependency on costly improvements by raising productivity through linkages.

Historically, shipping by water was the first mode of freight. Today, water freight remains an important component of the freight network of the Southwestern Pennsylvania Region due to the presence of the Monongahela River and the close proximity of the Port of Pittsburgh in Allegheny County. Freight movement by commercial trucking or "heavy trucks" (trucks with five or more axles-PennDOT 2005) is dependent upon the interstate system and supported by the local road system to provide door-to-door service. Rail freight is cost effective for large, bulky goods. Rail freight provides connections to commercial trucking so that deliveries can be made to various locations inaccessible by rail.

For Greene County, freight needs are met primarily through trucking, rail and barges. The Pennsylvania Motor Truck Association estimated that 12 percent of all vehicles on Pennsylvania roads in 2000 were trucks. On some roads, such as the Interstate Highways, the percentages are much higher. Trucks on local roadways carry materials to manufacturers, finished product to market, and merchandise to customers. In each case, the timely delivery of freight is critical. In isolated cases, local manufacturers and retailers may rely on "just in time" delivery of needed materials, which eliminates the need for the local manufacturer to keep every component used in their production process stocked locally. Instead, items can be delivered when they are needed, eliminating the need to warehouse them locally.

Truck traffic is expected to increase substantially in coming years. As freight activity and truck traffic grows in the region, local roads will be subjected to increased wear and tear as a result of the high truck densities, and may experience increased delay as a result of the mix of truck and automobile traffic. The safe accommodation of trucks on these roadways may suggest the need for increased roadway design standards for the most heavily utilized truck routes, such as Interstate 79.

Recent legislative changes have placed strict limits on truck drivers' "hours of service." These new hours of service limitations have resulted in an increased need for truck rest areas along long distance truck routes, including Interstate routes. There is one highway rest area in Greene County, the Kirby Welcome Center, located on Interstate 79 just north of the West Virginia Border. Unfortunately, this rest area does not offer amenities such as fuel, convenience retail, showers or other facilities that serve the personal needs of the long distance truckers. The nearest such facility is located off Interstate 70 in New Stanton, Westmoreland County.

For the following freight shipper identification each has been identified as providing intra-state, regional, national or international services. The designation of Intra-sate indicates local or within Pennsylvania shipping, Regional refers to shippers that have regional markets but do not serve the entire continental United States. National indicates shippers that serve regional markets throughout the continental United States and International refer to shippers that serve Mexico or Canada as well as the continental United States. There is one trucking company that was identified as headquartered in Greene County.

Higgins Hauling Company

Headquarters: 338 Sy Huffman Hill, Waynesburg, PA 15370
Phone: (724) 852-2400 / FAX: (724) 852-2686
Contact(s): John Higgins Owner, Established: 1969
Markets Served Intra State (PA), Northeastern States (Ohio, West Virginia, Virginia, and Maryland)
County Wide Employment: 6

An important link in the freight transportation network for Southwestern Pennsylvania is the waterborne barge traffic on the Monongahela, Ohio and Allegheny Rivers. River Terminals are an essential component of the freight-shipping network. A river terminal handles cargo before and after the cargo is shipped by one method to another. Some terminals serve only as distribution modes while others are actual production centers for the goods that are shipped. Cargo is shipped upon the water by a barge that has the cargo carrying capacity of 15 rail cars, or 60 trucks, making river transport a key contributor to congestion reduction on local roadways. Greene County has no river-oriented freight companies or terminals. However, data provided by the Port of Pittsburgh Commission lists three public river terminals located on the Monongahela River in Washington County – the Mon Valley Intermodal facility at Donora, the McGrew Welding and Fabrication Company in the Mid Mon Valley Industrial Park in Donora, and Three Rivers Marine and Rail Terminal in Charleroi.

Rail

Pennsylvania has an extensive system of railroads that provide freight service within the Southwestern Pennsylvania area through two national (Class 1) railroad systems - Norfolk Southern Railway (NS) and CSX Transportation (CSX) and one short line railroad, the Wheeling and Pittsburgh Steel railroad as shown in *Map 5-1: Transportation Network*. Services include shipping coal and other goods to distribution and manufacturing destinations along the East Coast.

The Class I rail lines serve the region by connecting Greene County to the rest of the North American market. Greene County is served by the Norfolk Southern line, which extends in a mostly East West direction, connecting Chicago and points west with the New York City area.

Norfolk Southern—Norfolk Southern is a Virginia-based holding company, which operates in 22 Eastern States. Norfolk Southern has 12,500 miles of road and 31,300 miles of rail track nationwide. Norfolk Southern has a rail line along the Monongahela River in Washington County and a spur that enters Greene County along Ten Mile Creek in Morgan Township. The rail line extends to Waynesburg where it splits into two lines extending northwest to the Washington County line and south to West Virginia.

Short line and regional railroads are dispersed throughout the SPC Region and provide connections to the Class 1 railroads. Short line systems are one of the most important elements of the rail transportation system. The short line railroads provide access to local industrial properties

and function as an economic development tool for businesses that want to locate on industrial sites. Pennsylvania is served by seventy regional and short line railroads, more than any other state (PennDOT, 2004).

Regional and shortline railroads are smaller than the Class I railroads, with less than $250 million in annual revenues, and generally having less than 350 miles of track. They frequently connect to the Class I railroads, providing opportunities to "transload" materials from a regional to a national distribution network. Shortline railroads are much smaller operations, often serving a single customer. The Wheeling Pittsburgh Steel line is such an example, serving the Monessen coke works exclusively. Shortline and regional railroads are one of the most important elements of the transportation system. They provide access to many excellent business properties and function as an economic development tool for businesses willing to locate on theses industrial sites. There is no regional rail line serving Greene County. There is one short line rail road within Greene County – the Cumberland Mine rail line. It should be noted the Cumberland Mile rail line crosses the Monongahela River to connect to the Norfolk Southern rail line in Fayette County.

The Pennsylvania Rail Freight Assistance Program assists railroads in maintaining the rail network. This program uses Commonwealth General Fund monies to provide matching grants to railroad companies and others for projects which preserve essential rail freight service where economically feasible, and/or preserve or stimulate economic development through the generation of new or expanded rail freight service.

Aviation / Airport

The economic impacts of aviation facilities are a result of many aspects of an existing airport – private or public. Such economic benefits include employment, governmental spending, visitor spending, and supporting service costs. While airfreight does not have a large role in terms of the amount of freight, it is valuable for low-weight and high cost items that must be shipped in an expedited fashion. No other mode of freight can match air for efficiency in time. In 2004, the U.S. Department of Transportation-Bureau of Transportation Statistics (Smallen, D. 2004) reported that the total value of airfreight doubled from 1993 to 2002.

Greene County Airport (WAY) is a general service airport located at 417 E. Roy Furman Highway (State Route 21) in Franklin Township just east of Waynesburg. The facility encompasses 152 acres and is accessible from Interstate 79. The Greene County Airport is owned by the County of Greene and is operated by the Department of Recreation, Office of Airport Administration. A full-time Airport Manager is employed to oversee operations.

According the recently completed Greene County Airport Master Plan (2007), the airport is classified as a General Service Airport that is functionally classified as a Basic Facility by the Statewide Airport System Plan. The facility has a 3,500 by 75 foot runway that is lighted from dusk to dawn. The airport facility provides major repair; hangar rental; tie-downs; flight instruction; aircraft rental; and bulk oxygen. Accommodations at Greene County airport include an Administration Building, restrooms, and restaurant. The Greene County Airport does not handle air

cargo on a scheduled basis, although local companies may use the Airport for occasional emergency deliveries in corporate aircraft.

The Greene County Airport has a Twelve-Year Plan and an Airport Capital Improvement Plan that is reviewed twice a year with an annual final submission. Projects included on the two plans include new building construction, rehabilitation of the taxiway, runway extensions, expansion of the parking facilities, and the installation of a wildlife perimeter fence. As of 2005, the Greene County Airport had four aviation-related tenants on the premises, two of which provide revenue for the Airport. The primary source of terminal revenue is AJ's Landing Restaurant, which accounts for approximately 84 percent of total revenue; Eagle One Flight School accounts for the remaining 16 percent. The two other tenants, Flight Level Aviation Flight Simulator and District Justice / Office of Tourism, do not provide revenue. The Airport accounts for over 32 jobs with a payroll of $305,600 to the local economy, with an overall total output of $984,400. The Airport Master Plan documented 36 aircraft based at the facility, which were primarily single-engine aircraft.

The Airport Master Plan yielded some interesting results based on information provided by pilots and other interested parties. There were 38 total responses and the stakeholders stated that they make 16 trips per month on average, with an average of 57 miles per trip from or to the airport. The survey noted many issues and concerns of the pilots. One item that was noted in great detail was the stakeholder's belief that there were issues surrounding the runways and taxiways. According to the stakeholders, 23 did not mention any issues or concerns and 15 responded that there were issues surrounding the runways and taxiways. Of these issues seven respondents noted issues with no instrument approach, four noted inadequate lighting on the runways, three noted issues with the Runway 27, three noted issues with fuel service, two noted paving issues on the taxiways, one response noted an issue with runway length, and one respondent noted an issue with large amounts of deer on all runways in the evenings.

Overall, the respondents' issues were varying and the County is in the process of addressing all the issues and concerns. As of January 2007, the lighting issues were being corrected, the paving and instrument approach was being planned through the Federal Aviation Administration, and Runway 27 was focused on to provide more safety. After the Airport Master Plan is completed in late 2007, the document will address all the issues and recommend strategies to correct them.

Future considerations for Greene County planners and elected officials include improvements to the Airport's existing facilities. The Airport Master Plan identifies the following physical improvements to the existing facilities:

1. Long Term: The airport runway is rated good, meaning it will require rehabilitation or replacement in 10-15 years.
2. Short Term: The airport access taxiway areas are in poor condition and will need replacement in 0 to 5 years.
3. Short Term: Hangers 17 and 18 are in poor condition and will need replacement in 0 to 5 years.

Greene County planners and elected officials will also need to prepare for improvements, or take action, that will enhance the accessibility and development potential of the Greene County Airport. The Airport Master Plan identifies the following improvements:

1. Develop one or more instrument approaches.
2. Implement the recommended Runway Protection Zone (RPZ) Control Plan.
3. Remove noted obstructions to air navigation.

Greene County has identified one transportation related improvement to the Airport that is included on the Long Range Plan for Economic Development projects for SPC. The identified improvement is an extension of the Norfolk Southern rail line to service the Greene County Airport and adjacent EverGreene Technology Park.

Typically, general aviation airports require federal and state subsidy for airport improvement projects and capital maintenance. The Commonwealth of Pennsylvania's Bureau of Aviation administers three grant programs for airport development: the Pennsylvania Block Grant Program, the Aviation Development Program, and the Capital Budget /Transportation Assistance Program.

Commercial Waterways

The Monongahela River flows north from the confluence of the West Fork and Tygart rivers at Fairmont, West Virginia to the City of Pittsburgh where it joins with the Allegheny River to form the Ohio River. The Monongahela River serves many purposes including transportation, recreation, and a source of water for many municipaities within the County. Historically, the Monongahela River has been considered a significant form of transportation for all of Southwestern Pennsylvania. During the pre-Revolutionary times, individuals utilized this waterway as a method of traveling westward to the Ohio River. During the industrial era, the Monongahela River was a source of moving materials from the busy coal mines located along its shores to industrial centers. Today, the river still is considered a commercial waterway due to the number of barge companies that transport coal, petroleum products, scrap metal and other materials.

The Monongahela River was improved for year round transportation by the Monongahela Navigation Company in 1837 when a series of seven locks and dams from Pittsburgh towards the West Virginia state line were built. The U.S. Army Corps of Engineers took control in 1897 and began operation of the nation's oldest continuously operating slack-water river navigation systems (US Army Corps of Engineers, 2004). The present navigation system has nine locks and dams of several sizes and types constructed by the U.S. Army Corps of Engineers between 1902 and 1994. These locks allow boats to travel in a series of steps to accommodate the 147-foot difference in pool elevation from Fairmont to Pittsburgh (US Army Corps of Engineers, 2005). Together the U.S. Army Corps of Engineers and the Port Authority of Pittsburgh oversees 200 miles of commercially navigable waterways in an eleven county area including Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland Counties.

Locks and Dams

The Lock and Dam system is an important component of the Inland Waterway Navigation System. According to information supplied by the US Army Corps of Engineers (2005), the Locks and Dams 2, 3 and 4 are the three oldest operating navigation facilities on the Monongahela River and experience the highest volume of commercial traffic. The Lower Monongahela River Project is a series of planned improvements by the Army Corps of Engineers to the Locks and Dams 2, 3 and 4. Locks and Dam 2 (Braddock, Allegheny County) was recently replaced which will allow the removal of Locks and Dam 3 in Elizabeth, Allegheny County, following the replacement of Locks and dam 4 in Charleroi. The Lock and Dam #4 improvements include the replacement of the existing 70-year-old structure with a larger 110 foot wide chamber system, which will result in an increase in the lock-through capability thereby improving the overall efficiency and capacity. The removal of Locks and Dam 3 will result in a 30-mile long pool of water between Braddock and Charleroi. Other improvements to the Braddock Locks and Dams include dredging Pool #3, which will cause a 3.2-foot drop in water elevation between Elizabeth Borough, Allegheny County and Charleroi Borough, Washington County (US Army Corps of Engineers, 2004). The Lock and Dam system affecting the Monongahela River in Greene County includes facilities in Washington County, Greene County, and in West Virginia as noted below:

Locks and Dam 4

A two-chamber lock and gated dam located on the Monongahela River near Charleroi, Washington County, approximately 41.5 nautical miles from Pittsburgh. The facility was originally built in 1930-1931 and renovated in 1967. According to the US Army Corps of Engineers, Pittsburgh District, Lock and Dam 4 allows for the movement of 19 million tons of freight each year. The pool located upstream to the Maxwell Lock and Dam is 19.7 miles of slack water, which is also available for recreational use and as a source of municipal water supply. There are no public facilities located at this site.

Maxwell Locks and Dam

Also a two-chamber lock and gated dam located at river mile 61.2 approximately 5 miles south of Brownsville, Fayette County. The lock chambers and operations buildings are situated along the right bank of the river. Road access to the project is from a local legislative route south of Brownsville. Construction of Maxwell Locks and Dam began in 1960 and was completed in 1965 to replace the Lock and Dam 6 at Rices Landing, Greene County. The Maxwell Lock and Dam creates a pool of navigable water for 20.8 miles up to Grays Landing Lock and Dam. According to the US Army Corps of Engineers, Pittsburgh District, the Maxwell Locks and Dam accommodates approximately 18 million tons of freight each year.

Grays Landing Lock and Dam

The Grays Landing Lock and Dam is located at river mile 82 near the community of Grays Landing in Fayette County. Access to the lock chamber and operations buildings is on the right descending bank of the Monongahela River off State Route 166 South. The facility was constructed between 1988 and 1993, at a cost of $96 million; opened May 1993 with the dam completed by June 1995. The Dam is 576 feet in length and serves to create a body, or Pool, of water that is 8.8 miles from Grays Landing to the Point Marion Lock and Dam. The Lock system is 84 feet wide by 720 feet long providing a 15 feet rise in elevation and serves about 7.5 million tons of freight annually. The Grays Landing Lock and Dam consists of one lock chamber and a fixed-crest dam. This type of dam is basically a concrete weir or wall across the river which keeps the river channel upriver of the project deep enough for navigation -- at least nine feet. Water flowing over this type of dam cannot be controlled locally and consequently cannot provide any control over flood waters although the body of water formed by the dam is a source of municipal and industrial water supply.

Point Marion Lock and Dam

The Point Marion Lock and Dam is located 90.8 miles upriver from Pittsburgh, PA, between the Cheat River at Point Marion and the West Virginia border. The facility was first constructed in 1923-1926 at an original cost of $2.08 million. The dam was reconstructed in 1958-59 for $3.3 million and a new lock in December 1993 for a construction cost of $94 million. The dam structure is 560 feet in length, which creates a pool of water that is 11.2 miles in length from its beginning above Point Marion, across the state border and past Morgantown, WV, to Morgantown Lock and Dam. The Point Marion Lock and Dam provides a lift of 19 feet and experiences annual traffic flow of approximately 10 million tons of freight.

Morgantown Lock and Dam

Located at Morgantown, West Virginia and is 102 miles upriver from the mouth of the Monongahela at Pittsburgh. The Morgantown Lock and Dam was built in 1948-1950 at a cost of $8.8 million. The 410 foot dam structure creates a six mile pool of navigable water to the Hildebrand Lock and Dam. The Lock and Dam system provide a rise in elevation of 17 feet and experiences an annual traffic level of approximately 300,000 tons of freight.

Port of Pittsburgh

The Port of Pittsburgh is the second busiest inland port in the nation. It is the 13th busiest port of any kind in the nation—larger than Baltimore, Philadelphia, and St. Louis in terms of shipping tonnage. The Port district includes the following 11-county service area—Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington, and Westmoreland. The service area for the Port of Pittsburgh includes over 200 miles of commercially navigable waterways and connects over 200 river terminals and water freight suppliers (Port of Pittsburgh, 2005).

The primary commodities shipped through the Port of Pittsburgh are "steam and metallurgical coal for uses in utilities and steel mills, chemicals and petrochemicals for uses by local chemical companies, sand and gravel used in construction and cement production, and petroleum products for local gasoline stations, and to the Pittsburgh International Airport (Martin Associates, 1998, p I-2). Coal remains the largest product shipped through the Port of Pittsburgh with over 75 percent of all traffic constituted by this commodity (Martin Associates 1998).

Waterway Access

The ability of residents to use the river or other waterways, as a source of recreation is partly dependent upon the availability of public boat launches. Currently, the only public access to waterways is in Rices Landing Borough at the boat docks in Pumpkin Run Park. Private boating facilities include:

- Greene Cove Yacht Club—Jefferson Township
- Jessop Boat Club—Cumberland Township
- Koci Tavern Marina—Jefferson Township
- Sunset Marina—Jefferson Township
- Two Rivers—Dunkard Township

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C. Development Strategies

Greene County is fortunate to have a variety of major transportation thoroughfares, such as Interstate 79, which provides easy access to the City of Washington, the City of Pittsburgh, and the City of Morgantown; the Monongahela River, which is a designated water trail; and the Greene County Airport. Assessing public opinion regarding the transportation system in Greene County was undertaken during public and focus group meetings.

Identified assets of the transportation network include:

1. Greene County Airport
2. Interstate 79
3. State Route 21
4. State Route 18
5. US Route 19
6. Shared Ride Program
7. Railroad
8. Monongahela River
9. Greene River Trail

Identified deficiencies of the transportation network include:

1. State Route 21
2. State Route 88
3. State Route 218
4. State Route 21 junction with US Route 19
5. Congestion in Waynesburg
6. Airport does not have facilities to accommodate Corporate Jets/Aircraft
7. Lack of a public transportation system
8. Poor access to western portion of Greene County

Identified needed improvements of the transportation network include:

1. Construction of Park-n-Rides
2. Development of a public transportation system
3. Upgrades to the Greene County Airport

Throughout the public participation process, the most pressing issues that residents wanted addressed were the following:

1. Safe and efficient travel on clearly marked roadways.
2. Diverse transportation systems that encompass an expanded air traffic operation, an extensive pedestrian network, and public transportation option for residents of Green County to access employment, medical centers, shopping, and entertainment.
3. Physical road improvements to major thoroughfares.
4. Improved access to western Greene County.

It is vital for the County to coordinate transportation planning with economic development and land use planning, in order to ensure "smart growth" and efficient use of resources. There are many actions that must be taken by the County to improve the transportation network and direct development to appropriate areas. It is important to understand that County officials must balance the needs of the residents with the proper appropriation of limited resources. Recommendations have been developed that take these factors into account and offer the best solutions to needed transportation improvements.

GOAL: Preserve the function of major thoroughfares

Strategy: Develop subdivision and land development guidelines that improve access management by requiring internal local and collector street systems in new residential subdivision so as to avoid direct access from individual parcels to state routes.

Strategy: Apply development policies that will require cross access easements or a network of parallel roads so as to discourage strip development along State Route 21.

Strategy: Require that large-scale developments that are auto-oriented in nature be located near interstate highways or regional arterials.

Strategy: In conjunction with the local municipalities, complete an Access Management Plan for State Route 21, US 19, State Route 88, S.R. 18, S.R. 221, and S.R. 188 to address impacts of rural development and subdivisions along these transportation routes.

- Access plan should include:
  i. Policies controlling access
  ii. Issues related to dimensions and location of driveways, street intersections and detailed lane dimensional data
  iii. Requirements for traffic studies

GOAL: Lessen the capital expense to the County for access management

Strategy: Require developers to provide safe and adequate access to roadways.

Strategy: Require new developments to bear the cost of needed transportation and utility improvements.

GOAL: Implement the major transportation projects submitted to SPC as Greene County's priority projects

Strategy: Focus investment on major road corridors and bridges and coordinate planned improvements with economic development strategies.

Strategy: Continue to focus lobbying efforts and interaction with PennDOT to ensure that the S.R. 21 Corridor Improvement Project aligns with County transportation and economic development goals.

Strategy: Establish formal criteria for prioritizing maintenance and improvements to existing roads and bridges according to safety and mobility factors.

Strategy: Continue to involve SPC Public Participation Panel (PPP) in setting prioritization criteria for Greene County transportation projects.

Strategy: Continue activities to support selected projects by giving presentations at the PPP Transportation Improvement Plan (TIP) public meetings.

Strategy: Continue active involvement with SPC.

Strategy: Actively engage Congressional delegation to help move projects forward.

GOAL: Promote tourist attractions & other amenities along major thoroughfares

Strategy: Encourage local businesses and attractions within close proximity to the I-79 interchanges to participate in the PA Logo Signing Program. Examples of signing include the following:

- Exit #14: Waynesburg / Masontown – "Roy E. Furman Highway," Waynesburg Business District, Waynesburg Historic District, EverGreene Technology Park, Greene County Historical Museum, Ryerson Station State Park, Greene County Airport, Foundation Coal Water Park, Southwest Regional Center, Waynesburg University, Greene County Fairgrounds, and the Greene River Trail
- Exit #19: Ruff Creek – Waynesburg Business District, Waynesburg Historic District, Waynesburg University

GOAL: Continue to improve transportation accessibility to and on the Monongahela River

Strategy: Collaborate with West Virginia entities, Washington County and Fayette County to support infrastructure improvements on the Monongahela River.

Strategy: Support the development of public access to the Monongahela River via boat launches and riverfront development (recreation, commercial, and housing).

Strategy: Increase the awareness and use of the Upper Monongahela River Water Trail.

GOAL: Establish a multi-modal transportation approach

Strategy: Implement the recommendations contained in the Greene County Airport Master Plan.

Strategy: Support the extension of the Greene River Trail.

Strategy: Support rail banking to plan for conversion to trails (avoiding conflict with economic goals for rail infrastructure necessary to support industrial sites).

Strategy: Lobby PennDOT to include shoulders suitable to support bicycle traffic, for example when completing routine maintenance or rehabilitation projects (minimum 6 to 8 foot shoulders with buffers when possible) on the following roadways: (PennDOT capital or county maintenance funds can be used for these projects).

- S.R. 21
- US 19
- S.R. 88
- S.R. 188

Strategy: Encourage retail commercial around multi-modal hubs, where amenities such as grocery stores, coffee shops, video stores, etc. are clustered.

Strategy: Support the inclusion of bike/pedestrian improvements to S.R. 21/Masontown Bridge and S.R. 88/Point Marion Bridge.

Strategy: Support the development of the proposed Central Waynesburg Trail that would connect Waynesburg University to EverGreene Technology Park (feasibility study necessary).

Strategy: Continue to work with SPC and County economic development agencies to identify rail improvements.

Strategy: Identify opportunities to improve connectivity between rail and other transportation modes such as air, road, water, and transit.

Strategy: Extend the Norfolk - Southern Rail Line to serve the EverGreene Technology Park Greene County Airport.

Strategy: Monitor operations of the Norfolk – Southern Rail Company and their plans.

Strategy: Work with industrial and economic agencies and sites to assess rail infrastructure needs.

Strategy: Establish a Park and Ride facility at the Ruff Creek Interchange on I-79 (other locations should be identified and established to support long-term multi-modal and economic development goals).

Strategy: Work with the Federal Transit Administration and Southwestern Pennsylvania Commission (SPC) to identify opportunities to establish a public transit service for county residents.

GOAL: Ensure that development along major transportation routes align with community character and County goals

Strategy: Support the Waynesburg Prosperous and Beautiful Program.

Strategy: Establish development and preservation policies for the four interchanges along I-79.

Strategy: Enact County Zoning at interchange locations with no municipal zoning controls (Perry Township).

Strategy: Support municipal zoning regulations that direct development in a manner compatible with existing infrastructure (water, sewerage, roads) and which align with local character.

Strategy: Support infrastructure improvements (and funding applications) in accordance with desired land use goals at each interchange.

GOAL: Develop a long-range transportation plan that parallels the County's economic development strategy & guides the corresponding effect of development

Strategy: Incorporate NEPA considerations into the project planning and prioritizing process.

Strategy: Evaluate the need, feasibility, location and estimated cost for a regional inter-modal freight distribution center (highway, rail, air, barge, etc.).

Strategy: Establish a county policy for the integration of rail, air, and truck modes for freight and barge service.

Strategy: Establish a Greene County Transportation Policy for new road development and road improvements.

Strategy: Counties and Municipalities should petition the state to add additional monies to the ACT 26 budget.

Strategy: County Government could accept qualified local structures as County Bridges until Act 26 is repealed or modified to the point where the County would no longer enjoy a no-cost status for their bridges, However ACT 26 funding is not adequate to take care of all of the county owned bridges in Greene County. .

Strategy: Municipalities should petition their County Government to accept qualified local structures as County Bridges until Act 26 is repealed or modified to the point where the County would no longer enjoy a no-cost status for their bridges.

Strategy: Provide technical assistance to local municipalities regarding negotiations with transportation entities when local projects are consistent with the transportation goals of Greene County.

Strategy: Conduct County review of local transportation and development projects to ensure consistency with County Development Policies and encourage Pennsylvania and/or Federal transportation agencies to support only those projects that are consistent when funding grant requests and development plans.

Strategy: Adhere to the National Environmental Protection Agency's (NEPA) 10-step process to minimize negative impacts to communities.