



### 4.3.11 Transportation Accident

This section describes the location and extent, range of magnitude, past occurrence, future occurrence, and vulnerability assessment for the transportation accident hazard for the Fulton County Hazard Mitigation Plan (HMP).

Transportation hazards include hazardous materials in transit, vehicular accidents, aviation accidents, and roadways vulnerable to floods. A transportation hazard may be defined as a condition created by movement of anything by common carrier. Transportation hazards can be divided into two categories: hazards created by the material being transported and hazards created by the transportation medium. Transportation systems available in Fulton County include roadways, one commercial airport, and a few private airstrips. A major road accident in the County is probable; however, aviation accidents are unlikely. All County systems and supporting transportation resources provide services locally, regionally, and nationally. Transportation accidents defined below include incidents involving road and air travel.

- **Vehicular Accidents:** A vehicular accident is an incident that usually involves one vehicle colliding with another vehicle or other road user, such as an animal or a stationary roadside object. A vehicular accident may result in injury, property damage, or possible fatalities. Many factors contribute to vehicular accidents, including equipment failure, poor road conditions, weather, traffic volume, and driver behavior.
- **Aviation Accidents:** According to the International Civil Aviation Organization, an aviation accident is an occurrence during operation of an aircraft from the time a person boards the aircraft with intent to fly to a destination, to the time the person has disembarked the aircraft. Three different situations qualify as an aviation accident: a person is fatally or seriously injured; the aircraft sustains damage or structural failure; or the aircraft is missing or inaccessible. An aviation incident is an occurrence, other than an accident, associated with operation of an aircraft that affects or could affect the safety of operation (International Civil Aviation Organization 2015). Although Fulton County is home to only one private airport, limiting the probability of aviation accidents, airport accidents and incidents have the potential to occur while the plane is over County airspace.
- **Hazardous Materials (HazMat) in Transit:** A HazMat is defined as a substance or material determined capable of posing an unreasonable risk to health, safety, or property when transported. “Unreasonable risk” covers a broad range of health, fire, and environmental considerations. HazMats come in various forms, some of which can cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property. HazMat substances include explosives, flammable solids, substances that become dangerous when wet, oxidizing substances, and toxic liquids. An accident involving a vehicle carrying HazMats becomes a HazMat incident if the HazMat leaks; is involved in a fire; or if the potential for release, fire, or other hazard exists. Hazards can occur during production, storage, transportation, use, or disposal of HazMats (Illinois Emergency Management Agency 2012).

Transportation accidents described here include incidents involving road and air travel. HazMat conveyance during transportation is an additional transportation threat to Fulton County. Volatility of products transported, along with potential impact on a local community, may increase risk of intentional acts against a transport vehicle. Release of certain products considered HazMat can cause immediate and adverse impacts on the general population, ranging from the inconvenience of evacuations to personal injury and even death. Additional effects of a release of HazMat from transportation accidents are addressed in the Environmental Hazard profile (Section 4.3.4 [Environmental Hazards]). County residents have indicated concern over the potential for transportation accidents involving animal waste and other biological hazardous materials related to the transport, feeding, and associated care for animals in a Concentrated Animal Feeding Operation (CAFO), as there are multiple CAFO facilities in Fulton County. The potential



impacts and associated concerns with CAFO facilities, including transportation accidents, are described in more detail in Section 4.3.4 (Environmental Hazards).

### 4.3.11.1 Location and Extent

#### Vehicular Accidents

Major roadways in Fulton County include I-70, the Pennsylvania Turnpike – I-76, U.S.-522, and U.S.-30. Fulton County has more than 685 miles of roadways, divided as listed in Table 4.3.11-1, and illustrated in Figure 4.3.11-1 on the following page.

**Table 4.3.11-1. Fulton County Transportation Network**

Category	Miles
Interstate Highway	38.9
Freeways/Expressways	0.0
Principal Arterials	24.2
Minor Arterials	48.7
Major Collectors	44.5
Minor Collectors	68.9
Local Roads	461.2
<b>Total</b>	<b>686.3</b>

Source: PennDOT 2017

Structurally deficient bridges pose a risk for transportation accidents. In response to the collapse of the I-35W Bridge in Minneapolis in August 2007, PennDOT assessed the structural integrity of all bridges in the Commonwealth. Table 4.3.11-2 lists the total number of bridges in Fulton County as well as the number of those that are structurally deficient (noted in parentheses).

**Table 4.3.11-2. Bridges in Fulton County**

On State Roads	On Local Roads
181 (20)	25 (9)

Source: PennDOT 2019

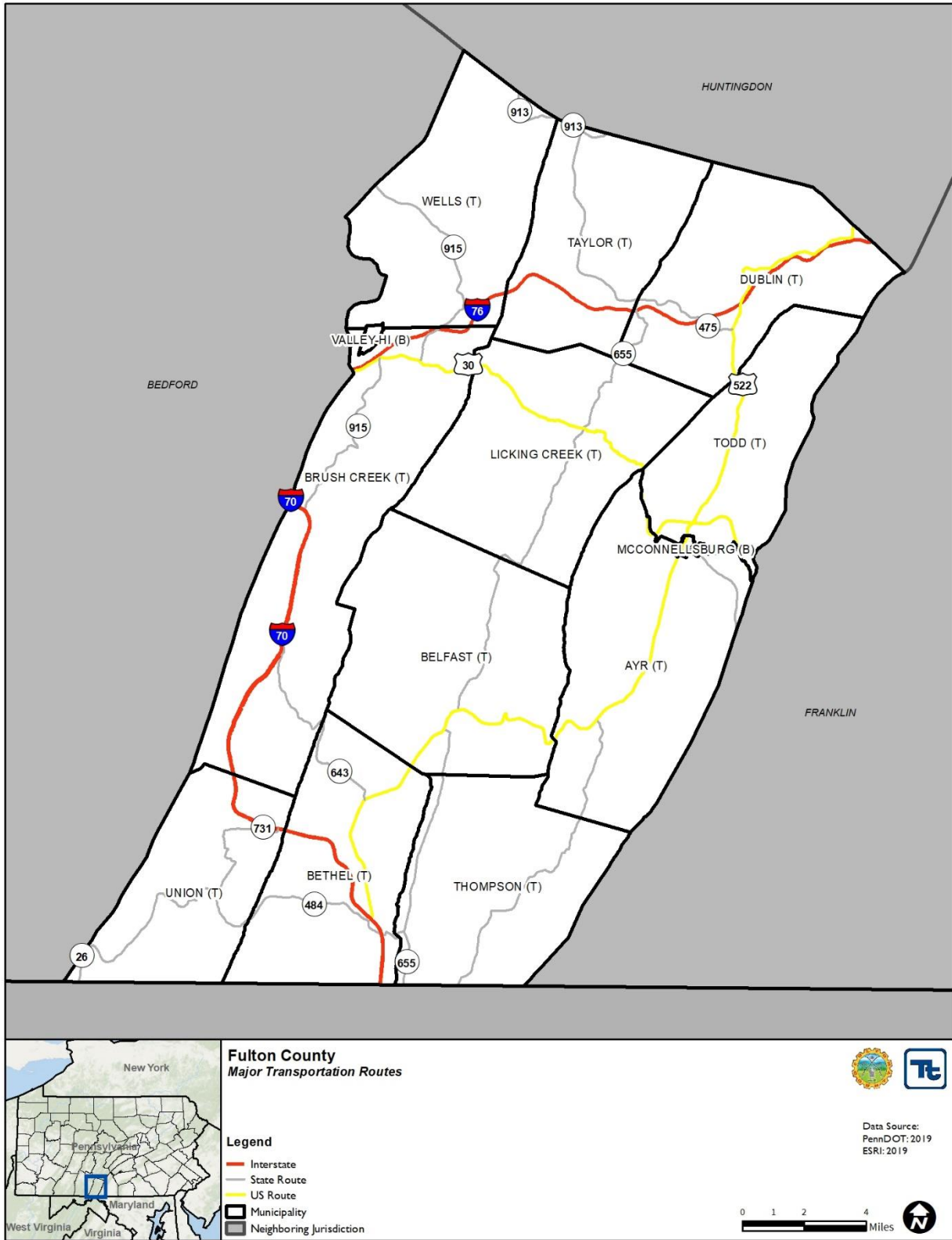
There is no warning time for vehicular accidents. Factors contributing to these accidents are typically associated with the driver, vehicle, and the environment. Factors associated with the driver include error, speeding, lack of experience, and blood-alcohol level. Factors associated with the vehicle include type, condition, and center of gravity. Environmental factors include quality of the infrastructure, weather, and obstacles. The majority of vehicular accidents are attributed to the driver. Vehicular accidents can severely affect those directly involved as well as others not directly involved. Other effects may include severe traffic delays, lost sales to businesses, delayed commodity shipments, and increased insurance costs (Cova and Conger 2004).

County and local officials identified the following areas as especially problematic for transportation accidents:

- PA-915 near Slabtown Drive
- US-30 near South Valley Road
- I-70 in Brush Creek Township



Figure 4.3.11-1. Major Transportation Routes in Fulton County





### Aviation Accidents

Fulton County has only one airport within its limits, and this airport, Flying R Airport – PN35, is privately owned and operated. Although Fulton County does not maintain any public airports, several Pennsylvania counties near Fulton do. The most notable are the Franklin County Regional Airport and the Bedford County Airport. Farther away are the Gettysburg Airport, the Hanover Airport, the Mid-Atlantic Soaring Airport, and the Southern Adams County Heliport in Adams County; the Carlisle Airport and the Shippensburg Airport in Cumberland County; the Altoona-Blair County Airport, the Blue Knob Valley Airport, and the Cove Valley Airport in Blair County; and the Somerset County Airport in Somerset County. In addition, the Harrisburg International Airport is a little less than 70 miles from McConnellsburg, PA. This airport may have associated air traffic patterns in the skies above Fulton County that could lead to problems in flight and a crash within the County.

Approximately 80 percent of all aviation accidents occur shortly before or during take-off and landing. Reportedly, most of these accidents are caused by human error. Mid-flight accidents are rare but not unheard of. A survey of 1,843 plane crashes between 1950 and 2006 showed that 53 percent were the result of pilot (human) error, 21 percent were caused by mechanical failure, 11 percent were caused by weather, 8 percent were attributed to other human error (lack of communication or improper maintenance), 6 percent were caused by sabotage and terrorism, and 1 percent resulted from other causes (Krasner 2009).

Aviation accidents are often devastating incidents that may result in serious injuries or fatalities. The Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB) are the agencies responsible for monitoring air travel and investigating accidents. Some of the most common causes of aviation accidents occur as a result of violations of FAA and NTSB regulations. Some other causes of accidents include, but are not limited to:

- Pilot or flight crew errors – Pilot error is the number one cause of aviation accidents and accounts for the highest number of fatalities. Pilots have the responsibility to transport passengers safely from one place to another and follow the FAA and NTSB regulations to better ensure passenger safety. If a pilot or flight crew makes an error, an accident may occur.
- Faulty equipment – Faulty aircraft equipment or mechanical features is another common cause of aviation accidents.
- Aircraft design flaws – The manufacturer of an aircraft is responsible for an aviation accident if the structural design is flawed and results in an accident.
- Failure to properly fuel or maintain the aircraft – If any regulations and safety standards set by the FAA or NTSB are violated, an accident may occur.
- Negligence of Federal Air Traffic Controllers – Failure of air traffic controllers to properly monitor the airways is another cause of aviation accidents (*Aviation Law News* Date Unknown).

#### 4.3.11.2 Range of Magnitude

Roadway accidents in Fulton County range from minor crashes to more serious incidents that involve injuries or fatalities or result in a release of HazMats (described further in Section 4.3.4).

Aircraft accidents can vary from a single-engine aircraft having a “hard landing” causing damage to the aircraft, to a crash of a small turboprop or jet aircraft, to a crash of a large jet (such as a Boeing 727). Other aircraft accidents could include helicopter or experimental aircraft crashes. Aviation accidents can also involve radio-controlled or drone aircraft devices, many of which are experimental and not subject to defined regulatory oversight, potentially complicating issues with and for the public that could arise if one of these devices crashes.

A worst-case transportation accident scenario within the County would be the overturn of a tractor-trailer carrying an extremely hazardous substance (described in Section 4.3.4) resulting in a massive release of its cargo on a major roadway. This incident would block traffic on Fulton County’s major transportation routes and could threaten the health and safety of individuals on the roadways and in surrounding neighborhoods. In addition, a



release could necessitate closure of critical County facilities near the accident. The most likely transportation accident in the County would involve a single vehicle hitting an object and sustaining minimal damage.

#### 4.3.11.3 Past Occurrence

Major roadway accidents (such as multi-vehicle accidents, those that close roads or bridges, or those involving school buses) are reported by Fulton County to PennDOT. Table 4.3.11-3 summarizes these accidents from 2013 to 2017. While this table lists accidents reported to the counties and Commonwealth, significantly more minor accidents are not reported.

**Table 4.3.11-3. Summary of Major Roadway Accidents in Fulton County, 2013 to 2017**

Year	Vehicle Accidents	Aircraft Accidents	Fatalities
2013	286	0	1
2014	246	0	9
2015	264	0	5
2016	228	0	2
2017	246	0	7
<b>Total</b>	<b>1,270</b>	<b>0</b>	<b>24</b>

Source: PennDOT 2018

Table 4.3.11-4 below describes the significant transportation accidents in Fulton County from 2015 to April 2019.

**Table 4.3.11-4. Significant Accidents in Fulton County, 2015 - April 2019**

Date(s) of Event	Event Type	Description	Location
08/29/2017	Vehicular Accident	Runaway cement truck into a camper and fence behind Sheetz.	McConnellsburg Borough
08/01/2018	Vehicular Accident	A freight truck hauling sand crashed on PA-915 at the bridge near Slabtown Dr.	Wells Township
10/01/2018	Vehicular Accident	A freight truck went over the embankment on PA-915 near 187 Slabtown Dr. with driver ejection.	Wells Township
12/03/2018	Vehicular Accident	A car accident occurred with a freight truck going into a pond on U.S.-30 near South Valley Road, there was 1 reported fatality.	Brush Creek Township
01/07/2019	Vehicular Accident	A 48-vehicle pile-up with a fuel spill occurred on I-70 due to icy conditions. A winter weather advisory was in effect at this time.	Brush Creek Township
02/19/2019	Vehicular Accident	A freight truck crashed on McQuait’s Turn located at 10590 Waterfall Road.	Dublin Township
04/08/2019	Vehicular Accident	A freight truck hauling an oversized load rolled on U.S-30 near South Valley Road.	Brush Creek Township
04/17/2019	Vehicular Accident	A truck hauling alcohol crashed on PA-915. The driver was ejected, and the passenger was killed.	Wells Township

Source: Fulton County, 2019

#### 4.3.11.4 Future Occurrence

Transportation hazards are impossible to predict accurately; however, areas prone to these hazards can be located, quantified through analysis of historical records, and plotted on countywide and municipality base maps.



Areas with certain characteristics that contribute to these hazards or increase vulnerability to these hazards can be identified.

Assuming that transportation accidents are as likely to occur in the future as they have occurred in the past, and based on the available data, Fulton County can expect the following each year:

- Approximately 1,270 major vehicle accidents. (The actual number of vehicle accidents in Fulton County may be much higher; however, this figure is based on vehicle accidents captured from PennDOT from 2013-2017.)
- No aircraft incidents.

Based on the Risk Factor Methodology Probability Criteria, the probability of a transportation accident in the categories listed above is considered to be *highly likely* (see Table 4.4-1).

#### 4.3.11.5 Vulnerability Assessment

The entire County has been identified as the hazard area for transportation accidents. This section evaluates and estimates the potential impact of transportation hazards on Fulton County in the following sections:

- Overview of vulnerability
- Data and methodology used for the evaluation
- Impacts on: (1) life, safety, and health; (2) general building stock; (3) critical facilities; (4) the economy; and (5) future growth and development
- Further data collections that will assist in understanding this hazard over time

Several types of County transportation rely on use of roadways. Hazards associated with transportation can include natural hazards affecting the roadway, type of material being transported, or hazards pertaining to the transportation medium itself. Multiple major roadways (interstates and other major highways) within the County are used by residents and commuters, and these are means for transporting all types of materials, including HazMats. A major accident on any of these major roadways is possible and could minimally or severely affect the County.

#### Impact on Life, Health, and Safety

Transportation hazards could lead to potential losses in categories of human health and life, property, and natural resources. Vehicular accidents, flooded roadways, and other roadway impairments may result in injury or death to drivers and passengers on the road, the public in the immediate vicinity, and emergency services personnel. The number of people exposed to a hazard depends on population density, whether exposure occurs during day or night, and proportions of the population located indoors and outdoors.

The County and its municipalities are prepared to manage and respond to transportation hazards.

#### Impact on General Building Stock, Critical Facilities, Economy, and Future Development

Because of insufficient data, a full loss estimate was not completed for the transportation hazard. Loss of roadway use and public transportation services would affect thousands of commuters, employment, day-to-day operations within the County, and delivery of critical municipal and emergency services. Disruption of one or more of these modes of transportation can lead to congestion of another and affect both the County and the region as a whole. As discussed in Section 2.4 of this HMP, areas targeted for future growth and development have been identified across Fulton County. Increased development in the County and region will lead to increased road traffic.



### Impact on the Environment

Like the range of magnitude, the environmental impacts associated with transportation crashes can vary greatly. In the case of a simple motor vehicle crash or aviation crash, the environmental impact is minimal. However, if the crash involves any type of vehicle moving chemicals or other hazardous materials, the impact will be considerably larger and may include an explosion or the release of potentially hazardous material (PEMA 2018). For a complete discussion of the environmental impacts of hazardous materials releases, refer to Section 4.3.4.

### Future Growth and Development

Increased development in Fulton County will lead to increased road traffic. Areas targeted for potential future growth and development in the next five to ten years have been identified across Fulton County (further discussed in Section 2.4 of this HMP). Any areas of growth could be potentially impacted by the transportation crashes hazard because the entire County is exposed and potentially vulnerable.

### Effect of Climate Change on Vulnerability

The 2014 National Climate Assessment notes that the national transportation system is vulnerable to climate change impacts through infrastructure damages and electricity and communication outages (U.S. Global Change Research Program 2014). Damaged infrastructure and ineffective safety systems may lead to an increased risk of transportation crashes. Continued use of transportation that uses fossil fuels also adds to the impact of climate change through the release of greenhouse gas emissions. According to the U.S. Department of Transportation, 28% of total U.S. greenhouse gas emissions in 2012 came from the transportation sector (USDOT 2017).

### 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 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).

Studying traffic and potential transportation accident patterns could provide information on vulnerability of specific road segments and nearby populations. Increased understanding of the types of HazMats transported through the County will also support mitigation efforts. 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 (see Section 4.3.4 for a discussion of environmental impacts due to transportation accidents), or repair damaged infrastructure would be useful for developing mitigation options.