

## **Utilities Failure – Electric, Water, Gas, and Communications**

### **General**

Utility failures are very common in Perry County. They are typically experienced as a secondary effect of many hazards, such as severe weather, landslides, hazardous material spills, and transportation accidents, to name a few. While such occurrences are common, the longevity of outages can present serious consequences with certain weather characteristics, such as severe cold or hot weather.

The following is a general description of the utility services available in Perry County.

### **Electric<sup>1</sup>**

Electric services are provided to Perry County through the Pennsylvania Electric Company and PPL Electric Utilities Corporation.

### **Water/ Sewer**

There are eight public water systems in Perry County that serve approximately 35 percent of the total County population. The rest are served by individual wells, springs, or cisterns.

**TABLE C.1**

### **MUNICIPAL WATER AUTHORITIES, COMPANIES, AND DEPARTMENTS**

<b>Water Service Provider</b>	<b>Address</b>	<b>Telephone</b>	<b>Municipalities Served</b>
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<sup>1</sup> Perry County Comprehensive Plan (2007)

Blain Borough Water Company	P.O. Box 9, Blain, PA 17006	(717) 536-3333	Blain Borough and part of Jackson Township
Bloomfield Water Authority	P.O. Box 293, New Bloomfield, PA 17068	(717) 582-3382	Bloomfield Borough portion of Centre Township
United Water of Pennsylvania	8189 Adams Drive Hummelstown, PA 17036	(717) 564-3662	Marysville Borough and part of Rye Township
Duncannon Borough Water Department	428 North High Street, Duncannon, PA 17020	(717) 834-4311	Duncannon Borough and portions of Reed Township (Dauphin County) and Penn Township
Liverpool Municipal Authority	P.O. Box M Liverpool, PA 17045	(717) 444-3194	Liverpool Borough
Millerstown Borough Municipal Authority	44 North High Street, Millerstown, PA 17062	(717) 589-3738	Millerstown Borough
Newport Borough Water Authority	497 North Front Street, Newport, PA 17074	(717) 567-6373	Newport Borough and portions of Howe Township and Oliver Township
Penn Township Municipal Authority	100 Municipal Building Road, Duncannon, PA 17020	(717) 834-6926	Portions of Penn Township

*SOURCE: TCRPC Inventory Research of Police Services, August 29, 2012*

**Public Water**

The following is offered as a summary of each of these service entities.

**Blain Borough Water Company**

The Blain Borough Water Company is a municipally owned water system that serves Blain Borough and a part of Jackson Township. Service is provided to 116 households and a population of 321. Water to supply the system is obtained from two wells. Water is treated through a chlorination process at a new treatment building constructed in 2006 which pumps to a new water tower with a 2 ½ day capacity. The water has a quality characterized as soft to moderately hard and low in iron.

**Bloomfield Water Authority**

The Bloomfield Water Authority is a municipally owned and managed water system that serves the Borough of New Bloomfield and portions of Centre Township. The population of this service area is 1,100 with 458 customer connections. Water to supply the system is obtained from four wells, with a fifth well being developed. Only 2 wells are permitted to be utilized at any one time. There is a 300,000 gallon storage tank with an additional 35,000 emergency service storage tank. Water service is 95,000 gallons per day.

**United Water of Pennsylvania**

United Water is a large investor-owned water utility serving the Borough of Marysville and parts of Rye Township. The population of the service area is approximately 3,500. Water is provided to this area of Perry County from the company's Sixth Street Water Treatment Plant, located in Susquehanna Township, Dauphin County. The main source of supply is the Susquehanna River. A 16-inch diameter pipeline crosses the Susquehanna River and distributes water to the service area from the plant. Water treatment is accomplished through a filtration process involving high rate clarifier units that achieve maximum water clarity. The water quality is characterized as moderate with low iron content. United Water also maintains a steel distribution storage tank in Marysville that holds 300,000 gallons.

### **Duncannon Borough Water Department**

The Duncannon Borough Water Department provides municipal water service to the Borough of Duncannon and portions of Reed Township (Dauphin County) and Penn Township. There are 666 customer connections. This water system is currently supplied by four (4) wells. Average daily flow is 136,000 gallons. There is a reservoir with 511,000 gallons and a standpipe with 322,000 gallons.

### **Liverpool Municipal Authority**

The Liverpool Municipal Authority supplies and maintains water services to the Borough of Liverpool. The population within this service area is approximately 900 residents with 328 customer connections. The water is supplied by two (2) wells with an estimated yield of approximately 177,000 gallons per day. The authority has a 250,000-gallon standpipe.

### **Millerstown Borough Municipal Authority**

The Millerstown Borough Municipal Authority provides water services to the Borough of Millerstown. The population of this area is approximately 650 residents with 300 customer connections. The water is supplied by the Nace Street well, which has an estimated yield of 75,000 gallons per day. Raw water from the well is pumped through a 4-inch transmission main to the Authority's Iron Mountain Reservoir. The authority has a 179,000-gallon finish water standpipe and needs to develop an additional well.

### **Newport Borough Water Authority**

The Newport Borough water system is municipally owned. The facility serves the Borough of Newport and parts of Howe and Oliver Townships. With a residential population of approximately 2,350 there are 1,000 customer connections. The service area is supplied with water through four (4) wells. The Authority also maintains three (3) 250,000-gallon distribution storage tanks. Treated through chlorination, the water is characterized as being very soft and is low in iron content. The Authority also withdraws water from the Juniata River through a Zenon Water Filtration System.

**Penn Township Municipal Authority**

The Penn Township Municipal Authority covers areas adjacent to Duncannon Borough (Sunshine Hills and Petersburg Commons). The Authority oversees approximately 120 connections to approximately 300 people. Petersburg Commons receives its water directly from the Duncannon Borough water system. Sunshine Hills has its own separate well and two 1,500-gallon tanks. Unlike Petersburg Commons, this water system is not connected to Duncannon’s water facilities.

**Small Localized Water Supply Facilities**

As of 2013, there were 102 other entities with active water systems permitted by the Department of Environmental Protection across the County. These range from campgrounds to mobile home parks to schools and restaurants.

***Public Sewer***

Perry County’s public sewage is maintained by nine municipal sewer authorities. These authorities administer the sewage systems within the County as well as 11 treatment plants.

**TABLE C.2  
MUNICIPAL SEWER AUTHORITIES**

<b>Authority Name</b>	<b>Address</b>	<b>Telephone</b>	<b>Municipalities Served</b>
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Bloomfield Borough Sewer Authority	P.O. Box 293, New Bloomfield, PA 17068	(717) 582-8295	Bloomfield Borough and a portion of Centre Township
Carroll Township Sewer Authority	50 Rambo Hill Road Shermans Dale, PA 17090	(717) 582-8200	Portions of Carroll Township
Duncannon Borough Municipal Authority	428 North High Street, Duncannon, PA 17020	(717) 834-4311	Duncannon Borough and a portion of Penn Township
Ickesburg Village Municipal Authority	3954 Veterans Way Elliotsville, PA 17024	(717) 437-3884	Saville Township
Landisburg Municipal Authority	Landisburg, PA 17040	(717) 789-4959	Landisburg Borough and a portion of Tyrone Township
Liverpool Municipal Authority	P.O. Box M Liverpool, PA 17045	(717) 444-3194	Liverpool Borough
Loysville Village Municipal Authority	P.O. Box 116 Landisburg, PA 17040	(717) 789-4414	Portion of Tyrone Township
Marysville Borough Sewer and Sanitation Committee	200 Overcrest Street Marysville, PA 17053	(717) 957-3110	Marysville Borough
Millerstown Municipal Authority	44 North High Street, Millerstown, PA 17062	(717) 589-3834	Millerstown Borough
New Buffalo Borough	P.O. Box 245 New Buffalo, PA 17069	(717) 994-5076	New Buffalo Borough
Newport Borough Municipal Authority	497 North Front Street, Newport, PA 17074	(717) 567-3728	Newport Borough Portion of Oliver Township
Oliver Township Municipal Authority (Flow goes to Newport Plant)	P.O. Box 126 Newport, PA 17074	(717) 567-3809	Portion of Oliver Township
Penn Township Municipal Authority	100 Municipal Building Road, Duncannon, PA 17020	(717) 834-6926	Portions of Penn Township

*SOURCE: TCRPC February 2013 Phone Survey*

**TABLE C.3  
PERRY COUNTY SEWAGE TREATMENT PLANT PROFILE**

<b>Municipal System</b>	<b>Municipalities Served</b>	<b>Connections</b>	<b>Most Recent Modification</b>	<b>Average Daily Flow (MGD)</b>	<b>Design Capacity (MGD)</b>	<b>Type of Treatment</b>	<b>Receiving Water Body</b>
Bloomfield Borough	Bloomfield Borough, Centre Township	470	1999	0.120	0.250	Sequential Batch Reactor	Little Juniata Creek
Duncannon Borough	Duncannon, Penn Township	594	2002	0.5688	1.0	Secondary	Susquehanna River
Ickesburg Village*	Saville Township	250	1991	0.010	0.024	Spray Irrigation	Land Applied
Landisburg Borough	Landisburg, Portion of Tyrone Township	157	2006	0.015	0.030	Extended Aeration	Montour Creek
Liverpool Borough	Liverpool Borough	338	2002	0.080	0.175	Sequential Batch Reactor	Susquehanna River
Marysville Borough	Marysville Borough	1,200	2012 and ongoing	0.423	1.250	Activated Sludge	Susquehanna River
Millerstown Borough	Millerstown Borough	300	2013	0.045	0.120	Ultra Violet	Juniata River
Newport Borough	Newport Borough, Oliver Township	600	1973	0.200	0.400	Activated Sludge	Juniata River
Cove Village Kinkora-Pythian Home	Penn Township	260 (1 nursing home)	2003 1996	0.065 0.009	0.100 0.015	Extended Aeration	Unnamed Tributary To Cove Creek
Loysville Village	Tyrone Township	220	2009	0.067	0.110	Activated Sludge	Muddy Run
New Buffalo Borough*	New Buffalo Borough	500	1999	0.067	0.110	Secondary	Buffalo Creek

*SOURCE: - \* 1994 Perry County Sewerage Plan - TCRPC February 2013 Phone Survey*

## **Gas<sup>2</sup>**

Natural gas distribution lines do not currently exist within Perry County. However, natural gas transmission pipelines for Buckeye, Allegheny, Texas Eastern, Mobile and Laurel all pass through the County.

As natural gas extraction in the Commonwealth continues, even areas like Perry County will be subjected to the exploration of this resource. While the geology of the Marcellus Shale does not lend itself to sparking an interest in Perry County, there are much anticipated quantities of natural gas locked up in the Utica Shale layer. When the industry sees it cost-effective to go after this resource, Perry County will likely see additional pipeline improvements (Both gathering and transmission).

## **Communications<sup>3</sup>**

MCI Worldcom Network Service Inc., AT&T Communications of Pennsylvania, Inc., and United Telephone Company of Pennsylvania provide communications access to Perry County.

## **History**

While detailed information regarding outages is not readily attainable, it is commonly known that utility failures occur frequently. Future documentation of these instances and their extent may provide an opportunity for Perry County to mitigate such service outages.

## **Vulnerability**

### **Electric**

Electrical failures are a common secondary effect of hazards such as severe weather and flooding. High winds, along with heavy snow, ice, and rain, can affect an electrical system's ability to function. Minor power failures have also been caused by worker strikes. Other causes of power outages include falling tree limbs, transformer failures, vehicular accidents, and small animals that destroy wiring. When power outages occur, they are typically on a regional scale. According to the 2007-2011 5-yr estimates for the US Census Bureau, 28.2 percent of Perry County households utilize electricity as their heating source (21.8% in the 2000 Census). Additionally, another 43.1 percent are estimated to use fuel oil, kerosene, or other liquid to heat their homes. In an extended power outage, these residents would have a difficult time efficiently heating their homes.

The protection of electric supply facilities within their rights-of-way is essential to preventing potential fires from occurring.

### **Water**

Contamination of the water supply can occur both naturally and human-influenced due to human error, or intentionally. On occasion, the release of manure or other farming byproducts has been

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<sup>2</sup> Ibid.

<sup>3</sup> Ibid.

known to contaminate water. Accidents involving hazardous material spills can also adversely affect groundwater.

Perry County's water supply system consists of springs, streams, rivers, reservoirs, treatment plants, storage tanks and pumping stations. Water distribution can be affected by the amount of water available, the quality of water available, and the viability of the physical components of the distribution systems. The quantity of water depends on natural conditions, such as drought. Human action can affect the maintenance of water quality. Terrorism is a potential threat to water quality. Some terrorist organizations have stated a desire to infect the water supply or damage associated infrastructure. U.S. intelligence has stated this would be difficult to achieve, due to the amount of chemicals needed to contaminate the water supply.

### **Gas**

According to the 2000 U.S. Census and the 2007-2011 5-yr estimates, less than one percent of Perry County houses use gas as a source of heat. According to the American Gas Association, there are more than 2.6 million natural gas consumers in Pennsylvania<sup>4</sup>. With a scant number of gas users in Perry County, the effects of a gas shortage would probably be minimal. A shortage of natural gas would not allow these residential, commercial, and industrial customers to efficiently heat their structures. Not to be overlooked, gas has the potential to ignite, explode, or release toxic fumes.

With transmission lines and substations, there are always concerns over the integrity of facilities. The gas service industry is heavily regulated to assure these facilities are in sound working order. The extension of natural gas exploration into the County will increase the amount of gathering and transmission lines, requiring more inspection and maintenance to assure the facilities are safe and sound.

Similar to the electric companies, the protection of gas lines within their designated rights-of-way is of paramount importance. Construction encroachments must get full clearance from the industry if allowed to perform any such work within a designated gas line right-of-way.

### **Communications**

While Perry County residents receive their communication services from a range of service providers, they are still vulnerable to outages. Small-scale failures will continue to occur annually.

### ***Probability***

There is a low probability a large-scale, extended utility failure will occur in Perry County. There is a greater chance of small-scale failures lasting short periods of time occur annually.

### ***Maximum Threat***

Utility failure poses the greatest threat to Perry County's special needs population. Resources like communications, gas, electricity, and water supply are critical to ensure the health, safety, and general welfare of the County's citizens and business owners and clientele. The special needs

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<sup>4</sup> American Gas Association – [www.aga.org](http://www.aga.org)

population can be vulnerable to loss of heat or air conditioning during extreme weather months. It is of primary importance for the County to account for its special needs population during any extended utility failure.

*Secondary Effects*

The potential secondary effect of a loss of communications and water is an inadequate emergency response. Efficient and effective communications and adequate potable water supply are critical resources for first responders. A loss of electricity and gas can also have a negative impact and reduce the efficiency of first responders. However, the most critical secondary effect would be the loss of a residential heating or cooling compounded by prolonged periods of severe weather. The health and safety of at-risk populations in the affected area, such as the elderly, could be adversely affected by a loss of heat or cooling devices due to utilities failure.