Chapter 3: County Priorities

Priority Issue 1



















Infrastructure does not meet the needs of all areas of the County.

Back Story - Infrastructure includes "the basic physical and organizational structures and facilities needed for the operation of a society or enterprise." It creates the physical and digital backbone that links communities together, sets the foundation for economic and community development, and allows residents to enjoy a quality



of life. For purposes of the 2017 County Comprehensive Plan Update, six major types of infrastructure are recognized, as outlined to the left. The six are a combination of traditional and atraditional forms of infrastructure. Together they form the critical framework and system needed for a successful physical and organizational structure by which the government, its authorities, businesses, industries and residents rely on for a rich quality of life.

The quality of the county's infrastructure can have a significant impact on its health and overall economy. Its ability to attract and retain people and businesses relies on having and growing a sound infrastructure system that encourages further investment.

Since early 2000s, Lycoming County has helped advance over 200 community infrastructure projects. The County's role with each initiative varies, but it generally involves assembling Federal, State and local funds needed to enable a Lycoming County municipality, authority or publicprivate partnership to complete the project.

The needs of each geographic section of the County vary significantly. Issues facing the eastern municipalities in the County can be quite different from those identified by the County's Pine Creek western communities. The challenge is to strike the right balance among competing priorities since funding is extremely limited.

Moving forward, there are five overarching infrastructure issues or needs that must be addressed:

- Improve coordination among fragmented infrastructure/service providers
- Maintain, repair or replace aging multiple forms of infrastructure across the county
- Expand the reach of existing infrastructure in a well-planned, cost effective manner
- Secure the limited Federal & State grant funding that is available to minimize local burden
- Establish priority consensus on future strategic infrastructure investments given limited funds

Priority Issue Overview-Transportation Infrastructure

Lycoming County is blessed with an interconnected multi-modal transportation system consisting of highways and bridges, public transit, commercial air and freight rail services and bikeway/pedestrian facilities that provides safe and efficient access to major regional markets as well as access to the local communities.

The major highway routes in the County that are included on the National Highway System, (NHS) consist of Interstate 180 which is the primary east-west route along with US 220 and US 15, the primary north-south routes which are either four lane limited access or controlled access facilities where substantial federal and state investments have been made over the past several decades to upgrade these facilities for public safety and economic development purposes. The other major project that will complete the overall upgrade of US 15 in Pennsylvania is the Central Susquehanna Valley Thruway, (CSVT) project. Once completed, this project is anticipated to result in major shifts in north-south regional traffic patterns that will increase traffic utilizing the Interstate 180 corridor north of Interstate 80 to its connection with US 15 in Williamsport. There are numerous interchanges along I-180 that may experience significant development pressures as a result along with potential decreases in traffic volumes using the US 15 corridor between I-80 and Williamsport which may help alleviate traffic congestion problems occurring on the Market Street Bridge which is affecting Old City Revitalization efforts.

PennDOT is also in the process of designing major access management improvements along the US 220 corridor between Williamsport and Jersey Shore to enhance public safety and provide more efficient ingress and egress to developing areas along this corridor with construction anticipated to commence in 2019.

There are nearly 2,000 miles of public roadways throughout Lycoming County. PennDOT owns 716 miles of roads with local municipalities owning 1,258 miles and other agencies owning the remainder. Approximately 20% of PennDOT roads are in poor condition, however most of this road mileage is concentrated on those rural secondary roads with lower traffic volumes. There is no data summarizing the condition of locally owned roads. In terms of safety, there were 5,788 reportable crashes on Lycoming County roadways during the past five years (2012-2016) with 81 fatalities.

In terms of bridge infrastructure, there are a total of 712 bridges throughout Lycoming County. PennDOT owns 512 bridges; local municipalities own 185 bridges with county owning the remaining 15 bridges. Only 20 PennDOT owned bridges in Lycoming County (3.9%) are deemed structurally deficient in comparison to 15.8% on a statewide basis. However, about 40 bridges (25%) owned by 21 different local municipalities are structurally deficient and should be repaired or replaced based upon the most recent bridge inspection data. A "structurally deficient" designation does not mean the bridge is unsafe, but that the bridge is in need of rehabilitation or replacement. Often times, structurally deficient bridges cannot carry legal loads (40 tons) where weight limit restrictions must be imposed in the interest of public safety which can lead to long detours, hamper emergency response and disrupt local communities.



Compressed Natural Gas Fueled Bus Source: River Valley Transit

Public transit service is operated by
River Valley Transit, the sole fixed route
provider in Lycoming County. Service is
largely provided in the Williamsport
Urbanized Area and outlying
communities of Hughesville, Muncy,
Montgomery and Jersey Shore. A
PennDOT funded demonstration project
to expand service to the Lock Haven
Area in Clinton County is also about to
get underway. RVT is also in the process
of converting its entire bus fleet from
diesel to compressed natural gas which

will substantially lower overall transit operating costs. STEP, Inc. operates the shared ride program throughout Lycoming and Clinton Counties where federal and state subsidies are provided for certain trip types for qualifying individuals eligible to receive the subsidy along with much higher regular fares for the general public that do not qualify for trip subsidies.

The Williamsport Regional Airport is the only commercial service airport serving Lycoming County as well as a regional 13 county service area with direct service only to the Philadelphia International Airport provided by American Airlines. Numerous projects to upgrade airport safety and capacity have been recently undertaken such as expanding the main runway and lowering minimum aircraft landing thresholds along with replacing the

aging terminal building with a new modern terminal now under construction which can accommodate additional airline space and passenger needs. The airport is now serviced by a regional jets instead of turbo-props.

Freight rail service is provided by Norfolk Southern which owns and operates the Harrisburg-Buffalo mainline primarily located on the south side of the Susquehanna River, with the SEDA-COG Joint Rail Authority owning the shortline track system on the north side of the river which is contractually operated by the North Shore Railroad as the Lycoming Valley Railroad. This shortline service is vitally important to over 30 companies in



Freight rail siding with Overhead Crane, Reach Rd. Industrial Park Area, Williamsport Source: PCD

Lycoming County that rely on quality freight rail services to remain viable supporting hundreds of jobs. Much of this rail infrastructure is in excellent physical condition due to strategic capital investment upgrades made by the Joint Rail Authority with the most significant completed project involving the replacement of the Loyalsock Creek Railroad Bridge destroyed by Tropical Storm Lee in 2011. Rail service plays a prominent role in the transport of materials supporting the Marcellus Shale natural gas play and the Newberry Yard is a major staging area where rail and truck transfer occurs to allow distribution of materials to gas wells developed throughout many rural portions of the county. There is no passenger rail service serving Lycoming County.

Lycoming County boasts an extensive network of bikeways and trails, highlighted by the world famous 62 mile long Pine Creek Rail Trail between Jersey Shore and Ansonia in Tioga County. The recently completed Susquehanna Riverwalk situated on the levee system in Williamsport, South Williamsport and Loyalsock Township is also heavily used and plans for future extensions to provide connections to Susquehanna State Park, Newberry and eventually Jersey Shore linking with the Pine Creek Rail Trail are underway. The Outdoor Recreation Section of this chapter provides information from our public survey showing strong support for additional investments in trails and pedestrian facilities to promote walkable communities. The State Transportation Commission survey results shown in the Appendix section also underscores this public sentiment both at our county level and state-wide.

Key Implications

A safe and reliable multi-modal transportation system is the economic lifeblood of our communities. Transportation facilities provide access to jobs, health care, shopping, recreation and social activities. It is vitally important to provide the public with a full range of transportation choices which are efficient and affordable. To ensure a viable and sustainable transportation system now and in the future requires a prudent strategy to not only address proper maintenance of existing transportation infrastructure, but examination of

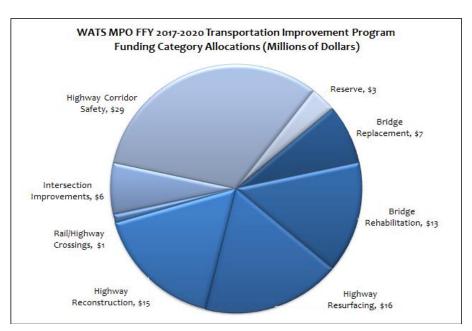


Figure X: WATS MPO FFY 2017-2020 Transportation Improvement Program Funding Category Allocations

Source: PCD

additional investments required to make necessary upgrades to correct documented public safety deficiencies, support future economic development activity and respond to changing demographics that influence transportation demand. Since, transportation dollars are always scarce in that needs far outweigh available

resources, priorities must be established to ensure investments are targeted to respond to the most pressing needs.

The Williamsport Area Transportation Study, (WATS) Metropolitan Planning Organization, (MPO) is the federally designated body to identify, prioritize and implement such transportation capital investments in Lycoming County through development of a required Long Range Transportation Plan and adoption of a Transportation Improvement Program, (TIP). The WATS Long Range Plan was adopted in December, 2013 and is currently being updated for re-adoption in December, 2018 in compliance with federal law.

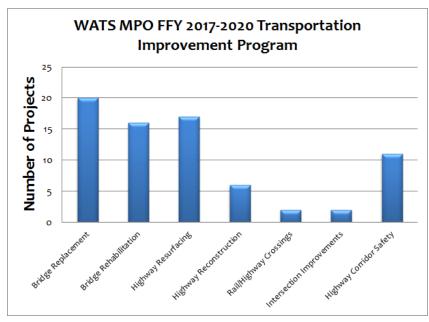


Figure X: WATS MPO FFY 2017-2020 Transportation Improvement Program **Source:** PCD

In July, 2016, the Williamsport Area Transportation Study, (WATS) Metropolitan Planning Organization, (MPO) approved an update to the FFY 2017-2020 Transportation Improvement Program, (TIP) which details proposed highway and bridge improvement projects throughout Lycoming County that are approved for federal and state transportation dollars during the next four years. The TIP commits over \$ 90 million in new transportation investments for 74 projects. Of these, 28 are carry-over projects from the prior TIP and 46 are new projects added to the TIP during this update largely due to the passage of Act 89 by the General Assembly and the FAST Act passed by

Congress. However, an additional \$ 51 million will still be needed to complete 24 of these projects during future TIP updates so the number of new projects added to the next TIP will be limited given federal fiscal constraint requirements in budgeting TIP resources.

Projects of Countywide Significance for this Issue

This plan will highlight major projects that are consistent with the WATS Long Range Transportation Plan that are of the highest priority for implementation and is not meant to be an exhaustive list of all proposed transportation infrastructure improvement projects in Lycoming County.

LYCOMING COUNTY LOCAL BRIDGE BUNDLING INITIATIVE



Severe spalling, cracking, and exposed, severely rusted rebar—T-506 over Daugherty's Run, Lewis Township Source: Larson Design Group

An innovative and cost-effective approach to address the growing backlog of 40 locally-owned structurally deficient bridges is a new program whereby Lycoming County will bundle larger groups of bridges into single engineering and construction contracts which are anticipated to save municipal bridge owners 10% to 30% in costs along with faster completion schedules over the more conventional approach of undertaking bridges as separate projects. The initial bundling package will include repairing or replacing 17 bridges with a total estimated cost of \$ 6.9 million. The County will apply for a Pennsylvania Infrastructure Bank, (PIB) loan through PennDOT to provide the needed upfront capital to immediately design and construct the bridges. The debt service to pay the PIB loan will be derived from the PA Act 89 \$ 5 vehicle fee

registration surcharge recently enacted by the Lycoming County Commissioners along with PA Act 13 restricted bridge account funds and a 5% local share provided by the 17 participating municipalities. Two additional local bridges will be funded from federal matching funds that Lycoming County will be eligible to receive from PennDOT as an Act 89 Fee for Local use participating county conducting local bridge projects. The County will hire the engineers and contractors to undertake the bridge projects, while the local municipal bridge owners will retain bridge ownership and participate on a project delivery team that will periodically meet during the project development process. *This approach will reduce the backlog of structurally deficient local bridges by 50%*

within the next three years.

SUPPORT AIRPORT TERMINAL BUILDING REPLACEMENT PROJECT

The Williamsport Municipal Airport
Authority has initiated construction of
the new terminal building at the
Williamsport Regional Airport.
Numerous funding sources have been
secured for the \$ 16 million project
including Redevelopment Capital
Assistance Program, PA DCED MultiModal Transportation Fund, PA
Transportation Capital Budget, PennDOT







Murray Associates Rendition of New Airport Terminal

Aviation Improvement Program, TEA-21 earmark, Lycoming County Act 13 funds and the First Community Foundation of PA. This project will eliminate the many structural problems associated with the current building and provide more space to accommodate additional air service to meet the airport's growing commercial air passenger demands.

SUPPORT EVENTUAL COMPLETION OF INTERSTATE 99 DESIGNATION



There is significant regional support for permanent designation of the section of US 15 between the I-180/US 220 interchange from Williamsport to the New York Border as Interstate 99. The New York section from the NY/PA Border to Corning at Interstate 86 is already designated as I-99. PennDOT review of certain sections of highway continues to ensure Interstate design standards are met or are granted waivers by the Federal Highway

Administration. The remaining sections of proposed Interstate 99 remaining to be upgraded to Interstate standards is the US 220 section in Lycoming County between the West Fourth Street Interchange and PA 287, the US 220 section between Salona and I-80 in Clinton County and the upgrade of the I-80/I-99 Bellefonte Interchange in Centre County. These regional I-99 projects are supported by Lycoming County.

CSVT IMPACTS EVALUATION

The county acknowledges that the Central Susquehanna Valley Thruway, (CSVT) may create additional development pressure along the I-180 corridor. Therefore, the County supports as a high priority initiative to conduct an evaluation of CSVT impacts on traffic and growth patterns along the I-180 corridor which involves a comprehensive review of land use ordinances adopted by the County and appropriate



PennDOT Secretary Leslie Richards Tours CSVT Project Site, 10/2017 Source: PennLive com

local municipalities to determine if changes are needed to accommodate development pressure, including the possibility of creating interchange overlay zoning districts. As part of this ordinance review, typical interchange land uses should be examined and the municipalities should decide which uses are desirable to allow near interchanges. Additionally, infrastructure needs should be reviewed at the interchanges and improvement plans

developed if needed. The US 15 Corridor from the Union/Lycoming County line to Williamsport will also be included in the evaluation as traffic changes and additional growth are also expected to occur.

SUPPORT GENESEE-SUSQUEHANNA GREENWAY

The county is working closely with the Susquehanna Greenway Partnership and the Genesee River Wilds

organizations to promote and facilitate the completion of an overall 400 mile three state trail system connecting Lake Ontario at Rochester, NY with the Chesapeake Bay, MD referred to as the Genesee-Susquehanna Greenway, (GSG). The Pine Creek Rail Trail and Susquehanna Riverwalk are key components of this overall system. Also planned as a key connection is the proposed 41 mile Bald Eagle Ridge Trail connecting Muncy and Lock Haven. The County has completed a feasibility study and is seeking funding and resolving design



Pine Creek Rail Trail Extension, Jersey Shore Borough Source: PCD

level issues to advance the project. Also, the County has conducted a feasibility study to provide additional trail connections between Montoursville and Muncy-Montgomery as part of this overall GSG system and funding is being explored.

ESTABLISH COMMUNICATION FORUM WITH AMISH COMMUNITY

There are safety conflicts occurring between motorized vehicles and Amish buggies. A recent motor vehicle collision with a horse drawn buggy in Washington Township has illuminated this concern. The County and other appropriate organizations should conduct an outreach with the Amish community to begin conversations to properly address such serious safety issues and develop a cooperative approach and action plan to implement needed improvements.

Priority Issue Overview-Water & Sanitary Sewer Infrastructure

Public water and sanitary sewer infrastructure is essential for communities in Lycoming County to provide good clean water for its residents while protecting the environment from ground water, soils and surface water contamination.

Lycoming County's Water Supply Plan, published in 2001, identified 37 community water systems serving a population estimated to be 74,632. These systems utilized a total of 79 wells, four streams and three springs. Each of the 37 systems owned, operated, and maintained its own sources of supply, treatment and distribution facilities. Water supplies were evaluated as having generally good yields and water quality. The Plan also noted that there was inadequate finished storage among about half of the County's community water systems. Many systems are in need of management improvements, chiefly mobile home parks. Eighteen systems lacked certified primary operators while 31 systems lack certified secondary operators. As many as 23 systems lack approved Operation and Maintenance Plans. Not surprising—one of the primary recommendations in the Plan called for regional solutions to achieve economies of scale and achieve increased coordination and cooperation. In fact, the most efficient and effectively

Williamsport Sanitary Authority (WSA) Williamsport Municipal Water Authority (WMWA) Jersey Shore Area Joint Water Authority Lycoming County Water & Sewer Authority (LCWSA) Hughesville-Wolf Authority Hughesville Borough Water Authority Muncy Borough Municipal Authority Montgomery Water and Sewer Authority Tiadaghton Valley Municipal Authority (TVMA) Old Lycoming Area Authority West Branch Regional Authority (WBRA) Montoursville Borough Water Works

Figure X: Major Water & Sewer Providers

managed systems were encouraged to assume responsibility for expanded service and, in some instances, to incorporate weaker systems. Finally, the Plan also identified the need for Wellhead Protection Programs to protect water quality.

Over the past 15 years, many of the major recommendations in that 2001 Plan have been advanced and are discussed in the Community Facilities & Infrastructure Profile, Chapter 2. Today, the water and sanitary sewer needs of the urbanized areas of Lycoming County are fulfilled by a number of public entities; the 12 major



TVMA Sanitary Sewer Plant completed 2014 Source: Larson Design Group



WMWA-WSA Central Plant upgrades completed 2013 Source: WMWA-WSA

providers are listed above. The photos show a few of the major infrastructure projects completed over the past 10 years.

Three key agencies oversee the environmental compliance of these public entities: Susquehanna River Basin Commission (SRBC), US Environmental Protection Agency (EPA), & PA Department of Environmental Protection (DEP).

It is notable that our water and sanitary sewer providers have been able to make the needed improvements and maintenance upgrades over the years while dealing with increasing regulations and still maintaining reasonable rates.



LCWSA's recently constructed water tower Source: hrg-inc.com

With all the headway made over the past 15 years, there are still several issues that may be road blocks to the water and sanitary sewer providers ensuring that the past and future investments in water/sewer will be sustainable for County residents. These issues can generally be categorized as economic, operational and workforce issues. The following represent a snapshot of these issues.

Economic

Investments were made in public water & sewer infrastructure based upon 2006 Comp Plan growth area designations and land use and density changes but growth in some areas did not occur as anticipated. Higher predictability of demand is needed for providers. These operations cannot afford to build speculatively without confidence in the customer base. Historically, municipalities have not been supportive of mandatory connection ordinances for public water systems. This creates uncertainty because without a mandatory water service connection requirement, people can elect not to connect even after the infrastructure investment is made. A smaller customer base drives up rate



WBRA Sanitary Sewer Plant constructed 2015 Source: PCD

- structures and tapping fees and can deter in-fill and green field development.
- Tighter regulations from EPA and DEP result in needing more staff for providers to remain in compliance and keep up with asset management at higher maintenance costs.
- Rural developed areas are seeing more on-lot septic failures for both individual lots and sewage systems
 designed for multiple lots. 95% of Lycoming County's land mass is outside of the growth area making
 development in these areas difficult to serve with public water and sanitary sewer.

- There is still an ongoing need to integrate infrastructure planning with transportation planning, and specifically sewer extensions with land use planning as pointed out in the 2006 County Plan.
- Wellhead protection of public water sources is an increasing concern that may have financial implications if we cannot ensure proper protections of our drinking water supplies.

Plant Operations

- PA DEP is having difficulty meeting EPA's requirements for lowering nutrient discharges ending up in the Chesapeake Bay. There is a growing concern that the EPA, through its Chesapeake Bay initiative, will invoke "back stops" (things that EPA will step in and overrule the states on and require if states don't meet their obligations). One of these "back stops" is requiring treatment plants to upgrade their process in accordance with the "Limit of Technology". Special filters and processes would have to be added to sanitary sewer plants to reduce nitrogen and phosphorus discharges to minute amounts.
- Investments were made to expand water treatment plants. However, providers have reported challenges with water withdrawal permitting through PA DEP and the Susquehanna River Basin Commission (SRBC) with water withdrawal permitting vs. plant capacity and approval timelines. These challenges may lead to deter economic growth and future investment.
- Plant operators have been notified of potential changing regulations for testing and removal of pharmaceuticals. These micro contaminants such as antibiotics, estrogen and endocrine disruptors, disturb stream/river biology. Regulators believe that endocrine disruptors found in the Susquehanna River are the cause of bass found with both sexes.
- On the sanitary sewer side, these contaminants will be very costly to test for and to remove prior to effluent discharge.
- On the water treatment side, the small permitted water providers such as mobile home parks and some industries and businesses may have difficulty with economics due to the high cost of testing for the micro contaminants let alone being able to afford treatment if there are positive results found.

Workforce

- In 2015, the Pennsylvania Department of Environmental Protection (DEP) initiated an external review of Pennsylvania's Operator Certification Program for calendar years 2011 through 2015, using the Certification Program Advisory Committee (CPAC). Among other issues, the CPAC members identified two specific concerns in the sustainability of the workforce for water and sanitary sewer operations:
- Average age of plant operators is in the age bracket of 50-59 years. There is coming a time where there
 will be a need to replace a large pool of retirees but there are very few younger operators with
 necessary certification training and even smaller number of education programs within colleges to
 prepare younger workers.
- Rural water and sanitary sewer providers may have difficulty hiring and retaining certified operators. About 50% of certified operators in Pennsylvania currently hold a Class A certificate (for systems permitted at flow rates of >5 million gallons per day), about 60% of the facilities in the state only require a Class D certificate (flow rates of <100,000 gallons per day). This may result in an abundance of

operators with high qualifications that may be more inclined to work at facilities in urban areas and larger communities looking for higher wages.

Key Implications

Community leaders should continue to work with water and sanitary sewer providers to make sure they have the information needed to make the best decisions possible when it comes to asset management and service area expansions. Lack of growth means the existing customer base has to bear the burden of new and future infrastructure cost and these higher costs can deter economic growth and future investment. In order to keep rates as low as possible, municipalities can consider putting proper regulations in place such as mandatory connection and source water protection ordinances. Mandatory connection increases the size of the customer base and lowers individual user rates. A community observing source water protection best practices will contribute to lowering maintenance costs of existing systems for removing contaminants. If our drinking water sources are cleaner to begin with, it costs less to prepare the water for consumption as well.

If public infrastructure improvements and extension planning is not used to guide development, our community will continue to struggle with failing on-lot septic systems and a higher risk of contaminated water sources. Within the next 20-30 years the useful life of on-lot septic systems may come to an end and small package sanitary sewer plants may be the only answer to safely handle sewage disposal realizing costs will be high to manage those systems with a small customer base. Good planning encourages service improvements within designated growth areas and discourages public funding to extend water and sewer service to areas outside designated growth areas. However, if local health or safety conditions warrant such extensions, improvements should be limited to only what is needed to serve the problem area.

Without regular water and sanitary sewer system maintenance, there is more chance for system breakdowns requiring higher repair costs. Rate structures need to be high enough to provide for asset management as well as repaying debt service. Although the capital investments, like the Combined Sewer Overflow (CSO) tanks made over the past ten years by some sewer companies, have raised rates, residents have benefited from the improvements contributing to cleaner waterways and sources for drinking water.

The EPA states that the sewer system is a hidden resource that contributes to our quality of life and to a community's long-term success. It is there for every time we empty your kitchen sink, flush a toilet, take a shower, or wash a load of laundry. The overflow control requirements help protect the sewer system and make sure it is there for you in the future. A sanitary sewer overflow (SSO) is an unintentional release of sewage from a collection system before it reaches the treatment plant. Discharges of untreated sewage from SSOs often occur due to root, grease and debris blockages, structural, mechanical and electrical failures, and extraneous flows that enter separate sanitary sewer systems due, in large part, to inadequate maintenance. An aging sewer infrastructure also increases the occurrence and severity of overflows. The sewage can contaminate groundwater or surface water, causing serious water quality problems and threatening drinking water supplies. It can also back up into basements. Overflows are unhealthy, destructive to public and private property, bad for recreation and tourism, and hard on sanitary sewer and drinking water system equipment. Unfortunately, they

² PA DEP Bureau of Safe Drinking Water 5-Year External Review Report, Operator Certification Program, Nov. 2015

are a chronic and growing problem in many parts of the country. Maintaining the wastewater collection infrastructure – pump stations, force mains, and sewers – is an integral component of the proper management of a treatment system and a critical step in preventing illegal wastewater releases.

Healthier communities are a result of sufficiently sized and maintained sewage facilities. Residents benefit from reducing community funds spent on costly clean ups and lawsuits and cleaner water, with fewer:

- Viruses that can cause stomach flu, upper respiratory infections, ear infections, and other diseases
- Bacteria that cause diarrhea, skin rashes, hepatitis, cholera, salmonella, or other diseases
- Worms and protozoa that can cause cryptosporidiosis or other diseases

There is less exposure to harmful organisms while swimming, drinking tap water and eating a locally caught fish or shellfish. Also, there would be less danger to children, the elderly, and people with suppressed immune systems who:

- Are more likely to catch sewage-borne diseases than healthy adults
- Are more likely to develop the most serious forms of disease
- Are more likely to spread disease to other people, causing secondary outbreaks

It is critical that municipalities across Lycoming County and the state assist the DEP in finding lower cost solutions for meeting its obligations to EPA for lowering the amount of nitrogen, phosphorus, and sediment to the Chesapeake Bay so the EPA's hand is not forced to implement its "back stop" solutions.

Projects of Countywide Significance for this Issue

TIMBER RUN INDUSTRIAL PARK WATER & SEWER PROJECT

The Lycoming County Industrial Park offers 361 acres of industrially zoned property that has good access to major highways, (US 15/I-80) and nearby airport service. Yet, the lack of adequate public infrastructure (primarily water and sewer service and internal access road connections) places the park at a competitive disadvantage. These projects should be advanced in conjunction with private developer interest and schedules where feasible and public-private funding partnerships should be explored and encouraged.

REVIEW THE COUNTY WATER SUPPLY PLAN WITH SANITARY SEWER SERVICE PLAN

The County Water Supply Plan was adopted in 2001. This project will review the existing plan and provide updates as needed and expand the plan's scope to incorporate sanitary sewer. Producing a County Sanitary Sewer Service Plan helps the County maintain relationships with water & sewer authorities. This plan will promote the continued evaluation of water and sanitary sewer expansion and improvement areas, support

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³ EPA Website-Wastewater Collection System Toolbox

 $^{^4}$ Benefits of Protecting Your Community from Sanitary Sewer Overflows, USEPA Office of Water, June 2000

public water system interconnections and redundancies, and discuss the benefits of municipal mandatory connection ordinances.

COUNTYWIDE SOURCE WATER PROTECTION PLANNING

Four of the six 2017 multi-municipal comprehensive plans call out source water protection planning as a priority project. This covers a significant portion of the growth areas of the county and the county will need to support these efforts. However, much of the county's source water is located outside of these growth areas and therefore, it is also important for the county to understand what measures are being taken to protect the vast majority of the county's rural water supplies and make recommendations where there are no provisions. Under the PA MPC, it is the responsibility of counties to provide for the reliable supply of water and its protection. A countywide plan that includes the existing source water initiatives and protection plans and develops an appropriate plan for areas where there are gaps will help achieve this.

SUPPORT MANDATORY ON-LOT SEWAGE DISPOSAL SYSTEM MANAGEMENT ORDINANCES

Each municipality within Lycoming County that contains properties with on-lot septic systems has the authority and obligation through the Pennsylvania Sewage Facilities Act (Act 537) to provide for adequate sewage treatment facilities and for the protection of public health by preventing the discharge of untreated or inadequately treated sewage. One way this is accomplished is through a municipality requiring minimum septic system maintenance requirements by adopting an on-lot sewage disposal system management ordinance. These ordinances contain provisions to help extend the operating life of an on-lot sewage system which include: inspection of a sewage system by the municipality's sewage enforcement officer (SEO); a frequency for pumping of sewage system storage tanks generally every 3-4 years; and based upon inspection, provisions for the municipality to require the landowner to perform maintenance or rehabilitation on the sewage system components including providing a back-up sewage system test site if determined needed by the SEO.

ENCOURAGE MUNICIPALITIES TO REVIEW ACT 537 SEWAGE FACILITY PLANS

Sewage facilities plans must be reviewed during or following the adoption of the Comprehensive Plan to ensure that these plans are guiding the development of the municipality in the same direction as the comprehensive plan.

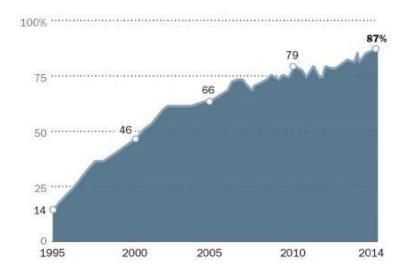
Priority Issue Overview-Telecommunications Infrastructure

Over the past two decades, the internet has become an integral aspect of American life. According to the Pew Research Center, the percentage of American adults who use the internet has grown from just 14% in 1995 to 87% in 2014. A large portion of that growth occurred prior to the adoption of the 2006 Lycoming County Comprehensive Plan; however, the quality of that internet has also rapidly improved since the adoption of that plan with home broadband access taking off just prior to 2006.

However, the most notable trend regarding communications was the boom of mobile data usage and the development of the smartphone. At the time of the adoption of the 2006 Lycoming County Comprehensive Plan, only about 3% of Americans over age 13 owned a smartphone. On January 9, 2007, Apple announced the first iPhone kicking off a

Internet use, 1995-2014

% of American adults who use the internet, over time



Source: Pew Research Center surveys, 1995-2014.

PEW RESEARCH CENTER

Figure X: Internet use among American adults 1995-2014

Source: Pew Research Center

boom in smartphone usage and mobile data demand. By December 2016, 81% of Americans over age 13 owned a smartphone.

With this growth of internet and mobile data access and the rapidly improving technology it was based on, businesses and institutions started moving substantial aspects of their business management and customer service to internet-based systems for ease of access and to lower costs. This has made broadband and wireless communication infrastructure a critical component of community infrastructure. Currently, cellular and broadband infrastructure in the private arena varies rather markedly. Within urban and suburban communities, broadband service is

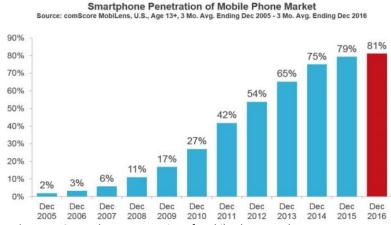


Figure X: Smartphone Penetration of Mobile Phone Market

Source: comStore.com

robust with generous amounts of public Wi-Fi connectivity, 4G cellular capability, fiber optic connectivity, and T1 internet service. However, Lycoming County's large geographic expanse together with its mountainous terrain and low population densities make it unprofitable for private companies to provide total coverage in the rural

areas of the county for these services whether it's broadband service or cellular service. As a result, the rural areas of the county either have very poor coverage or no coverage at all. Figure X shows known cell tower locations in the county. The map shows that the majority of towers are located around the urban areas and

along US-15 and I-180. More towers are located in the eastern portion of the county where the terrain is not as cumbersome and populations are denser. Broadband service is similarly sparse as the local internet providers do not provide the infrastructure to sparsely populated areas or require homeowners seeking the service to pay for costly extensions which could cost \$10,000 or more.

The issue of broadband/cellular service coverage was raised several times throughout the research phases of the development of this plan. The Community Facilities & Infrastructure Focus Group held on April 14, 2016 identified the issue of inadequate

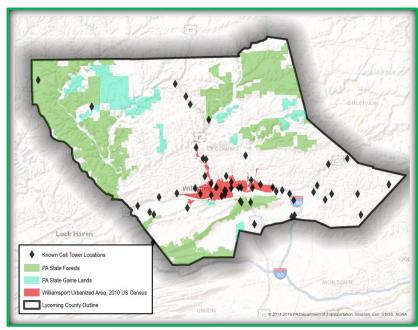


Figure X: Known Cell Tower Locations

Source: PCD

coverage stating that poor coverage decreases economic competitiveness and could be a deterrent to relocation of businesses to the County and also stating that poor coverage causes or exacerbates social, educational, and public safety issues. The Public Safety Focus Group held on April 22, 2016 also identified inadequate coverage as a challenge and noted that areas with insufficient service include:

- a. Route 15 lacks service (Clinton and Armstrong Townships)
- b. Route 44 to county line Watson/Porter Township line north bound to Potter County and the Elimsport area in Washington Township
- c. Route 414
- d. PA 87 Barbours area/Plunketts Creek Township area
- e. Route 118 east of Lairdsville
- f. Mifflin, Lycoming, and Anthony Townships

In addition to the Focus Groups, the issue of inadequate communications coverage was raised by three of the nine Planning Area Teams (PATs) including: Greater Williamsport Alliance, Rural West, and Rural East/Central. Both Rural PATs stated that inadequate coverage was a weakness in the area and both Rural PATs viewed internet and cellular coverage as a priority issue. The Greater Williamsport Alliance PAT also identified inadequate communications infrastructure as an issue in adjacent rural areas but did not identify it as a priority

issue in that Planning Area. While only a few people who participated in the Summer 2016 survey identified inadequate coverage as an issue; it was an issue which was brought up from numerous geographic areas.

Within the densely populated areas of the county, wireless infrastructure is sufficient to sustain local demand, however as technology improves, demand for data capacity will increase and begin to strain our existing wireless infrastructure. According to a Cisco report published in 2017, worldwide data traffic grew 63% in 2016 (44% in North America) from 4.4 exabytes per month to 7.2 exabytes per month (one exabyte is equivalent to one billion gigabytes) and in the last 5 years mobile data traffic has grown 18-fold worldwide. Meanwhile, average smartphone data traffic grew 38% worldwide in 2016 from 1,169MB per month to 1,614MB per month. Worldwide mobile data traffic is projected to increase sevenfold between 2016 and 2021 at a compound annual growth rate of 47% reaching 49.0 exabytes per month by 2021. This growth in data traffic demand will eventually require wireless network providers to upgrade their infrastructure. This will especially become apparent at large scale community events.

One solution which cellular providers are utilizing to accommodate demand is the concept of "small cell towers" which are cellular transmitters with smaller range and capacity. These small cells will be clustered in areas with existing coverage but high demand to bolster the network. Most of these will be located in downtowns, retail, office, and industrial districts and other areas with concentrated mobile traffic. Small cells are designed to be surreptitious and are most frequently attached to street lights, traffic lights, utility poles, or buildings.

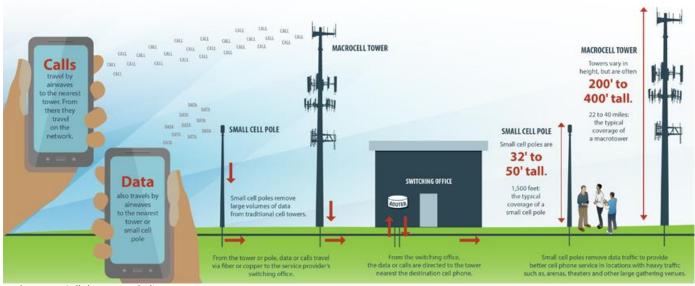


Figure X: Cellular network diagram Source: sdncommunications.com

Key Implications

Inadequate communications infrastructure creates inequality between rural and urban areas leaving rural areas without the benefits of a strong communications infrastructure network. A strong communications network helps to improve emergency response times in rural areas. Rural areas are already seeing response times of 45 minutes or more which can be fatal to those in need of immediate care, however, communications gaps could

leave help even further away if cellular service is unavailable. This is especially worrisome given the amount of people who travel to the most remote areas of our County for recreation. If an accident happens and emergency assistance is needed, these people could be waiting hours for emergency responders as others have to find a phone or an area where they can receive a cellular connection. In addition to exacerbating current public safety issues, inadequate communications infrastructure also impacts rural areas in other ways.

School Districts in the County have also identified inadequate internet service coverage as an issue which impacts their operations. Most notably impacted is the Jersey Shore Area School District (JSASD) whose geographic extent is by far the largest in Lycoming County and the 9th largest in Pennsylvania. JSASD includes Jersey Shore and Salladasburg Boroughs (Lycoming County) and Avis Borough (Clinton County) as well as townships including Brown, McHenry, Cummings, Mifflin, Anthony, Watson, Piatt, Nippenose, Bastress, and Limestone in Lycoming County and Crawford Township and part of Pine Creek Township in Clinton County. In spite of the large geographic extent of this school district, the district only contains a population of 17,850 people, most of which is concentrated around Jersey Shore. The more sparsely populated portions of this school district receive little to no cellular service with just passable broadband service. Cellular service through the Pine Creek Valley (a significant rural portion of the school district) is lost around the Watson Township/Porter Township border and service in Limestone and Bastress Townships is very spotty. JSASD has two primary concerns related to the poor cellular and broadband coverage in their district. First, they are concerned for public safety reasons, the district buses children to and from school and many of these children live in rural parts of the school district, however, if there is an accident in these areas or if the bus has mechanical problems this could leave the driver unable to contact the school for help. This is especially a problem considering some of the rugged terrain which the buses must travel in. Their second concern is related to how important internet is to 21st century learning. The JSASD has expanded its technology infrastructure for K-12. All students are assigned an IPad which has become their multiple source textbook and a vital part of their education. JSASD has concerns that inadequate internet coverage is causing inequality within the school district. The school district is also looking to provide multiple education options to their students depending how they want to learn whether it is traditional brick and mortar school buildings, completely virtual (online) education, or a mix of the two; however, inadequate internet service could prevent some students from being able to take advantage of these new services.

A strong communications network is essential to the economy of Lycoming County. The internet has allowed small businesses across the country to make their products and services available to a much wider audience than they ever could before. Other small businesses benefit by having information about their establishments available online resulting from improved sales without substantial investment. Meanwhile, almost 10% of the America's workforce works from home at least one day a week. (citylab.com) Many of the PATs expressed concerns about aging populations in the County stating that "[There are] fewer younger workers who [must comprise] a greater proportion of the tax base [in order] to support necessary community services ... [and] can create the potential for budget deficits and adversely impact the provision of community services to all individuals." As explained above and further in Priority Issue #6, younger people rely on a strong communications network as part of their everyday lives and it can be assumed that younger people would not

have a desire to live in areas without a strong communications network; therefore, inadequate communications infrastructure exacerbates the existing issue of the exodus of the younger generation.

While Pennsylvania Utility Commission (PUC) requires companies to make broadband/internet service available within 10 business days of a request at speeds of 1.544 megabits per second (mbps) downstream and 128 kilobits per second (kbps) upstream, this is very far from current industry standards. (PUC) In 2015 the FCC changed its definition of high speed internet to make the minimum download speed 25 mbps and the minimum upload speed to be 3 mbps. A 4 minute YouTube video streamed at 480P (about 25.2 MB) would require 2:16 to load at the PUC minimum standard. At the FCC minimum standard that same video would take 8 seconds to load. With poor DSL service the same video could take 3 to 15 minutes to load. These low speeds can make loading today's content rich webpages a very long process.

In relation to wireless communications infrastructure, it is important to keep abreast of changing legislation related to wireless communications infrastructure as it is a constantly evolving field. It is important to find a balance between providing the necessary infrastructure to citizens of the County while also preserving the character of our community. Unfortunately, our ridgetops will continue to marred by tall communications towers as the price we must pay for a strong communications network; however, when it comes to small cell technology, municipalities still have the ability to protect local character by requiring small cell towers to blend into their community to the best of their abilities.

Projects of Countywide Significance for this Issue

SUPPORT RURAL BROADBAND COVERAGE AND FEASIBILITY STUDY

In July 2017, SEDA-COG submitted a grant application to the Appalachian Regional Council requesting funding support to study of broadband coverage across five counties (Juniata, Lycoming, Mifflin, Northumberland, and Union Counties). This project will commission an analysis of regional broadband needs with a focus on business needs, including small businesses, institutional needs (K12 schools, larger businesses, healthcare institutions), an evaluation of current infrastructure and services, and development of a master plan to facilitate the expansion of broadband into the rural and underserved areas. Lycoming County will support this study and will seek to implement the master plan upon completion of the study.

Another potentially useful resource for this project could be the National Telecommunications and Information Administration's BroadbandUSA program which promotes innovation and economic growth by supporting efforts to expand broadband access. The program serves communities, industry, and non-profits that want to expand broadband infrastructure and promote digital inclusion. BroadbandUSA has several useful resources which could better inform the findings of this master plan including: guide to public private partnerships, guide to federal funding, guide to stakeholder engagement, and much more.

While other initiatives focus on rural economic development, USDA's Community Connect Grants are designed specifically to assist with rural community development. The grant helps fund broadband deployment into rural communities where it is not yet economically viable for private sector providers to deliver service. Eligible areas

include any rural areas that lack any existing broadband speed of 4 Mbps downstream and 1 Mbps upstream. These funds can be used for construction, acquisition, or leasing of facilities, spectrum, land, or buildings used to deploy broadband service. Other funds and resources available include the DCED Broadband Initiative and the FCC's Connect America Fund.

RURAL CELLULAR COVERAGE AND FEASIBILITY STUDY

The above mentioned study is currently proposed for broadband coverage only, however, inadequate communications infrastructure existing in the realm of cellular infrastructure as well. This study will analyze rural cellular infrastructure demand with a focus on economic needs, institutional needs, and public safety needs. Existing communications infrastructure will be inventoried and evaluated for coverage gaps and quality of service. Once this is complete, a master plan will be developed to facilitate the expansion of broadband into the rural and underserved areas. The study should include representation from PCD and DPS staff, local school districts, municipal leaders, and representatives of the major cellular networks including AT&T, Verizon, T-Mobile, and Sprint.

DEVELOP MODEL WIRELESS COMMUNICATIONS FACILITIES ORDINANCE

PCD will work with wireless communications providers, DCED, and other relevant stakeholders to develop a model ordinance designed to comply with the most recent state and federal regulations and designed to protect the community character from unwanted side effects caused by the deployment of new communications technology. Important regulations include: the federal Telecommunication Act of 1996, the federal Middle Class Tax Relief and Job Creation Act of 2012 (Spectrum Act), and FCC regulations promulgated by the FCC including the FCC's Report and Order of October 21, 2014, and the Pennsylvania Wireless Broadband Collocation Act (Act 191 of 2012). A model ordinance was adopted in Cumberland County, Pennsylvania which was designed to meet the regulations. This could be a starting point for the development of a Lycoming County model wireless communications facilities ordinance.

Priority Issue Overview-Natural Gas Infrastructure

The recent discovery of Marcellus Shale natural gas in Lycoming County has presented numerous opportunities to the local community, including new development, job creation, educational opportunities, and increased revenue for local businesses, among others. However, due to a lack of natural gas infrastructure and facilities, including access lines and fueling stations, residents and businesses have not been able to fully attain direct

access to this inexpensive energy source.

Lycoming County saw natural gas-related activities begin to noticeably increase in late 2007. This trend would continue to occur through 2012 and 2013. Economic factors stemming from state and national levels began to negatively affect the natural gas development across the county in subsequent years. As natural gas technologies advance and economic conditions improve, natural gas-related activities have begun to see an uptick. While a production boom comparable to the 2012-2013 peak period is unlikely, 2017 and onwards project to see a steady increase in activity over the next few years. This second wave of development can be utilized to further improve natural gas infrastructure for more diverse users.

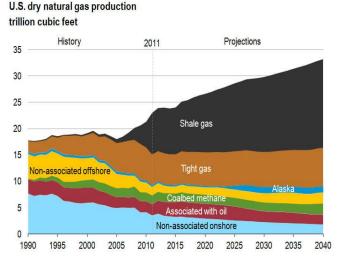


Figure X: U.S. Dry Natural Gas Production

Source: U.S. Energy Information Administation, Annual Energy
Outlook 2013 Early Release

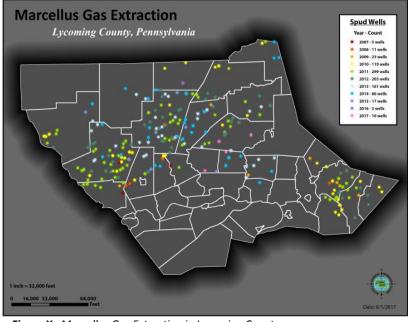


Figure X: Marcellus Gas Extraction in Lycoming County

Source: PCD

Despite the fact that natural gas is being extracted within the county, many residents and business owners are unable to utilize this resource to its full potential. This can be largely attributed to the prohibitively high costs of extending natural gas distribution lines to residents and businesses outside of the urbanized area, despite these areas being the closest in proximity to the natural gas developments themselves. Higher costs coupled with lower concentrations of homes and businesses renders the extension of supply lines not feasible barring an influx of development in the area to offset upfront costs.

In addition to using natural gas for homes

and businesses, the use of compressed natural gas for automobiles, primarily buses and medium and heavy duty

trucks has become much more common in recent years both domestically and internationally. The total number of vehicles using compressed natural gas as their fuel source sold since 2012 has increased by roughly 10% each year resulting in a projected doubling time of 7 years. However there are a number of limiting factors that can prevent compressed natural gas vehicles from being widely viable.

Converting existing vehicles can be costly and the cost-benefit is hinged on the vehicle being in service for a decade or more. According to the American Oil and Gas Reporter, the initial conversion of a heavy duty truck costs an estimated \$32,000 in upfront costs. This money is made back in the long run as CNG vehicles save

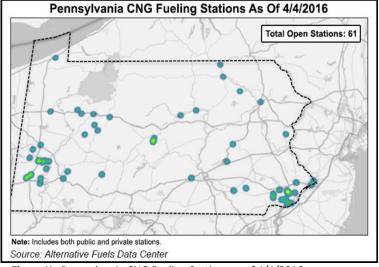


Figure X: Pennsylvania CNG Fueling Stations as of 4/4/2016

roughly 54 cents per mile travelled when compared to a similar diesel heavy duty truck. Furthermore, while CNG vehicles generally require less maintenance than conventional vehicles, those performing the maintenance may need to modify their facilities to meet NFPA codes and other applicable building codes. Another deterrent of seeing more widespread CNG-fueled vehicles is the dependence on having a well-established network of fueling stations. CNG-fueled vehicles have an estimated range of travel of 150-300 miles before needing to refuel. While most of the state has coverage, there are

routes that would leave drivers in a bind and would require a detour to ensure they are able to reach their destination without the risk of running out of fuel. There are major traffic corridors across the state that are heavily utilized by medium and heavy duty vehicles, yet the CNG fueling stations along these throughways are few and far between. There are long stretches of US-15, I-476, I-76, and US-6 that do not have a CNG fueling station. Additionally, there are large areas of the state that are severely underserved.



Figure X: CNG Fueling Project Locations

Source: PennDOT.gov

Lycoming County has been fortunate to have a compressed natural gas facility opened up in the county. This facility is operated in Williamsport and is open to the public however the primary user thus far has been River Valley Transit who recently began the multi-year process of converting their bus fleet from diesel to compressed natural gas in hopes of reducing operating costs. While trends for the fueling station in Williamsport have been positive, Lycoming County and North-central

Pennsylvania were not included in the recently approved 29 CNG fueling stations across the state that are being funded through PennDOT's P3 agreement with Trilium CNG (see Figure X).

Key Implications

Failure to keep pace with the natural gas infrastructure could prove to be a detriment to Lycoming County. The County adapted well during the initial natural gas rush by adopting an oil and gas amendment to the Lycoming County Zoning ordinance. Prior to this amendment, there were no regulations in place in the County's ordinance. Planning staff and local officials worked together to create fair and balanced regulations to ensure that the County was able to protect its valuable assets while also allowing the now burgeoning industry to thrive. This amendment was seen as an exemplary model by both the industry as well as the legislators in Harrisburg and has since been used as a model across the state. Another method of adaptation was the formation of

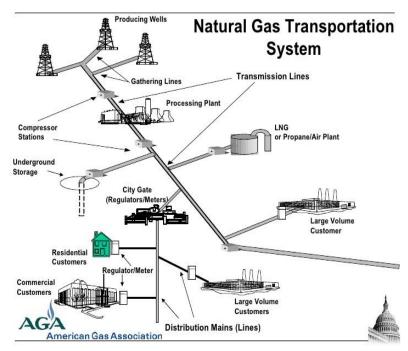


Figure X: Natural Gas Transportation System

Source: American Gas Association

the Community Natural Gas Task Force. Formed in 2008, the group consisted of the Chamber of Commerce and public officials of the local, county, and state levels, County planning officials, educators, and those with more specialized knowledge, specifically the environment, finance, and transportation. This group met frequently in the initial natural gas boom; however it has been inactive as of late.

The Developers Focus Group held on March 14, 2016 found that a need for compressed natural gas infrastructure was identified. The issue, however, is that the costs of installing these lines and stations to help promote growth can be a difficult ask. Unlike other public utilities, it is much more cost effective to extend the lines out to existing businesses or clusters of homes where they will see more immediate returns. Finding innovative and cost-effective solutions to this issue can help in encouraging new businesses to locate their facilities within the County due to the decreased costs of fuel. These solutions will also aid in the potential of



Pipeline Right-of-Way
Source: Penn State Extension

extending natural gas transmission lines into more rural residential areas to help in reducing costs for current and prospective homeowners.

The Natural Resource, Agriculture, and Forestry Focus Group held on April 22, 2016 raised concerns for the environmental impacts that are associated with natural gas infrastructure. The primary concerns were:

Loss of environmental services of the forest

- Forest fragmentation
- Loss of contiguous habitats
- More runoff and more flooding

These potential issues can be prevented or managed with proactive efforts much more easily than trying to mitigate after the fact. Because the effects can be very impactful, the results of poor stewardship or planning can result in a reparation process that spans multiple decades. By simply planning in advance, it can reduce legacy costs exponentially. This is easier said than done however. As new information is discovered, whether on the local, state, or federal level, changes should be made where applicable to the regulations that are enforceable by different agencies in Lycoming County. Furthermore, promoting smart development when new natural gas infrastructure is proposed will play a key role in preventing future mitigation efforts. Using preventative measures to contain development to sustainable and environmentally friendly levels will be important as well.

Projects of Countywide Significance for this Issue

REEVALUATE THE NEED FOR A GAS TASK FORCE

The Community Natural Gas Task Force was created in 2008 to identify key issues, research facts and information, and review and propose public policy regarding the impacts of natural gas developments occurring in Lycoming County. Part of the approach was to suspend the task force upon the determination of the required

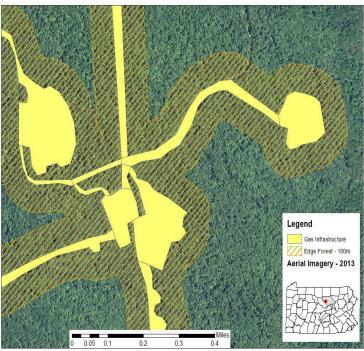


Figure X: Natural Gas Disturbance Areas **Source:** Penn State Extension

actions and responsible individuals or agencies. The Natural Gas Task force has been inactive for the past few years due to the downturn in the natural gas activity. While the original goals of obtaining research and information to disseminate to the public so that a consensus could be made to help craft new policies and regulations was completed, much has changed over the past 4 years. With the new developments and increasing frequency of natural gas related infrastructure projections occurring, a study or poll gauging the interest of past and potential members of restarting this program to ensure that as the industry changes, there will be a designated group of individuals who could support a careful monitoring of natural gas developments while also ensuring that the community can adapt as well.

UTILIZE EXISTING STUDIES AND DATA AS A GUIDELINE FOR FUTURE DEVELOPMENT

Recent studies conducted by organizations within the state such as the <u>Penn State Extension</u> and <u>PA Wilds</u> have found valuable information in regards to the natural gas fields. Penn State Extension has over 120 items (webinars, articles, videos, and news) all relating directly to natural gas developments. Ranging from preventing deforestation and soil compaction to negotiating pipeline easements to land owner leasing rights, these information sources can be valuable resources for our communities and citizens.

Studies discussing ways to encourage pipeline placement can be implemented by County or municipal planning staff. The Penn State Extension has conducted research that has found ways to mitigate the oftentimes destructive nature of pipelines. The report found that a pipeline right-of-way alters the width of the pipeline area plus the immediate 100 meters on each side of the pipeline itself. This disrupts forest services and causes a loss of habitat and exacerbates the "edge effect", the separation of otherwise contiguous habitats.

Colocation of pipelines within existing road, electrical, or other utility right-of-ways is another way that forest loss can be reduced. The average affected area of a well pad site in Lycoming County is 5.4 acres with a total well pad infrastructure (pad, water retention, etc.) of ~1114 acres. Pipeline and road infrastructure related to

natural gas activity accounts for 613 linear miles of new disturbed area. As of 2016, Lycoming County has lost 4% of its core forests, all within a 6 year period according to a study conducted by the Penn State Extension. Core forest loss was also twice as much on private lands than public lands. Landowner and leasing rights information can be used as a public outreach and education tool to ensure that residents of the County are well informed regarding the usage of their private property. Another source of information to foster sustainable development is the PA Wilds who offer design guides for infrastructure and land developments relating to the natural gas field.

COMPRESSED NATURAL GAS FUELING FACILITY EXPANSION NEEDS FEASIBILITY STUDY

PCD will work with outside agencies to conduct a study to determine whether there is a need to either expand the existing River Valley Transit Compressed Natural Gas Fueling Station or to explore other possible locations in Lycoming County or neighboring counties for a second location. As it stands now, the only location within a 50 mile radius of the RVT Fueling Station is in Wayne Township, Clinton County, PA.

Based on current trends at the Williamsport location, it is plausible that a second facility could be justified. It would

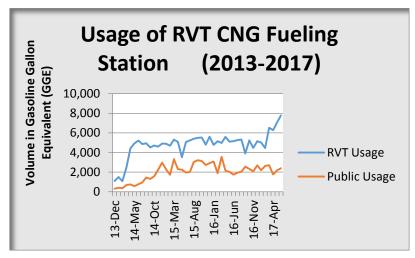


Figure X: Usage of RVT CNG Fueling Station (2013-2017)
Source: River Valley Transit

be important to factor in the future transportation infrastructure projects occurring both locally and regionally, namely the Central Susquehanna Valley Transportation project. This project could significantly impact traffic through Lycoming County due to the detouring of traffic off of US-15 and onto State Route 147. Because much of that traffic will then be diverted on to I-180, Lycoming County could feasibly see an increase in MD and HD Truck traffic that would justify either a second station at an interchange within Lycoming County or an expansion of the existing facilities.

Lycoming County PCD should consider partnering with PennDOT and RVT to conduct the feasibility study and if the results show that a second facility would be able to be supported without adversely affecting the existing RVT CNG facility, pursuing avenues of implementation could be explored. If the results are positive, reaching out to Tioga, Union and Northumberland counties would make the most sense. Each of these three counties all border Lycoming County, but more specifically are the counties in which major traffic routes enter and exit Lycoming County. It does not appear that these counties are in the current CNG fueling station expansion list that was approved by PennDOT, nor do they have any existing facilities that would be subject to losses from a new facility. These neighboring counties also have ideal locations for the prospective CNG fueling stations to be situated off of these heavily trafficked routes while still allowing the existing facilities in Lycoming or Clinton counties to remain viable.

Priority Issue Overview—Housing

According to 2015 US Census Bureau estimates, there are 52,641 housing units in Lycoming County. Approximately sixty percent are owner-occupied; however, 75% of the County's occupied housing stock was built prior to 1979. In fact, only approximately 2,200 residential structures have been built in the County since 2000. There is a significant difference in the age of housing within the core communities (City and Boroughs) and the outlying Townships. In the Townships, housing supply tends to be newer and have larger lots associated with it. The Boroughs and the City of Williamsport, however, host the oldest housing stock in the County since they were the original settlements and incorporated communities. Eighty-percent of the Borough's and City's housing stock is built before 1970 as compared to forty-six percent in the Townships.

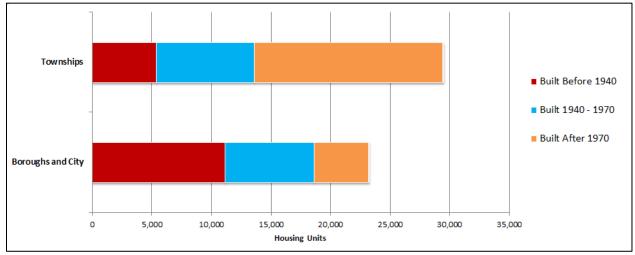


Figure X: Age of Housing Stock
Source: 2015 US Census, 5-year estimates

Housing Supply

There are several challenges associated with the supply of housing in Lycoming County. Although the housing stock in the core communities is older, their location in a dense and walkable community is what is appealing to many. Young professionals, families with children and seniors alike often favor a residential atmosphere that is more dense and in close proximity to the amenities that they seek, such as shopping, entertainment, and recreation. Additionally, these properties are, on average, smaller and greater percentages of residential properties here are outdated and/or located in the floodplains. These factors put our most dense clusters of residential housing at a disadvantage as opposed to an advantage like in other parts of the country where core communities are resurging as choice places to live. In fact, according to Zillow and other housing economists, urban real estate is now more valuable nationwide than suburban real estate. Due to the disadvantages noted above, Lycoming County's urban real estate has not yet followed this trend, although there are aspects of the City of Williamsport's downtown residential rental market that are resurging as property owners are renovating upper story mixed-use units into contemporary and attractive spaces.

The U.S. Census Bureau estimates that only 39% of Lycoming County's housing stock in 2015 was less than 45 years old.

61% of homes in the County were built before 1970

31% of homes in the county were built prior to 1939

Overall, housing stock in Lycoming County is 46% percent older than homes across the nation.

Having a significant proportion of the county's housing stock built prior to 1970 has many disadvantages to our ability to attract new residents from outside the county. Older homes require a greater percentage of a family's income to maintain and heat. This situation is more oppressive on families at poverty level – a population that Lycoming County has in higher percentage than either the US or the State.

Homes with higher maintenance costs, antiquated infrastructure systems, and layouts not relevant to the market demand are less marketable which makes our communities less able to compete with other areas of the Northeast US. This was particularly evident when there was an influx of out-of-the-area workers seeking residence in Lycoming County during the height of the Natural Gas Industry activity between 2007–2012. Many looking to buy homes in the county were not able to find the types and newer homes they were used to finding in other areas of the country.

The challenge is how to ensure a diverse supply of homes in multiple cost ranges and locations to meet the needs of the existing and future residents of Lycoming County. Specifically, there is a need to provide dwelling types that meet a changing demographic composition. The seniors who make up an increasing proportion of our population have different housing expectations than the millennial professionals that we want to retain and attract. Both groups are likely to seek rental housing and both groups tend to be attracted to denser, more walkable community environments, yet the housing stock currently available does not well accommodate either of these populations.

Number of Units, 2015	Percentage of units, 2015
36,685	70%
3,309	6%
2,669	5%
3,643	7%
2,636	5%
	36,685 3,309 2,669 3,643 2,636

Table X: Housing Units by Structure Type **Source:** US Census ACS 2015 5 Year Estimates

Housing Affordability

In general, Lycoming County is considered an affordable place to live. This includes the ability to afford market rate housing, whether for sale or rent. Using the Housing Affordability Index which measures household income relative to the

income needed to purchase a median-priced house, it is generally accepted that a household that spends up to thirty-percent of its income on housing costs is considered to be affordable.

In 2015, the estimated median home value in Lycoming County was \$138,500 – this was up 60% from \$86,200 in year 2000, however, PA only saw a 41% increase in the same time period. The median monthly gross rent was \$449 in 2000 and \$755 in 2015 – this is a 68% increase. These increases appear to be dramatic, but based on the calculations below; Lycoming County meets all established affordability tests.

According to the US Census:

2015 Median HH income: \$47,313

2015 Median Annual Housing Costs for Homeowner with Mortgage: \$14,328

- Therefore, the Annual Housing Costs for Homeowner with Mortgage as % of Median HH Income: **30.3**% 2015 Median Annual Housing Rental Costs: **\$8,676**
 - Therefore, the Annual Housing Rental Costs as % of Median HH Income: 18%

According to the County's median household income for the same year(s) and the affordability index ratio, Lycoming County's homeowner-occupied and rental housing stock continues to be considered "affordable."

There are areas of the County where the housing costs for homeowners and renters as a percentage of the median family income rise above thirty-percent (30%), such as the City of Williamsport, Loyalsock Township, and Susquehanna Township. This information can be found in greater detail in the respective multi-municipal comprehensive plans and also viewed on the map below.

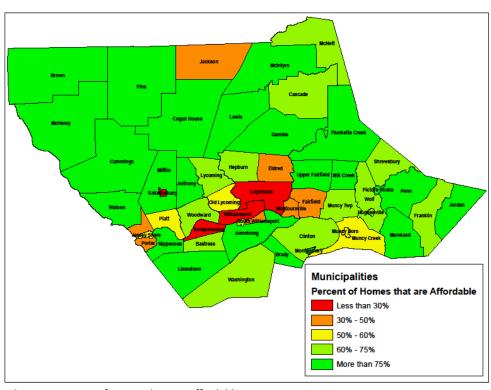


Figure X: Percent of Homes that are Affordable Source: PCD

In recent years, there has been a greater focus on developing additional affordable housing units to meet the needs of Lycoming County residents. These housing developments have traditionally been subsidized with tax credits in order to keep them affordable for at least the next thirty years. Affordable family housing developments as well as those accommodating senior citizens are continuing to be built to provide housing to the populations whose income cannot afford the current market rates.

New residential development for single family homes is also becoming less and less affordable. According to local realtors, it is difficult to build a new home today much under \$250,000. This includes land costs, sewer/water hookups or well and septic development, as well as other utility hook-up costs, addressing stormwater, permitting and approval fees. A mortgage on a new home with this value equates to 42% of the

Median Household Income in the County at current interest rates. This does not include other associated housing costs such as utilities, fuels, insurances or taxes.

Impacts of the Marcellus Shale Industry on Housing

As documented in the 2012 publication: *The Impacts of the Marcellus Shale Industry on Housing in Lycoming County,* the housing needs in Lycoming County are multifaceted, intertwined, and systemic. The housing market in Lycoming County was significantly affected by the influx of this industry primarily during the years between 2007 and 2012. Some of the greatest changes in the County's housing market were not solely due to the infusion of the shale gas activity. However, the presence of this industry in the County had exacerbated already existing critical problems.

The report quantified four primary housing issues in Lycoming County. It further recommended that the County consider utilizing Marcellus Shale Local Impact Fee revenues received to address these issues (see p. 55):

- 1. The supply of housing options in Lycoming County has not been sufficient to meet the demand of the Marcellus Shale industry. Furthermore, the rural nature of the County inherently means that there are fewer existing housing units to absorb the increased demand for housing created by the Marcellus Shale industry compared to counties with more extensive urban and suburban amenities.
- 2. The age and condition of the current housing stock is not attractive to new residents moving into the area with the Marcellus Shale industry. These potential new residents are looking for newer housing that is move-in ready and does not require any upgrades or repairs. Lycoming County homes are in growing need of energy upgrades, weatherization improvements, kitchen modernization, etc. Thus, the annual maintenance burden attendant with these aging properties can be daunting. Furthermore, with the shrinking of the housing options within the area, homeowners are unable to move up the housing strata and thus are stuck in substandard housing particularly seniors and those on fixed incomes. With the lack of options, homeowners are realizing that the option of moving is not possible and thus repairs need to be completed.
- 3. The limited supply of housing and the increased demand due to the growth in the Marcellus Shale industry had resulted in rental rates that made housing unaffordable for over 58% of the County's households, especially households with low to moderate incomes. The market segment feeling the most acute pressure is the rental market. Between 2009 and 2011, rental rates increased by 31.2% for a three-bedroom unit and 145.6% for a four-bedroom unit.
- 4. The increase in rental rates has meant a decrease in the number of housing units available for subsidized renters, which has significantly increased the number of applicants on waiting lists for subsidized units and has unfortunately forced housing agencies to return or forego much-needed funding from HUD. The County Housing Authority's waiting list increased significantly from 2009 to 2010, from 744 to 1,413 more than triple the increase in any of the previous years, dating back to 2006. Another 245 was added to the list

in 2010. The lack of affordable rental units has resulted in the expiration of a significant number of available Section 8 vouchers in Lycoming County. In 2010, 20% of the County's Section 8 vouchers expired and 33% expired during 2011 – compared to 4% in 2008. Now, most voucher holders are able to locate housing within 60 days therefore decreasing those that expire to near 7% in 2017.

These kinds of impacts are disruptive to the economy and can inhibit retention and future growth of residents in Lycoming County. It was because of the intense demand on the market by the natural gas industry workers, that these housing challenges were realized; however, in the future the stressor can be any number of other things. This further points to the need for ensuring that the county has a diverse and resilient housing stock available.

Impacts of Flooding on Housing

As discussed in Countywide Issue #2, several communities in Lycoming County are vulnerable to significant flood events. The County as a whole has approximately 7% of its residential structures located in the high hazard flood areas. This equates to 8.4% of the county's total population living in this high hazard area. However, core communities located along the Susquehanna River and its tributaries have the highest concentrations of residential properties in the floodplains. Communities such as Muncy and Jersey Shore have 39% and 46% of their residences, respectfully, situated in the 100yr high hazard floodplain.

This is an economic issue, but it is also an infrastructure issue. Residential structures located in the floodplains are generally assessed at lesser values than those outside of the floodplain. The market rate value of these homes is also decreased, therefore, providing both the homeowner and the local municipality with less than full ability to capture a return on the investments made on these sites. From an infrastructure standpoint, these core communities are generally built out to municipal boundaries and served by all the necessary utilities and infrastructure. When homes have been damaged or destroyed by flood events, the properties can either receive a buy-out from federal programs, they can be repaired and/or mitigated, or they can be demolished and rebuilt in place. All of these are costly endeavors; therefore historically these flood-damaged homes have remained in place at often sub-standard conditions.

Maintaining quality housing in the floodplains is yet another challenge of maintaining a sustainable housing supply in Lycoming County.

Key Implications

Housing is often viewed as an indicator for the state of the economy and therefore, it is a critical component of the County's infrastructure system. The type and quality of the housing supply can have a significant impact on the health and wealth of a community. The ability to attract and retain people relies on good housing and attractive neighborhoods. Without a quality supply of housing that is diverse and marketable, Lycoming County runs the risk of being left behind and overlooked as a choice place to live.

If Lycoming County does not maintain and grow a healthy housing stock that can overcome the challenges of the issues described above, it will perpetually have difficulty with attracting and retaining all segments of the population. The county will continue to be at a disadvantage from a broad market standpoint which may be a

deciding factor when large businesses and industries are considering expansion and relocation. Paying attention to the preferences of growing demographic sectors, such as the millennials, will help shape the types of investments that are needed in both urban and non-urban areas. The county needs to maintain sufficient affordable housing for all segments of the population so that people are able to adequately move up the housing strata. Land use regulations and transportation infrastructure are not void from this conversation – understanding the needs and desires of the population and how links between various infrastructure components will be key to building a sustainable array of housing options.

Projects of Countywide Significance for this Issue

HOUSING REINVESTMENT FUND

Continue to invest in the County's Homes-in-Need Program. This program assists homeowners with interior and exterior health and safety upgrades as well as weatherization and accessibility improvements. This program has been in operation since 2005 and has served more than 3,500 households. Yet, there are still over 900 households on the unmet needs list. The program is intended to enhance the quality of life for all county residents, improve the communities where they reside, stabilize their neighborhoods, and improve the tax base for those municipalities and the County as well. A Housing Reinvestment Fund could be established to support the existing HIN program and other like-minded programs intended to aid in the improvement of the existing housing stock, where warranted.

MILLENNIAL HOME BUYERS PROGRAM

For the purchase of existing homes in the City of Williamsport or any of the County's 5 Boroughs. Funding awards, low interest loans, or tax incentives could be given to qualifying millennials (age and job req't) to purchase and renovate older homes as a way to make our core communities more attractive to a variety of populations again. This program would help upgrade the housing stock, maintain and grow the tax base, and it will help young professionals gain equity and ability to move up the housing strata. The county could use PHARE funds and partner with local banks to offer rehab loans.

COUNTYWIDE HOUSING PLAN

Due to the age and condition of large segments of the housing infrastructure in Lycoming County, an assessment of the suitability and sustainability of the housing stock is needed. This can be done one community at a time, starting in the core communities of the City and the five Boroughs. It would include an evaluation of the housing types available, conditions (including code deficiencies, condemned and vacant), values, rental vs homeownership mix, availability and marketability to help identify the missing gaps and opportunities to meet the current and future demands. The plan should evaluate the potential for revitalization, demolition and rebuild, and density changes including a zoning compatibility analysis.

Priority Issue Overview-Outdoor Recreation Infrastructure

Outdoor recreation is important to the economic wellbeing of Lycoming County. Outdoor recreation is essential to attract and retain a strong workforce and can also function as a strong economic driver in the form of Eco-Tourism. According to a report published in 2017 by the Outdoor Industry Association, 142.4 million Americans participated in at least one outdoor activity going on a collective 11.7 billion outdoor outings in 2016. That equates to 48.4% of Americans participating in some form of outdoor recreation, averaging 82 outdoor outings per participant while 56% of Pennsylvanian's participate in some form of outdoor recreation each year. Outdoor recreation generates \$887 billion in consumer spending annually (ranking 4th behind Hospital Care, Outpatient Health Care, and Financial Services and Insurance) supporting 7.6 million outdoor recreation jobs nationwide. In fact, more Americans are employed by hunting and



- 17 The Digital Entertainment Group.
- Motion Picture Association of America.
 SuperData LLC Games & Interactive Media Intellige
- SuperData LLC Games & Interactive Media Intelligence.
 Combined attendance at National Football League, Major League Baseball, National Basketball Association and National Hockey League game
- 22 Apple Job Creation Report. Microsoft Workforce Demographics Re

Figure X: Nationwide Economic Impact of Outdoor Recreation Source: Outdoor Industry Association

fishing (483,000) than oil and gas extraction (180,000) and outdoor recreation sustains more than three times as many jobs in Pennsylvania (251,000) as the natural gas industry (72,000).

Throughout the development of this comprehensive plan, Lycoming County citizens, local stakeholders, and municipal officials consistently viewed Lycoming County's outdoor recreation infrastructure as one of its most important resources. PCD conducted a public survey to determine the issues most important to Lycoming County citizens. Survey respondents comments were separated into 22 separate categories, two of which were "parks & trails," which was the 3rd most positively commented on issue, and "outdoor recreation," which was the 5th most positively commented on issue. Combined, these two categories are the 4th most commented on issue and the 3rd most positively commented on issue just two votes behind "Community Pride and Promotion." Combined with the most positively commented topic, "Natural Beauty," these comments indicate that outdoor recreation and our natural resources are extremely important to Lycoming County citizens. This sentiment was echoed in the youth focus group event "Youth Plan the Future." High school students from Lycoming County School Districts indicated that "they would like to live and settle down in the region in the future because of the amount of open space and in order to enjoy the rural character and the outdoor recreation that the area affords. In the SWOT analysis which the students participated in, they identified "recreation amenities and diversity of amenities countywide" as the 2nd most important Strength and the "river and Riverwalk needs an amphitheater" was ranked 3rd for opportunities. The Williamsport Lycoming Young Professionals Focus Group

also indicated that outdoor recreation was very important to them stating that our natural resources and outdoor recreation infrastructure is one of the top reasons they like living here and choose to remain here. During the SWOT analysis exercises conducted at the first Planning Advisory Team (PAT) meetings for the multimunicipal planning areas, almost every PAT identified outdoor recreation as both a Strength and Opportunity for the planning area with four PATs identifying it as either a top strength or a top opportunity. Planning Areas with strong existing outdoor recreation infrastructure frequently ranked it higher than those without, indicating that they have seen the value which outdoor recreation has brought to their communities.

The feedback given by Lycoming County citizens indicates that the county's outdoor recreation infrastructure is necessary to maintain and develop a strong workforce. Without this important piece of infrastructure, many local citizens may look to relocate elsewhere with the youth and young professionals likely being the first to leave. Given our national outdoor recreation trends and Lycoming County's position near major metropolitan areas, outdoor recreation and scenic resources also present a tremendous economic opportunity in the form of Eco-Tourism. Lycoming County has the opportunity to set the stage for local businesses to benefit from Eco-Tourism by capitalizing on and promoting these assets.

In order to maximize the economic benefits of Outdoor Recreation, the private sector requires public sector investment in developing this part of our infrastructure system. The majority of economic activity related to outdoor recreation occurs in businesses surrounding the asset instead of with the asset itself. This means that privately funding outdoor recreation infrastructure will never be able to yield the same return as publicly funded outdoor recreation infrastructure.



Source: Pintrest

Outdoor recreation activities take many forms from jogging to hiking to kayaking to disc golf. Most outdoor recreation activities utilize one or more of the four major segments of outdoor recreation infrastructure shown to the left. Community Parks make up some of the most important elements of our outdoor recreation infrastructure. These parks include public parks, playgrounds, sports fields, public pools, tennis/basketball courts, and other similar recreation infrastructure. Community parks are built and maintained by municipal governments, non-profits, and other entities and usually operate with very limited funding. While these parks tend to fulfill the needs of local citizens more than act as a tourist destination, they are still essential to the economy of

the County in that they provide accessible outdoor recreation infrastructure to the County's workforce and their families. There are at least 30 named trails contained within or passing through Lycoming County offering over 200 miles of trails varying from rugged mountain trails to paved bikeways. According to a report published by the Outdoor Foundation in 2016; Running/Jogging, Day Hiking, Backpacking, and Trail Running are all trail sports which saw significant participation increases with each category experiencing growth of 25% or more over the past 9 years. While trails are an important component of our recreation infrastructure, they also provide mobility to the citizens of Lycoming County. For this reason, trail projects will be further discussed in the

transportation infrastructure portion of this issue. Lycoming County contains 2,200 miles of waterways, more than any other county in Pennsylvania, including large sections of Exceptional Value (EV) and High Quality-Cold Water Fisheries (HQ-CWF) fostering a strong fish population. These water resources provide tremendous recreation potential for many different forms of recreation including: fishing, kayaking, and canoeing. Fishing is America's 3rd favorite recreation activity even after a 12.57% decline in participation over the past 9 years. Kayaking has had the most notable growth of all recreation types surveyed by the Outdoor Foundation with an increase in participation of 129.78% over the last 9 years. Of



Canoers on Pine Creek
Source: www.PineCreekValley.com

Lycoming County's 796,160 acres of total land area, 612,000 acres are identified as forests and about 249,000 acres of land is designated as State Forest or Game Lands. The forests of Lycoming County support a variety of recreation activities from hunting to camping to wildlife viewing. These recreation activities are some of the most popular in America with many ranking fifth through ninth in participation. All of these segments must be provided for across the county in order to provide the social and economic benefits which a strong outdoor recreation infrastructure network can yield.

Based on feedback from Lycoming County citizens, local stakeholders, subject area experts, and PAT leaders, the following outdoor recreation needs have been identified to improve our outdoor recreation infrastructure. Trail needs will be further discussed in the Transportation Infrastructure portion of the Infrastructure issue.

- Expand and improve our existing facilities and build new facilities where recreation resources are scarce.
 - o Better river and creek accesses and improved water resources accesses are needed
 - Need additional indoor recreation facilities (pools, indoor basketball courts, etc.)
 - Muncy area needs improved bicycle/pedestrian facilities
 - Need regional continuity between trails
 - Need to improve accessibility to recreation infrastructure
 - Need more activities for youth
- Promote recreational assets for tourism as well as to attract well-paying employers
 - Need to list and map recreational assets for public use including information such as: trail and river access/parking areas, community park locations, public hunting areas and access points, trail types, etc.
 - Need to better market Lycoming County's recreation assets.
- Countywide recreation coordination
 - Need to coordinate recreation initiatives with resource protection, stormwater management,
 and transportation projects along with neighboring recreation projects
 - Need Bicycle/Pedestrian coordination with PennDOT

Key Implications

In addition to the economic benefits, outdoor recreation also provides a number of social benefits. The Center for Disease Control (CDC) has identified the importance of outdoor recreation infrastructure in developing healthy communities. (CDC) According to the CDC, only around 35% of students in grades 9-12 met the recommended levels of physical activity and in 2008 only 44% of adults met the recommended levels. The CDC then states that, "Having access to places for physical activity, such as parks and trails, encourages community residents to participate in physical activity and do so more often. The closer you live to a park, the more likely you are to walk or bike to those places, and use the park for exercise." The California Department of Parks and Recreation also identified the health benefits of outdoor recreation in their 2005 report titled "The Health and Social Benefits of Recreation." In this report they identified both physical health benefits of outdoor recreation (reduces obesity, diminishes risk of chronic disease, boosts immune system, and increases life expectancy) and the mental health benefits of outdoor recreation (reduces depression, relieves stress, improved self-esteem, improved personal and spiritual growth, and increased life satisfaction).

The California Department of Parks and Recreation also identified social benefits of recreation including: strengthening communities (reducing crime, encouraging volunteerism, and promoting stewardship); promoting social bonds (uniting families, building diversity, and supports individuals with disabilities and seniors); and supporting the youth (enhancing education and deterring negative behaviors such as drug and alcohol abuse, early sexual activity, and criminal activity).

Outdoor recreation also helps to protect the natural beauty of this county. The survey conducted in summer of 2016 by PCD indicated that natural beauty was by far the most frequently commented on topic of all the comment categories with 418 of the 1132 survey respondents indicating that natural beauty was one of things they care most about in our county.

The research indicates that outdoor recreation infrastructure has the ability to assist our county in addressing some of our most important issues including those identified under Issue #6 (volunteerism and civic engagement) and Issue #8 (Drugs). In addition to the benefits which outdoor recreation can provide to our citizens, outdoor recreation infrastructure projects can also be combined with other initiatives such as stormwater management, floodplain mitigation, resource protection, source water protection, and transportation to provide additional leverage to complete those projects and to more efficiently invest our funding.

Projects of Countywide Significance for this Issue

UPDATE THE LYCOMING COUNTY COMPREHENSIVE RECREATION, PARKS, & OPEN SPACE/GREENWAY PLAN

Adopted in April 2008, the Lycoming County Comprehensive Recreation, Parks, & Open Space/Greenway Plan (the Outdoor Recreation Plan) identifies strategies for enhancing our county's recreation resources. The plan inventories existing assets, programs, and organizations related to outdoor recreation and identifies strategies to enhance and preserve outdoor recreation infrastructure. The Recreation Plan should be updated following the adoption of this plan to reflect the current needs of the county's outdoor recreation infrastructure. The Recreation Plan update should identify strategies to address the needs mentioned above. This plan should recognize the infrastructure needed to capitalize on nature-based tourism opportunities. UPMC-Susquehanna could be an important partner in developing the Recreation Plan update.

EXPLORE THE MISSION AND SCOPE OF THE LYCOMING COUNTY RECREATION AUTHORITY

Multiple sources identified the need for better countywide outdoor recreation coordination throughout the development of this comprehensive plan. Currently, the Lycoming County Recreation Authority is responsible for overseeing the operations of the White Deer Golf Complex; however, there is an opportunity for the Lycoming County Recreation Authority to take on an expanded role in countywide recreation. As mentioned above, an entity is needed to coordinate outdoor recreation infrastructure with resource protection, stormwater management, and transportation projects. There is a need to coordinate bicycle and pedestrian improvements with the rest of our outdoor recreation infrastructure. There is also a need for an entity to market and promote our outdoor recreation infrastructure. The needs above should be considered when completing this project.