

CHAPTER THREE

COUNTY AND MULTI-MUNICIPAL COMPREHENSIVE PLANS

Overview

This chapter of the WATS Long Range Transportation Plan discusses the comprehensive planning process in Lycoming County. An overall vision statement along with goals and objectives will be re-affirmed and expanded upon consistent with the currently adopted Lycoming County Comprehensive Plan and the six multi-municipal comprehensive plans adopted in the growth area municipalities in the County. The vision, goals and objectives will also be shown to be consistent with the Federal SAFETEA-LU planning factors re-affirmed in MAP-21, Smart Transportation Themes, Keystone Principles, LUTED Central Region Vision and PA Mobility Plan goals and objectives discussed earlier throughout Chapter 2.

Chapter 3 also provides current demographic information based on the new 2010 U.S. Census along with economic indicators that provide updated population and employment data and trends that have direct implications on transportation planning and programming decision-making. The population and employment data are also directly tied to existing and future land use development patterns which will be highlighted. The sudden emergence of Marcellus Shale natural gas exploration has had profound impacts on population, employment, public safety, land use availability and utilization and all modes of transportation within Lycoming County. This chapter will highlight Marcellus impacts and provide a framework for further analysis to ensure a balanced approach is pursued to ensure safe and adequate preservation of Lycoming County's transportation system in future years.

Lycoming County Comprehensive Plan & Multi-Municipal Comprehensive Plans

The current *Lycoming County Comprehensive Plan* was adopted by the Lycoming County Board of Commissioners on August 24, 2006 in conformance with the PA Municipalities Planning Code (MPC), Act 247 of 1968 as reenacted and amended. This plan serves as a policy document that provides guidance to the County and local municipalities in areas such as land use, transportation, housing, infrastructure, and community development. The plan projects future growth trends based on data and careful analysis and proposes the best possible policies and implementation tools to accommodate expected growth while protecting the County's vast and precious

resources. The plan is not a regulatory document. The planning process involved public participation from dozens of stakeholder organizations and the general public over several years.



Concurrent with the development of the overall Lycoming County Comprehensive Plan, the Lycoming County Planning Commission engaged in an extensive comprehensive planning process with 26 municipalities to develop six individual Multi-Municipal Comprehensive Plans for the designated future growth areas of Lycoming County. The six adopted multi-municipal comprehensive plans consist of:

✚ MUNCY CREEK MULTI-MUNICIPAL COMPREHENSIVE PLAN

- *Hughesville Borough*
- *Muncy Borough*
- *Muncy Creek Township*
- *Picture Rocks Borough*
- *Shrewsbury Township*
- *Wolf Township*

✚ MONTOURSVILLE/MUNCY MULTI-MUNICIPAL COMPREHENSIVE PLAN

- *Montoursville Borough*
- *Muncy Township*
- *Fairfield Township*

✚ US 220 / FUTURE I-99 MULTI-MUNICIPAL COMPREHENSIVE PLAN

- *Jersey Shore Borough*
- *Piatt Township*
- *Porter Township*
- *Woodward Township*

✚ US 15 SOUTH MULTI-MUNICIPAL COMPREHENSIVE PLAN

- *Brady Township*
- *Clinton Township*
- *Montgomery Borough*
- *Gregg Township, Union County*

✚ GREATER WILLIAMSPORT ALLIANCE MULTI-MUNICIPAL COMPREHENSIVE PLAN

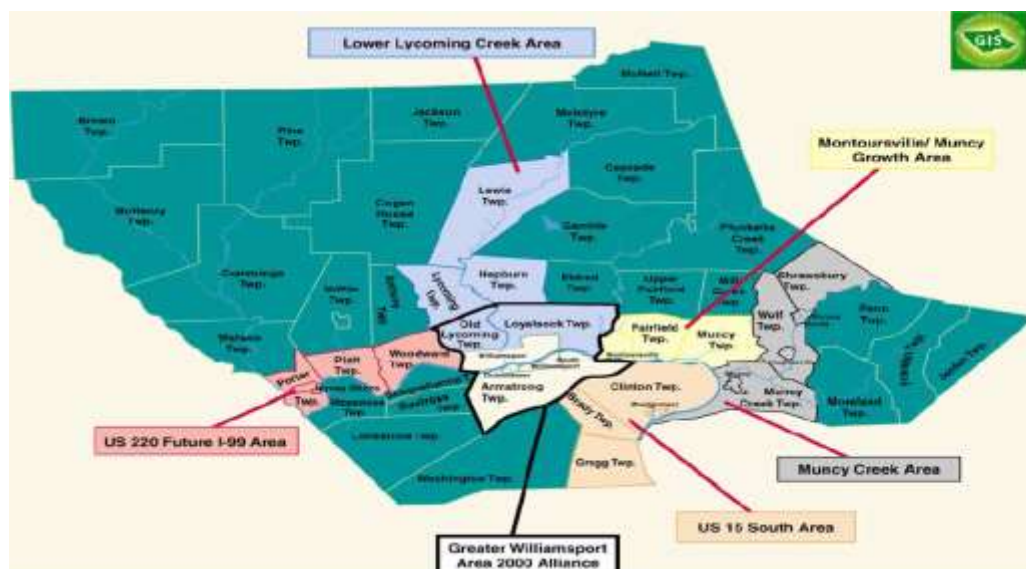
- *City of Williamsport*
- *South Williamsport Borough*
- *Armstrong Township*
- *DuBoistown Borough*
- *Old Lycoming Township*
- *Loyalsock Township*

✚ LOWER LYCOMING CREEK MULTI-MUNICIPAL COMPREHENSIVE PLAN

- *Lewis Township*
- *Lycoming Township*
- *Hepburn Township*
- *Old Lycoming Township*
- *Loyalsock Township*

These six multi-municipal comprehensive plans were adopted in the 2004-2006 timeframe by the municipalities noted above under each plan header and are currently in effect. For a complete review of all comprehensive plan related documents visit www.lyco.org.

The map depicted below illustrates the six multi-municipal planning growth areas:



VISIONING / TRANSPORTATION GOALS & OBJECTIVES

The purpose of developing a plan vision statement is to clearly convey a desired overall transportation direction for Lycoming County. This vision can then be further defined through more specific goals and objectives. The vision, goals, and objectives will then be supported throughout the plan, particularly when evaluating trends, issues and problems and prioritizing solutions. The vision statement, goals and objectives contained in this section of the plan are consistent with the overall Lycoming County Comprehensive Plan and Federal / State laws, regulations and policies relevant to the transportation planning process such as the SAFETEA-LU planning factors, Keystone Principles and Smart Transportation Themes discussed in Chapter 2.

OVERALL PLAN VISION STATEMENT

Lycoming County will have multi-modal transportation system alternatives that consist of highways, bridges, public transportation, rail service, air service and bikeway / pedestrian facilities that move people and goods in a safe, efficient and affordable manner, supporting economic development while preserving community character, natural and cultural resources and our outstanding quality of life.

GOAL 1 – Ensure adequate maintenance and preservation of existing transportation system



Objectives

- *Maintain and improve highway pavement and ride quality at proper life cycles*
- *Utilize PennDOT District 3-0 Business Plan to target system maintenance and preservation needs*
- *Reduce the number of structurally deficient state and locally owned bridges*
- *Incorporate preventative maintenance as part of overall transportation asset management and educate municipal officials through Local Technical Assistance Program training*
- *Properly maintain, modernize / replace fully accessible public transportation vehicle fleet and related transit facilities*

- *Preserve and enhance rail freight infrastructure*
- *Preserve and modernize airport infrastructure and facilities*
- *Preserve and enhance pedestrian and bicycle facilities*
- *Maintain and improve overall system connectivity*
- *Continue to monitor and assess transportation impacts from Marcellus Shale gas exploration and undertake appropriate measures, such as posting and bonding, to respond to emerging issues and concerns associated with widespread heavy hauling activities*

GOAL 2 – Promote efficient transportation system management and operations



Objectives

- *Implement Regional Operations Plan, (ROP) through deployment of Intelligent Transportation Systems, (ITS) equipment and related projects to improve incident management, response and provide up to date information for motorists.*
- *Properly maintain and improve traffic signal systems such as signal timing adjustments, equipment upgrades and enhance signal coordination in high traffic corridors as needed.*
- *Maximize use of public transportation, shared ride, park and ride, carpool/vanpooling and rail freight modal alternatives to help reduce traffic congestion and travel times and improve level of service*
- *Implement corridor access management recommendations, especially along US 220 between Jersey Shore and Williamsport and along PA 405, SR 2014 (John Brady Drive) and US 220 in the Muncy-Hughesville growth area to reduce / consolidate private drive access resulting from new significant development patterns to preserve the operational integrity of these high growth corridors.*
- *Assess overall traffic network heavily impacted by Marcellus gas exploration activity through additional traffic count monitoring, ongoing mapping of posted and bonded roads and bridges / oversized and overweight truck routes, rail system capacity and truck / rail intermodal transfer points and integrate data collection and analysis into overall transportation planning process.*

GOAL 3 – Enhance integration and connectivity of the transportation system



Objectives

- *Establish, maintain and improve intermodal connections to move people and freight.*
- *Reduce or eliminate transportation system barriers such as road / bridge closures, detours, weight and clearance restrictions, etc...*
- *Consider bike/ped. needs and access early in design of highway and bridge improvements.*
- *Promote improved coordination of transit service to serve major land developments.*
- *Develop core transportation networks*
- *Coordinate with SEDA-COG Joint Rail Authority to implement their Strategic Plan.*
- *Coordinate with Williamsport Municipal Airport Authority to implement Airport Master Plan.*
- *Implement Susquehanna Trail Feasibility Study recommendations.*

GOAL 4 – Ensure transportation investments protect and enhance the environment, promote energy conservation, promote consistency with state and local planned growth and improve quality of life.



Objectives

- *Improve access to employment and recreational opportunities*
- *Reduce impacts to environmental, natural and cultural resources*
- *Support sound land use planning initiatives by strategically targeting transportation infrastructure investments in Comprehensive and Multi-Municipal Plan Growth areas that promote community sustainability and livability and reduce or eliminate sprawl development patterns*
- *Incorporate context sensitive solutions and smart transportation principles into transportation project designs*
- *Maintain air quality attainment status within Lycoming County by reducing traffic congestion and vehicle emissions*

- *Maintain rural roadways in a manner that preserves scenic qualities and rural community character*
- *Support exploration and development of alternative fuel sources and related facility development, such as Compressed Natural Gas fueling stations to encourage transportation vehicle fleet conversion from diesel to natural gas where appropriate.*
- *Implement Lycoming County Energy Plan recommendations.*
- *Continue to utilize Linking Planning and NEPA screening process to assess transportation improvement needs and impacts on the environment prior to programming specific projects on the Long Range Transportation Plan and Transportation Improvement Program.*

GOAL 5 – Increase accessibility and mobility options for people and freight



Objectives

- *Improve and expand fixed route public transportation facilities and services, shared ride program, carpool and vanpool availability and park and ride lots.*
- *Strive to ensure transportation facilities and services are ADA compliant.*
- *Encourage improved utilization of rail freight transport to help reduce truck traffic on highway system to extend pavement life and reduce traffic congestion.*
- *Promote Walkable Communities initiative by addressing sidewalk connectivity and undertake streetscape and crosswalk improvements consistent with concepts identified in Walkable Communities Plans, including the Hughesville, Muncy and Williamsport Plans developed by SEDA-COG.*
- *Coordinate with Susquehanna Greenway Partnership to implement County-wide trail system, ensure regional trail connectivity, promote healthy communities and River Town designations underway in Jersey Shore and Montgomery Boroughs.*

GOAL 6 – Increase transportation system safety and security for all users



Objectives

- *Reduce the number and severity of motorized and non-motorized crashes, especially at high crash cluster locations*
- *Reduce conflicts between motorized and non-motorized transportation modes*
- *Improve rail / highway grade crossings*
- *Improve pedestrian safety at intersections and school zones*
- *Fully implement Pathway to Health initiative improving access to new Susquehanna Health Regional Medical Center Campus*
- *Improve emergency response time and access*
- *Maintain and improve emergency detour and transportation evacuation routes*
- *Implement Lycoming County Hazard Mitigation Plan recommendations*
- *Support Lycoming County and Municipal Emergency Response Plans*
- *Continue to meet or exceed Transportation Security Administration requirements at Williamsport Regional Airport*
- *Preserve air traffic control functions at Williamsport Regional Airport*
- *Monitor and assess hazardous materials multi-modal transport needs and routing systems*
- *Identify future Intelligent Transportation System applications, using data from weather events, road closures, Lycoming County Emergency Operations Center and other sources as appropriate.*
- *Strengthen enforcement of speed limits and other traffic control mechanisms, especially in high accident and / or congested locations*

Goal 7 – Ensure transportation investments support overall economic development that enables global competitiveness, productivity and efficiency.



Objectives

- *Improve access to designated growth areas through strategically targeted transportation infrastructure investments*
- *Improve intermodal goods movement and connectivity*
- *Maintain and enhance access to major tourist attractions such as Little League Baseball, PA Wilds etc...*
- *Support completion of enhanced regional north/south major highway access network such as Central Susquehanna Valley Thruway and Interstate 99 Corridor.*
- *Implement I-180 Corridor and Montgomery Corridor Plans that encourage improved access to Brownfields redevelopment and infill development sites supporting revitalization of core communities*
- *Properly maintain and improve access to Reach Road and Muncy Industrial Parks and proposed Timber Run Industrial Park*
- *Improve the range of air service choices at Williamsport Regional Airport through recruitment of new air carriers for business and leisure travel, promote cost competitive air fares and reduce customer leakage to other surrounding airports.*
- *Support the continued development of rail served industrial sites and maintain / extend rail infrastructure to industries that rely on rail service*
- *Promote leisure excursion train travel in support of regional tourist promotion efforts*
- *Identify multi-modal freight transportation opportunities and needs among major employers*
- *Support improved public transit (both fixed route and shared ride) services to access employment centers and encourage transit oriented design elements for existing and proposed new major land developments*
- *Maintain and expand parking availability in Williamsport Central Business District and surrounding urbanized area communities*
- *Evaluate trail and pedestrian network connection opportunities as part of major land development plans*

POPULATION, HOUSING, JOURNEY TO WORK TREND ANALYSIS

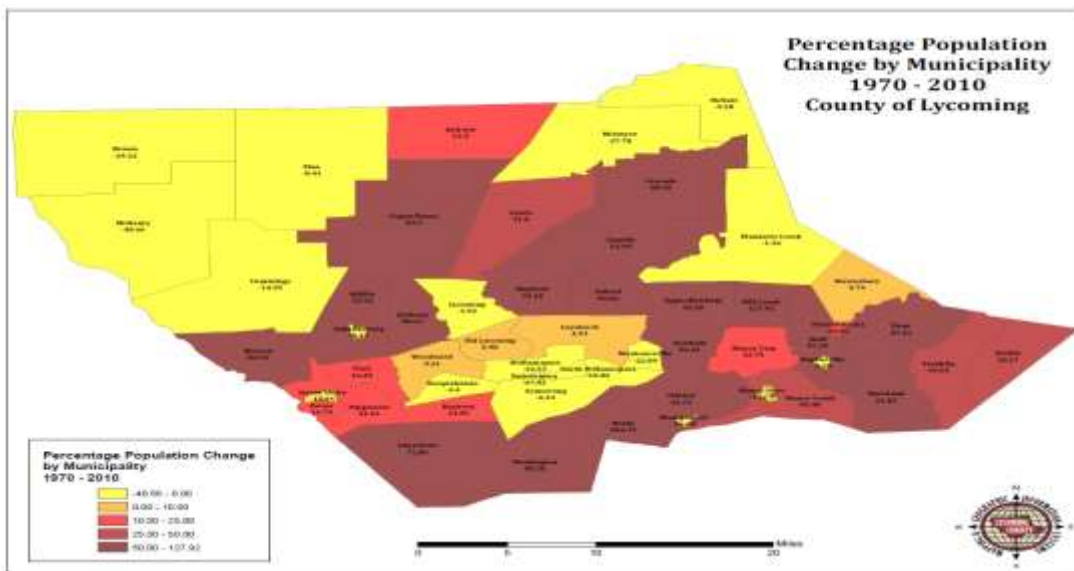
This section of the plan provides demographic profile and trend analysis of general population and housing characteristics for Lycoming County.

Population Profile

According to the US. Bureau of Census 2010 population figures, there are a total of 116,111 persons residing in Lycoming County. The chart below illustrates population changes in the County since 1970 in relation to the Commonwealth of Pennsylvania.

Change in Population (County of Lycoming) 1970-2010						
Year		1970	1980	1990	2000	2010
County of Lycoming		113,296	118,416	118,710	120,044	116,111
Pennsylvania		11,800,766	11,863,895	11,881,643	12,281,054	12,281,054

From 1970 to 2000, Lycoming County’s population grew by 6,748 persons yielding a 6% overall gain which was higher than Pennsylvania’s overall population growth at 4.1%. However, in the last decade between 2000-2010, Lycoming County’s population fell 3.3% while the state population increased by 3.4%. It should be noted that the sudden influx of persons coming to the County associated with Marcellus Shale gas exploration commencing in 2008 are not captured in Lycoming County Census data because the vast majority of these individuals have permanent residences listed outside of the County and Census information is based on the individual’s place of permanent residence. The map illustrated below shows the percentage population change by municipality from 1970-2010.



Indicative of statewide trends, county population has been shifting outward from the City and Boroughs into the suburban and rural Townships. However, much of the growth is occurring in rural Townships located just beyond the suburban fringe of the Williamsport Urbanized Area, which is well within commuting distance to major employment centers.

In terms of a future county-wide total population forecast, the Lycoming County Comprehensive Plan cites total population to grow to 122,112 persons (5.1%) by 2015 and further grow to 122,859 persons (5.8%) by 2020. The plan has no population projections for 2025 or 2030, however a plan update is schedule in the near future in which forecasts will be re-formulated by the County.

Population By Age Groups

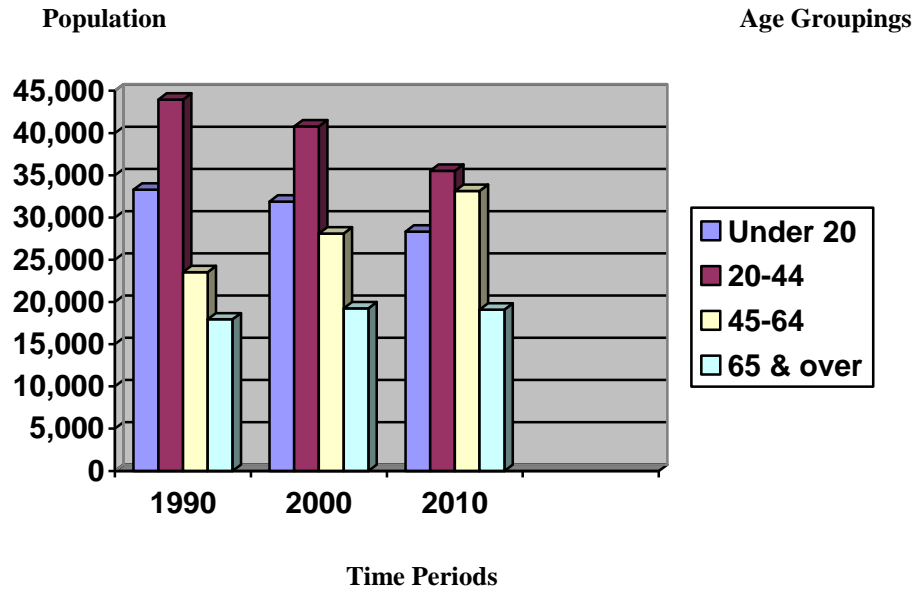
The US Census 2010 population for Lycoming County is shown by various age groups. The Lycoming County Comprehensive Plan further identifies age groups as follows:

- School Age Group (Under age 20)*
- Young Adult Age Group (20 to 44 years)*
- Mature Age Group (45 to 64 years)*
- Senior Elderly Population Age Group (65 years and over)*

AGE GROUP	2010 POPULATION	PERCENT SHARE
School Age (Under 20 years)	28,333	24.4 %
Young Adult (20 to 44 years)	35,528	30.6%
Mature (45 to 64 years)	33,138	28.5%
Senior Elderly (65 years and over)	19,112	16.5%
Total Population	116,111	100%

The next bar chart depicts these same population age group trends between 1990 and 2010.

LYCOMING COUNTY AGE GROUP TRENDS



Between 1990-2010, younger school age populations have seen a steady overall 15% decline. The young adult population group also declined by 19% while the mature age group population increased by a significant 40% and the senior age group rose 6% over the last two decades. This is a concern because a reduction or exodus of younger generation populations and corresponding rises in elderly populations can destabilize the social fabric of the community as less and less younger workers who generate a greater proportion of the tax base required to support necessary community services such as transportation, required by older individuals create the potential for budget deficits and adversely impact delivery of services to all individuals. Again, the emergency of Marcellus Shale employment opportunities may help retain younger local workers in the region, however additional Census data compiled in future years will be necessary to clearly establish meaningful future trends as Marcellus activity was just beginning at the time of the 2010 Census.

Racial Composition

The 2010 Census information by racial composition is provided on the following table:

Race	2010 Population	Percent Share
<i>White</i>	107,573	92.6 %
<i>Black or African American</i>	5,203	4.5%
<i>American Indian and Alaska Native</i>	217	.2%
<i>Asian</i>	671	.6%
<i>Native Hawaiian and other Pacific Islander</i>	25	.0%
<i>Some other Race</i>	421	.4%
<i>Two or More Races</i>	2,001	1.7%
Totals	116,111	100.0%

It should be noted that Hispanic is an ethnicity, not a racial category contained in Census data since persons of Hispanic origin can be of any race.

There are 1,543 persons of Hispanic or Latino minority ethnicity which represent 1.3% of Lycoming County's population according to the 2010 Census which is considerably lower than the State-wide 5.5% Hispanic or Latino minority population figure. Again, there are a number of individuals of Hispanic or Latino origin observed working in the Marcellus industry, however in many cases they recorded in Lycoming County population figures since their primary residence is out of county. As shown in the above statistics, the County's population racial composition is predominantly white, however 7.4% of the population is non-white which is substantially lower than the 14.7 % state-wide non-white population figure.



2007-2011 American Community Survey, (ACS)

The US Census Bureau has multiple data sets that it releases pertaining to population and transportation characteristics. Below is a summary of the latest ACS population and transportation data for Lycoming County that has relevance to the WATS Long Range Transportation Plan.

(Limited English Proficiency)

- ❖ According to ACS, there are a total of 109,884 persons in Lycoming County aged five years and older. A total of 1,046 persons (1%) speak a primary language at home other than English and Speak English less than very well. Lycoming County is lower than the statewide percent of 3.8% primary non English speaking population.

(Disabled Population)

- ❖ In terms of the total Civilian Non-institutionalized population of Lycoming County, there are 113,715 persons residing in the County, where 16,476 persons (14.5%) have a physical or mental disability. The 65 years and over age group of this population grouping total 18,245 persons with 6,900 persons (37.8%) having a physical or mental disability. Lycoming County population disability percentages are slightly higher than the state-wide disability percentages at 13.1% total disability and 35.6% over age 65 with disability figures.

(Poverty Status)

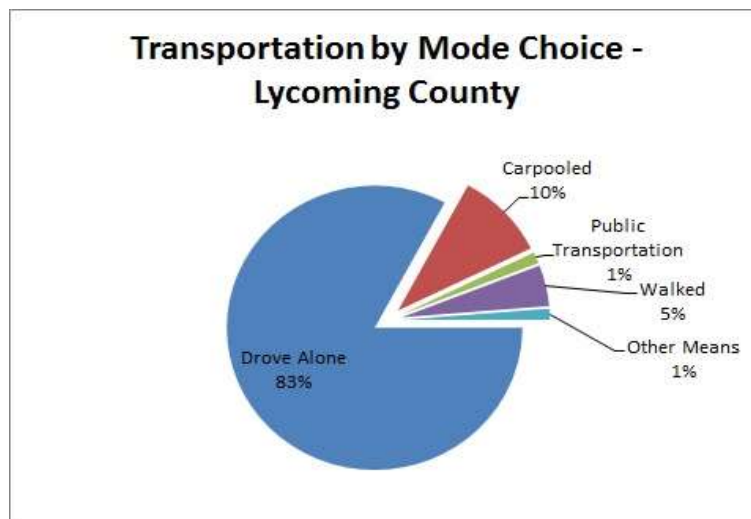
- ❖ There are 111,118 persons in Lycoming County for whom poverty status is determined. Of this number, 15,834 persons (14.2%) were determined to be falling below the poverty level which is slightly higher than the Pennsylvania 12.6% poverty level figure.

LYCOMING COUNTY SUMMARY HOUSEHOLD CHARACTERISTICS (2010 Census)

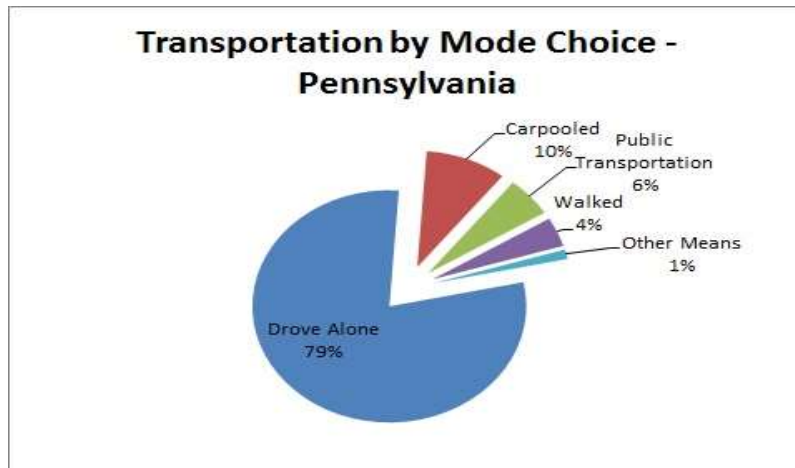
- There are 46,700 households in Lycoming County. The average household size is 2.37 persons. The average family size is 2.88 persons.
- There are a total of 52,500 housing units. 46,700 housing units (89%) are occupied and 5,800 housing units (11%) are vacant. Of occupied housing units, 31,821 (68%) are owner occupied while 14,879 (32%) are renter-occupied.
- There are 4,110 households in Lycoming County without a vehicle available for transportation which represents 8.8% of total households. This is somewhat lower than the state-wide average of 11.5%.

JOURNEY TO WORK

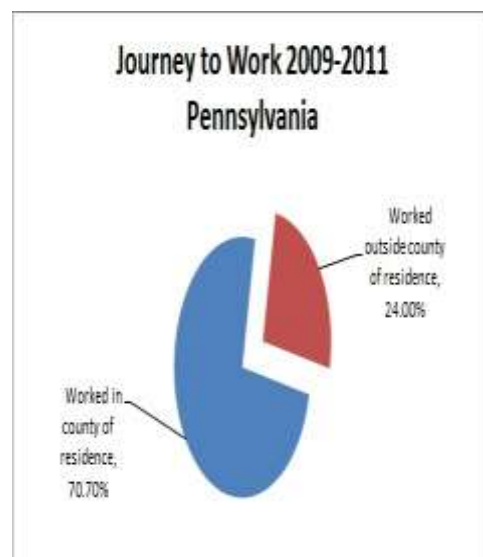
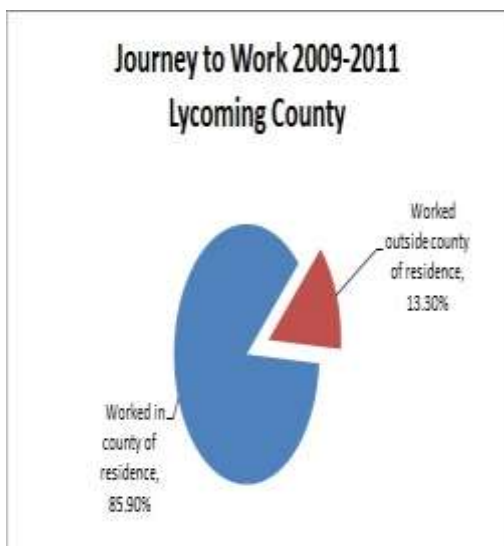
The pie charts depicted below present Lycoming County and Pennsylvania journey to work information provided by the 2007-2011 American Community Survey relating to the type of transportation modes that are used for work commute trip-making. As you will note below, the vast majority of County residents drive to work alone in their personal vehicles followed by carpooling, walking, taking public transportation or by other means.



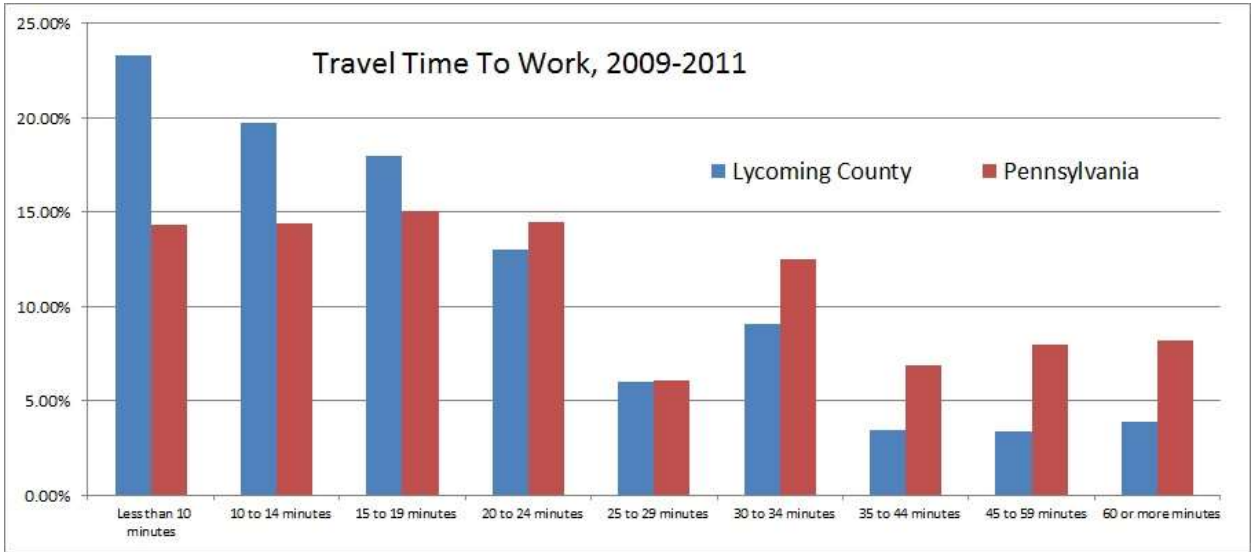
The PA Journey to Work by transportation modal choice is very similar to the Lycoming County data with the exception that there is a higher state-wide percentage of public transportation utilization mainly due to heavy use in the larger urbanized areas such as Philadelphia and Pittsburgh.



In addition, most workers in Lycoming County have their residence and workplace location within the County. This is also true of the Commonwealth as a whole, however Lycoming County has a higher percentage of County residents / workers than the State percentage as depicted below.



In terms of travel time to work, Lycoming County residents have a shorter work commute time than state-wide trends. The bar chart below illustrates this comparison.



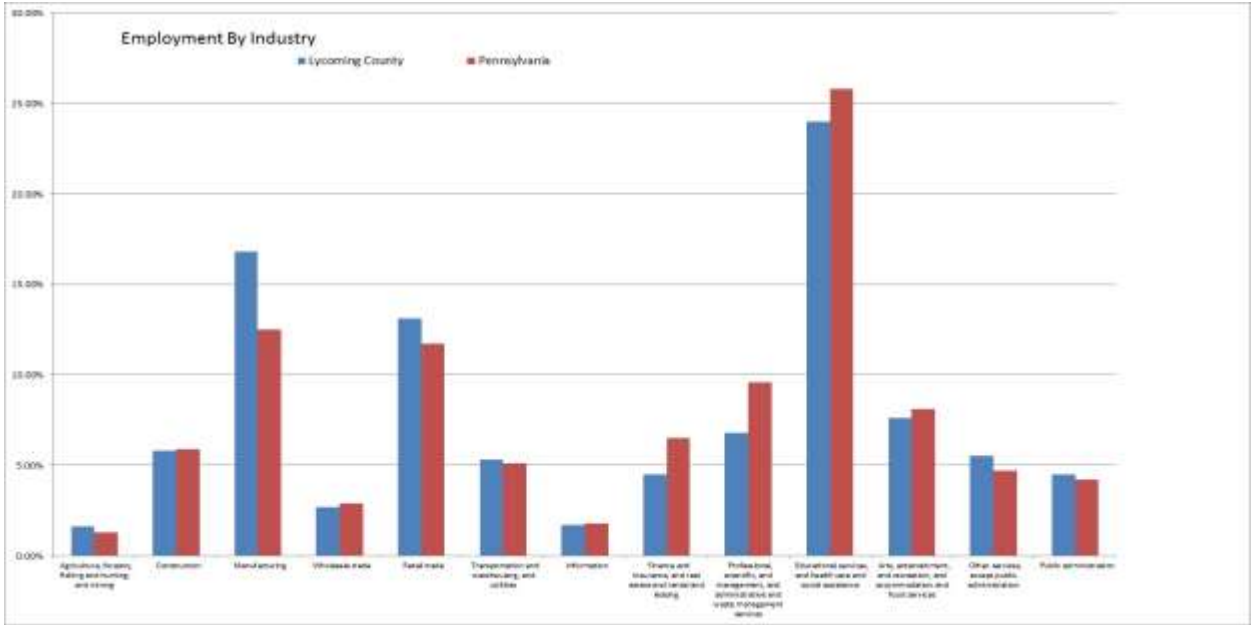
	Lycoming County	Pennsylvania
□ Μεαν ταπειλ τιμε το ωορκ (μινυτεσ)	19.4	25.7

LYCOMING COUNTY EMPLOYMENT DATA SUMMARY

The US Census Bureau, Center for Economic Studies “On the Map” data source contains worker profiles for Lycoming County. According to this data source, there were a total of 51,969 jobs in Lycoming County in 2011. Over half (55%) of the workforce is between the ages of 30 and 54 years with workers ages 29 and younger along with workers ages 55 or older each at approximately 22% of the total workforce. The total number of male and female workers are nearly evenly split at 51.% and 48.8%, respectively. In addition, the educational attainment level of workers consists of:

- Less Than High School = 3,280 workers (7.5%)***
- High School Equivalent, no college = 14,990 (29.3%)***
- Some college or associates degree = 12,792 (25%)***
- Bachelors degree or advanced degree = 8,309 (16.7%)***

2011 Employment by industry sector is shown on the bar chart below and compared with state-wide industry sector figures. The three largest industry sectors in order (Education, Health Care and Social Assistance); (Manufacturing); and (Retail Trade) are consistent between Lycoming County and Pennsylvania.



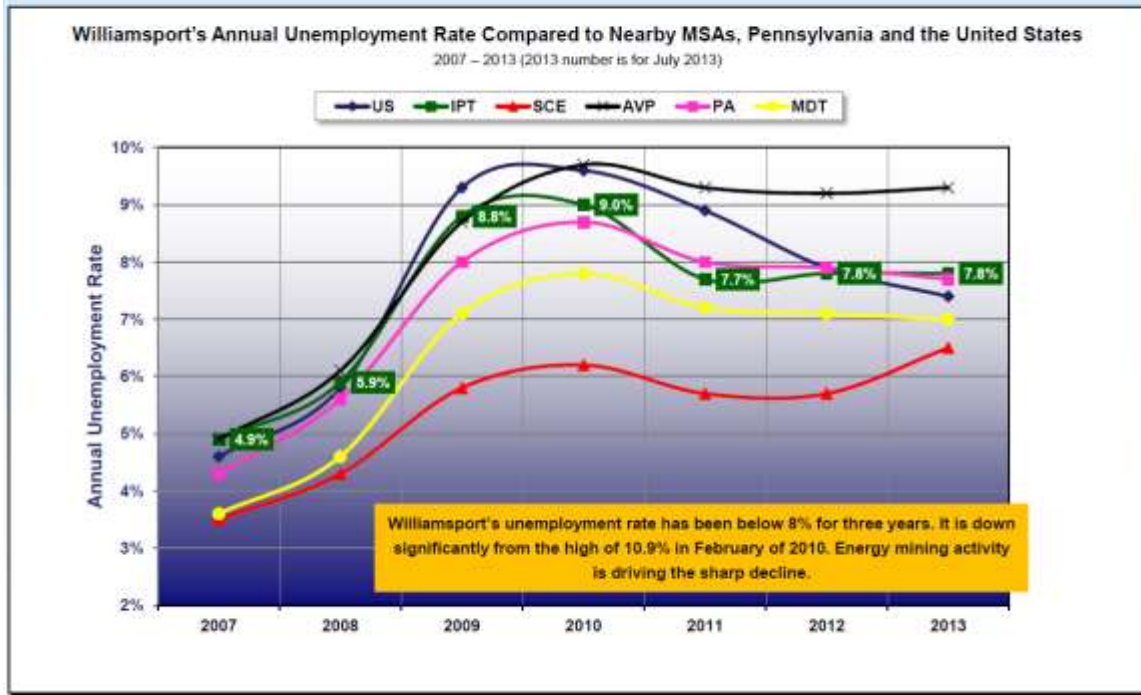
The chart below provides additional information about Lycoming County’s labor force income and unemployment levels as compared with state-wide data. Note that Lycoming County has a lower median household income, per capita income when compared to PA figures along with a slightly higher unemployment rate.

Economic Indicator	Lycoming County	Pennsylvania
2012 Median Household Income	\$ 40,164	\$ 49,167
2012 Per Capita Income	\$ 22,517	\$ 26,715
Unemployment Rate (As of 4/13)	7.6%	7.2%

Williamsport Major Private Employers

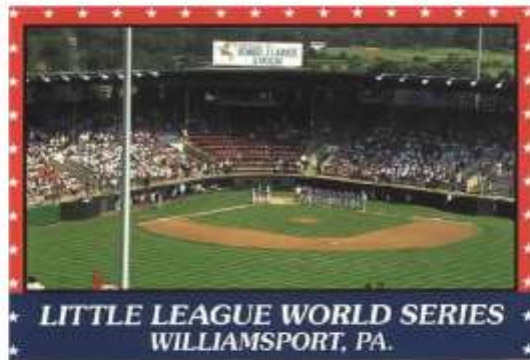
- Susquehanna Health, HQ in Williamsport**
 - Three Williamsport area hospitals and 2,544 employees
 
- PRIMUS Technologies, HQ in Williamsport**
 - 470 employees
 
- Brodart Corporation, HQ in Williamsport**
 - Library products and service, 950 employees
 
 Unparalleled in service and selection since 1939
- Hope Enterprises, HQ in Williamsport**
 - Services for those with learning disabilities, 450 employees
 
- West Pharmaceutical Services**
 - Factory facility, 300 employees, HQ in Philadelphia area
 
- Shop-Vac, HQ in Williamsport**
 - Vacuum products, 900 employees
 
- Lycoming Avco Aircraft Engines (Division of Textron, Providence, RI)**
 - Aircraft engine factory, 300 employees
 
- Andritz, Inc, Williamsport HQ**
 - Factory, 400 employees
 
- Wirerope Works, HQ and factory in Williamsport**
 - Factory, 410 employees
 

Williamsport's Recession Recovery Is Accelerating, Monthly Unemployment Is Down Three Points from the February 2010 High



Every August since 1947, Williamsport Has Hosted the Little League World Series; Drawing Hundreds of Thousands of Visitors from Around the World

- The World Series runs for eleven days each August. Games are conducted at the Howard J. Lamade Stadium, which can hold up to 41,000 spectators.
- Each year sixteen teams, eight from around the United States and eight from around the world, compete.













- Local economic impact from this event is estimated to exceed \$30 million each year.
- The Little League World Series Home Office is in Williamsport, administering League affairs worldwide.
- Williamsport stages ancillary events supporting the tournament, including the "Williamsport Welcomes the World" celebration and the "Grand Slam Parade". Tournament games are broadcast nationwide and in dozens of other countries.

LAND USE PATTERNS



The Lycoming County Planning Commission, (LCPC) developed a countywide inventory of each municipality's land uses employing the American Planning Association's Land-Based Classification Standard's (LBCS) model providing a consistent, flexible model for classifying land uses based on their characteristics. For planning purposes, LBCS classifies land uses in the following dimensions: Activity, Function, Structure Type, Site Development Character, and Ownership. The LCPC prepared the land use inventory by photo-interpreting the County's low level aerial photography. The identified land uses were primarily classified using the LBCS's Activity and Structure dimensions. The Activity dimension refers to the actual use of land based on its observable characteristics. It describes what actually takes place in physical or observable terms, for example, farming, shopping, or manufacturing. The Structure dimension refers to the type of structure or building on the land, such as single family house, office building, warehouse, hospital building, or highway. The table below presents a more descriptive overview of each LBCS land use classification.

Land Use Classifications Summary

Dimension	Code	Land Use Classification	Description	Color (RGB)	Color Fill
Activity	1000	Residential	Includes activities that occur in all types of residential uses (except multi-family), structures, ownership characteristics, or the character of the development.	Yellow (251, 248, 60)	
Structure	1200	Multi-family (Residential)	A subset of the Residential Activity, the Multi-family Structure dimension is defined by the number of units and not by the number of floors or stories in the structure.	Orange (255, 102, 0)	
Activity	2000	Commercial	This category captures all uses that are business related. Use it as a catch-all category for all retail, office, commercial, and industrial activities when the subcategories are either too specific or otherwise unknown (as in comprehensive plan designati	Red (233, 51, 51)	
Activity	3000	Industrial	Includes land accommodating manufacturing, assembly, warehouse, and waste management activities. Use this as a catch-all category for anything not specified in subcategories below.	Purple (172, 89, 202)	
Activity	5000	Transportation	This category encompasses activities associated with all modes of transportation. It includes rights-of-way and such linear features associated with transportation.	Gray (210, 210, 210)	
Activity	6000	Institutional	The Activity dimension includes land that is currently used for schools, government, hospitals, public recreational facilities, nursing homes, and treatment facilities.	Dark Blue (0, 0, 128)	
Activity	8300	Field	This LCPC classification includes uses associated with non-cultivated land areas that are typically used for pasturing, grazing and grass harvesting activities.	Chocolate (139, 69, 19)	
Activity	8100	Cultivated	This LCPC classification Agricultural activities, such as farming, plowing, tilling, cropping, seeding, cultivating, and harvesting for the production of food and fiber products. Also includes sod production, nurseries, orchards, and Christmas tree plantations	Light Green (204, 255, 204)	
--	9000	Water	Identifies the county's surface water features, which include lakes, major streams, and the Susquehanna River.	Aqua (0, 255, 255)	
--	9000	Woodlands	Identifies the county's forested areas and includes activities associated with forestry and outdoor recreational activities. It also includes private hunting club lands.	Dark Green (0, 139, 0)	

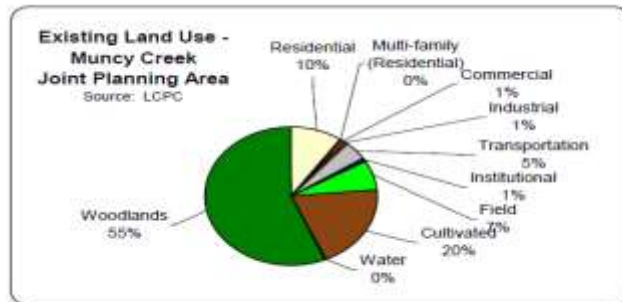
As indicated at the beginning of this chapter, the Lycoming County Comprehensive Plan contains six multi-municipal growth area plans along with the non-growth area covering the remaining geographic portion of the County, referred to as the special resource protection areas. Therefore, this land use inventory and future forecast section of the plan will be summarized for each of the six multi-municipal planning growth areas and the special resource protection area using the above referenced color coded land use classification system.

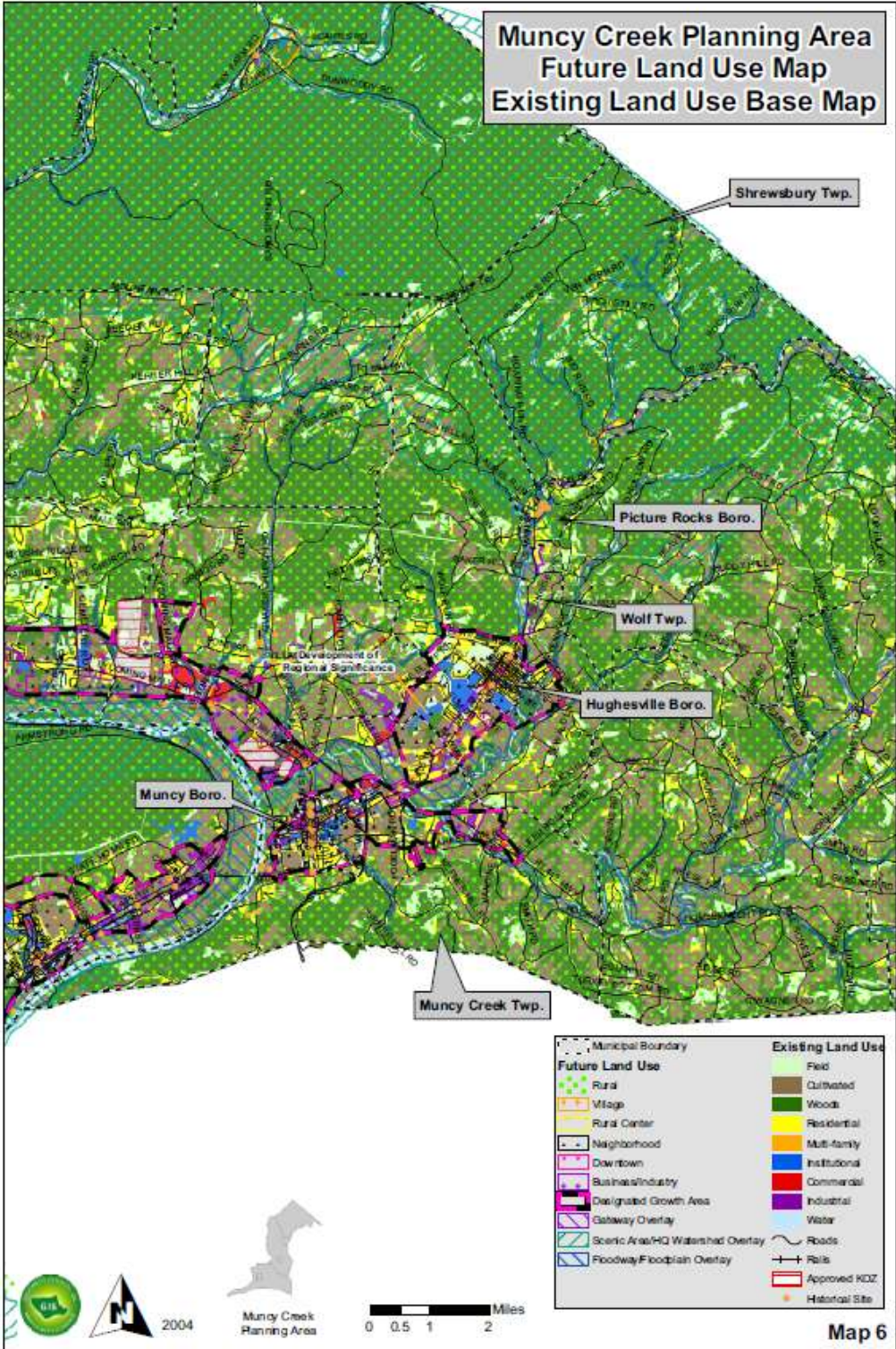
Muncy Creek Multi-Municipal Growth Plan Area

This planning area consisting of Muncy Creek, Shrewsbury, Wolf Townships and Muncy, Hughesville and Picture Rocks Boroughs has land use patterns heavily influenced by the area's topography. The past importance of the Susquehanna River as a transportation corridor has combined with the rough terrain of the surrounding area to focus development in the relatively flat areas along the river and its tributaries. When Interstate 180 was completed, it provided the planning area access to US 220 into Bradford County and through to New York State. In the event the Central Susquehanna Valley Thruway in Union and Snyder Counties is eventually completed, most traffic entering the region will be via I-180, which will likely increase development pressures on the Muncy Creek Planning Area.



Residential development includes single-family housing, as well as apartments, townhouses and several mobile home parks. Much of the new residential development is close to the Boroughs. Less land is devoted to residential uses further from the river and some steep slope development is occurring in Wolf Township. Commercial and industrial land uses are found on a smaller scale with most commercial development situated in Hughesville and Muncy Boroughs and strip commercial along the PA 405 corridor in Muncy Creek and Wolf Townships. The Muncy Industrial Park contains the majority of industry, however significant gas related development is occurring along expanding portions adjacent to the main industrial park area and along John Brady Drive (SR 2014) , US 220 and PA 405. Major institutional uses include the Muncy and East Lycoming School District facilities, Muncy Valley Hospital, the Lycoming Fairgrounds in Hughesville and the Limebluff Recreational area in Wolf Township. However, by far the most dominant land use is agriculture and open space, with some Agricultural Security Areas designated. Approximately 1700 acres are devoted to transportation facilities. Overall land use in this planning area is summarized below:



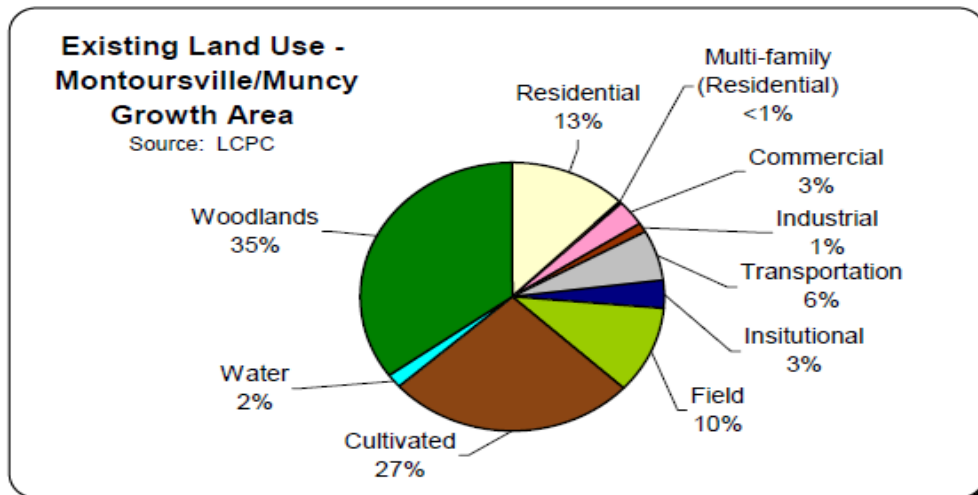


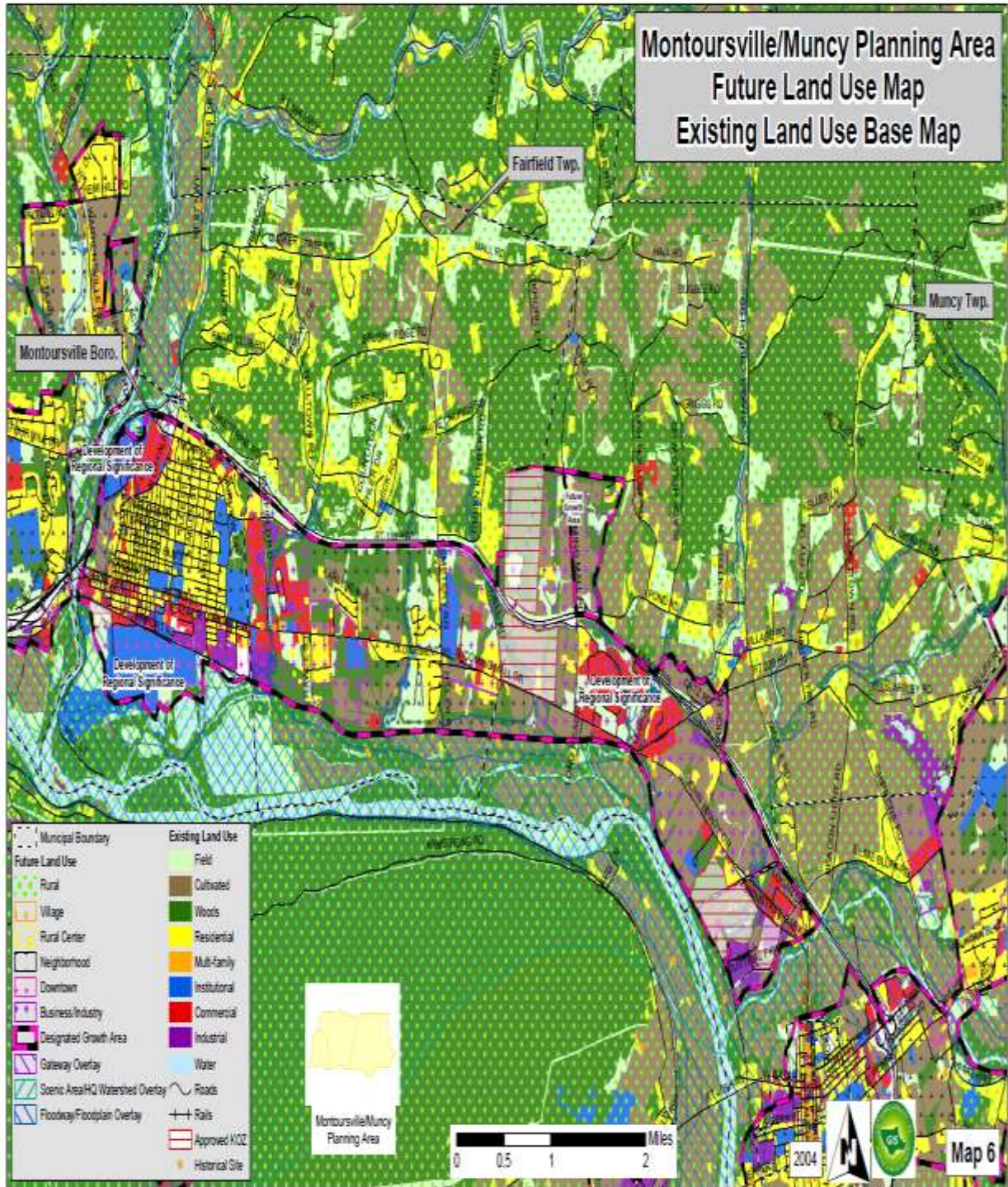
Montoursville-Muncy Multi-Municipal Growth Plan Area

This planning area consisting of Montoursville Borough, Muncy and Fairfield Townships. The Borough is a town center that has a viable downtown area with residential and commercial shopping areas. The Borough is also the location of the Williamsport Regional Airport, PennDOT Engineering District 3-0, Wal-Mart Plaza and Montoursville High School.



Fairfield Township is more rural, however significant mixed use commercial / residential development is planned near the I-180/Fairfield Road Interchange with existing industrial and commercial development primarily situated along Fairfield Road between I-180 and SR 2014. Many parts of Muncy Township are rural but is host to the Lycoming Mall, a regional shopping center and adjacent commercial uses such as Lycoming Crossings situated near I-180. The gas industry has an emerging presence in Muncy Township leading to significant potential industrial growth along with intense pressure for new commercial and related development. Still agriculture and open space remain the dominant land use types throughout most of the planning area. Also, the Loyalsock Creek creates a very large floodplain in both Montoursville Borough and Fairfield Township thus limiting future development potential. A flood levee on the east side of Loyalsock Creek is in the design phase that may offer limited future growth opportunities behind the levee in the Borough once completed. Overall land use in this planning is summarized below:



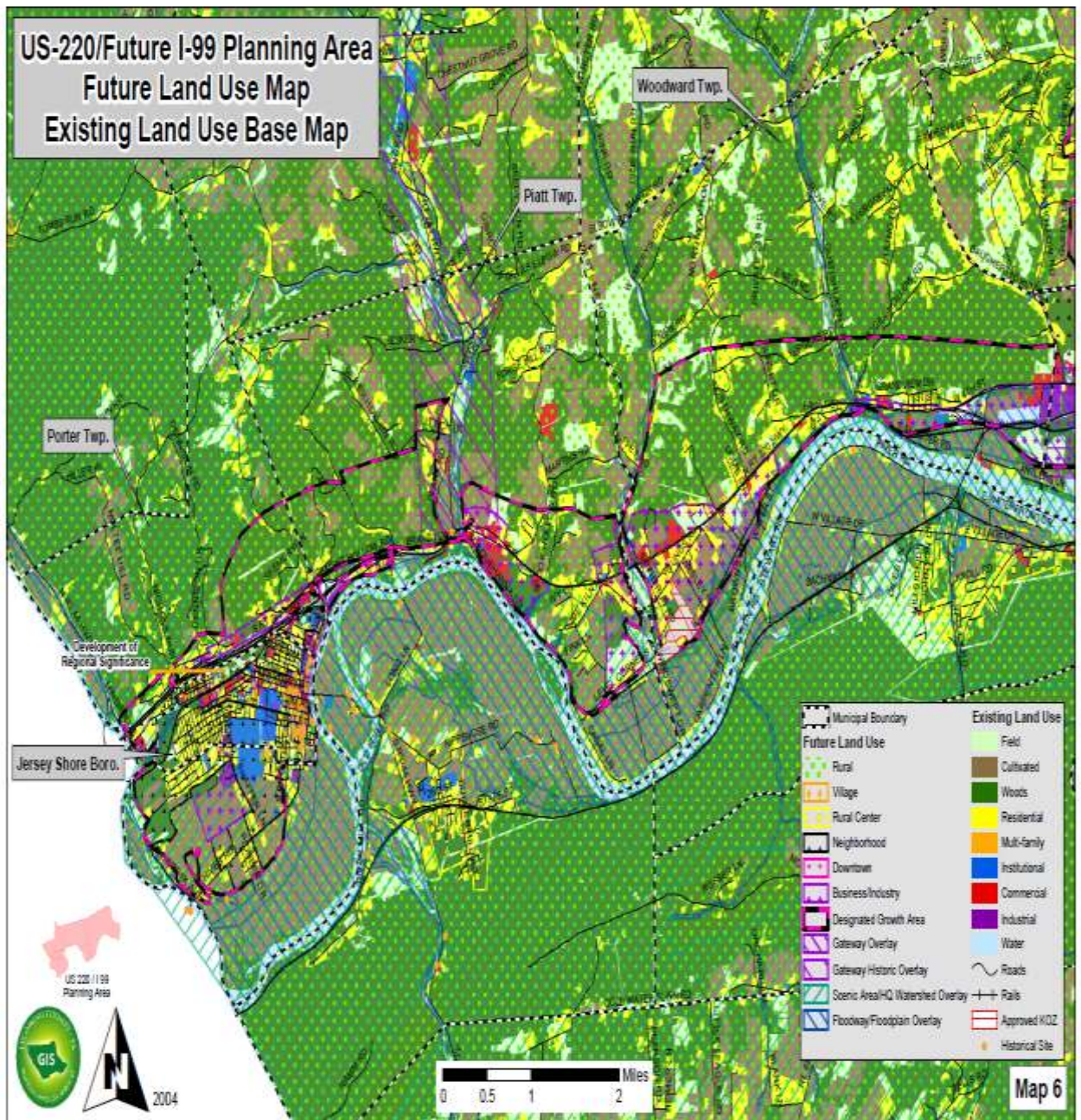
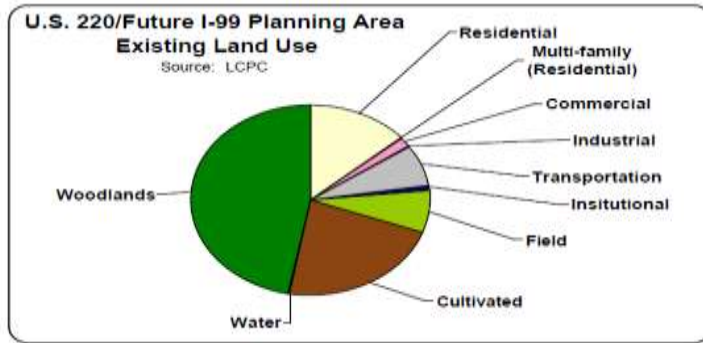


US 220 / FUTURE I-99 MULTI-MUNICIPAL GROWTH PLAN AREA

This planning area consists of Jersey Shore Borough, Porter, Piatt and Woodward Townships. Current land use patterns in this planning area are heavily influenced by topography and historical development patterns, particularly the US 220 transportation corridor. The past importance of the Susquehanna River has combined with the rough terrain of the surrounding area to focus development in the relatively flat areas along the river and its tributaries.



The Borough of Jersey Shore has traditionally been an industrial and railroading center in the west end of Lycoming County. The downtown and surrounding area has concentrated commercial and residential development. There is substantial strip commercial and residential development, including a large mobile home park along the US 220 Corridor in Piatt and Woodward Townships. Institutional land uses which are quite small in this planning area mainly include several schools in Jersey Shore which are part of the Jersey Shore School District. Substantial Agricultural lands are situated mainly south of US 220 with woodlands land use being the largest portion in the outlying three Townships. Marcellus activity has also had a noticeable impact on this planning area in terms of US 220 truck traffic, water withdrawal sites along the river and housing needs in the Jersey Shore area. The following graphs and maps summarize the current and future land use in this planning area. In the event the US 220 corridor would eventually be upgraded to a four lane limited access highway as part of I-99 there would be a significant influence on future land use patterns.



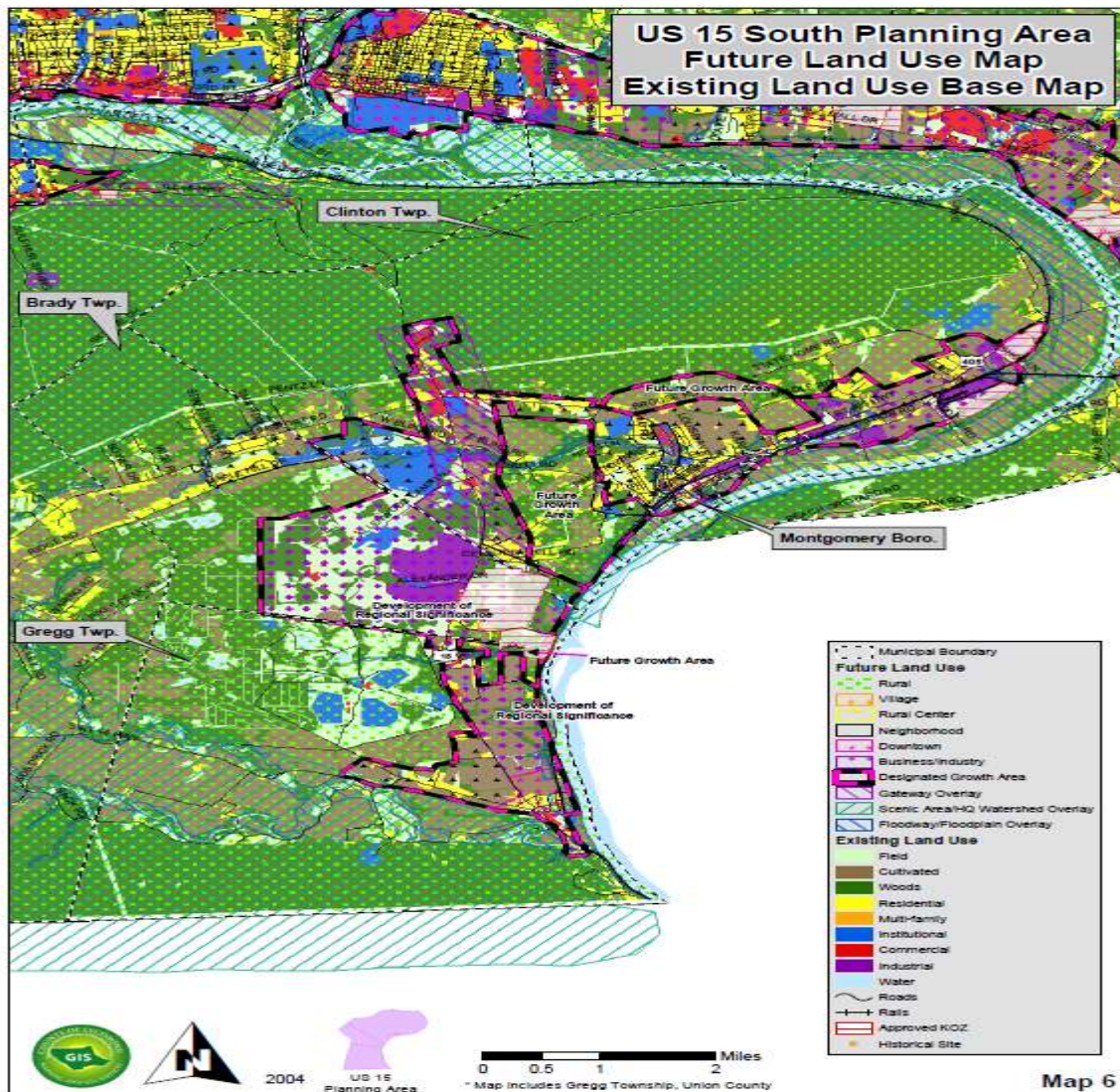
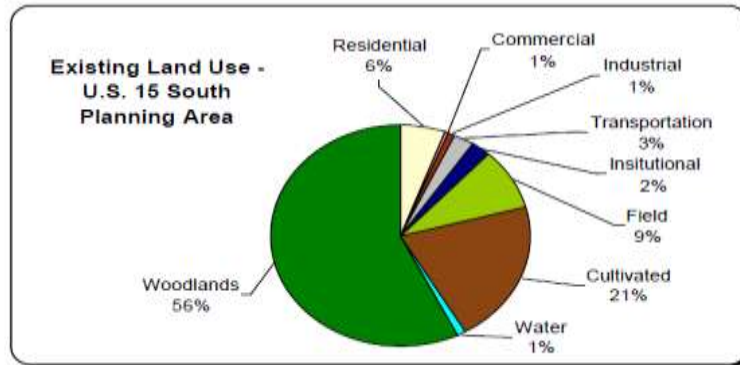
US 15 SOUTH MULTI-MUNICIPAL GROWTH AREA PLAN

This planning area consists of Montgomery Borough, Brady, Clinton and Gregg Townships, (Union County). Clinton, Brady and Gregg Townships are predominantly rural areas. Because Allenwood is home to one of the largest Federal Corrections Complexes in the United States and also has a large and semi-vacant 670 acre development tract known as Great Stream Commons that is a Keystone Opportunity Zone that can accommodate a mix of manufacturing, commercial and residential land uses, it was decided by both Lycoming and Union Counties to include Gregg Township in this planning area rather than limit comprehensive planning to the county boundary. The Borough of Montgomery is a traditional town center, with commercial and outlying residential areas. The Borough is located along the Susquehanna River and the main line of Norfolk Southern railroad. Montgomery has large amounts of existing industrial space that is being revitalized, especially due to Marcellus activity which pose excellent Brownfields re-use opportunities.



In Clinton Township, a combined 100 acre River Valley Commerce Park and River Valley Commerce Park South industrially zoned land tract near PA 405 is rail accessible and a Keystone Opportunity Zone Site. Significant land development activity related to natural gas exploration already exists, such as the Halliburton facility and large scale new development such as the Moxie Energy Plant is proposed in the Township. Further, the 290 acre Lycoming County Industrial Park located adjacent to US Route 15 situated directly across from the Lycoming County Landfill is yet another Keystone Opportunity Zone for significant future industrial development, however infrastructure is still needed, such as highway and rail access before the site can be fully developed. In addition to the Allenwood Federal Correctional Complex mentioned earlier, the Muncy State Correctional Institute also is located within the planning area which serves as a diagnostic and classification center and close-security prison housing all of the state's female capital case inmates. Despite all of the above-mentioned land developments, this planning area still

possesses agricultural recreation and open space as the most dominant land use features, such as the White Deer Golf Course along with State Game and Forest Lands. The following graphs and maps depict a summary of existing and future land uses in this planning area.



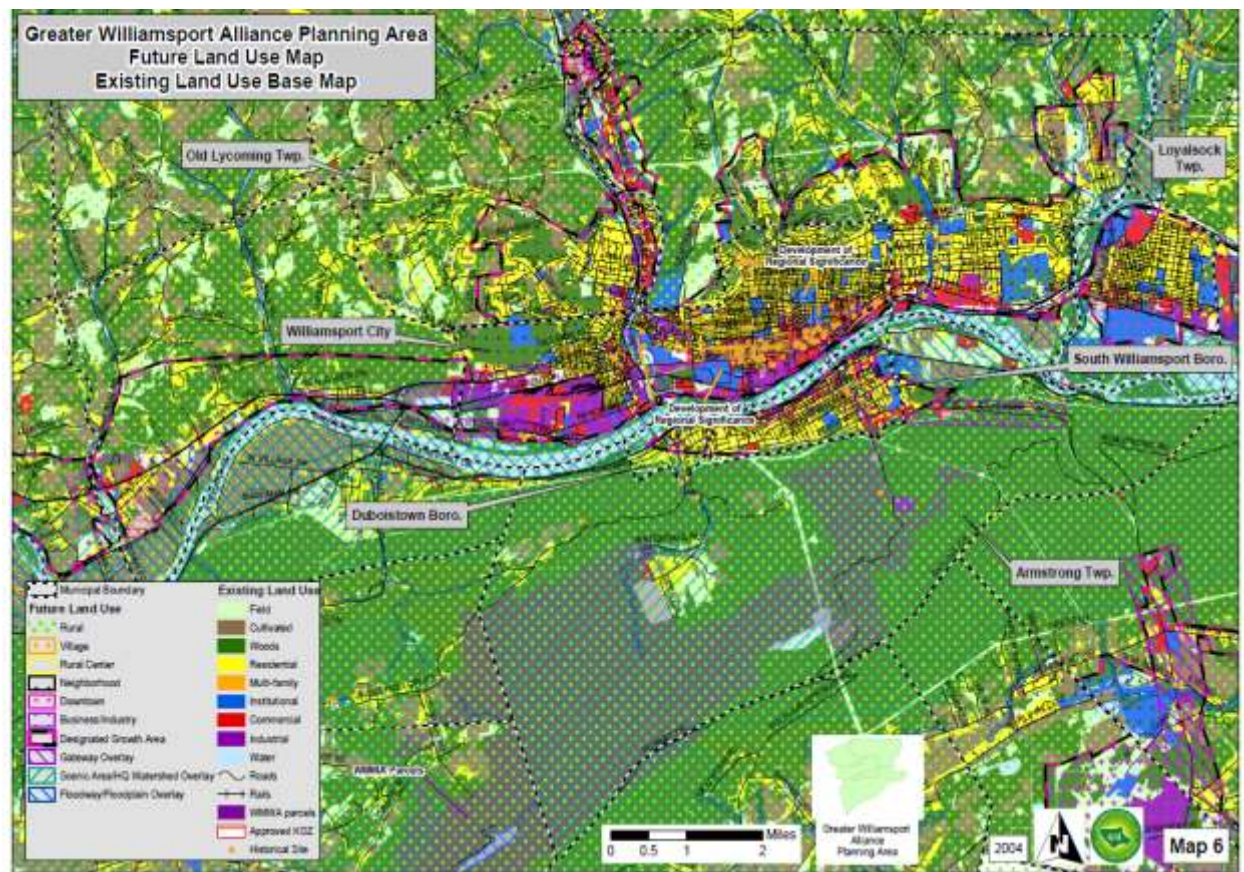
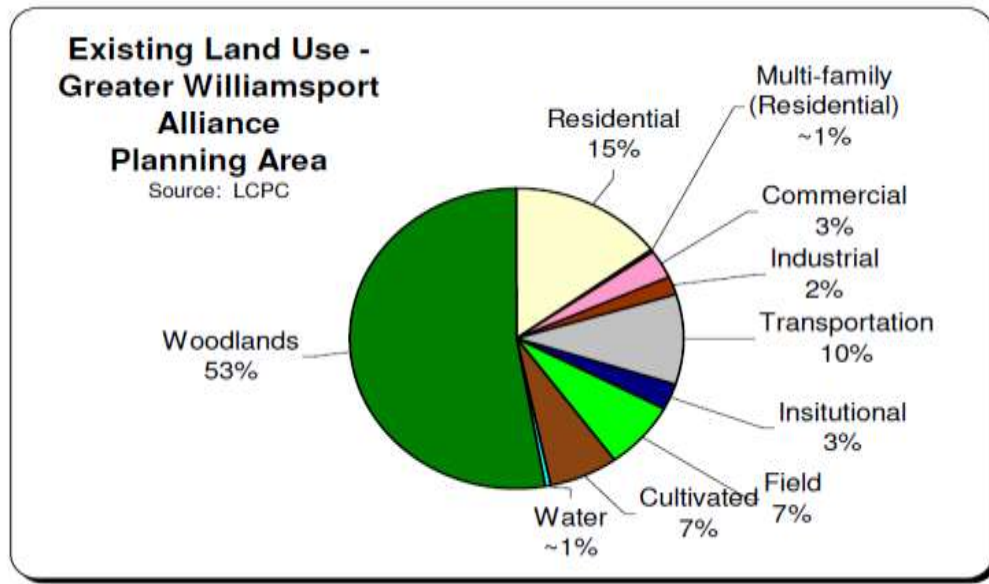
GREATER WILLIAMSPORT ALLIANCE MULTI-MUNICIPAL GROWTH AREA PLAN

This planning area consists of the City of Williamsport, Boroughs of South Williamsport and DuBoistown as well as Armstrong, Old Lycoming and Loyalsock Townships. The City of Williamsport and the Boroughs of South Williamsport and DuBoistown exhibit fairly urban land use distributions while Old Lycoming and Loyalsock Townships are more suburban in nature. However, Armstrong Township is quite different as most land uses are categorized as Woodlands, Field and Cultivated. Significant expansion of recreational areas are also planned in this Township.



During the past decade, Downtown Williamsport has been in the midst of a major revitalization spearheaded by the PennDOT investment to replace the US 15 Market Street Bridge coupled with the gas industry regarding Williamsport as a regional service center. Several new hotels have been recently constructed to accommodate the influx of gas workers to the area and their housing needs. Other revitalization efforts and investments included construction of a new cinema-plex, Trade and Transit Centre, Church Street Transportation Center, Susquehanna Riverwalk, streetscape improvements and the Expansion of Susquehanna Health as a major regional medical center with associated transportation improvements referred to as the “Pathway to Health” and Penn College and Lycoming College Expansions. Additional revitalization planned revitalization projects include Trade and Transit Centre II Expansion, Destination 2014 and additional parking and mixed use commercial and residential development. This planning area is also home to Little League Baseball headquarters, historic Bowman Field Minor League Baseball Park and historic Millionaires Row. The County’s largest industrial park along Reach Road has grown substantially since Marcellus industries began locating in the County since the Newberry Rail Yard serves as an intermodal hub truck / rail transfer point. Strip commercial areas continue to expand along the SR 2014 Golden Strip in Loyalsock Township and in the Garden View Area in Old Lycoming Township. By far, most of the transportation facilities in the County are situated in this planning area occupying 10% of the total land in this planning area. The Williamsport-Lycoming Chamber of Commerce

reports that Williamsport is the seventh fastest growing City in the nation largely due to the emergence of Marcellus Shale. Existing and future land use is summarized on the following graphs and mapping.

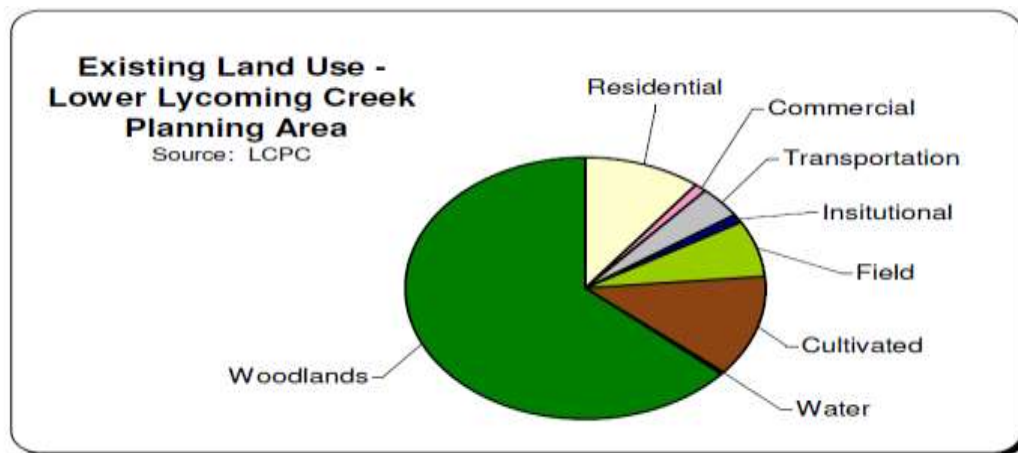


LOWER LYCOMING CREEK MULTI-MUNICIPAL GROWTH PLAN AREA

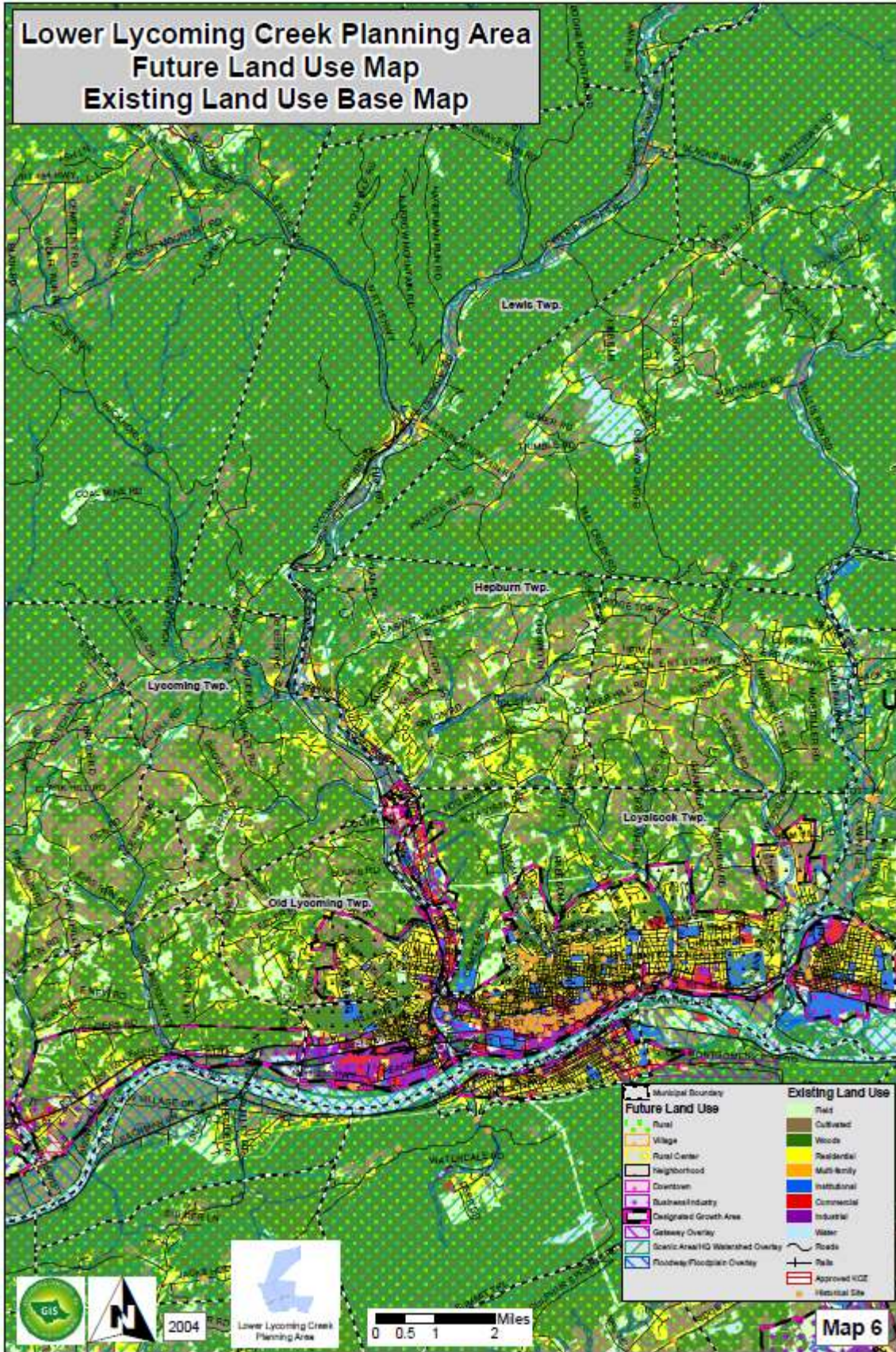
This planning area consists of Lewis, Lycoming, Hepburn, Old Lycoming and Loyalsock Townships. In addition to the influence of the Susquehanna River as a transportation corridor, this planning area has also been influenced by the Lycoming Creek and the upgrade of US 15 between Williamsport and New York State as a major north/south transportation artery connecting Maryland and Virginia with Canada. This corridor is part of “Future 1-99” and will have significant effects on future land use in the event the designation is firmly established. Currently, agriculture and open space are by far the most dominant land uses which encompass approximately 75% of this planning area.



Residential land use accounts for about 1/3rd of the planning area, however this ratio varies substantially as municipalities closer to the Williamsport Urban Core have much more residential land use than the northern municipalities such as Lycoming, Hepburn and especially Lewis Townships. Limited strip commercial and light industrial land use exists in the planning area mainly in the Garden View section of Old Lycoming Township along old US 15. The graphs and map depict existing and future land uses in the planning area.



Lower Lycoming Creek Planning Area Future Land Use Map Existing Land Use Base Map

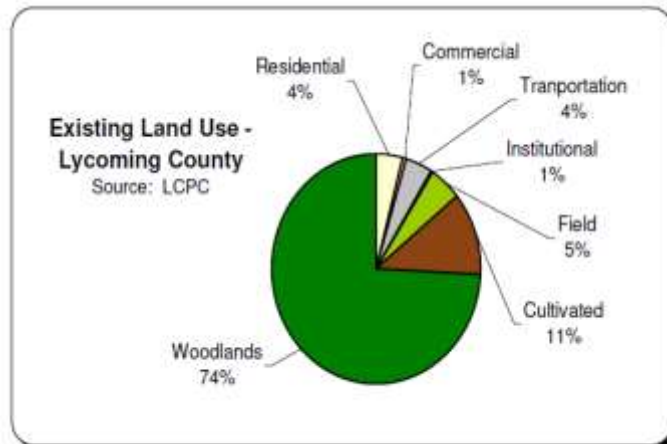


LYCOMING COUNTY COMPREHENSIVE LAND USE PLAN (Non-Growth Special Resource Protection Areas)

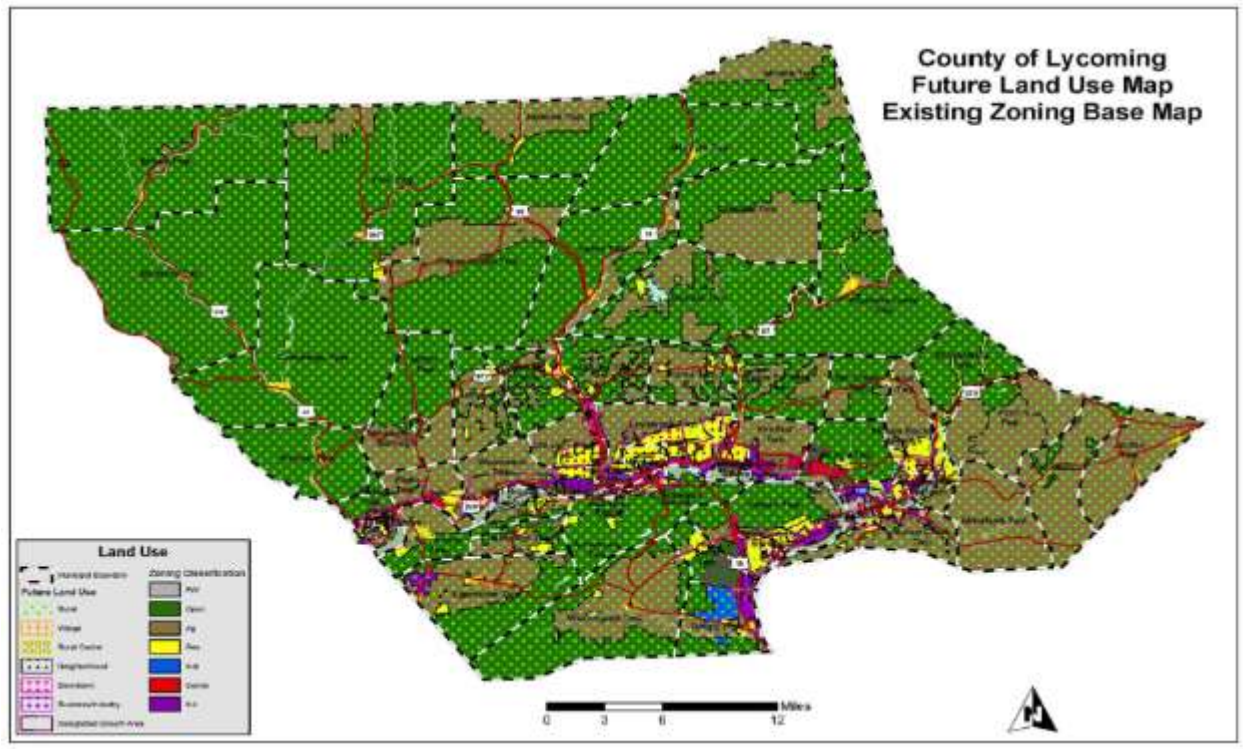
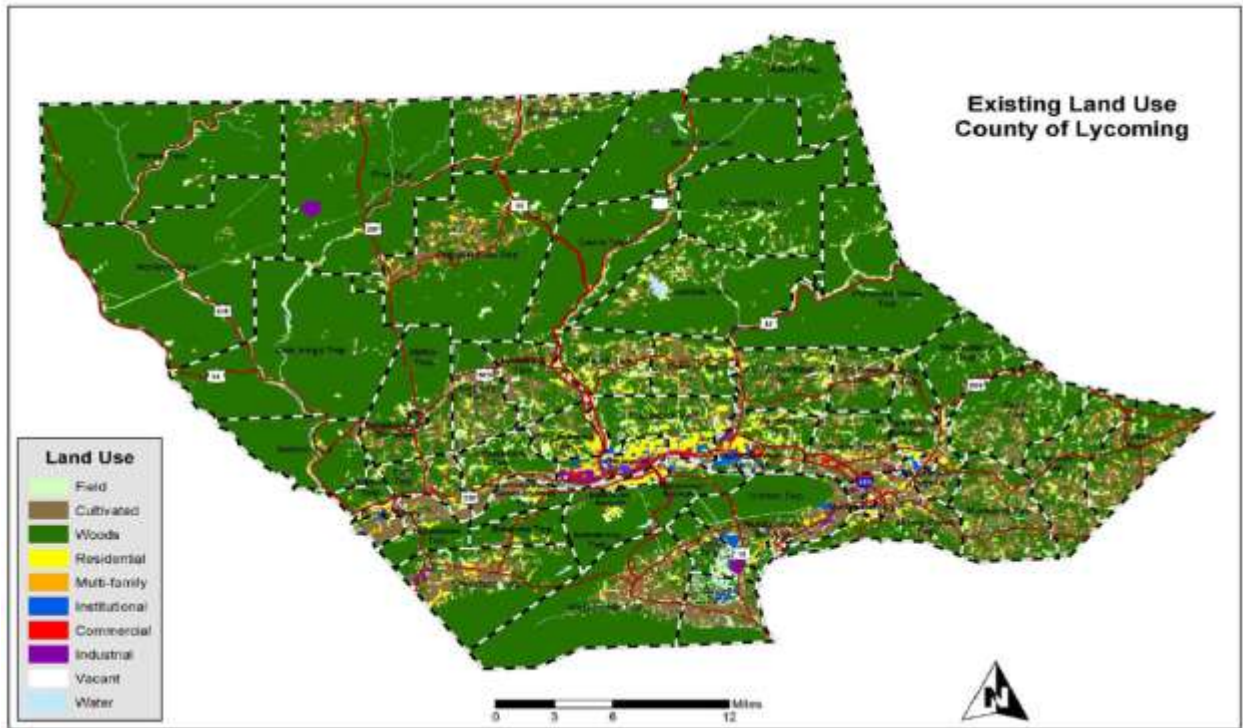
Municipalities that are not included as part of the Multi-Municipal Comprehensive Plan six growth areas are included in the Lycoming County Comprehensive Plan special resource protection areas. These 26 municipalities consist of Brown, McHenry, Cummings, Watson, Pine, Mifflin, Anthony, Cogan House, Jackson, McIntyre, McNett, Cascade, Gamble, Plunketts Creek, Eldred, Upper Fairfield, Mill Creek, Penn, Moreland, Franklin, Jordan, Washington, Limestone, Bastress, Susquehanna and Nippenose Townships which represent one half of all Lycoming County municipalities.



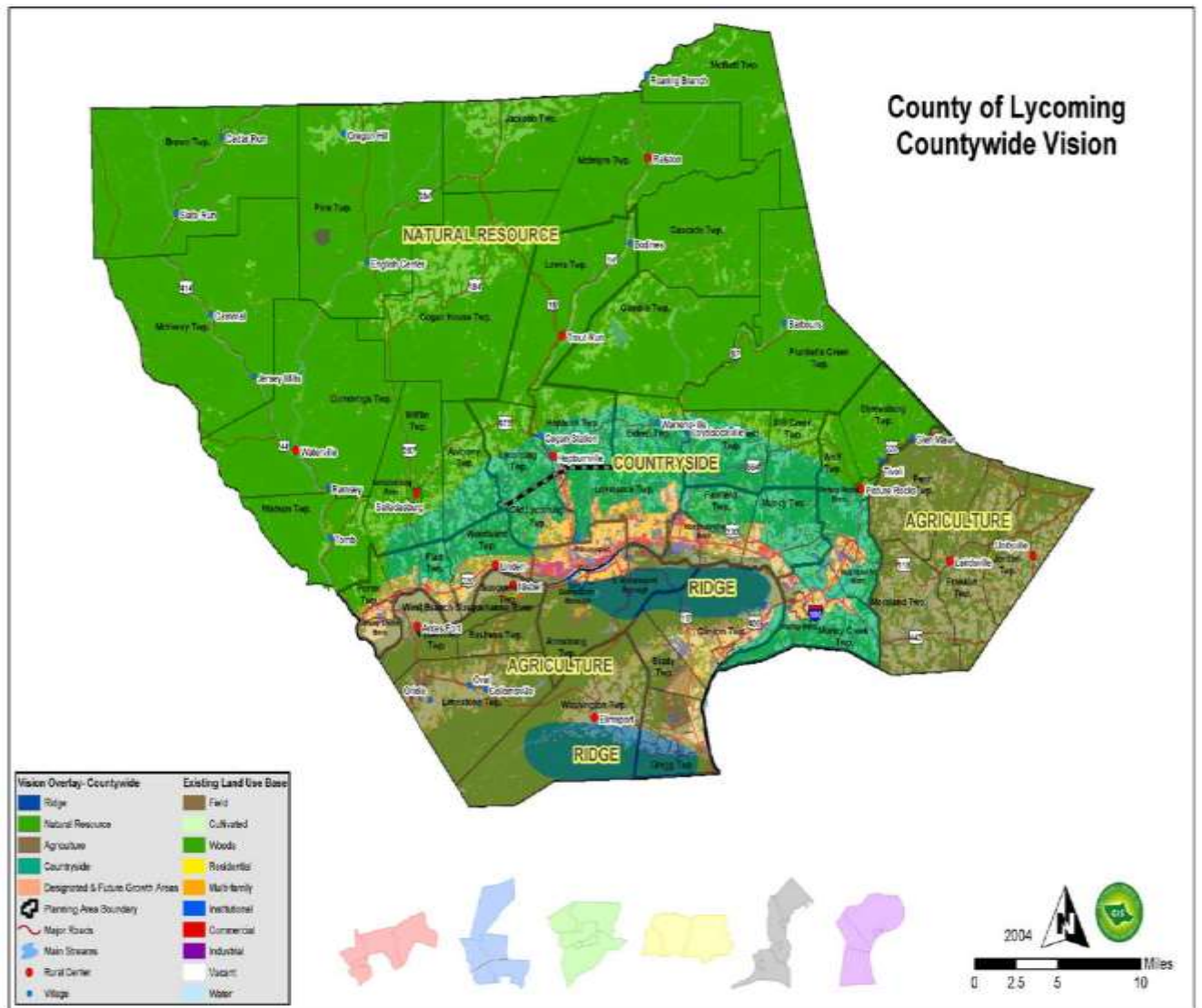
The rural character and natural resources present in this vast portion of Lycoming County are underscored with approximately 90% of the land uses consisting of undeveloped woodlands (including an abundance of State Forest and Game Lands), open space and agricultural areas. Only 4% of land uses consist of residential development, 1% are commercial development and 1% are institutional. Transportation facilities occupy the remaining 4% of land use. The Lycoming County Comprehensive Plan encourages future preservation of this land area and avoidance of large scale development patterns which would cause negative impacts to natural resources and require costly public infrastructure extension such as water and sewer and roads. Emphasis should be placed on maintenance of current infrastructure, recreational promotion and prudent land conservation stewardship practices.



Summary county existing and future land use maps are illustrated below.

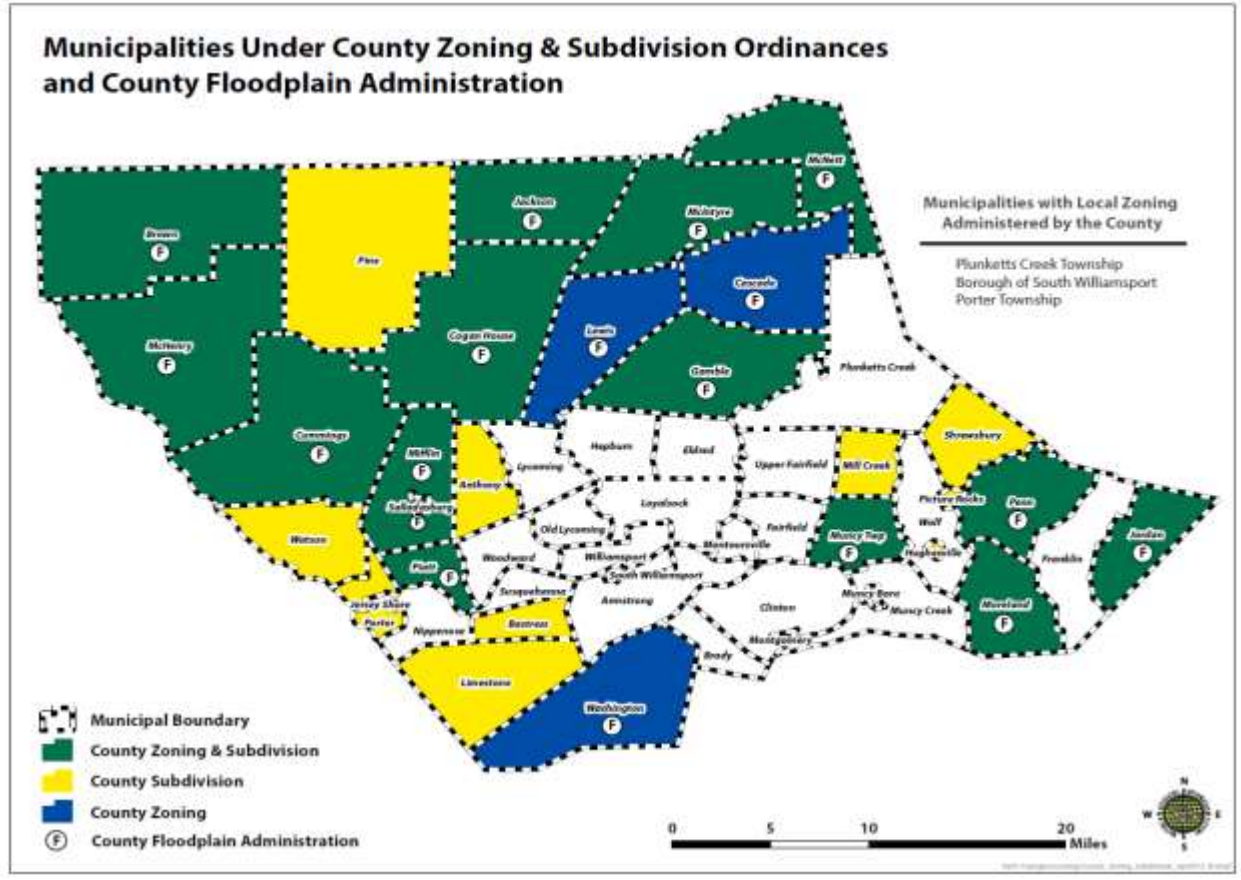


When compiling the previously illustrated existing and future land use mapping, the Lycoming County Planning Commission has established an overall county-wide vision of future land uses that will be used as a basis to further integrate, land use and transportation planning connectivity as part of this Long Range Transportation Plan.



However, in order to achieve this vision, the County needs full cooperation from Lycoming County municipalities regarding subdivision, land development and zoning decisions because the County lacks land use decision making authority in many areas, especially in the six multi-municipal plan growth areas.

The map below illustrates county-wide land use jurisdiction for each of the 52 municipalities.

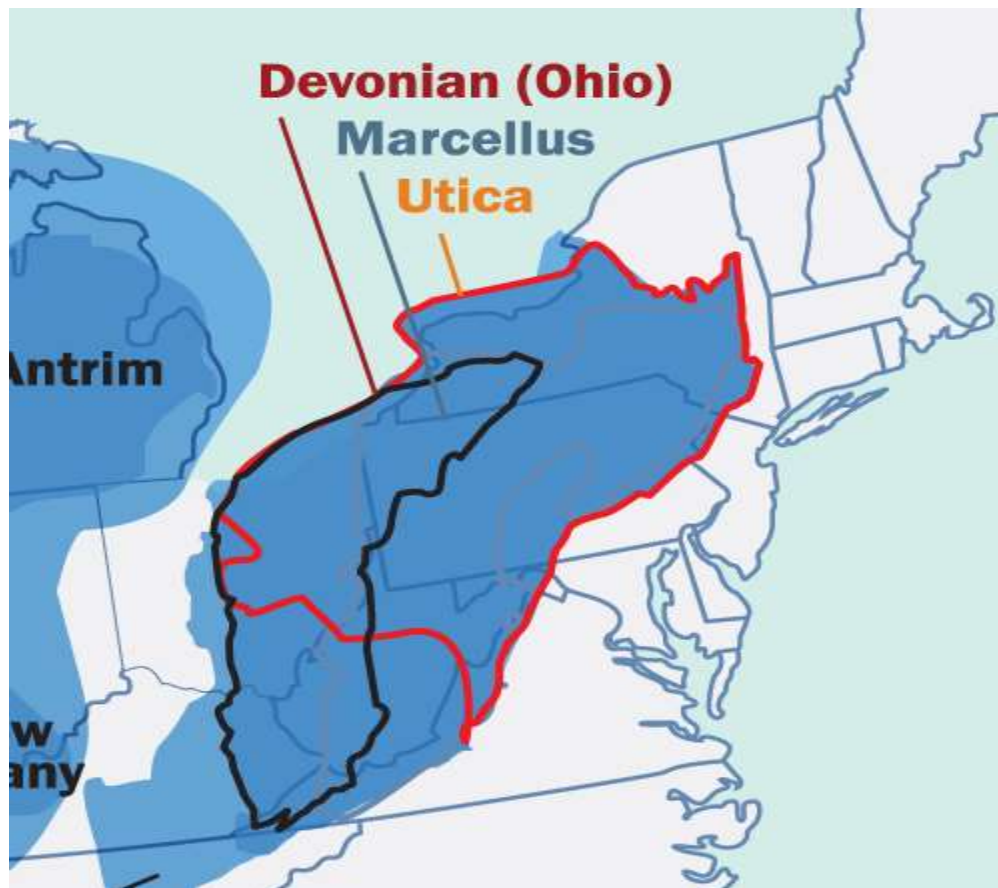


As noted on the map, the Lycoming County Planning Commission through an adopted Subdivision and Land Development Ordinance, (SALDO) regulates subdivision and land development activity in 24 of the 52 Lycoming County municipalities. The remaining 28 municipalities have adopted their own ordinances and thus have decision-making jurisdiction over subdivision and land developments. In those cases, the Lycoming County Planning Commission provides advisory review comments to the municipality under PA Act 247. Further, the Lycoming County Zoning Ordinance adopted by the Lycoming County Board of Commissioners regulates zoning activity in 18 of 52 municipalities through a County Zoning Hearing Board appointed by the Commissioners. Again, the remaining 34 municipalities have adopted their own zoning ordinances and possess decision-making over zoning matters with county comment provided in those areas. It is important to state that all land use areas of Lycoming County are zoned. The next section of the plan will provide a more detailed discussion of Marcellus Shale and its associated profound impacts on land use and transportation.

MARCELLUS SHALE NATURAL GAS EXPLORATION

Background

The single largest economic impact to Lycoming County since the lumbering boom over a century ago is the emergence of Marcellus Shale natural gas exploration. The Marcellus Shale gas formation and its underlying Utica Shale is abundant in natural gas resources. In fact, the Marcellus gas play is estimated to be the largest natural gas find in the nation and second largest globally. Stretching across Pennsylvania, New York, West Virginia, Ohio and Maryland, the United States Geological Survey estimates the formations total area to be around 95,000 square miles, ranging in depth from 4,000 to 8,000 feet containing more than 410 trillion cubic feet of natural gas supplying the nation's energy needs for generations to come. Technological advances attributed to horizontal drilling paired with hydraulic fracturing have allowed energy companies to harvest natural gas in a much more efficient and profitable manner in relation to traditional vertical well drilling techniques.



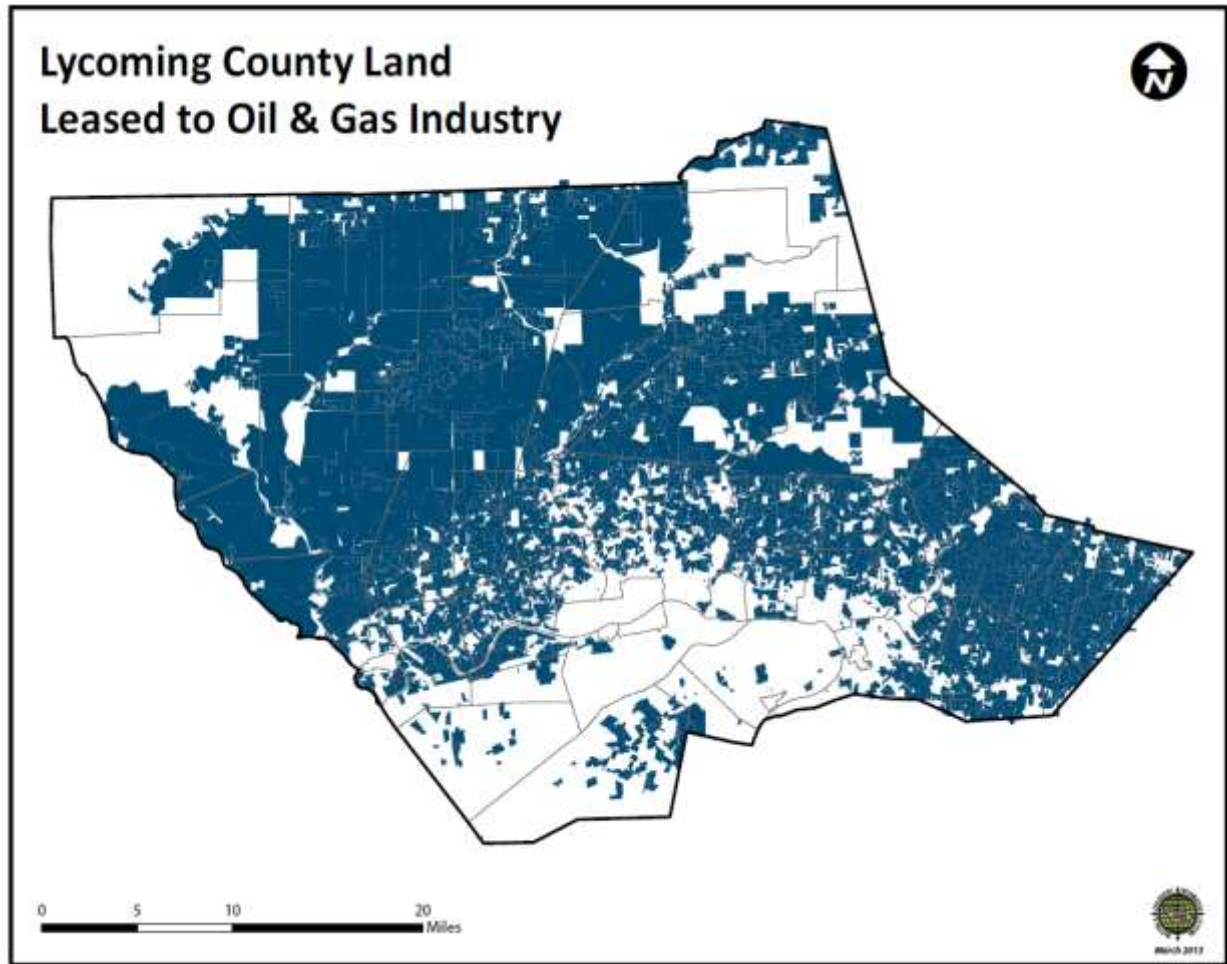
Lycoming County has a history of energy production attributed to timber harvesting as part of the lumbering boom as well as coal mining operations, however until 2007 there was a very limited amount of conventional oil and gas drilling operations underway. The first Marcellus Shale natural gas well was drilled that year in Cogan House Township. During the past six years, natural gas drilling has skyrocketed to a level where Lycoming County witnessed the highest number of wells drilled during 2012 among all counties in Pennsylvania. (Approximately 40 PA counties are included as part of the Marcellus Play). Despite this intense level of gas exploration, it is recognized that this new industry is still in its early growth stage with continued drilling and gas production likely to occur for decades, although perhaps not at the remarkable levels previously seen in the past five years.

Much of the rapid development of Marcellus wells was attributed to more profitable natural gas commodity prices, need for drilling due to the value and expiration of current land leases along with industry competition. This fact, combined with the current volatile nature of fluctuating natural gas commodity prices that have fallen significantly from \$ 13 mcf to as low as \$ 2 mcf creates challenges in establishing meaningful industry activity trends and predicting future industry activity level forecasts for planning purposes. Potential changes to federal and state regulations on natural gas exploration along with changes to energy consumption patterns among residential, commercial and industrial sources are also among key the factors affecting the future growth of this industry. Finally, industry shifts between development of the “dry gas” portion of the Marcellus and the “wet gas” areas in Western PA, Ohio and other plays throughout the nation due to profitability considerations will also continue to affect future drilling levels in Lycoming County.

The impact of natural gas drilling on the landscape of Lycoming County is quite evident when considering that approximately 60% of the County’s total land area is currently under land lease for gas exploration which comprises about 691 square miles. Given the size of the land area currently under lease, the potential exists for the future number of wells yet to be drilled county-wide may exceed 3,000.



The map depicted below shows the vast land area already under and oil and gas leases.



Community Natural Gas Task Force

During the initial onset of natural gas development in 2008, the Lycoming County Commissioners working in partnership with the Williamsport-Lycoming Chamber of Commerce formed a Community Gas Exploration Task Force, which was the first such Task Force created at the county level in Pennsylvania. Since that time, more counties, such as Clinton and Bradford Counties have formed similar task forces throughout the Marcellus Play. It has since been renamed the Community Natural Gas Task Force, (CNGTF). The stated purpose of the CNGTF is to ***“identify key issues, research facts and information, and review and propose public policy regarding the positive, economic impact of gas exploration of the Marcellus Shale in Lycoming County.”***



This task force consists of 18 members representing banking, real estate, county and local government, state legislators, health care, transportation, education, public safety, Chamber of Commerce, local municipalities and PA DEP. Although the gas industry is not represented on the Task Force as a formal member, gas industry representatives are invited to make presentations on various topics. The Task Force is further divided into seven special purpose subcommittees to research Marcellus issues on a more in depth basis and report back to the Task Force on a regular basis. These subcommittees are:

- *Economic Development*
- *Education*
- *Environment*
- *Housing*
- *Planning and Zoning (Including Transportation)*
- *Public Policy and Legal Issues*
- *Public Safety*

The Task Force travelled to Tarrant County Texas in July, 2008 to gain a basic understanding of gas exploration issues and experiences attributed to the development of the Barnett Shale Play. It is envisioned that this Task Force will continue to comprehensively address Marcellus issues in the foreseeable future.

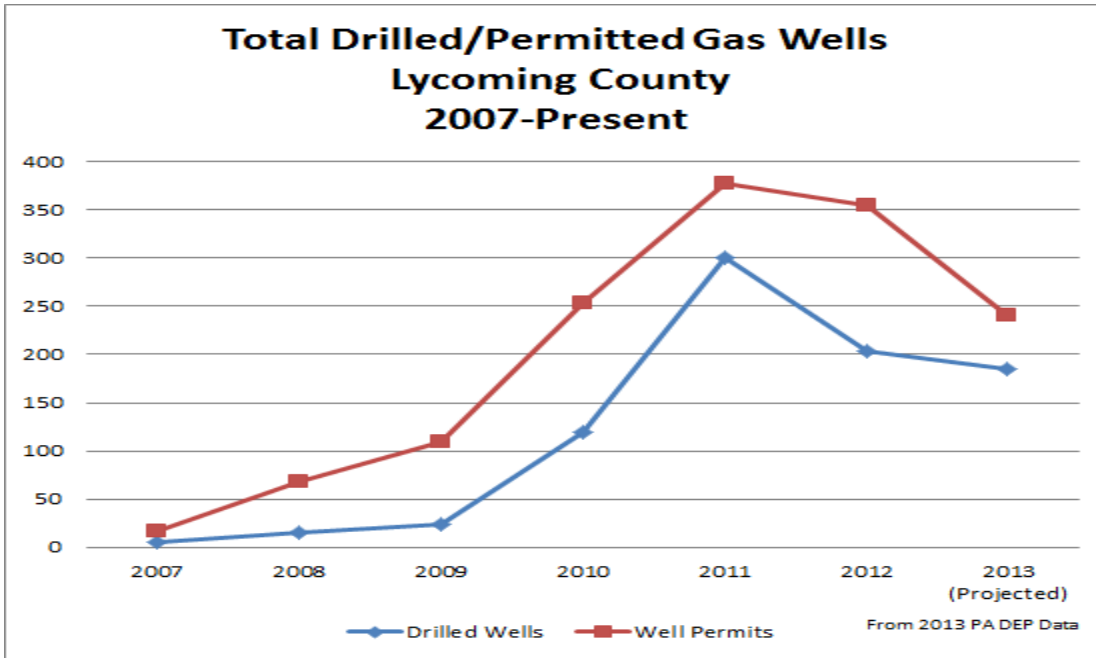
Marcellus Natural Gas Exploration Activity

Since the first Marcellus well drilling rig arrived in Lycoming County in 2007, the gas boom has transformed the entire Northcentral PA region with permitting and drilling of several thousand wells over a multi-county area including, Lycoming, Bradford, Tioga, Sullivan, Susquehanna, and Clinton Counties. Impacts from gas exploration are widespread and far reaching touching upon virtually every aspect of everyday life in the region. This section of the plan will provide an overview of Marcellus activity with an emphasis on multi-modal transportation system infrastructure impacts, as this is a transportation plan, however it should be recognized that numerous other infrastructure impacts have occurred affecting available and affordable housing supply, water and sewer infrastructure, schools, pipeline development to name a few.



In terms of monitoring gas well permitting and drilling activity, the PA Department of Environmental Protection maintains an updated database that provides names and locations of well sites. Further, the Lycoming County Department of Public Safety maintains a supplementary database where all well sites receive a physical location address primarily to enhance emergency 911 response capability in the event of safety related incidents since the vast majority of gas wells are located in remote areas.

From 2007 to 2011 both the number of DEP permitted gas wells and drilled wells rapidly increased as noted in the graph below. A leveling of permitting and drilling activity started to occur during 2012 with a continued steady decline in new wells during 2013. Currently (as of May 7, 2013) there are a total of 727 spudded (drilled) wells and 271 additional DEP permitted wells to date in Lycoming County so it is possible that by the end of 2013 nearly 1,000 total wells may be drilled County-wide during the past 6 years.



The regional impacts of the Marcellus gas exploration activity goes well beyond the borders of Lycoming County.

- New gas well drilling began in southwestern Pennsylvania but activity in the five-county Williamsport area and immediately north has begun and accelerated in the past two years. (Five-county area includes Lycoming, Bradford, Clinton, Sullivan and Tioga counties)
- The acceleration of mining activity in the Williamsport region is illustrated by the Pennsylvania Department of Environmental Protection statistics on mining permits and well drilling for 2009, 2010, 2011 and 2012. In 2012 mining activity slowed due to a short term drop in natural gas prices, which has since corrected.

PENNSYLVANIA OIL AND GAS WELLS PERMITTED & DRILLED: 2009 - 2012

	2009	2010	2011	2012	Change
Total Permits	6,234	6,592	3,512	4,226	20.3%
Permits for Five County Williamsport Area	984	1,940	1,658	1,078	-44.4%
Percent Williamsport Area	15.8%	29.4%	47.2%	25.5%	
Wells Drilled	2,543	2,843	2,946	2,344	-17.6%
Wells Drilled in the Five County Williamsport Area	291	867	1,039	512	-40.9%
Percent Williamsport Area	11.4%	30.5%	35.3%	21.8%	

The five-county Williamsport area accounts for 26% of new permits issued in 2012

22% of all new wells in the state are in the Williamsport area.

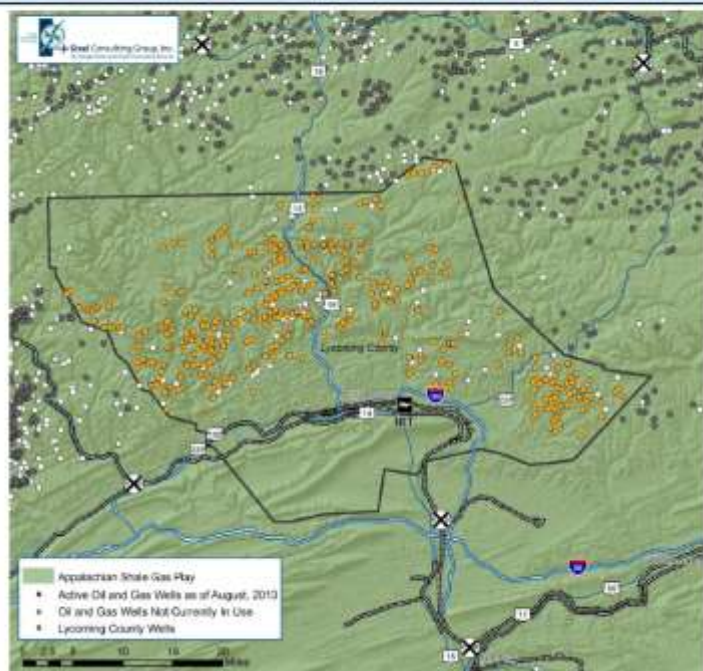
Energy Mining Companies and Support Companies Are Using Williamsport as a Base for Mining Operations up to 70 Miles to the North, East and West

- 2,709 gas wells were drilled in the Williamsport five-county area between 2009 and 2012.
- Major support facilities in the Williamsport MSA have been built or are under development by:
 - Anadarko
 - Eureka Resources
 - GE Oil & Gas
 - FMC Technologies
 - Black Hawk Specialty Tool
 - Weir SPM
 - Range Resources
 - EXCO Resources
 - Universal Well
 - Halliburton
 - Stallion Oilfield Services
 - Tera Aqua Resources
 - Sooner Pipe
 - Weatherford



Williamsport Sits Atop One of the Best Locations in the Marcellus; the Formation Locally Is High Yielding and Road and Rail Infrastructure Is Good

- The Marcellus formation is thick and high yielding in the Williamsport region.
- Williamsport's ground transportation infrastructure is the best in the region:
 - Proximity to I-80 and adjacent spur I-180
 - The only rail lines close to the mining region
- Williamsport has always been the regional center for commerce and trade for an area extending north to the New York state line and up to 70 miles northwest.
- Over 100 gas mining company or support company facilities have been built, leased or purchased in the Williamsport region in the past three years.



Over 100 Gas Mining or Gas Mining Support Companies, Large & Small, Domestic & International, Have Established Facilities in the Williamsport Area

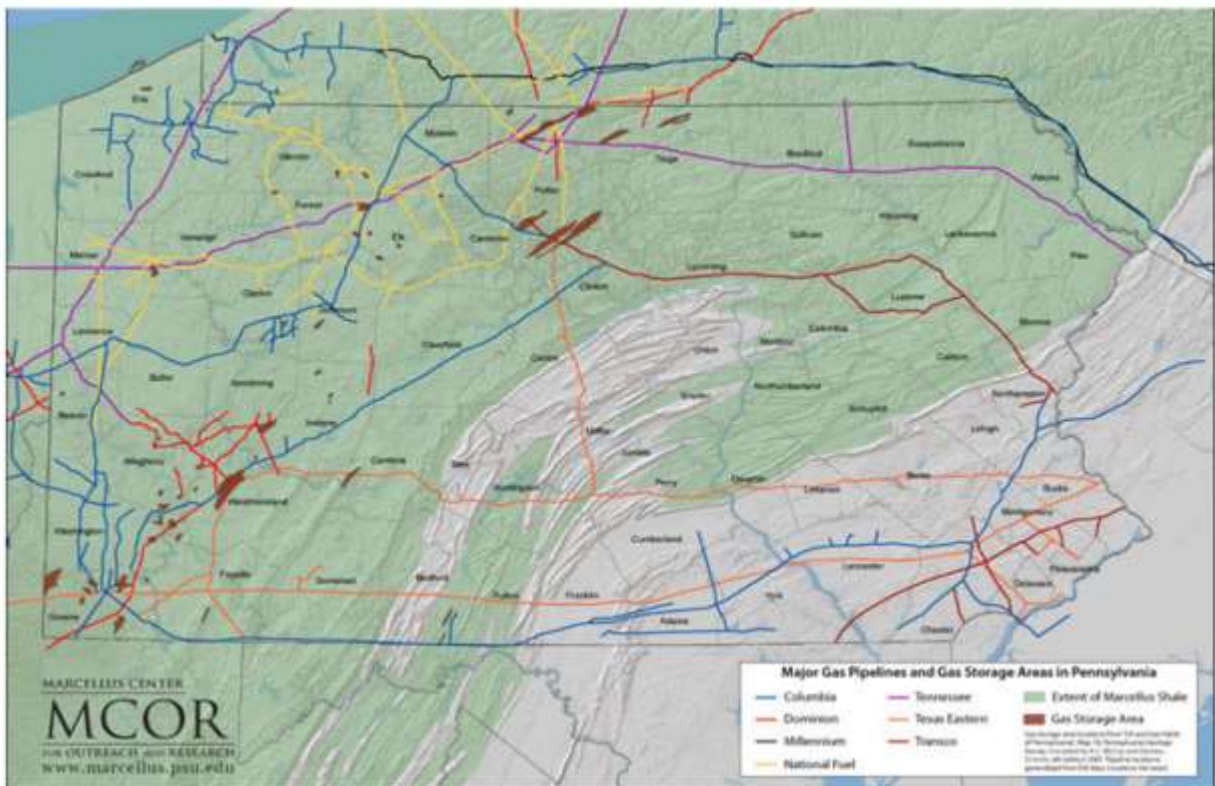
ACF Environmental	Fairway Laboratories	Phillips and Jordan, Inc.
Allied Cementing	Flint Energy Services, Inc. (Oil Field Rentals)	Pipeline Specialties & Supply Inc.
American Peak Production	FMC Technologies	Precision Drilling
Anadarko Petroleum Corp.	Folse Oilfield Services, LLC	Range Resources Corporation
Appellation Pre-Fab	FL Worth Pipe Service, LP	Red Oak - a Rockwater Energy Solutions Company
Archer	Frac Tech Services	RENSCO (Resource Energy Service Corporation)
Bass Fishing and Rentals LLC (Oil Field Rentals)	Gannett Fleming, Inc.	RETTEW Associates, Inc.
B. J. Services	Gas Group LLC	Rigmaids
Blackhawk Specialty Tools (Oil Field Rentals)	GE Oil & Gas	ROC
Bridger Crane and Rigging, LLC	GFI Oil & Gas, Inc.	Rockwater Energy Solutions
Brinjac Engineering, Inc. (Engineers)	Greenes Energy Group	Rogers Uniforms
Cabot Oil & Gas	Gulfstream Services	Saxon Drilling
CASCO, USA (Compressed Air Systems)	Hairchase Associates	Schlumberger Oilfield Services
CCS Midstream Services	Halliburton	Select Field Services
CGGVeritas Land (U.S.) Inc.	Halliburton Energy Services	Select Oilfield Construction
Chesapeake Appalachia, LLC	HB Rentals	Skelly & Loy Engineering
Chief Oil and Gas	Heiser Supply Company	Southern Flow
Clean Earth of Williamsport	Hemphill Trucking	Specialty Rental Tools & Supply
Clean Harbors Exploration Services	Infinity Oilfield Services	Speedy Heavy Hauling
Continental Wire Cloth	Jasper Steel Fabrication, Inc.	Stallion Oilfield Services - (Rental Equipment)
Cudd Energy Services	JW Operating	Summit Energy Services
Cummins Power Systems, LLC	Key Energy Services (Oil Field Rentals)	Summitt Sales & Equipment
Dawn Trucking Co.	Key Equipment Sales & Rental Inc	Susquehanna Wire Rope & Rigging, Inc.
Destiny Drilling	Light Tower Rentals, Inc.	Terraqua Resource Management, LLC (TARM)
Ditmar Fuel Company	Logan Oil Tools	Thru Tubing Solutions
DMS Environmental Services	Magna-Solutions, LLC	Tioga Minerals Inc.
DuBois Chemicals Inc	McTish, Kunkel & Associates (Consulting)	Tobin Testing Services, LLC
Elk Environmental Services	M&J Land Services	TransAxle LLC
Energy Construction Management (ECM)	Mountain Supply & Service (Oilfield Supply)	Tyndale's Factory Store
Energy Controls Group, LLC	National Oilwell Varco	Universal Well Services
Ensign Energy Services, Inc.	Next Energy, LLC	Valley Environmental Health and Safety
Environmental Service Laboratories, Inc.	Nortech Energy Solutions, LLC	Vaughn Energy Services
Eureka Resources (Gas Well Water Treatment)	NuWeld, Inc.	Warrior Energy Services
Excalibur Energy Services	Patterson & Wilder Construction Co. (Pipeline)	Weatherford International
EXCO Resources	Peak Energy Services	Whitco Supply
Express Energy Services	Penn Virginia Corporation	XTO Energy, Inc.

. There are also 9 active drilling rigs stationed in the county involving 12 company operators. The three largest gas drilling operators in terms of active wells are Anadarko (110 wells), Exco (53 wells) and Range Resources (48 wells). Currently the top three municipalities currently with well drilling activity are Cummings Township (57 wells), Cogan House Township (55 wells) and Penn Township (24 wells). Quarterly reports of gas field activity in the County are provided to the Community Gas Task Force on a quarterly basis. Further, the vast majority of new land development plans under County jurisdiction relate to the natural gas industry. Also about 40% of new County zoning permits issued in 2012 are gas industry related.

In addition there are currently 37 compressor/meter/interconnect stations located throughout the County to process and transport gas to market



The major natural gas transmission pipelines in PA are shown below with the Transco pipeline traversing the heart of Lycoming County in an east-west direction as shown below. Hundreds of miles of gathering lines are under development throughout the county.



In terms of natural gas well development, each well pad typically uses about 3-5 acres of land with 6-8 wells per pad. The pad development occurs over a 4-6 week period. Approximately 5,000 tons of aggregate are needed during well pad construction generating 300-400 truck trips. Once a pad is constructed well drilling operations involve transportation of more equipment, water and cement generating another 150-200 truck trips over a 4-5 week period. Finally, after the well is drilled and the fracking operation resumes an additional 800-1,000 truck trips are needed to transport 3-6 million gallons of water and frac sand to the well location over a 1-2 week period which totals 1,250-1,600 cumulative truck trips per pad site for construction of the 2-3 month well pad development, well drilling and gas fracking production process. Obviously, this level of truck and employee traffic occurring largely on the rural roads creates substantial impacts given the weight, size and frequency of vehicles on roads and bridges that were not originally designed or built to accommodate such intense heavy hauling activity.



Photo: Universal Well Services

To properly address impacts of heavy hauling, Title 75 and 67 of the PA Motor Vehicle Code along with PennDOT Publication 23 establishes laws, regulations and policy governing the posting of vehicle weight and size restrictions for roads and bridges and authorizing bonding to secure financial security from heavy haulers to correct damages caused by their heavy hauling activity. The State Posting and Bonding Program manages vehicle weights over 10 tons and less than 40 tons for roads and bridges unable to support heavy truck traffic. In PA, if a road or bridge cannot structurally support 40 ton loads it should be posted for the appropriate weight limit based on engineering analysis.

According to Section 189.4 of the PA Motor Vehicle Code, *“No over-posted weight vehicle, shall be driven on a posted highway with a gross weight in excess of the posted weight limit unless the posting authority has issued a permit for the vehicle or vehicles in accordance with this section.”* The posting authority must follow proper procedures such as conducting an engineering study to determine the appropriate weight limit for the road or bridge, providing required public notice, notifying law enforcement and installing appropriate signage. PennDOT approves posting and bonding on State-owned highways

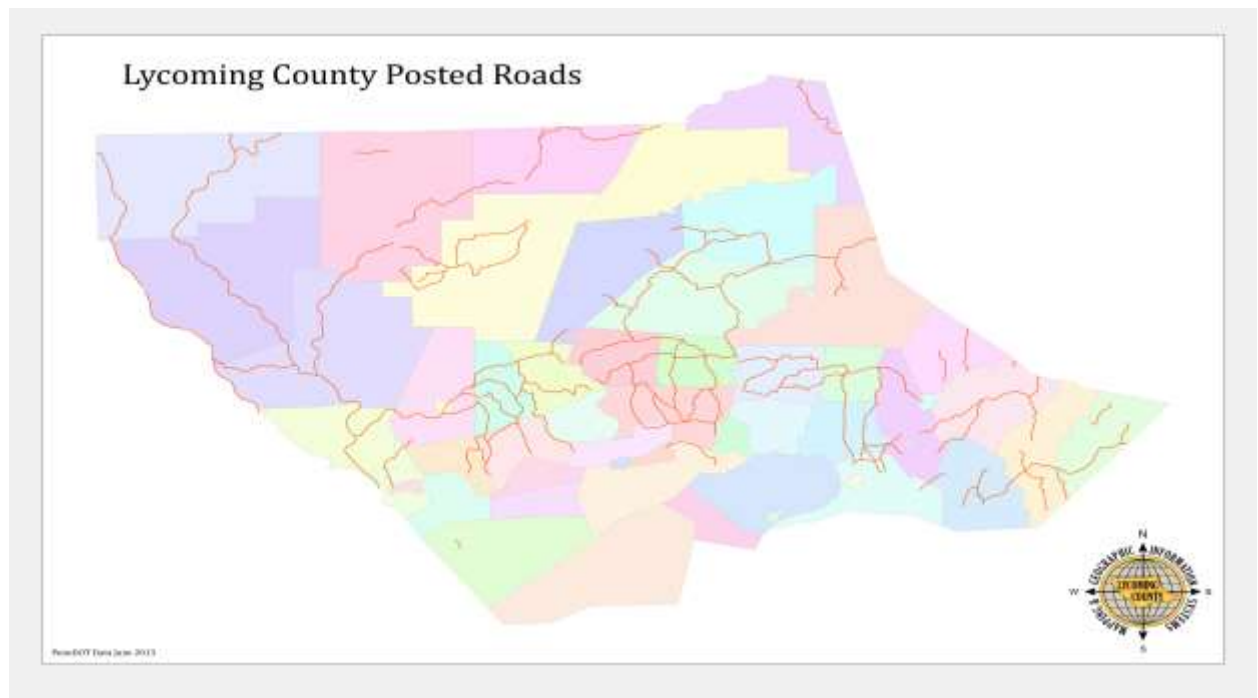
while local municipalities approve posting and bonding on their locally owned roads, however municipalities must follow the same PA Motor Vehicle Code when posting and bonding locally owned roads and bridges to be able to enforce weight limits and issue heavy hauling permits. Various types of permits are issued to heavy haulers which include:

- Type 1 permitting one truck on one travel route.
- Type 2 permitting multiple trucks on one travel route (Most Marcellus activity)
- Type 3 permitting one truck on multiple travel routes.
- LoLD permitting multiple trucks on multiple routes

An excess maintenance agreement is executed between the road posting authority and heavy hauler which establishes an initial road inspection, excess maintenance responsibilities and payments to make necessary repairs, approved road maintenance plan and roadway condition surveys for heavy users. The hauler provides financial security based on permit type ranging from \$ 6,000 / mile for unpaved roads or \$ 12,500 / mile for paved roads under Type 1 and 2 permits. Type 3 permits are county/municipality wide for \$ 10,000. Certain types of local traffic can be exempt from posting and bonding requirements.

According to the most recent data supplied by the PA Department of Transportation Bureau of Maintenance and Operations there are currently 385.4 miles of PennDOT posted state-owned roadways which represents about 50% of total state-owned road mileage in Lycoming County.

The map below shows the PennDOT Posted state-owned roads in Lycoming County.



Currently, there is a total of 198.2 miles (25%) of bonded state-owned roads in Lycoming County.

Unlike the state-owned road system, there is not an up to date, comprehensive or reliable database that exists for locally-owned roadways that are posted and bonded in Lycoming County which is typical across the Commonwealth. Rather, each municipality establishes its own database system. The County does have very limited and outdated local road posting and bonding information based on LCPC outreach efforts, however there is not a high confidence level in this data so it will not be included in this plan. Municipal outreach to collect this data in the past was largely unsuccessful as many municipalities were not responsive in providing the requested data.

There are 3 state-owned bridges and 27 locally owned bridges that are posted for weight limits in Lycoming County. A more comprehensive discussion of the structurally deficient load posted bridges is provided in Chapter 4 of this Plan.

It should be noted that the Marcellus industry has spent millions of dollars maintaining and upgrading those state and locally owned roads that have been posted and bonded in order to ensure these roads remain safe and passable and meet industry transportation needs and the overall pavement condition of these roads is generally improved as a result. However, a concern is that the major state-owned roads that are not posted and bonded are receiving accelerated life cycle pavement deterioration due to the substantial increases in truck traffic that may require more frequent and costly treatments.

Marcellus impacts on the transportation system are not just limited to roads and bridges. Other transportation modes such as air service, rail service and public transit have experienced significant positive impacts. These impacts are summarized herewith by transportation mode. (Chapter 4 of this Long Range Plan will provide a more detailed overview of all Lycoming County multi-modal facilities.)

Marcellus Air Service Impacts



The Williamsport Regional Airport is the only commercial airport in Lycoming County serving a 13 county service area in Northcentral PA. US Airways provides direct commercial air service to Philadelphia International Airport with three daily flights using 37 seat Dash8 turboprop aircraft. Since Marcellus gas exploration emerged in Lycoming County in late 2007, enplanements at the airport rose from approximately 18,000 annual passengers to over 26,000 annual passengers at the end of 2012 representing a 44% increase.

About 50% of total passenger enplanements are Marcellus related customers. Current load factors at the airport are about 85% which signify that most planes are full most of the time with very limited seating capacity available to accommodate this new demand. In fact, of the 37 commercial airports in the FAA Eastern Region, the Williamsport Regional Airport was tied for first in terms of highest percentage increase (6%) in passengers between 2011-2012. There were 24 airports that actually reported passenger declines. The top five final destination states among Marcellus commercial air passengers using the airport in order are Texas, Oklahoma, Louisiana, Arkansas and Colorado. Given the rapid growth at the airport and the antiquated condition of the airport terminal building along with limited physical space availability to house tenants and provide for potential new airline service, the Airport Authority has initiated a project to replace the terminal building which will be discussed in greater detail in Chapter 4.



New FBO Energy Aviation

Corporate and general aviation traffic at the airport is also heavily influenced by Marcellus customers with 60% of all corporate aviation traffic being Marcellus business. In the past year, a new fixed base operator, Energy Aviation, now operates full service general aviation facilities at the airport. Also, the Williamsport Regional Airport operating budget has gone from negative to positive cash flow by securing property leases with 5 new gas industry tenants such as Anadarko, Sooner Pipe, MB Machining, Infrastructure Pipeline Services and Exco Corporation. Collectively, these new airport tenants have invested over \$ 7 million to improve airport property needed for their operations and creating over 130 new jobs. Clearly, the presence of Marcellus gas exploration has had a substantial positive impact on the airport which is one of the fastest growing airports in the Northeast United States.

Marcellus Short Line Rail Service Impacts

The Lycoming Valley Railroad is the short line railroad primarily serving the Marcellus business rail service activity. The railroad facilities are owed by the SEDA-COG Joint Rail Authority and operated through a contract with the North Shore Railroad Company. Again, similar to the airport, the Lycoming Valley Railroad has witnessed a substantial increase in rail freight traffic since the advent of Marcellus gas exploration. Approximately 20% of all rail freight carloads handled by the LVRR is Marcellus related freight. In terms of raw carloads of rail freight directly attributable to Marcellus business the following activity has been reported since the LVRR has begun to compile carload statistics that tracks Marcellus rail activity:



LYCOMING COUNTY RAILROAD CARLOAD TRENDS
MARCELLUS FREIGHT 2009-2011

YEAR	TOTAL CARLOADS	ANNUAL PERCENT CHANGE
2009	1,230	---
2010	5,789	+ 370%
2011	6,880	+18%

Among these carloads, the LVRR handles a variety of Marcellus related commodities originating from multiple geographic locations as summarized below:

COMMODITY	ORIGIN
Frac Sand	Ind, Ill, Mich, Wis, NJ
Steel Pipe	AR, AL
Plastic Pipe	Tx
Hydrochloric Acid	KY
Petroleum Oil	LA
Ground Barites	Tx, NV
Barium Sulfate	LA
Cement	Tx, Lehigh Valley
Ceramic Proppant	GA
Equipment (Primarily Cranes)	CO, Saskatchewan

The Newberry Yard situated in the heart of the Williamsport Industrial Park is serving as a major intermodal rail / truck transfer center. It is not unusual to have a frac sand inventory stored at the Newberry Rail Yard in excess of 500 rail carloads at any given time. This intermodal transfer railyard is essential to serve Marcellus wells since commodities shipped by rail must transfer to trucks using highways to reach well locations that are not in close proximity to the rail system. As a result, the Newberry Rail Yard is now functioning at full capacity with very limited room for additional expansion. An \$ 11 million TIGER 2 grant was awarded to the SEDA-COG Joint Rail Authority by the US Department of Transportation in 2010 to help improve the regions railroad infrastructure to better serve Marcellus and other area business rail freight needs. Most of these projects have since been completed. A more in-depth overview of the rail system in Lycoming County will be provided in Chapter 4.

Marcellus Public Transit Impacts

The arrival and expansion of the Marcellus Shale gas industry has also increased demands and pressures on the existing fixed route transit system, River Valley Transit. The substantially increased presence of gas workers has saturated local hotels and increased the number of riders utilizing the local and regional transit system. In 2012, River Valley Transit recorded over 1.4 million passengers which is an all time record. Much of this ridership is attributable to Marcellus workers and / or friends and family using the transit system for shopping and ease of travel around the county as many of these individuals are from out of town and are not familiar with the area and rely on transit for safe, efficient transportation.

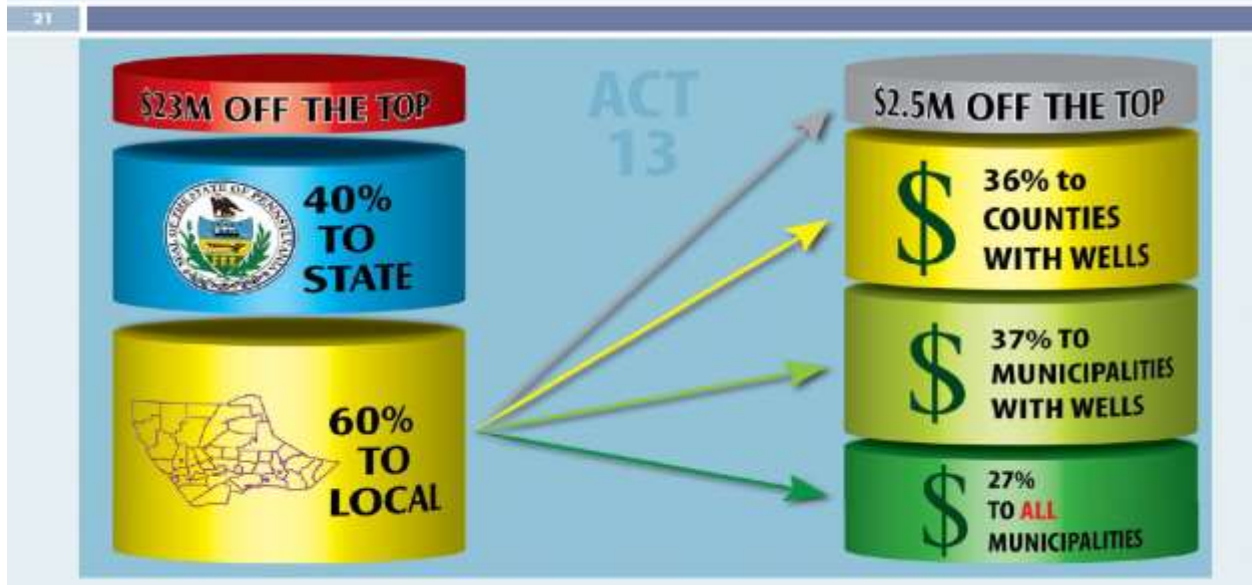


In addition to transit ridership increases, River Valley Transit has seized on the opportunity to harness the local natural gas resource to substantially lower its operating costs initiated through conversion of its 30 bus vehicle fleet from diesel-powered to Compressed Natural Gas, (CNG). Toward this end, RVT was awarded in \$ 3.5 million FTA Clean Fuels Program funding to construct a fast-fill CNG at its Third Street garage and office location. One CNG bus has already been purchased and is online and four additional CNG buses are proposed for purchase under the Tiger 5 Grant Program. The CNG fueling facility should be completed and operational this fall. The public transportation system in Lycoming County will be more fully described in Chapter 4.

ACT 13 FUNDING

To help address Marcellus related impacts, such as transportation system impacts, the PA General Assembly approved Act 13 providing funding assistance to Counties, local municipalities and other state agencies, such as PennDOT through fees levied on the Marcellus industry and administered through the PA Public Utility Commission. This funding will be helpful to address such impacts, however in no way should it be regarded as fully sufficient to cover all associated infrastructure impacts created by the industry. The next series of illustrations outline the impact fee distribution methods authorized under Act 13 with funding estimates for Lycoming County and its local municipalities.

Impact Fee Distribution



County Impact Fee Allocation

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■ Lycoming County Estimated Allocation (36%)

Year	Estimated County Allocation
1	\$3,776,240
2	\$3,200,000
3	\$2,800,000

■ Key Components of County's Allocation

- Allocation based on proportion of spud wells physically located within Lycoming County
- Year 2 and 3 are conservative estimates

**Calculations based on DEP well count.

Municipal Impact Fee Allocation

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■ Estimated Municipal Allocation in Lycoming County

	Year 1 *	Year 2	Year 3
<i>Well-Host Municipal Allocation</i>	\$3,881,136	\$3,300,000	\$2,900,000
<i>Eligible Municipalities and All Municipalities Allocation</i>	\$2,832,180	\$2,400,000	\$2,200,000
Municipal Total	\$6,713,316	\$5,700,000	\$5,100,000

■ Key Components of Municipal Allocation

- All municipalities receive an allocation
- Well host municipalities receive an additional allocation
- Estimates for years 2 & 3 are conservative

*Calculations based on DEP well count

It is important to note that the Lycoming County Commissioners have already made a significant Act 13 investment in transportation facility upgrades through dedication of \$ 1 million from the County's allocation for the Williamsport Regional Airport Terminal Building Replacement project and \$ 117,200 for the City of Williamsport to reconstruct and widen Reach Road, the main local road serving the growing Williamsport Industrial Park and Newberry Rail Yard. These facilities are high County priorities and have been substantially impacted by Marcellus related activity. The county anticipates making continued transportation investments through Act 13 to assist local municipalities with transportation needs using a competitive grant program approach.

