



4.3.4 Environmental Hazard

This section provides a profile and vulnerability assessment of the environmental hazard profile for Fulton County.

The U.S. Department of Transportation's (DOT) Federal Motor Carrier Safety Administration (FMCSA) categorizes hazardous materials (HazMat) into the following nine classes based on chemical characteristics producing the risk (FMCSA 2019):

- Class 1: Explosives
- Class 2: Gases
- Class 3: Flammable liquids
- Class 4: Flammable solids
- Class 5: Oxidizing substances; organic peroxides
- Class 6: Poisonous and infectious substances
- Class 7: Radioactive materials
- Class 8: Corrosives
- Class 9: Miscellaneous Dangerous Goods

Fulton County is home to 11 identified facilities that utilize, ship, or house chemicals considered hazardous. These facilities have been identified under the Superfund Amendment and Reauthorization Act (SARA) as exceeding the quantity threshold for reporting.

Product release into the local environment can derive from a fixed facility or occur at any location along a route of travel and may be the result of carelessness, technical failure, external incidents, or an intentional act against the facility or container. Volatility of products stored or transported, along with potential impact on a local community, may increase the risk of intentional acts against a facility or transport vehicle. Release of certain products considered HazMat can immediately and adversely impact the general population, ranging from the inconvenience of evacuations to personal injury and even death. Moreover, any release can compromise the local environment through contamination of soil, groundwater, or local flora and fauna.

Additionally, Concentrated Animal Feeding Operations (CAFO) will be discussed under this hazard profile. CAFOs have been identified as a priority concern by multiple County residents and municipalities, due to their prevalence in Fulton County. While Animal Feeding Operations (AFOs) provide a valuable resource to the livestock industry and contribute to overall affordability of animal products for consumption, they also contribute to negative environmental and human health impacts. According to the Environmental Protection Agency (EPA), AFOs consist of facilities that keep and raise animals in confined situations, thus congregating animals, feed, manure and urine, dead animals, and overall production operations on a small land area. Operations are considered to be an AFO if the animals are confined at least 45 days in a 12-month period, and if there is no grass or other vegetation in the confinement area during the normal growing season. CAFOs are AFOs that meet certain EPA criteria (regarding number of animals and pollutants/waste management dispersal), and they consist of about 15 percent of all AFOs. Although CAFOs can augment the severity of a number of natural and non-natural hazards, this area is being highlighted under the Environmental Hazards profile, as the CAFO's greatest impacts connect to the higher quantity of pollutants and waste produced by the animals.

4.3.4.1 Location and Extent

Based on past occurrences, HazMat releases within Fulton County have been accidental and have not been considered terrorist or criminal acts. While past occurrences have not been deemed intentional, an intentional release of any of these products in large quantity would pose a threat to the local population, economy, and environment resulting in lost revenue, injuries, and deaths.



Fulton County is home to 686.3 miles of roadways, including 38.9 miles of interstate highway, 24.2 miles of principal arterial roads, 48.7 miles of minor arterial roads, and over 461.2 miles of local roads. With nearly 700 miles of roadways linking more-populated areas with rural communities, the grid work of roadways facilitates free movement of HazMat throughout the region. The County’s mountainous terrain increases its vulnerability to HazMat accidents.

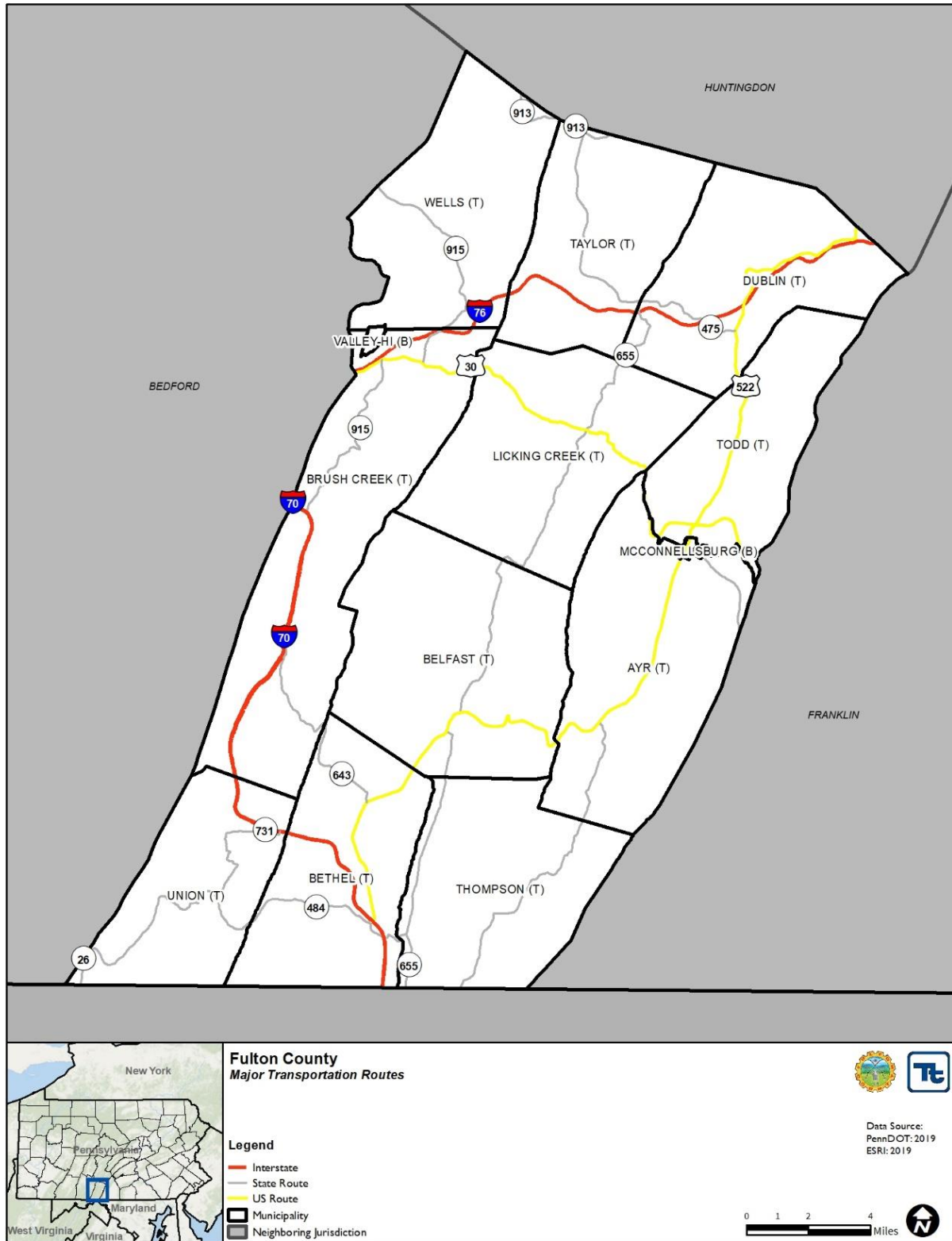
While permitted, identified hazardous substance travel routes are not maintained by the County or regional planning entities. The primary roadways in Fulton County are listed as follows (and shown in red on Figure 4.3.4-1):

- Pennsylvania Turnpike (I-76)
- Interstate 70 (I-70)
- U.S. Highway 522 (US-522)
- U.S. Highway 30 (US-30)
- PA State Highway 16 (PA-16).

The U.S. EPA tracks management of over 650 toxic chemicals that pose a threat to human health and the environment through the Toxic Release Inventory (TRI). Facilities in certain industries that use or house these chemicals in an amount over a certain specified level must submit annual reports on how each chemical is managed through recycling, energy recovery, treatment, and releases to the environment. A “release” of a chemical means that it is emitted to the air or water or placed in some type of land disposal. The EPA publishes all TRI data in a publicly accessible database in Envirofacts. In 2017, three TRI facilities in Fulton County reported to EPA. Fulton County TRI releases consist of only 0.85% of total TRI releases/transfers in Pennsylvania (EPA 2019).



Figure 4.3.4-1. Major Roadways Used to Transport Hazardous Materials in Fulton County





Fulton County is home to approximately 15 CAFOs. The CAFOs are of varying sizes and most contain either turkeys or pigs. Fulton County is home to a greater number of pig CAFOs than turkey CAFOs. No one jurisdiction in the County is noteworthy for being home to more CAFOs than another.

Per EPA regulations, an AFO must meet certain thresholds to be considered a CAFO. CAFOs can be divided by size categories into large, medium, and small. A large CAFO confines a minimum of the number of animals listed in the table below. A medium CAFO confines the number of animals in the range listed in the table below, and also (1) has a man-made ditch or pipe to carry manure or wastewater to surface water or (2) the animals come into contact with surface water that passes through the area where they are confined. A permitting authority may choose to designate a medium-sized facility as a CAFO if found to be a significant contributor of pollutants. A small CAFO confines fewer than the number of animals listed below and has been designated as a CAFO by the permitting authority if it is a significant source of pollutants.

Table 4.3.4-1. Regulatory Thresholds to Define Large, Medium, and Small CAFOs

Animal Sector	Size Thresholds (Number of Animals)		
	Large CAFO	Medium CAFO*	Small CAFO**
Cattle or Cow/Calf Pairs	1,000 or more	300-999	Less than 300
Mature Dairy Cattle	700 or more	200-699	Less than 200
Veal Calves	1,000 or more	300-699	Less than 300
Swine (weighing over 55 pounds)	2,500 or more	750-2,499	Less than 750
Swine (weighing less than 55 pounds)	10,000 or more	3,000-9,999	Less than 3,000
Horses	500 or more	150-499	Less than 150
Sheep or Lambs	10,000 or more	3,000-9,999	Less than 3,000
Turkeys	55,00 or more	16,500-54,999	Less than 16,500
Laying Hens or Broilers (Liquid Manure Handling Systems)	30,000 or more	9,000-29,999	Less than 9,000
Chickens Other than Laying Hens (Other than a Liquid Manure Handling System)	125,000 or more	37,500-124,999	Less than 37,500
Ducks (Other than a Liquid Manure Handling System)	30,000 or more	10,000-29,999	Less than 10,000
Ducks (Liquid Manure Handling System)	5,000 or more	1,500-4,999	Less than 1,500

* Must also meet one of two “method of discharge” criteria to be defined as a CAFO or may be designated.
 ** Never a CAFO by regulatory definition but may be designated on a case-by-case basis.

Source: EPA, 2015

4.3.4.2 Range of Magnitude

Environmental hazard incidents within Fulton County could range from minor petroleum spills to large, facility-based incidents that could lead to loss of life and damage to property, environment, and economy. Severity of an incident varies with type of material released, and distance and related response time for emergency response teams. Areas within closest proximity to the releases are generally at the greatest risk; however, depending on the material, a release can travel great distances or persist over a long time (e.g., nuclear radiation), resulting in far-reaching effects on people and the environment.

A HazMat release, whether accidental or intentional, can be exacerbated or mitigated by specific circumstances surrounding the event. Exacerbating conditions are characteristics that can enhance or magnify effects of a hazard, and mitigating conditions are characteristics of the target and its physical environment that can reduce effects of a hazard. These conditions are described below.

- Non-compliance with applicable codes (e.g., fire and building codes) and maintenance failures (e.g., fire protection and containment features) – can substantially increase damage to a facility and to surrounding buildings.
- Geographic location of HazMat site – if occurring within a Special Flood Hazard Area (SFHA), a materials release could cause large-scale water contamination during a flood incident, or a flood incident



could compromise production and storage of hazardous chemicals. Stormwaters and floodwaters can also move toxic chemicals swiftly across great distances.

- Weather conditions – affect how the hazard develops.
- Micro-meteorological effects of buildings and terrain – alter dispersion of materials.
- Shielding in the form of sheltering-in-place – protects people and property from harmful effects.

Although most recognized for their pollutant contributions, CAFOs can increase the impacts of a hazard event for a variety of hazards, including public health, security, flooding, fire, transportation accidents, and drought. For this reason, CAFO operations require careful management and supervision. As noted above, CAFOs have been highlighted in the Environmental Hazards profile due to their direct connection with environmentally hazardous events; however, all potential impacts will be noted.

The EPA monitors CAFO sites for pollutant control as improperly managed manure and wastewater can negatively impact the environment and public health. This monitoring occurs via the delegation of federal authority to the Pennsylvania Department of Environmental Protection (PA DEP), which in turn delegates its authority of monitoring CAFO sites to the Pennsylvania State Conservation Commission (PA SCC). The PA SCC delegates its authority to local-level county conservation districts so that monitoring and enforcement can occur on a local level. While monitoring at federal, state, and local levels is designed to be as comprehensive as possible, not all information is available to be tracked due to voluntary report statuses, lack of sufficient resources, and competing governmental priorities. The incomplete records for CAFO sites leads to increased resident concern about the impact of pollutant control for CAFOs on County residents, air quality, land/soil quality, and water quality. Residents have also expressed concern about the voluntary nature of most reporting mechanisms regarding CAFOs, particularly with concern to the management and transport of animal waste and manure. The EPA has also documented this area of weakness. Additionally, while farming operations are required to develop Manure Management Plans, these plans do not need to be kept on file by local-level conservation districts. Although farming operations must provide these plans to enforcement officers upon request, the lack of regular reports and immediate access decreases accountability and lessens the ability of independent confirmation.

Manure and wastewater have the potential to introduce nitrogen and phosphorus, organic matter, sediments, pathogens, heavy metals, hormones, and ammonia to the environment. Potential impacts from any of these pollutants can include excess nutrients in the water (e.g., nitrogen and phosphorus), leading to low levels of dissolved oxygen and fish kills; decomposing organic matter that can contribute to toxic algal blooms; degraded water resources; respiratory problems in workers and local residents; and increased chance of illness through the exposure of wastes and pathogens in drinking water.

Regarding the increased potential for illness, several scientific publications and institutions (including Science Daily, the Johns Hopkins School of Public Health, and the National Institute of Health) have noted that exposure to CAFO and manure fertilizers may increase the frequency of Methicillin-Resistant Staphylococcus Aureus (MRSA). MRSA is caused by strains of bacteria that have developed resistance to more widely used antibiotics. Staphylococcus (Staph) is a common bacteria on the human body; however, if an antibiotic-resistant strain of Staph enters the human body, it may be resistant to methicillin, amoxicillin, penicillin, oxacillin, and other common medical treatments. Insect-borne diseases also present a greater threat of infection to residents, necessitating CAFO facilities to consider animal care in addition to manure management.

Another potential hazard from CAFOs concerns animal mortality management. Increased animal mortality can contaminate the water table, soil, and air. If animals in a CAFO were to become infected with a highly infectious and fatal virus that leads to a large loss of animals in a short period of time (e.g., a pig CAFO becoming infected with Porcine Epidemic Diarrhea Virus [PEDv]), the facility may have difficulty in adequately disposing of all the animal remains.



While CAFO operations have come under increasing regulations in the past few years to decrease their potential environmental and public health impacts, one area which is still under-regulated is transportation accidents. Manure and animal waste from CAFOs is frequently transported to and from the facility without significant oversight. Were an accident to occur, this could lead to a HazMat incident in the County or in neighboring counties. HazMat incidents could also occur through other forms of manure spills, such as while pumping manure, while removing animal waste from a manure pit, or while applying manure in the field.

The other hazards that could be magnified by a CAFO have been described, with potential impacts, in the list below.

- **Security** – As with other environmental hazards, events can either be accidental or deliberate in nature. While most environmental events in the County would be accidental, CAFO sites should still consider the possibility of deliberate incidents. If a CAFO does not maintain appropriate security measures, it could become a potential terrorist target due to the wide scope and impact of a HazMat incident.
- **Flooding** – A CAFO located near a river or body of water, particularly one with a tendency to flood during storm events, can increase the chance of freshwater and stormwater contamination. The EPA notes that many AFOs currently lack sufficient stormwater management guards. If a local river floods into a CAFO’s land, animal waste and manure may enter the stream and, ultimately, contaminate local drinking water.
- **Fire** – Animal waste contains a higher rate of methane and may be a fire hazard if not adequately controlled for. Additionally, if an unrelated wildfire were to occur, the need for animal evacuation could create transportation difficulties.
- **Drought** – Due to the large number of animals maintained in a CAFO, such facilities require a significant amount of drinking water. This could lead to potential exacerbation of water resource management problems during a drought. Additionally, residents have noted concern about the potential for well water contamination should wastewater and other animal waste not be sufficiently regulated.

The worst-case scenario would be a large, uncontrolled release of a toxic gas within a major urban area. In Fulton County, this could take the form of an accident and major rupture of a tanker hauling a toxic or flammable gas in or near McConnellsburg Borough. While little physical property damage is likely from this type of event, potential for injury and death to residents and visitors up to 0.25 mile from the scene is significant. This event would likely overwhelm the medical care capacity within the County and possibly the region. The population vulnerable to such a release includes the 1,037 people in McConnellsburg Borough alone (U.S. Census Bureau 2018). Other municipalities are vulnerable to HazMat releases along US 522 and other routes. In addition, an event such as this would likely close County offices, causing a major disruption to government operations. The most likely scenario would be a transportation accident resulting in a rupture of a truck’s fuel tank, spilling a small quantity of diesel fuel onto the roadway.

4.3.4.3 Past Occurrence

Fulton County is approximately 2 hours away, by road, from both Baltimore, MD, and Harrisburg, PA. The County’s relative proximity to these more urban areas could eventually lead to an increase in transportation of HazMat via road or air. These transportation routes, combined with the fixed-site facilities and end users of HazMat, could be locations of frequent chemical and petroleum-product release incidents throughout the County, with several deemed as serious events.

The County has undergone HazMat release accidents at facilities and along roadways. Most incidents have involved spills of petroleum products or release of natural gas or propane; these incidents have easily been contained. At least one chemical spill of an unknown substance was documented in Thompson Township in 2007, and one call for an abandoned explosive detonation cord was made in Bethel Township in 2004. Fulton County has an annual contract with EP&S of Vermont, based out Harrisburg, for cleanup of larger HazMat incidents (previously, the County contracted with Cumberland County’s Special Hazards Operation Team [SHOT]). Local records do not indicate any HazMat release accidents or explosions since 2010. However, these



statistics may not be comprehensive. The reporting requirements from the State changed in 2007, allowing State agencies to categorize incidents as something other than “Hazardous Materials.” For instance, a vehicle collision resulting in a spill of petroleum products (e.g., gasoline, motor oil) may be reported as a vehicle accident instead of a HazMat release. In the case of an explosion, the explosive event may not be the primary incident. Rather, the incidents may be based on events that led up to an explosion.

Fulton County also tracks releases of chemicals into air, water, or land disposal units. This information is then published by EPA. In 2017, Fulton County disposed of a total of 1,200 pounds of toxic chemicals, with disposal of 3,445 pounds on-site (through air) and 6,600 pounds off-site. The top five TRI chemicals released by air included manganese (43 percent), ethylene glycol (31 percent), creosote (16 percent), nitric acid (7 percent), zinc compounds (2 percent). The top TRI chemicals released off site consisted of manganese (81 percent), nickel (13 percent), and zinc compounds (6 percent). The amount of 2017 TRI releases decreased from the 2016 disposal amount of 2,374 pounds and the 2015 disposal amount of 3,133 pounds.

The County has documented in Table 4.3.4-4.3.4-2 several instances of manure-related HazMat incidents or spills whose frequency may have been exacerbated by the presence of local CAFOs. Additionally, an incident may not be identified as being connected to or worsened by a nearby CAFO because of voluntary report standards and because this issue is not always noted in the media.

Table 4.3.4-4.3.4-2. Fulton County Manure-related HazMat Incidents

Date	Location	Impacts
March 2002	Brush Creek Tributary	Manure spill of over 770,000 gallons from a concrete pit under a pig farm occurred in Crystal Spring.
July 2004	Buck Hollow Road/Big Cove Tannery	Manure and pollutant spill from a dairy farm resulted in dead fish at hatchery in the area of Big Cove Tannery. Manure contaminated an unnamed tributary to Esther Run.
October 2007	Big Cove Creek	Manure spill of over 200,000 gallons from a dairy farm occurred just north of McConnellsburg.
November 2009	Big Cove Creek	Manure spill occurred at a dairy farm, with an estimated tens of thousands of gallons spilled. Slurry manure flowed about 1,500 feet from the manure storage pit into Big Cove Creek. The Pennsylvania Fish and Boat Commission documented over 1,000 dead fish in a segment of the stream less than a mile long.

4.3.4.4 Future Occurrence

Because of the wide scope of definition of environmental hazards, ranging from a small spill to a large release of a highly volatile or toxic HazMat, incidents can happen at any time. Additionally, the County is home to 11 SARA facilities. Although these facilities follow applicable safety and health regulations and best practices, proximities of the facilities to population centers is a concern for the County.

HazMats are also transported along I-70, I-76, US-30, US-522, PA-26, PA-475, PA-484, PA-643, PA-655, PA-731, PA-913, PA-915. Transportation of HazMat on highways involves tanker trucks or trailers; not surprisingly, trucks are responsible for the greatest number of HazMat incidents. At several points, these transportation routes cross streams within the watersheds that are part of the County's domestic water supply.

As with other environmental hazards, the wide scope and ability for CAFOs to impact environmental releases or other hazard incidents means that an event could occur at any time. This event is difficult to predict as many factors contribute to an event occurrence. Additionally, smaller incidents may occur and not be reported, or they may be labeled as a different type of hazard event. Fulton County is investigating ways to better document CAFO-related environmental events due to local interest in the subject.

While HazMat release incidents in Fulton County have occurred in the past, they are generally considered difficult to predict. Smaller incidents, such as fuel spills, will affect the County many times each year, most



likely during refilling of home heating oil tanks, and may not be reported. Although the County does not anticipate severe releases on any regular basis, possibility of this should not be discounted. Based on Risk Factor Methodology Probability Criteria, the likelihood of future occurrences within Fulton County remains likely.

4.3.4.5 Vulnerability Assessment

To understand risk, a community must evaluate assets exposed or vulnerable within the identified hazard area. To assess effects of and risk from environmental hazards, locations of SARA Title III facilities, and major roadways, are examined. The following sections evaluate and estimate potential impacts in Fulton County, presenting specifically:

- Impacts on (1) life, health, and safety; (2) general building stock and critical facilities; (3) the economy; (4) the environment; and (5) future growth and development
- Effect of climate change on vulnerability
- Further data collections that will assist in understanding this hazard over time.

Facilities that produce, use, or ship HazMat within the Commonwealth of Pennsylvania are required to comply with regulations set forth within the federal SARA and the Emergency Planning and Community Right to Know Act (EPCRA), and the Commonwealth of Pennsylvania reporting requirements under the Hazardous Materials Emergency Planning and Response Act (Act 165). The County has 11 SARA Title III facilities.

As stated above, hazardous materials are transported via rail, pipeline, and along major roadways in the County, including two interstates (I-70, I-76), U.S. Highways (US-30, US-522), and eight state Highways PA-26, PA-475, PA-484, PA-643, PA-655, PA-731, PA-913, PA-915). Accidents on these routes can result in HazMat spills that can contaminate and impact surrounding populations and environment.

The vulnerability radius for each hazard facility is determined by the Fulton County Local Emergency Planning Committee, and each radius is shown in Appendix I.

Impact on Life, Health, and Safety

Environmental hazards exert the greatest impact on the residential population in Fulton County (below). Several incidents reported in the County are related to petroleum spills, which may have resulted from motor vehicle incidents. In order to estimate the number of exposed individuals to the hazard, the total population for each municipality was divided by the number of residential buildings to establish an average population per residential structure which intersects the environmental hazard area.

Table 4.3.4-3. Estimated Fulton County Population Vulnerable to Environmental Hazards

Municipality	Total Population	Population within ¼ mile of major roadways	% Population	Population within vulnerability radii of SARA Facility	% Population
Ayr Township	1,942	675	34.8%	395	20.3%
Belfast Township	1,448	540	37.3%	0	0.0%
Bethel Township	1,508	660	43.7%	0	0.0%
Brush Creek Township	819	368	45.0%	0	0.0%
Dublin Township	1,264	938	74.2%	34	2.7%
Licking Creek Township	1,703	540	31.7%	0	0.0%
McConnellsburg Borough	1,220	1,208	99.0%	1,180	96.7%
Taylor Township	1,118	496	44.4%	0	0.0%
Thompson Township	1,098	400	36.4%	0	0.0%



Municipality	Total Population	Population within ¼ mile of major roadways	% Population	Population within vulnerability radii of SARA Facility	% Population
Todd Township	1,527	694	45.4%	409	26.8%
Union Township	706	263	37.3%	0	0.0%
Valley-Hi Borough	15	0	0.0%	0	0.0%
Wells Township	477	263	55.1%	0	0.0%
Fulton County	14,845	7,045	47.5%	2,018	13.6%

Sources: U.S. Census 2010, Fulton County 2019

Notes:

% Percent

SARA Superfund Amendments and Reauthorization Act

Impact on General Building Stock, Critical Facilities, and Economy

Jurisdictions that are home to EPA-identified hazardous material facilities should be considered vulnerable to releases from these fixed sites. While buildings and critical facilities may be present within the hazard area of a hazardous materials release, estimating direct damage to these structures and facilities is difficult without additional information regarding the specific event (e.g., type of material, concentration, duration of release, etc.). However, damages to the surrounding environment can result in indirect impacts, such as temporary loss of function due to hazard response or damage in the area.

Economic loss from environmental hazards and explosion incidents ranges from non-recordable to losses exceeding millions of dollars. Impact on the local economy from a single incident is almost impossible to measure because of complexities of predicting losses of work, revenue, and future business.

Transportation of hazardous materials also increases risk of hazardous material releases to those jurisdictions through which carriers pass. Transportation carriers must have response plans in place to address accidents, otherwise the local emergency response team will step in to secure and restore the area. Quick response minimizes the volume and concentration of hazardous materials that disperse through air, water and soil. Economic loss from environmental hazards and explosion incidents ranges from non-recordable to losses exceeding millions of dollars. Impact on the local economy from a single incident is almost impossible to measure because of complexities of predicting losses of work, revenue, and future business.

While buildings and critical facilities may be present within the hazard area, estimating direct damage to these structures and facilities would be difficult. However, damages to the surrounding environment can result in indirect impacts, such as temporary loss of function due to hazard response or damage in the area. As for the population, an assessment occurred of exposure of critical facilities within the 0.25-mile buffer surrounding major roadways, railroads, pipelines, and within specified vulnerability radii of SARA facilities (Table 4.3.4-4 below).



Table 4.3.4-4. Critical Facilities Vulnerable to Environmental Hazards

Municipality	Facility Types																						
	Church	Commercial	Communication	County Office	DPW	Dam	Day Care	EOC	Fire	Hazmat	Library	Municipal Hall	Police	Polling Station	Post Office	Potable Water	Power	School	Senior	Shelter	Substation	Wastewater Pump	Wastewater Treatment
Ayr Township	0	1	1	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	1	4	1	0	1
Belfast Township	0	0	1	1	0	0	0	0	1	0	0	1	0	1	2	1	0	1	0	3	0	0	0
Bethel Township	0	0	3	0	0	2	0	0	0	0	0	1	0	1	1	0	0	3	1	6	1	1	0
Brush Creek Township	0	0	7	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	2	0	0	0
Dublin Township	0	0	3	1	0	1	0	0	1	1	0	1	0	1	1	0	0	0	2	7	0	2	2
Licking Creek Township	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	3	0	0
McConnellsburg Borough	0	0	2	4	0	0	0	1	2	1	1	1	0	1	1	0	0	2	0	9	0	0	0
Taylor Township	0	0	2	0	0	0	0	0	0	1	0	1	0	1	3	0	2	3	0	4	1	2	0
Thompson Township	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
Todd Township	0	0	4	0	1	0	1	0	0	0	0	1	0	1	0	0	1	0	0	4	0	0	1
Union Township	1	0	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	0	0
Valley-Hi Borough	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wells Township	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	3	0	0	0
Fulton County	1	1	28	6	1	3	1	1	4	7	1	7	1	8	10	1	3	9	4	55	6	5	4

Source: Fulton County 2019



Impact on the Environment

As discussed above, transportation and HazMat release incidents can profoundly affect the surrounding environment. Contamination of soil, and surface water and groundwater supplies, can result in many direct impacts on surrounding populations and ecosystems. Local flora and fauna within hazard areas are also at risk. The application of salt to de-ice roads may impact groundwater and contaminate potable drinking water sources near major highway corridors and state highway routes in the County. Additional environmental impacts of hazardous material releases include (PEMA 2018):

- Effects on water quality (i.e., changes in water temperature)
- Damage to streams, lakes, ponds, and wetland ecosystems
- Air quality effects – pollutants, smoke, and dust
- Loss of quality in landscape

Future Growth and Development

As discussed in Section 2.4, areas targeted for future growth and development have been identified across the County. Any areas of growth could be impacted by environmental hazards if located within identified hazard areas.

Additional Data and Next Steps

Based on limited data regarding the probability and potential impact of this hazard, a quantitative loss estimate was not completed for this Hazard Mitigation Plan (HMP). Over time, the County can work with appropriate agencies to collect additional data to support mitigation planning, consideration of potential risks, and prioritization of mitigation measures for this hazard.

Fulton County recognizes it must compile and maintain data regarding specific concerns and past losses from this hazard. These data should include specific information regarding damage or loss of life, property, or infrastructure; and any reports pertaining to potential or actual cost and logistics of responding to an event caused by this hazard (locations of road closures, map detours, traffic counts, durations of closures and detours; and costs to respond). These data will be included in future revisions of the HMP and can be used to support future mitigation grant efforts (benefit-cost analysis). Maintaining a record of frequently transported materials can facilitate development of preparatory measures to respond to a release. Predicting costs needed to respond to a release, remediate the environment, or repair damaged infrastructure would be useful for developing mitigation options.