



## 5.6 Hazardous Materials

### 2023 SHMP UPDATE CHANGES

- ❖ The hazard profile was reorganized and significantly enhanced to include detailed descriptions of the following: hazard definition, location, extent, previous occurrences, and probability of future occurrences (including how future conditions may impact the hazard).
- ❖ Hazardous materials incidents that occurred in the State of West Virginia (the State) from January 1, 2018, through December 31, 2022, were researched for this 2023 HMP.
- ❖ Information was updated regarding the current population affected by hazardous materials.
- ❖ State asset exposure to hazardous materials was analyzed, and local vulnerabilities were assessed.
- ❖ The profile and vulnerability assessment have been updated to include the most up-to-date information on the numbers of hazardous materials facilities and Superfund sites.
- ❖ A discussion of future changes that may impact the State's vulnerability has been added.

#### 5.6.1 Hazard Profile

This section provides general information on the hazardous materials hazard.

##### HAZARD DESCRIPTION

Hazardous materials are ubiquitous in modern society and may be found at all production, consumption, and disposal stages. Federal and State laws permit the intentional release of some hazardous materials into the environment, typically in quantities, in a form, and/or in locations such that the risk to human health and the environment is thought to be acceptable.

However, sometimes releases are unintentional, resulting from leaks, accidents, or natural hazards (FEMA 2019). Many hazardous substances are commonly used chemicals that are harmless in their normal uses but are quite dangerous if released in concentration. The U.S. Environmental Protection Agency (U.S. EPA) designates more than 1,300 substances as hazardous and subject to the reporting requirements under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Emergency Planning and Community Right-to-Know Act (EPCRA), and/or Clean Air Act (CAA). This number does not include all hazardous chemicals for which material safety data sheets are required (U.S. EPA 2015). Because relevant legislation uses the term "hazardous substance," but the emergency management and response community typically use the term "hazardous materials," for the purpose of this hazard profile, "hazardous materials" is used to include "hazardous substances."

Hazardous waste is waste that is dangerous or potentially harmful to our health or the environment. The wastes can be liquid, solid, gas, or sludge. Examples of potentially hazardous wastes are discarded commercial products,

##### Key Terms

***Hazardous Materials:*** Any substance or material that can pose an unreasonable risk to health, safety, and property (Federal Aviation Administration 2023)



such as cleaning fluids or pesticides, or the by-products of manufacturing processes (West Virginia Department of Environmental Protection 2022).

Oil releases are a subset of hazardous materials that can occur naturally or unnaturally through oil seeps on land or underwater. Oil spills can result from the release of crude oil from offshore oil platforms, drilling rigs, wells, pipelines, tank trucks, and marine tank vessels (tankers). Refined petroleum products such as gasoline, diesel, and heavier fuels such as bunker fuel used by cargo ships are also sources of potential oil spill releases. According to the National Oceanic and Atmospheric Administration (NOAA), oil spills can be caused by people making mistakes or being careless, by equipment breaking down, by natural disasters, and by deliberate acts of terrorism, vandals, or illegal dumpers (NOAA 2016).

Hazardous substances, as defined by the CERCLA (commonly known as Superfund), include materials and wastes that are considered severely harmful to human health and the environment. According to CERCLA, the definition of a hazardous substance includes the following (U.S. EPA 2023):

- Any element, compound, mixture, solution, or substance designated as hazardous under Section 102 of CERCLA.
- Any hazardous substance designated under Section 311(b)(2)(a) of the Clean Water Act (CWA) or any toxic pollutant listed under Section 307(a) of the CWA. There are over 400 substances designated as either hazardous or toxic under the CWA.
- Any hazardous waste having the characteristics identified or listed under Section 3001 of the Resource Conservation and Recovery Act (RCRA).
- Any hazardous air pollutant listed under Section 112 of the CAA, as amended. There are over 200 substances listed as hazardous air pollutants under the CAA.
- Any imminently hazardous chemical substance or mixture which the U.S. EPA Administrator has "taken action under" Section 7 of the Toxic Substances Control Act (TSCA) (U.S. EPA 2023).

The EPCRA, also known as Title III of the Superfund Amendment and Reauthorization Act (SARA Title III), was passed by Congress in 1986 (NIH n.d.). The EPCRA establishes requirements for federal, State, and local governments, Indian tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. States and communities, working with facilities, can use the information to improve chemical safety and protect public health and the environment. There are four key provisions to the EPCRA, which include:

- **Emergency planning** – Local governments are required to prepare chemical emergency response plans and to review plans at least annually. State governments are required to oversee and coordinate local planning efforts. Facilities that maintain Extremely Hazardous Substances (EHS) on-site in quantities greater than corresponding threshold planning quantities (TPQs) must also cooperate in preparing emergency plans.
- **Emergency release notification** – Facilities must immediately report accidental releases of EHSs and other hazardous substances, as defined under CERCLA. Any release of these substances in quantities greater than their corresponding reportable quantities must be reported to State and local officials.



- **Hazardous chemical storage reporting requirements** – Facilities handling or storing any hazardous chemicals, as defined under Occupational Safety and Health Administration (OSHA), must submit Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) to State and local officials and fire departments. Facilities must also submit an inventory form for these chemicals to State and local officials and local fire departments.
- **Toxic chemical release inventory (TRI)** – Facilities must complete and submit a toxic chemical release inventory form (Form R) each year. Form R must be submitted for each of the over 600 TRI chemicals that are manufactured or other used above the applicable threshold quantities (NIH n.d.).

The U.S. EPA chooses to specifically list substances as hazardous and extremely hazardous rather than providing objective definitions. Hazardous substances, as listed, are generally materials that, if released into the environment, tend to persist for long periods and pose long-term health hazards for living organisms. Extremely hazardous substances, while also generally toxic materials, represent acute health hazards that, when released, are immediately dangerous to the lives of humans and animals and cause serious damage to the environment. When facilities have these materials in quantities at or above the TPQ, they must submit “Tier II” information to appropriate State and/or local agencies to facilitate emergency planning (NIH n.d.).

The United States Department of Transportation (U.S. DOT) regulations define hazardous materials as a substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce and has designated as hazardous under Section 5103 of federal hazardous materials transportation law (U.S. Code Title 49.B.I.A.105.A n.d.). The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (U.S. Code Title 49.B.I.C.172 n.d.), and materials that meet the defining criteria for hazard classes and divisions. When a substance meets the U.S. DOT definition of a hazardous material, it must be transported in accordance with safety regulations providing for appropriate packaging, communication of hazards, and proper shipping controls. According to the National Fire Protection Association (NFPA), the U.S. DOT categorizes hazardous materials into the following nine classes based on chemical characteristics producing the risk (NFPA 2022):

- Class 1: Explosives
- Class 2: Gases
- Class 3: Flammable liquids
- Class 4: Flammable solids
- Class 5: Oxidizers and organic pesticides
- Class 6: Poisons and etiologic materials
- Class 7: Radioactive materials
- Class 8: Corrosives
- Class 9: Miscellaneous

During the past two decades, increasing attention has been given to hazardous materials releases resulting from natural disasters. The term “natech” (an abbreviation for “natural disaster that triggers a technological accident”)



is generally used to refer to such releases. As pointed out by hazmat specialists (Cruz and Suarez-Paba 2019), natechs are of particular concern because:

- They may simultaneously affect many industrial facilities, overwhelming the capacity for response.
- Mitigation measures may fail (e.g., an outer containment system constructed to contain a release from within may itself be damaged so badly that it allows the hazardous material to escape).
- There may be cascading disasters, resulting in a “domino effect” (e.g., a fire in one facility may cause an explosion in a neighboring facility, which in turn damages a third facility, and so on).
- Response personnel typically focus on search and rescue first and give attention to the presence of hazardous materials only secondarily, if at all.
- Response may be hindered by a disaster’s impact on the physical environment (e.g., roadways may be cut or blocked; power lines and communication towers may be toppled).
- Determining the appropriate response may be difficult (e.g., it may not be obvious whether, following an earthquake, people should shelter in place for protection against a chemical release or be evacuated to avoid being harmed by aftershocks) (Krausmann, Girgin and Necci 2019).

This hazard profile addresses the State’s vulnerability to hazardous materials releases from fixed facilities and during transportation by road, rail, or pipeline.

## LOCATION

### In-Transit and Fixed Facilities with Hazardous Materials

Hazardous materials are widely stored and transported throughout the State. An event involving hazardous materials release can occur anywhere. However, for the purpose of this hazard profile, the State examines its vulnerability within certain distances of fixed facilities and transportation routes. For releases from road, rail, and pipeline transportation, the State uses a buffer of  $\frac{1}{2}$  to define the vulnerable area. For releases from fixed facilities that do not store EHS, the State also uses a  $\frac{1}{2}$  mile buffer. The State uses a radius of 1 mile around fixed facilities that do store EHS. The State recognizes that the U.S. EPA guidance (U.S. EPA, FEMA, U.S. DOT 1987) on calculating the vulnerability radius around fixed facilities reflects a 10-mile radius around some facilities. However, the radius around each specific facility was not available for this SHMP update.

Table 5.6-1 shows the area of the State and each county that is vulnerable to hazardous materials releases. West Virginia has 2,621,023 acres of land located within  $\frac{1}{2}$  mile of pipelines, 3,331,943 acres within  $\frac{1}{2}$  mile of rail lines, 2,158,396 acres within  $\frac{1}{2}$  mile of major roadways, 678,002 acres within the vulnerability radii of fixed facilities that store EHS, and 1,663,118 acres within  $\frac{1}{2}$  mile of fixed facilities that do not store EHS. Kanawha County has the most land of any county in each of these hazard areas, with 214,163 acres within  $\frac{1}{2}$  mile of pipelines, 262,080 acres within  $\frac{1}{2}$  mile of rail lines, 109,832 acres within  $\frac{1}{2}$  mile of a major roadway, 59,096 acres within the vulnerability radii around fixed facilities with EHS, and 141,795 acres within  $\frac{1}{2}$  mile of fixed facilities that do not store EHS.



Figure 5.6-1 shows the buffers around pipelines. Figure 5.6-2 shows the buffer around rail lines. Figure 5.6-3 shows the buffer around major roadways. Figure 5.6-4 shows the vulnerable areas around fixed facilities. Each figure also highlights socially vulnerable populations within the State.

*Table 5.6-1: Total Acres of Land Area Located in the Hazmat Area by County*

County	Total Acres of Land Area	Total Acres of Land Area (Excluding Waterbodies) Located in the Hazmat Hazard Areas									
		Total Acres Located Within ½ Mile of Pipelines	Percent of Total	Total Acres Located Within ½ Mile of Rail Lines	Percent of Total	Total Acres Within ½ Mile of Major Roadways	Percent of Total	Total Acres Within 1 Mile of Facilities With EHS	Percent of Total	Total Acres Within ½ Mile of Facilities Without EHS	Percent of Total
Barbour	218,598	49,009	22.4%	44,594	20.4%	44,570	20.4%	4,014	1.8%	31,101	14.2%
Berkeley	205,141	0	0.0%	159,239	77.6%	26,339	12.8%	26,748	13.0%	19,707	9.6%
Boone	321,687	51,429	16.0%	128,147	39.8%	34,455	10.7%	3,842	1.2%	10,053	3.1%
Braxton	328,023	51,155	15.6%	57,061	17.4%	39,006	11.9%	4,015	1.2%	24,103	7.3%
Brooke	59,321	29,433	49.6%	35,646	60.1%	17,463	29.4%	40,976	69.1%	6,970	11.7%
Cabell	184,109	51,996	28.2%	104,048	56.5%	47,909	26.0%	13,386	7.3%	17,424	9.5%
Calhoun	179,487	33,827	18.8%	0	0.0%	9,007	5.0%	12,487	7.0%	91,586	51.0%
Clay	219,951	36,053	16.4%	0	0.0%	6,066	2.8%	0	0.0%	15,903	7.2%
Doddridge	205,051	128,786	62.8%	0	0.0%	12,115	5.9%	2,117	1.0%	141,795	69.2%
Fayette	427,276	61	0.0%	201,760	47.2%	70,164	16.4%	14,550	3.4%	12,539	2.9%
Gilmer	217,274	43,147	19.9%	3,855	1.8%	16,178	7.4%	2,008	0.9%	87,001	40.0%
Grant	305,479	7,233	2.4%	35,933	11.8%	34,011	11.1%	2,004	0.7%	7,834	2.6%
Greenbrier	654,360	1,609	0.2%	124,222	19.0%	79,696	12.2%	12,716	1.9%	11,097	1.7%
Hampshire	412,248	2,270	0.6%	54,931	13.3%	33,268	8.1%	8,133	2.0%	5,550	1.3%
Hancock	56,222	10,810	19.2%	32,289	57.4%	14,137	25.1%	8,813	15.7%	5,918	10.5%
Hardy	373,689	28,467	7.6%	39,245	10.5%	52,249	14.0%	2,000	0.5%	12,083	3.2%
Harrison	266,023	109,372	41.1%	57,120	21.5%	46,020	17.3%	27,120	10.2%	129,634	48.7%
Jackson	300,968	74,957	24.9%	27,127	9.0%	49,896	16.6%	3,466	1.2%	30,531	10.1%
Jefferson	134,920	0	0.0%	82,092	60.8%	10,293	7.6%	9,206	6.8%	15,369	11.4%
Kanawha	582,312	214,163	36.8%	262,080	45.0%	109,832	18.9%	59,096	10.1%	91,664	15.7%
Lewis	246,359	65,305	26.5%	9,999	4.1%	46,663	18.9%	5,316	2.2%	94,594	38.4%
Lincoln	280,594	83,361	29.7%	39,800	14.2%	43,699	15.6%	5,209	1.9%	22,291	7.9%
Logan	291,325	40,230	13.8%	106,428	36.5%	45,827	15.7%	11,478	3.9%	11,345	3.9%
Marion	199,006	165,861	83.3%	44,625	22.4%	36,657	18.4%	26,662	13.4%	23,552	11.8%
Marshall	199,304	159,269	79.9%	43,621	21.9%	34,308	17.2%	48,829	24.5%	49,751	25.0%



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Mason	284,059	16,317	5.7%	108,301	38.1%	67,249	23.7%	8,449	3.0%	8,077	2.8%
McDowell	342,174	21,348	6.2%	134,423	39.3%	37,051	10.8%	6,904	2.0%	7,718	2.3%
Mercer	268,828	10,356	3.9%	89,851	33.4%	70,378	26.2%	20,182	7.5%	11,139	4.1%
Mineral	210,134	7,548	3.6%	31,067	14.8%	16,479	7.8%	6,633	3.2%	6,405	3.0%
Mingo	270,756	48,562	17.9%	115,860	42.8%	64,221	23.7%	9,644	3.6%	12,118	4.5%
Monongalia	232,200	78,878	34.0%	113,501	48.9%	64,867	27.9%	29,591	12.7%	30,548	13.2%
Monroe	302,704	21,901	7.2%	9,892	3.3%	41,484	13.7%	8,054	2.7%	1,860	0.6%
Morgan	146,880	0	0.0%	69,864	47.6%	14,630	10.0%	4,707	3.2%	3,870	2.6%
Nicholas	415,482	27,359	6.6%	35,877	8.6%	29,350	7.1%	8,026	1.9%	10,838	2.6%
Ohio	69,666	25,224	36.2%	115	0.2%	21,701	31.1%	42,170	60.5%	10,562	15.2%
Pendleton	446,485	14,637	3.3%	0	0.0%	50,436	11.3%	7,094	1.6%	5,020	1.1%
Pleasants	85,837	9,147	10.7%	20,650	24.1%	9,940	11.6%	4,232	4.9%	29,357	34.2%
Pocahontas	601,520	0	0.0%	27,258	4.5%	51,593	8.6%	0	0.0%	7,000	1.2%
Preston	415,612	60,370	14.5%	36,536	8.8%	70,425	16.9%	12,079	2.9%	14,231	3.4%
Putnam	223,706	40,999	18.3%	56,257	25.1%	61,362	27.4%	16,399	7.3%	45,095	20.2%
Raleigh	388,484	47,981	12.4%	138,096	35.5%	74,265	19.1%	16,207	4.2%	17,468	4.5%
Randolph	664,970	50,816	7.6%	62,792	9.4%	69,920	10.5%	2,830	0.4%	14,665	2.2%
Ritchie	290,396	60,586	20.9%	0	0.0%	13,637	4.7%	2,092	0.7%	187,755	64.7%
Roane	309,410	53,219	17.2%	0	0.0%	36,385	11.8%	18,846	6.1%	28,776	9.3%
Summers	233,898	20,961	9.0%	84,897	36.3%	23,966	10.2%	6,636	2.8%	1,229	0.5%
Taylor	110,892	19,565	17.6%	55,926	50.4%	28,545	25.7%	3,776	3.4%	11,314	10.2%
Tucker	265,897	30,535	11.5%	578	0.2%	65,541	24.6%	1,999	0.8%	3,222	1.2%
Tyler	166,857	73,355	44.0%	14,248	8.5%	7,519	4.5%	7,681	4.6%	35,204	21.1%
Upshur	226,613	52,533	23.2%	66,478	29.3%	15,235	6.7%	9,169	4.0%	20,784	9.2%
Wayne	325,702	84,760	26.0%	107,232	32.9%	76,248	23.4%	11,462	3.5%	31,277	9.6%
Webster	355,637	0	0.0%	30,588	8.6%	0	0.0%	2,008	0.6%	7,675	2.2%



County	Total Acres of Land Area	Total Acres of Land Area (Excluding Waterbodies) Located in the Hazmat Hazard Areas									
		Total Acres Located Within ½ Mile of Pipelines	Percent of Total	Total Acres Located Within ½ Mile of Rail Lines	Percent of Total	Total Acres Within ½ Mile of Major Roadways	Percent of Total	Total Acres Within 1 Mile of Facilities With EHS	Percent of Total	Total Acres Within ½ Mile of Facilities Without EHS	Percent of Total
Wetzel	231,289	195,299	84.4%	49,464	21.4%	33,560	14.5%	25,289	10.9%	61,514	26.6%
Wirt	150,356	4,878	3.2%	0	0.0%	0	0.0%	2,007	1.3%	24,322	16.2%
Wood	241,020	43,178	17.9%	64,242	26.7%	38,152	15.8%	21,613	9.0%	37,305	15.5%
Wyoming	320,602	62,908	19.6%	114,087	35.6%	44,428	13.9%	8,034	2.5%	7,372	2.3%
<b>Total</b>	<b>15,466,796</b>	<b>2,621,023</b>	<b>16.9%</b>	<b>3,331,943</b>	<b>21.5%</b>	<b>2,158,396</b>	<b>14.0%</b>	<b>678,002</b>	<b>4.4%</b>	<b>1,663,118</b>	<b>10.8%</b>

Source: USGS 2022; West Virginia University Geographic Information Systems (GIS) Technical Center (WVU GISTC) 2022

Note: The acreage in this table excludes waterbody areas.





**Figure 5.6-1. Areas within 1/2 Mile of Pipelines**

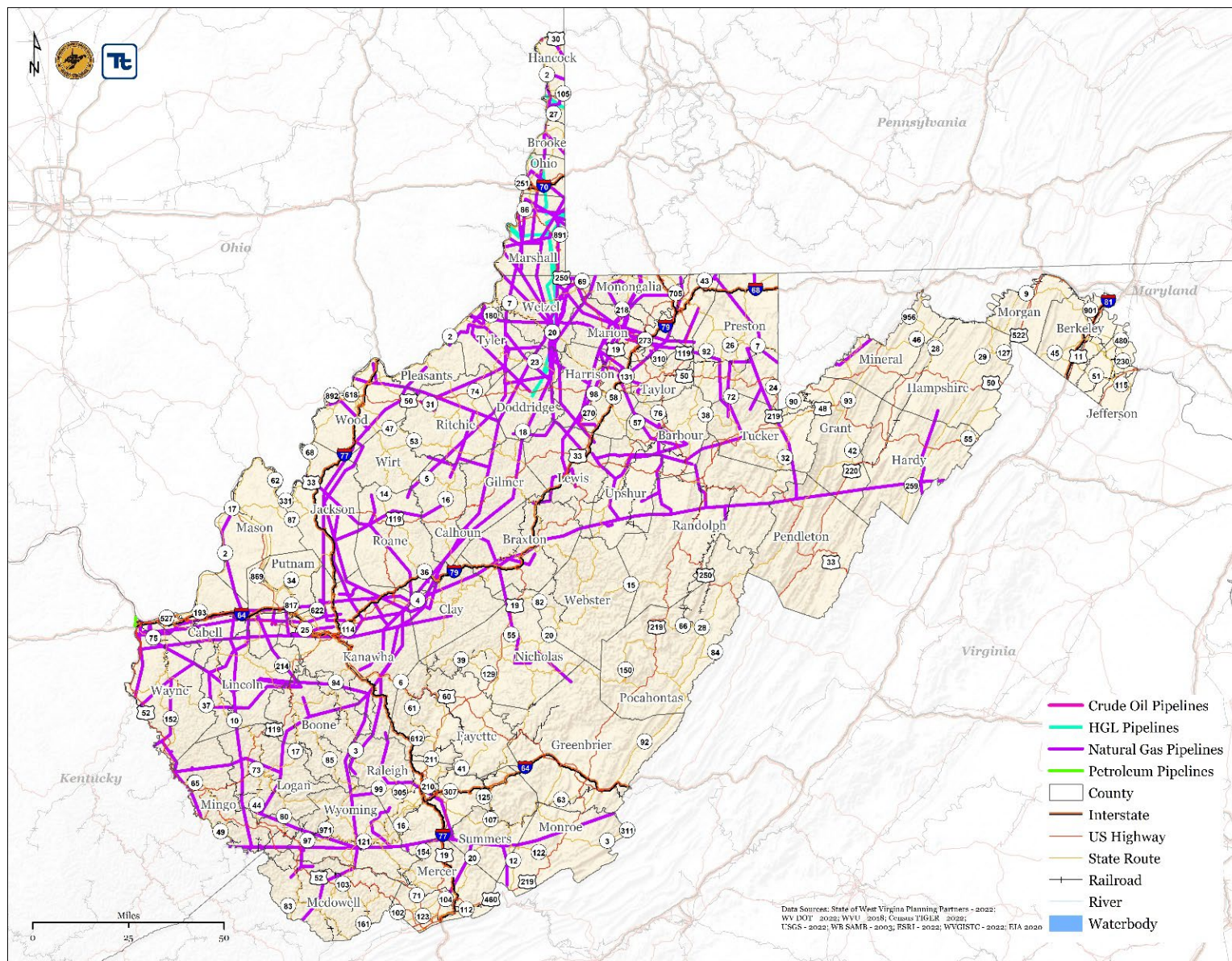






Figure 5.6-2. Areas within 1/2 Mile of Rail Lines

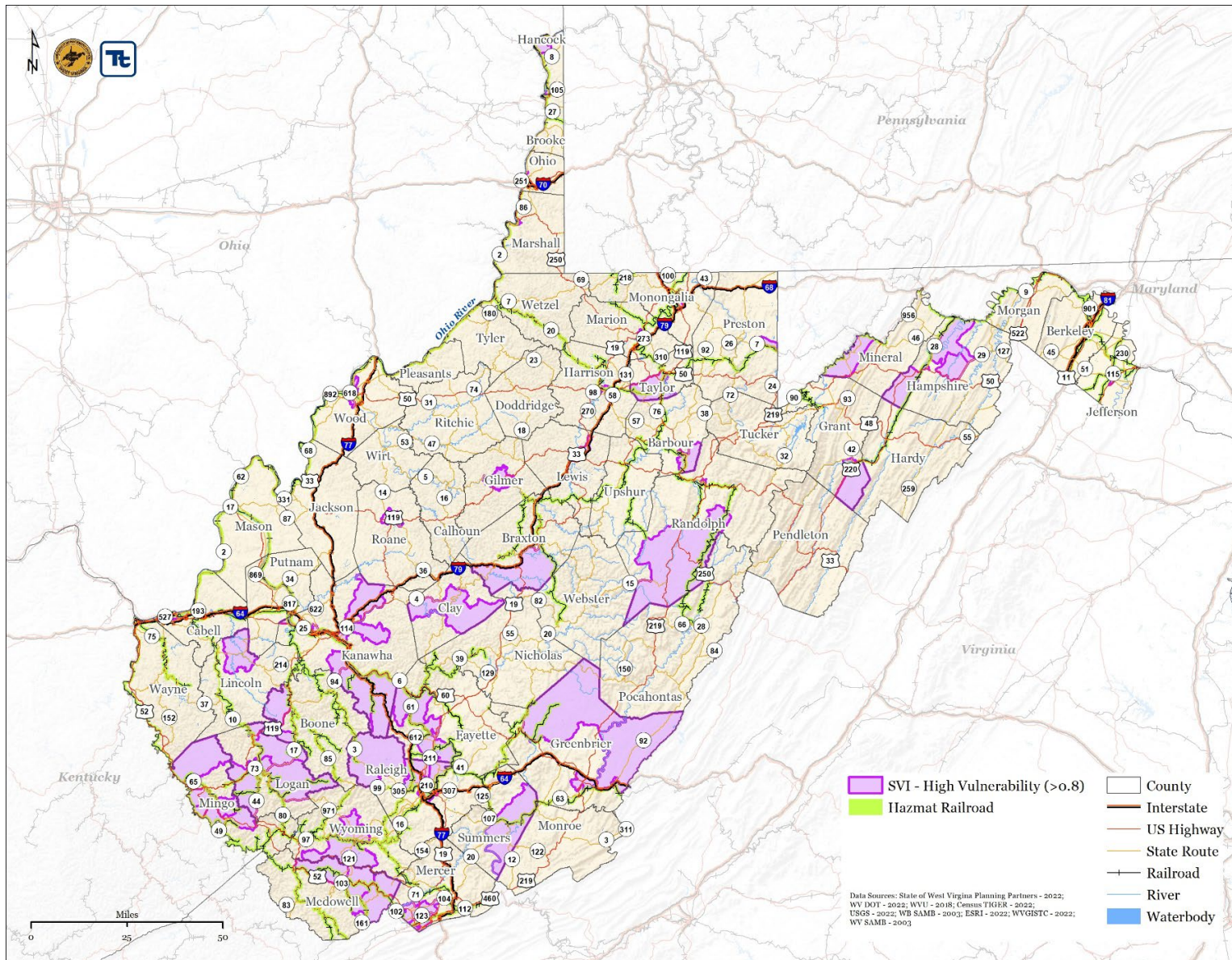
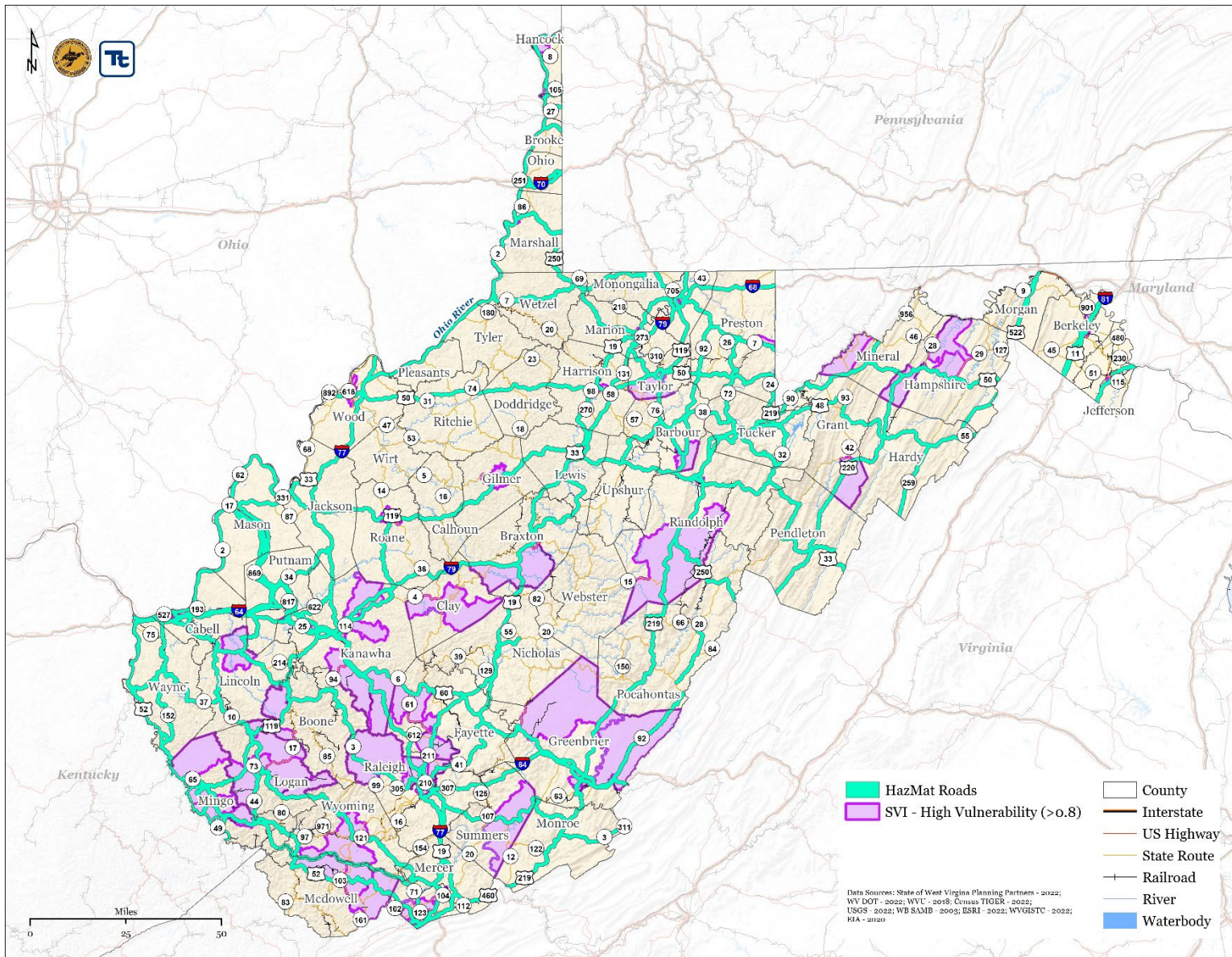






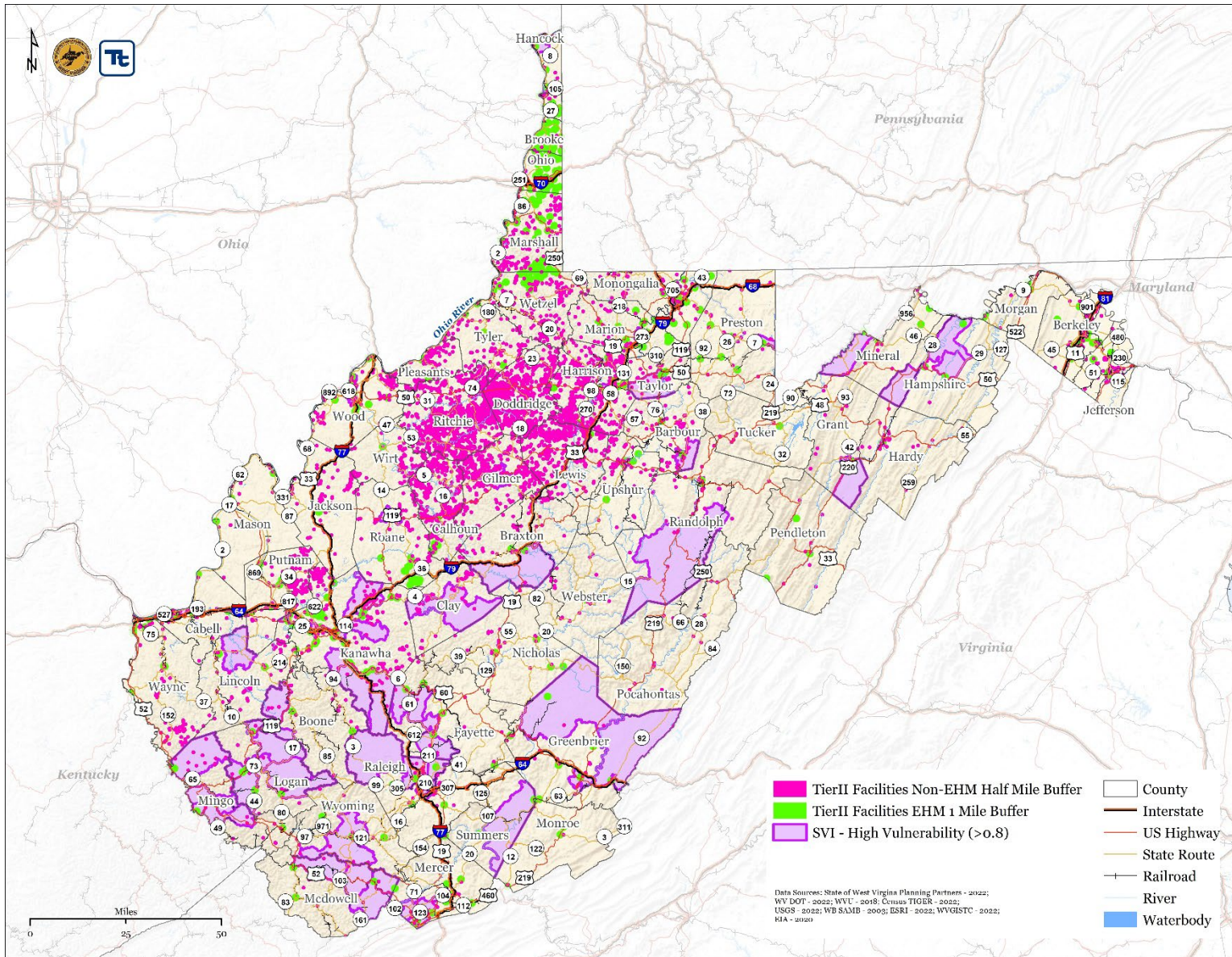
Figure 5.6-3. Areas within 1/2 Mile of Major Roadways







**Figure 5.6-4. Areas Vulnerable to Releases from Fixed Facilities**





## Superfund Sites

In response to concerns regarding health and environmental risks, Congress established the Superfund program in 1980 to clean up sites in which hazardous materials were released and ultimately abandoned (U.S. EPA 2023). The Superfund program is locally administered by the U.S. EPA in cooperation with the West Virginia Department of Environmental Protection (WVDEP 2023).

Federal regulations, including CERCLA and the SARA, require that a National Priorities List (NPL) of sites throughout the United States be maintained and revised at least annually (SARA amended CERCLA on October 17, 1986). The NPL is a list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the U.S. EPA in determining which sites warrant further investigation. As of May 21, 2023, there are 14 active NPL (Superfund) sites in West Virginia (U.S. EPA 2023). See Table 5.6-2 for more information.

Superfund sites increase the State's and communities' risk to impacts from other hazards, such as flooding, that can cause the migration or spread of hazardous materials throughout the environment, adversely impacting both public and environmental health and adding significant complications to recovery efforts following a disaster.

**Table 5.6-2: Superfund National Priorities List**

County	City	Site Name	Listing Date
<b>Brooke</b>	Follansbee	Follansbee	January 2004
<b>Fayette</b>	Minden	Shaffer Equipment/Arbuckle Creek Area	May 2019
<b>Harrison</b>	Clarksburg	North 25th Street Glass and Zinc	September 2016
<b>Jackson</b>	Ravenswood	Ravenswood PCE Ground Water Plume	September 2004
<b>Jefferson</b>	Leetown	Leetown Pesticide	August 1996
<b>Marion</b>	Fairmont	Big John Salvage - Hoult Road	July 2000
<b>Marion</b>	Fairmont	Sharon Steel Corp (Fairmont Coke Works)	December 1996
<b>Marshall</b>	Moundsville	Hanlin-Allied-Olin	July 1999
<b>Mason</b>	Point Pleasant	West Virginia Ordnance (USARMY)	September 1983
<b>Mineral</b>	Mineral County	Allegany Ballistics Laboratory (USNAVY)	May 1994
<b>Monongalia</b>	Morgantown	Ordnance Works Disposal Areas	August 2018
<b>Putnam</b>	Nitro	Fike Chemical, Inc.	September 1983
<b>Wetzel</b>	Paden City	Paden City Groundwater	March 2022
<b>Wood</b>	Vienna	Vienna Tetrachloroethene	October 1999

Source: U.S. EPA 2023

## EXTENT

Hazardous materials vary greatly in the types of health risks they pose to humans. Emergency responders contend with the following potential health risks from hazardous materials: thermal, radiological, asphyxiation, chemical, etiological, or mechanical (TRACEM) (FEMA 2019).

- Thermal harm results from exposure to temperature extremes. Thermal injuries can be external (from contacting or being in close proximity to, a fire or other heat source) or internal (from inhaling fumes or heated air). Thermal injuries can also include frostbite from contact with low-temperature hazardous materials.



- Radiological harm, perhaps the most misunderstood type of harm in the TRACEM model, results from exposure to radioactive materials. The most harmful types of radiation cannot be seen, felt, or smelled. Special detection devices are required to monitor and measure levels of radiation, and these devices are becoming more available to emergency responders.
- Asphyxiation results from exposure to materials that reduce oxygen to levels that may cause suffocation. Asphyxiation typically occurs in confined spaces or with extremely concentrated forms of simple asphyxiants. Asphyxiants displace so much oxygen from the ambient atmosphere that the lungs cannot supply enough to fully oxygenate the tissues, and the victim slowly suffocates. Many asphyxiants (e.g., carbon dioxide, methane) are odorless and tasteless (unless odorants are added), so that individuals could become unconscious without realizing an asphyxiant gas is present.
- Chemical harm results from exposure to chemicals, including poisons and corrosives. Injuries and illness vary by material. Chemical agents are classified according to the potential severity of their effects.
- Etiological (or biological) harm results from exposure to biological materials, including bacteria, viruses, and toxins. Symptoms of etiological harm are often delayed because the pathogens often require time to multiply sufficiently to cause illness in the person carrying the pathogen.
- Mechanical harm results from exposure to, or contact with, fragmentation or debris scattered because of a pressure release, explosion, or boiling liquid expanding vapor explosion (BLEVE). Certain, predictable reactions occur during and immediately after an explosion, routinely injuring or killing anyone in proximity. The degree of harm is closely related to the size of the explosion and proximity to the device (FEMA 2019).

The extent of a hazardous substance release will depend on whether it is from a fixed or in-transit (mobile) source, the volume of substance released, duration of the release, the toxicity and properties of the substance, and the environmental conditions (for example, wind and precipitation, terrain, etc.). Hazardous substance releases can contaminate air, water, and soils, possibly resulting in death and/or injuries. Dispersion can take place rapidly when the hazardous substance is transported by water and wind. While often accidental, releases can occur as a result of human carelessness, intentional acts, or natural hazards. When caused by natural hazards, these incidents are known as secondary events. Such releases can affect nearby populations and contaminate critical or sensitive environmental areas (FEMA 2019).

With a hazardous substance release, whether accidental or intentional, several potentially exacerbating or mitigating circumstances will affect its severity of impact. Mitigating conditions are precautionary measures taken in advance to reduce the impact a release has on the surrounding environment. Primary and secondary containment or shielding by sheltering-in-place measures protects people and property from the harmful effects of a hazardous substance release. Exacerbating conditions, characteristics that can enhance or magnify the effects of a hazardous substance release, include the following (FEMA 2019):

- Weather conditions, which affect how the hazard occurs and develops (such as wind speed and direction)
- Micro-meteorological effects of buildings and terrain, which alters the dispersion of hazardous substances in compliance with applicable codes (such as building or fire codes)
- Mechanical failures (such as fire protection and containment features), which can substantially increase the damage to the facility itself and to surrounding buildings





- Land use, population and building density will be factors contributing to the extent of exposure and impacts incurred.

## Warning Time

Hazardous materials incidents can occur suddenly without any warning (such as an explosion) or may develop slowly (such as a leaking container). Facilities that store EHS are required to notify local officials when an incident occurs. Local emergency responders and emergency management officials determine the need to evacuate the public or whether to advise people to shelter in place. Similar to on-site hazardous substances incidents, the amount of warning time for incidents associated with hazardous substances in-transit varies based on the nature and scope of the incident. If an explosion or hazardous materials release does not occur immediately following an accident, there may be time for warning adjacent neighborhoods and enough time to facilitate appropriate protective actions.

## PREVIOUS OCCURRENCES AND LOSSES

### Federal Emergency Management Agency (FEMA) Disaster Declarations

Between 1954 and 2022, FEMA has included the State in one hazardous material-related disaster (DR) or emergency (EM) declaration, as shown in Table 5.6-3.

**Table 5.6-3. FEMA Disaster Declarations for Hazardous Materials (1954 to 2022)**

Incident Date	Declaration Number	Counties Affected	Name	Date Declared
January 9-20, 2014	EM-3366	Boone, Cabell, Clay, Jackson, Kanawha, Lincoln, Logan, Putnam, Roane	West Virginia Chemical Spill	January 10, 2014

Source: FEMA 2022

### U.S. Department of Agriculture (USDA) Disaster Declarations

The Secretary of Agriculture from the U.S. Department of Agriculture (USDA) is authorized to designate counties as disaster areas to make emergency loans to producers suffering losses in those counties and in counties that are contiguous to a designated county. Between 2018 and 2022, West Virginia was not included in any hazardous materials-related agricultural disaster declarations.

## Previous Events

Information on previous occurrences of hazardous materials releases comes from a variety of sources. For example, the U.S. DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) reported 285 hazardous materials incidents occurred in the State from 2018–2022 (U.S. DOT 2023). For this SHMP update, major events that occurred in the State from 2018–2022 are listed in Table 5.6-4. Not all incidents that occurred are reflected in the table.



**Table 5.6-4. Hazardous Material Incidents from 2018 to 2022**

Date of Incident	County	City	Impacts
June 6, 2018	Greenbrier	Lewisburg	A truck ran off the roadway along I-64 West at mile 171 and overturned, spilling approximately 6,500 gallons of petroleum product. WVDOH and WVDEP responded. No injuries or fatalities were reported. A contractor excavated 800 tons of contaminated soil that was disposed of in the Greenbrier County Landfill. \$336,670 in damages were reported.
July 24, 2018	Kanawha	Belle	A forklift operator lost control of a load of petroleum distillate. 275 gallons were released onto the trailer floor and leaked onto the asphalt and concrete below. A contractor cleaned up the spill. \$6,500 in damages were reported.
February 8, 2019	Morgan	Berkeley Springs	A propane truck rolled onto its side, releasing propane vapor for approximately 30 minutes. Remaining product was pumped into another vehicle. \$5,000 in damages were reported.
February 26, 2019	Kanawha	Charleston	A package of organic compounds spilled in a trailer and leaked onto 20 more packages. No injuries, fatalities, or damages were reported.
August 10, 2019	Ohio	Valley Grove	200 gallons of diesel fuel were released when the driver of a tank trailer struck a parked trailer. A clean-up contractor was dispatched and conducted remediation at the site. \$30,550 in damages were reported.
January 5, 2020	Wetzel	Proctor	3,600 gallons of toluene diisocyanate were released onto the roadway and migrated into a nearby creek. A clean-up contractor was dispatched to complete clean-up and site remediation. \$32,800 of damages were reported.
August 24, 2020	Hancock	Newell	500 gallons of flammable liquids were released from a truck onto the roadway. A contractor cleaned affected areas. \$25,000 in damages were reported.
April 16, 2021	Wood	Rockport	A tractor-trailer rolled over on I-77, spilling nearly 40,000 pounds of extremely hazardous substance. A contractor excavated affected soil. \$10,000 in damages were reported.
November 4, 2021	Wyoming	Maben	\$87,350 of damages occurred due to a 35-gallon diesel fuel spill. No other details were provided.
November 11, 2021	Cabell, Wayne	Huntington	270 gallons of corrosive liquids were spilled over the span of 30 miles from a leaking trailer. It was determined that the spilled material was not recoverable due to heavy rain.
July 19, 2022	Kanawha	Charleston	750 gallons of flammable liquids were spilled inside a trailer, with approximately 350 gallons having spilled outside the trailer. \$65,000 in damages were reported.
August 25, 2022	Fayette	Pax	A tractor-trailer accident spilled an unidentified quantity of alkyl dimethylamine on the West Virginia Turnpike near mile 62.5.

Source: U.S. DOT 2023; Jordan 2022

## PROBABILITY OF FUTURE HAZARD EVENTS

### Overall Probability

There has been one federal declaration for hazardous material incidents in the State. All events reported earlier in this section that occurred between 2018 and 2022 were used to calculate the probability of future occurrences. Based on the PHMSA and other sources, the State experienced 285 hazardous material incidents between 2018 and 2022. Therefore, there is a 100 percent chance of a hazardous material incident occurring in any given year in the State. However, as was the case for historical events in the State, the magnitude of the incidents expected to occur will vary widely from very minor releases to the potential for major events in which thousands of gallons of hazardous materials may be released.





**Table 5.6-5. Probability of Future Hazardous Materials Events in West Virginia**

Hazard Type	Number Of Occurrences Between 2018 And 2022	Percent Chance of Occurrence in Any Given Year
Hazardous Materials	285	100%

Source: U.S. DOT 2023

### Projected Future Conditions

In February 2022, the U.S. Government Accountability Office (GAO) found that nearly one-third of all hazardous materials facilities across the country are located in areas vulnerable to hazards that may become more vulnerable due to changing hazard conditions. Further, the U.S. EPA does not consistently assess how these facilities are managing risks from natural hazards and climate change (U.S. GAO 2022). GAO maintains an [interactive map](#) displaying vulnerable hazardous materials facilities, where it appears that several facilities in West Virginia are subject to moderate to high flood risk.

Future conditions may increase the frequency and intensity of specific natural hazards, putting hazardous materials facilities at greater risk of damage and releasing chemicals into surrounding communities.

## 5.6.2 Vulnerability Assessment

Overall, it is difficult to quantify potential losses due to hazardous material incidents because of the many variables that must be considered, including but not limited to the specific hazardous substance, quantity, location, time of day, meteorological conditions, surrounding environment, and emergency response and clean-up capabilities. Potential impacts may be local, regional, or statewide depending on the magnitude of the event and level of service disruptions. A qualitative assessment is discussed below.

### STATE ASSETS

Potential losses to State buildings caused by a hazardous materials release are difficult to monetize. The degree of damage to the asset depends on the scale of the incident. Generally speaking, all State buildings are potentially vulnerable to a hazardous materials release. State facilities near Tier II facilities, NPL sites, or transportation corridors that permit the transport of hazardous materials have an increased risk of exposure. Depending upon the incident, State employees may need to evacuate the building if exposure may impact human health. This may result in loss of productivity that can be measured by days and dollar equivalency. In terms of building-related and property damage, damage may include but not be limited to damage to heating, ventilation, and air conditioning (HVAC) systems due to the corrosive effects of some chemicals; and/or contaminated soil, groundwater, and nearby waterbodies.

All State roads that permit the transport of hazardous materials are potentially at risk of an incident. Quick response minimizes the volume and concentration of hazardous materials that disperse through air, water, and soil. Hazardous material releases may lead to road closures until response and clean-up efforts are completed. This may impact access to communities, commuting to work, and impact the ability to deliver goods and services efficiently.



Table 5.6-6 and Table 5.6-7 show the number of State facilities that are located within ½ mile of a pipeline by county as well as agency. The State has 214 facilities located in this hazard area with a replacement cost value of \$2.6 billion. Kanawha County has the most State facilities (88) impacted by this hazard, but Monongalia County has the highest replacement cost (\$1.6 billion). The Division of Highways has the most facilities (27) impacted by this hazard, while West Virginia University has the highest replacement cost value (\$1.5 billion).

**Table 5.6-6: State Facilities Located in the Pipeline Hazard Area by County**

County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Barbour	2	\$40,000	\$5,000	\$45,000
Berkeley	0	\$0	\$0	\$0
Boone	0	\$0	\$0	\$0
Braxton	9	\$3,269,653	\$646,100	\$3,915,753
Brooke	2	\$0	\$60,000	\$60,000
Cabell	12	\$43,790,840	\$3,791,300	\$47,582,140
Calhoun	0	\$0	\$0	\$0
Clay	0	\$0	\$0	\$0
Doddridge	3	\$31,854,101	\$6,980,500	\$38,834,601
Fayette	0	\$0	\$0	\$0
Gilmer	1	\$0	\$0	\$0
Grant	0	\$0	\$0	\$0
Greenbrier	0	\$0	\$0	\$0
Hampshire	0	\$0	\$0	\$0
Hancock	2	\$0	\$1,550,000	\$1,550,000
Hardy	0	\$0	\$0	\$0
Harrison	3	\$515,000	\$3,123,000	\$3,638,000
Jackson	1	\$10,430,053	\$2,239,600	\$12,669,653
Jefferson	0	\$0	\$0	\$0
Kanawha	88	\$349,014,033	\$128,597,577	\$477,611,610
Lewis	0	\$0	\$0	\$0
Lincoln	4	\$800,000	\$381,000	\$1,181,000
Logan	0	\$0	\$0	\$0
Marion	13	\$238,364,751	\$17,211,800	\$255,576,551
Marshall	10	\$75,062,761	\$3,935,974	\$78,998,735
Mason	7	\$2,225,000	\$356,050	\$2,581,050
McDowell	0	\$0	\$0	\$0
Mercer	0	\$0	\$0	\$0
Mineral	0	\$0	\$0	\$0
Mingo	7	\$0	\$835,300	\$835,300
Monongalia	16	\$1,387,674,322	\$173,440,604	\$1,561,114,926



County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Monroe	0	\$0	\$0	\$0
Morgan	0	\$0	\$0	\$0
Nicholas	0	\$0	\$0	\$0
Ohio	5	\$0	\$1,268,759	\$1,268,759
Pendleton	0	\$0	\$0	\$0
Pleasants	0	\$0	\$0	\$0
Pocahontas	0	\$0	\$0	\$0
Preston	0	\$0	\$0	\$0
Putnam	9	\$13,750,100	\$2,896,500	\$16,646,600
Raleigh	6	\$6,425,500	\$3,130,000	\$9,555,500
Randolph	1	\$5,000	\$15,000	\$20,000
Ritchie	3	\$8,289,491	\$1,026,400	\$9,315,891
Roane	0	\$0	\$0	\$0
Summers	1	\$51,485,058	\$4,025,000	\$55,510,058
Taylor	0	\$0	\$0	\$0
Tucker	1	\$0	\$52,300	\$52,300
Tyler	1	\$1,000,000	\$100,000	\$1,100,000
Upshur	2	\$0	\$115,000	\$115,000
Wayne	3	\$10,324,150	\$1,897,564	\$12,221,714
Webster	0	\$0	\$0	\$0
Wetzel	1	\$0	\$0	\$0
Wirt	0	\$0	\$0	\$0
Wood	0	\$0	\$0	\$0
Wyoming	1	\$0	\$113,400	\$113,400
<b>Total (WV State)</b>	<b>214</b>	<b>\$2,234,319,813</b>	<b>\$357,793,728</b>	<b>\$2,592,113,541</b>

Source: WVBRIM 2022

**Table 5.6-7: State Facilities Located in the Pipeline Hazard Area by Agency**

Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Adjutant General's Office State of West Virginia	1	\$295,000	\$93,000	\$388,000
Administration, Secretary of Department of Administration	0	\$0	\$0	\$0
Agriculture, Department of State of West Virginia	0	\$0	\$0	\$0
Air and Environmental Quality Boards State of West Virginia	0	\$0	\$0	\$0
Alcohol Beverage Control Administration State of West Virginia	0	\$0	\$0	\$0
Architects, Board of State of West Virginia	1	\$0	\$17,000	\$17,000
Armory Board State of West Virginia	7	\$40,919,815	\$4,535,064	\$45,454,879



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Arts, Culture & History, Department of State of West Virginia	1	\$7,062,890	\$212,200	\$7,275,090
Attorney General, Office of The State of West Virginia	0	\$0	\$0	\$0
Aviation, Division of	0	\$0	\$0	\$0
Bar, State State of West Virginia	1	\$1,230,000	\$250,000	\$1,480,000
Barbers & Cosmetologists, Board of State of West Virginia	1	\$0	\$100,000	\$100,000
Blue Ridge Community & Technical College	0	\$0	\$0	\$0
Bluefield State College	0	\$0	\$0	\$0
Board of Treasury Investments	0	\$0	\$0	\$0
Bridgevalley Community & Tech College	1	\$15,000,000	\$19,050,000	\$34,050,000
Cedar Lakes Conference Center State of West Virginia	1	\$10,430,053	\$2,239,600	\$12,669,653
Chiropractic Examiners Board State of West Virginia	0	\$0	\$0	\$0
Commission For National and Community Service, WV	1	\$0	\$80,000	\$80,000
Concord University	0	\$0	\$0	\$0
Conservation Agency, West Virginia State of West Virginia	4	\$0	\$749,400	\$749,400
Consolidated Public Retirement Board Department of Administration	0	\$0	\$0	\$0
Consumer Advocate, Division of WV Public Service Commission	1	\$0	\$150,000	\$150,000
Corrections, Division of State of West Virginia	5	\$97,041,081	\$9,831,274	\$106,872,355
Courthouse Facilities Improvement Authority	0	\$0	\$0	\$0
Dentistry, Board of State of West Virginia	0	\$0	\$0	\$0
Department of Transportation	0	\$0	\$0	\$0
Dietitians, Board of Licensed	0	\$0	\$0	\$0
Eastern Panhandle Instructional Coop	0	\$0	\$0	\$0
Eastern WV Community & Tech. College	0	\$0	\$0	\$0
Economic Development Authority State of West Virginia	1	\$750,000	\$100,000	\$850,000
Economic Development, WV Dept of	1	\$0	\$3,000,000	\$3,000,000
Education, Department of State of West Virginia	10	\$0	\$1,070,000	\$1,070,000
Educational Broadcasting Authority State of West Virginia	0	\$0	\$0	\$0
Enterprise Resource Planning Board, WV	1	\$0	\$2,000,000	\$2,000,000
Environmental Protection, Division of State of West Virginia	5	\$11,500	\$2,260,660	\$2,272,160
Ethics Commission, West Virginia Department of Administration	1	\$65,000	\$65,000	\$130,000
Examiners In Counseling, Board of State of West Virginia	1	\$0	\$6,000	\$6,000
Fairmont State University	1	\$211,509,751	\$13,786,800	\$225,296,551
Fire Commission State of West Virginia	0	\$0	\$0	\$0
Fleet Management Office, Dept of Admin State of West Virginia	0	\$0	\$0	\$0
Forestry, Division of State of West Virginia	3	\$0	\$680,000	\$680,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
General Services Division Department of Administration	3	\$20,202,522	\$1,000,000	\$21,202,522
Geological and Economic Survey State of West Virginia	0	\$0	\$0	\$0
Glenville State College	0	\$0	\$0	\$0
Governor, Office of The State of West Virginia	0	\$0	\$0	\$0
Health & Human Resources, Department of State of West Virginia	21	\$102,260,000	\$37,070,000	\$139,330,000
Higher Education Policy Commission, WV	7	\$79,270,000	\$19,725,000	\$98,995,000
Highways, Division of State of West Virginia	27	\$43,975,783	\$6,744,236	\$50,720,019
Homeland Security & Emergency Management Division	0	\$0	\$0	\$0
Insurance Commissioner, Office of The State of West Virginia	0	\$0	\$0	\$0
Investment Management Board, WV State of West Virginia	1	\$0	\$2,500,000	\$2,500,000
Joint Committee on Government & Finance State of West Virginia	0	\$0	\$0	\$0
Justice & Community Services, Div. of	0	\$0	\$0	\$0
Juvenile Services, Division of	5	\$7,504,700	\$659,800	\$8,164,500
Labor, Division of State of West Virginia	0	\$0	\$0	\$0
Land Division/Dept of Agriculture State of West Virginia	0	\$0	\$0	\$0
Landscape Architects, Board of State of West Virginia	1	\$0	\$2,500	\$2,500
Library Commission State of West Virginia	0	\$0	\$0	\$0
Lottery Commission State of West Virginia	2	\$46,200,000	\$10,000,000	\$56,200,000
Marshall University	0	\$0	\$0	\$0
Military Affairs, Secretary of and Public Safety	0	\$0	\$0	\$0
Miner's Health Safety, Division of and Training, State of West Virginia	0	\$0	\$0	\$0
Motor Vehicles, Division of State of West Virginia	4	\$0	\$1,048,000	\$1,048,000
Mountain State Esc	1	\$1,000,000	\$250,000	\$1,250,000
Mountwest Community & Technical College	0	\$0	\$0	\$0
National Coal Heritage Area Authority	0	\$0	\$0	\$0
Natural Resources, Division of State of West Virginia	5	\$2,000,000	\$595,000	\$2,595,000
New River Community & Technical College	0	\$0	\$0	\$0
Northern Community & Tech College, WV College Square	0	\$0	\$0	\$0
Occupational Therapy Board State of West Virginia	1	\$0	\$10,000	\$10,000
Office of Technology/Is&C Department of Administration	1	\$0	\$400,000	\$400,000
Osteopathic Medicine, WV Board of State of West Virginia	1	\$0	\$25,000	\$25,000
Osteopathic Medicine, WV School of	0	\$0	\$0	\$0
Parks, West Virginia State C\O Division of Natural Resources	7	\$59,999,549	\$5,071,400	\$65,070,949
Pharmacy, Board of State of West Virginia	0	\$0	\$0	\$0
Physical Therapy, Board of State of West Virginia	0	\$0	\$0	\$0
Pierpont Community and Technical College	2	\$400,000	\$3,100,000	\$3,500,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Practical Nurses, Board of State of West Virginia	0	\$0	\$0	\$0
Prosecuting Attorneys Institute, WV	1	\$0	\$121,000	\$121,000
Psychologists Examiners, Board of State of West Virginia	0	\$0	\$0	\$0
Public Service Commission State of West Virginia	2	\$14,844,069	\$3,365,000	\$18,209,069
Purchasing, Division of Department of Administration	1	\$155,000	\$750,000	\$905,000
Rail Authority State of West Virginia	0	\$0	\$0	\$0
Real Estate Commission State of West Virginia	1	\$0	\$150,000	\$150,000
Regional Jail & Corr. Fac. Authority State of West Virginia	1	\$28,640,000	\$1,232,000	\$29,872,000
Registered Nurses, Board of State of West Virginia	1	\$0	\$250,000	\$250,000
Rehabilitation Services Division of Commerce	7	\$0	\$4,086,299	\$4,086,299
Respiratory Care, WV Board of	0	\$0	\$0	\$0
School Building Authority, West Virginia	0	\$0	\$0	\$0
Schools For The Deaf and The Blind State of West Virginia	0	\$0	\$0	\$0
Senior Services, Bureau of State of West Virginia	1	\$0	\$150,000	\$150,000
Shepherd University	0	\$0	\$0	\$0
Southern Educational Services Coop	0	\$0	\$0	\$0
Southern WV Community & Tech College	0	\$0	\$0	\$0
Speech Pathology & Audiology Examiners West Virginia Board of	0	\$0	\$0	\$0
State Police, West Virginia Dept of Military Affairs & Public Safety	14	\$23,061,623	\$11,268,600	\$34,330,223
Supreme Court of Appeals State of West Virginia	14	\$0	\$1,227,400	\$1,227,400
Tax Appeals, WV Office of	1	\$0	\$130,000	\$130,000
Tax Department State of West Virginia	2	\$0	\$5,050,000	\$5,050,000
Treasurer of State State of West Virginia	2	\$0	\$711,000	\$711,000
University Physicians and Surgeons	7	\$13,530,000	\$3,180,000	\$16,710,000
Unknown	12	\$0	\$0	\$0
Veterans Assistance, Department of State of West Virginia	3	\$10,419,640	\$1,393,300	\$11,812,940
Veterinary Medicine, Board of State of West Virginia	0	\$0	\$0	\$0
Water Development Authority State of West Virginia	1	\$6,500,000	\$1,000,000	\$7,500,000
West Liberty University	0	\$0	\$0	\$0
West Virginia Parkways Authority	2	\$6,425,500	\$2,870,000	\$9,295,500
West Virginia State University - Institute	0	\$0	\$0	\$0
West Virginia State University - Malden	0	\$0	\$0	\$0
West Virginia University	1	\$1,364,812,628	\$170,618,604	\$1,535,431,232
West Virginia University Arthurdale	0	\$0	\$0	\$0
West Virginia University At Parkersburg	0	\$0	\$0	\$0
West Virginia University Beckley	0	\$0	\$0	\$0
West Virginia University Bruceton Mills	0	\$0	\$0	\$0
West Virginia University Charleston	1	\$14,207	\$777,591	\$791,798
West Virginia University Fort Ashby	0	\$0	\$0	\$0
West Virginia University Granville	1	\$18,789,502	\$986,000	\$19,775,502
West Virginia University Jacksons Mill	0	\$0	\$0	\$0
West Virginia University Kearneysville	0	\$0	\$0	\$0



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
West Virginia University Keyser	0	\$0	\$0	\$0
West Virginia University Montgomery	0	\$0	\$0	\$0
West Virginia University Reedsville	0	\$0	\$0	\$0
West Virginia University Union	0	\$0	\$0	\$0
West Virginia University Wardensville	0	\$0	\$0	\$0
West Virginia University Weston	0	\$0	\$0	\$0
Workforce West Virginia	0	\$0	\$0	\$0
WV Public Employees Grievance Board	0	\$0	\$0	\$0
WVsom Clinic Inc Db a Robert C Byrd Clinic	0	\$0	\$0	\$0
<b>Total (WV State)</b>	<b>214</b>	<b>\$2,234,319,813</b>	<b>\$357,793,728</b>	<b>\$2,592,113,541</b>

Source: WVBRIM 2022

Table 5.6-8 and Table 5.6-9 show the number of State facilities that are located within ½ mile of a rail line by county as well as agency. The State has 500 facilities located in this hazard area with a replacement cost value of \$3.8 billion. Kanawha County has the most State facilities (163) impacted by this hazard, but Monongalia County has the highest replacement cost (\$1.6 billion). The Department of Health and Human Resources has the most facilities (57) impacted by this hazard, while West Virginia University has the highest replacement cost value (\$1.5 billion).

**Table 5.6-8: State Facilities Located in the Rail Line Hazard Area by County**

County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Barbour	7	\$0	\$1,168,389	\$1,168,389
Berkeley	34	\$27,519,308	\$12,905,120	\$40,424,428
Boone	10	\$16,905,900	\$2,952,700	\$19,858,600
Braxton	3	\$755,000	\$220,000	\$975,000
Brooke	1	\$0	\$0	\$0
Cabell	28	\$158,070,028	\$10,121,683	\$168,191,711
Calhoun	0	\$0	\$0	\$0
Clay	0	\$0	\$0	\$0
Doddridge	0	\$0	\$0	\$0
Fayette	6	\$44,454,142	\$5,790,000	\$50,244,142
Gilmer	0	\$0	\$0	\$0
Grant	3	\$423,675	\$846,800	\$1,270,475
Greenbrier	4	\$60,000	\$125,000	\$185,000
Hampshire	3	\$6,175,924	\$160,000	\$6,335,924
Hancock	6	\$650,000	\$1,640,000	\$2,290,000
Hardy	9	\$3,408,434	\$4,342,000	\$7,750,434
Harrison	18	\$13,096,296	\$6,549,682	\$19,645,978
Jackson	3	\$25,773,856	\$2,065,000	\$27,838,856
Jefferson	8	\$246,743,250	\$27,814,895	\$274,558,145



County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Kanawha	163	\$709,998,329	\$211,934,296	\$921,932,625
Lewis	0	\$0	\$0	\$0
Lincoln	0	\$0	\$0	\$0
Logan	16	\$27,166,000	\$6,798,100	\$33,964,100
Marion	13	\$11,729,271	\$1,321,300	\$13,050,571
Marshall	9	\$47,197,174	\$2,068,804	\$49,265,978
Mason	17	\$63,877,708	\$8,503,850	\$72,381,558
McDowell	11	\$1,125,000	\$995,000	\$2,120,000
Mercer	4	\$122,335,739	\$20,665,400	\$143,001,139
Mineral	4	\$119,654,403	\$7,000,839	\$126,655,242
Mingo	11	\$15,995,822	\$4,415,300	\$20,411,122
Monongalia	13	\$1,385,694,322	\$173,247,604	\$1,558,941,926
Monroe	0	\$0	\$0	\$0
Morgan	1	\$0	\$125,000	\$125,000
Nicholas	0	\$0	\$0	\$0
Ohio	0	\$0	\$0	\$0
Pendleton	0	\$0	\$0	\$0
Pleasants	6	\$28,974,523	\$2,157,372	\$31,131,895
Pocahontas	1	\$6,333,200	\$1,181,000	\$7,514,200
Preston	2	\$25,548,000	\$360,000	\$25,908,000
Putnam	18	\$48,723,773	\$25,829,725	\$74,553,498
Raleigh	5	\$10,600,500	\$3,420,000	\$14,020,500
Randolph	8	\$42,901,784	\$4,460,000	\$47,361,784
Ritchie	0	\$0	\$0	\$0
Roane	0	\$0	\$0	\$0
Summers	4	\$151,200	\$251,300	\$402,500
Taylor	3	\$0	\$554,000	\$554,000
Tucker	0	\$0	\$0	\$0
Tyler	1	\$0	\$10,000	\$10,000
Upshur	8	\$19,372,708	\$4,061,000	\$23,433,708
Wayne	7	\$727,769	\$871,000	\$1,598,769
Webster	0	\$0	\$0	\$0
Wetzel	6	\$760,000	\$500,900	\$1,260,900
Wirt	0	\$0	\$0	\$0
Wood	23	\$27,439,387	\$6,440,282	\$33,879,669
Wyoming	3	\$11,500	\$190,400	\$201,900
<b>Total</b>	<b>500</b>	<b>\$3,260,353,925</b>	<b>\$564,063,741</b>	<b>\$3,824,417,666</b>

Source: WVBRIM 2022



**Table 5.6-9: State Facilities Located in the Rail Line Hazard Area by Agency**

Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Adjutant General's Office State of West Virginia	0	\$0	\$0	\$0
Administration, Secretary of Department of Administration	1	\$0	\$112,000	\$112,000
Agriculture, Department of State of West Virginia	4	\$1,384,053	\$1,020,000	\$2,404,053
Air and Environmental Quality Boards State of West Virginia	1	\$0	\$60,000	\$60,000
Alcohol Beverage Control Administration State of West Virginia	1	\$8,398,535	\$5,375,000	\$13,773,535
Architects, Board of State of West Virginia	1	\$0	\$17,000	\$17,000
Armory Board State of West Virginia	21	\$126,306,240	\$30,097,000	\$156,403,240
Arts, Culture & History, Department of State of West Virginia	2	\$7,062,890	\$212,200	\$7,275,090
Attorney General, Office of The State of West Virginia	1	\$0	\$40,000	\$40,000
Aviation, Division of	0	\$0	\$0	\$0
Bar, State State of West Virginia	0	\$0	\$0	\$0
Barbers & Cosmetologists, Board of State of West Virginia	1	\$0	\$100,000	\$100,000
Blue Ridge Community & Technical College	2	\$0	\$6,872,720	\$6,872,720
Bluefield State College	1	\$121,244,089	\$20,360,000	\$141,604,089
Board of Treasury Investments	1	\$0	\$70,000	\$70,000
Bridgevalley Community & Tech College	2	\$44,146,767	\$21,740,000	\$65,886,767
Cedar Lakes Conference Center State of West Virginia	0	\$0	\$0	\$0
Chiropractic Examiners Board State of West Virginia	1	\$0	\$100,000	\$100,000
Commission For National and Community Service, WV	1	\$0	\$80,000	\$80,000
Concord University	0	\$0	\$0	\$0
Conservation Agency, West Virginia State of West Virginia	4	\$0	\$33,200	\$33,200
Consolidated Public Retirement Board Department of Administration	1	\$0	\$1,500,000	\$1,500,000
Consumer Advocate, Division of WV Public Service Commission	1	\$0	\$150,000	\$150,000
Corrections, Division of State of West Virginia	10	\$109,933,215	\$11,577,776	\$121,510,991
Courthouse Facilities Improvement Authority	1	\$300,000	\$200,000	\$500,000
Dentistry, Board of State of West Virginia	0	\$0	\$0	\$0
Department of Transportation	2	\$0	\$0	\$0
Dietitians, Board of Licensed	1	\$0	\$20,000	\$20,000
Eastern Panhandle Instructional Coop	8	\$800,000	\$1,690,000	\$2,490,000
Eastern WV Community & Tech. College	2	\$1,923,675	\$766,000	\$2,689,675
Economic Development Authority State of West Virginia	0	\$0	\$0	\$0
Economic Development, WV Dept of	0	\$0	\$0	\$0
Education, Department of State of West Virginia	17	\$22,307,648	\$5,274,200	\$27,581,848
Educational Broadcasting Authority State of West Virginia	0	\$0	\$0	\$0
Enterprise Resource Planning Board, WV	1	\$0	\$2,000,000	\$2,000,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Environmental Protection, Division of State of West Virginia	8	\$14,000	\$1,390,812	\$1,404,812
Ethics Commission, West Virginia Department of Administration	1	\$65,000	\$65,000	\$130,000
Examiners In Counseling, Board of State of West Virginia	1	\$0	\$6,000	\$6,000
Fairmont State University	0	\$0	\$0	\$0
Fire Commission State of West Virginia	1	\$0	\$500,000	\$500,000
Fleet Management Office, Dept of Admin State of West Virginia	1	\$0	\$50,000	\$50,000
Forestry, Division of State of West Virginia	4	\$307,488	\$550,300	\$857,788
General Services Division Department of Administration	14	\$241,162,952	\$21,828,174	\$262,991,126
Geological and Economic Survey State of West Virginia	0	\$0	\$0	\$0
Glenville State College	0	\$0	\$0	\$0
Governor, Office of The State of West Virginia	1	\$0	\$2,000,000	\$2,000,000
Health & Human Resources, Department of State of West Virginia	57	\$197,046,661	\$55,987,500	\$253,034,161
Higher Education Policy Commission, WV	9	\$83,870,000	\$21,767,246	\$105,637,246
Highways, Division of State of West Virginia	50	\$80,946,183	\$15,871,036	\$96,817,219
Homeland Security & Emergency Management Division	0	\$0	\$0	\$0
Insurance Commissioner, Office of The State of West Virginia	2	\$0	\$1,270,000	\$1,270,000
Investment Management Board, WV State of West Virginia	1	\$0	\$2,500,000	\$2,500,000
Joint Committee on Government & Finance State of West Virginia	0	\$0	\$0	\$0
Justice & Community Services, Div. of	1	\$0	\$750,000	\$750,000
Juvenile Services, Division of	13	\$7,504,700	\$1,829,800	\$9,334,500
Labor, Division of State of West Virginia	1	\$0	\$975,000	\$975,000
Land Division/Dept of Agriculture State of West Virginia	0	\$0	\$0	\$0
Landscape Architects, Board of State of West Virginia	1	\$0	\$2,500	\$2,500
Library Commission State of West Virginia	1	\$0	\$166,959	\$166,959
Lottery Commission State of West Virginia	2	\$46,200,000	\$10,000,000	\$56,200,000
Marshall University	1	\$78,454,356	\$4,269,858	\$82,724,214
Military Affairs, Secretary of and Public Safety	1	\$0	\$350,000	\$350,000
Miner's Health Safety, Division of and Training, State of West Virginia	3	\$0	\$75,000	\$75,000
Motor Vehicles, Division of State of West Virginia	12	\$1,000,000	\$6,069,000	\$7,069,000
Mountain State Esc	1	\$1,000,000	\$250,000	\$1,250,000
Mountwest Community & Technical College	0	\$0	\$0	\$0
National Coal Heritage Area Authority	2	\$2,000,000	\$350,000	\$2,350,000
Natural Resources, Division of State of West Virginia	10	\$9,030,000	\$3,005,000	\$12,035,000
New River Community & Technical College	0	\$0	\$0	\$0
Northern Community & Tech College, WV College Square	0	\$0	\$0	\$0
Occupational Therapy Board State of West Virginia	0	\$0	\$0	\$0



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Office of Technology/Is&C Department of Administration	5	\$0	\$22,382,000	\$22,382,000
Osteopathic Medicine, WV Board of State of West Virginia	1	\$0	\$25,000	\$25,000
Osteopathic Medicine, WV School of	6	\$0	\$64,225	\$64,225
Parks, West Virginia State C\O Division of Natural Resources	11	\$24,695,181	\$4,985,682	\$29,680,863
Pharmacy, Board of State of West Virginia	1	\$850,000	\$80,000	\$930,000
Physical Therapy, Board of State of West Virginia	1	\$0	\$80,000	\$80,000
Pierpont Community and Technical College	2	\$9,616,296	\$700,000	\$10,316,296
Practical Nurses, Board of State of West Virginia	1	\$0	\$60,000	\$60,000
Prosecuting Attorneys Institute, WV	1	\$0	\$121,000	\$121,000
Psychologists Examiners, Board of State of West Virginia	1	\$0	\$45,000	\$45,000
Public Service Commission State of West Virginia	2	\$14,844,069	\$3,365,000	\$18,209,069
Purchasing, Division of Department of Administration	2	\$155,000	\$1,196,000	\$1,351,000
Rail Authority State of West Virginia	1	\$524,381	\$2,827,000	\$3,351,381
Real Estate Commission State of West Virginia	1	\$0	\$150,000	\$150,000
Regional Jail & Corr. Fac. Authority State of West Virginia	2	\$50,640,000	\$2,056,000	\$52,696,000
Registered Nurses, Board of State of West Virginia	1	\$0	\$250,000	\$250,000
Rehabilitation Services Division of Commerce	13	\$0	\$7,546,924	\$7,546,924
Respiratory Care, WV Board of	1	\$0	\$100,000	\$100,000
School Building Authority, West Virginia	1	\$500,000	\$300,000	\$800,000
Schools For The Deaf and The Blind State of West Virginia	0	\$0	\$0	\$0
Senior Services, Bureau of State of West Virginia	1	\$0	\$150,000	\$150,000
Shepherd University	1	\$246,443,250	\$27,131,195	\$273,574,445
Southern Educational Services Coop	0	\$0	\$0	\$0
Southern WV Community & Tech College	1	\$15,882,800	\$3,515,000	\$19,397,800
Speech Pathology & Audiology Examiners West Virginia Board of	1	\$0	\$20,000	\$20,000
State Police, West Virginia Dept of Military Affairs & Public Safety	37	\$35,864,791	\$13,930,600	\$49,795,391
Supreme Court of Appeals State of West Virginia	44	\$0	\$4,785,300	\$4,785,300
Tax Appeals, WV Office of	1	\$0	\$130,000	\$130,000
Tax Department State of West Virginia	5	\$0	\$5,340,000	\$5,340,000
Treasurer of State State of West Virginia	4	\$0	\$1,876,000	\$1,876,000
University Physicians and Surgeons	8	\$530,000	\$1,015,000	\$1,545,000
Unknown	29	\$0	\$0	\$0
Veterans Assistance, Department of State of West Virginia	7	\$10,419,640	\$1,429,300	\$11,848,940
Veterinary Medicine, Board of State of West Virginia	0	\$0	\$0	\$0
Water Development Authority State of West Virginia	1	\$6,500,000	\$1,000,000	\$7,500,000
West Liberty University	0	\$0	\$0	\$0
West Virginia Parkways Authority	5	\$10,734,000	\$6,470,000	\$17,204,000
West Virginia State University - Institute	1	\$130,503,950	\$9,519,200	\$140,023,150
West Virginia State University - Malden	1	\$1,114,000	\$115,000	\$1,229,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
West Virginia University	1	\$1,364,812,628	\$170,618,604	\$1,535,431,232
West Virginia University Arthurdale	0	\$0	\$0	\$0
West Virginia University At Parkersburg	0	\$0	\$0	\$0
West Virginia University Beckley	0	\$0	\$0	\$0
West Virginia University Bruceton Mills	0	\$0	\$0	\$0
West Virginia University Charleston	1	\$14,207	\$777,591	\$791,798
West Virginia University Fort Ashby	0	\$0	\$0	\$0
West Virginia University Granville	1	\$18,789,502	\$986,000	\$19,775,502
West Virginia University Jacksons Mill	0	\$0	\$0	\$0
West Virginia University Kearneysville	0	\$0	\$0	\$0
West Virginia University Keyser	1	\$119,654,403	\$6,972,839	\$126,627,242
West Virginia University Montgomery	1	\$4,857,375	\$0	\$4,857,375
West Virginia University Reedsville	0	\$0	\$0	\$0
West Virginia University Union	0	\$0	\$0	\$0
West Virginia University Wardensville	0	\$0	\$0	\$0
West Virginia University Weston	0	\$0	\$0	\$0
Workforce West Virginia	5	\$0	\$317,000	\$317,000
WV Public Employees Grievance Board	1	\$0	\$285,000	\$285,000
WVsom Clinic Inc Dba Robert C Byrd Clinic	0	\$0	\$0	\$0
<b>Total (WV State)</b>	<b>500</b>	<b>\$3,260,353,925</b>	<b>\$564,063,741</b>	<b>\$3,824,417,666</b>

Source: WVBRIM 2022

Table 5.6-10 and Table 5.6-11 show the number of State facilities that are located within ½ mile of major roadways by county as well as agency. The State has 827 facilities located in this hazard area with a replacement cost value of \$4.8 billion. Kanawha County has the most State facilities (183) impacted by this hazard, but Monongalia County has the highest replacement cost (\$1.6 billion). The Division of Highways has the most facilities (105) impacted by this hazard, while West Virginia University has the highest replacement cost value (\$1.5 billion).

**Table 5.6-10: State Facilities Located in the Major Roadway Hazard Area by County**

County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Barbour	8	\$40,000	\$931,289	\$971,289
Berkeley	27	\$22,324,660	\$11,697,392	\$34,022,052
Boone	8	\$19,955,900	\$3,638,700	\$23,594,600
Braxton	4	\$750,000	\$360,000	\$1,110,000
Brooke	3	\$2,900,000	\$85,000	\$2,985,000
Cabell	35	\$157,346,692	\$10,439,683	\$167,786,375
Calhoun	0	\$0	\$0	\$0
Clay	0	\$0	\$0	\$0
Doddridge	9	\$34,570,334	\$1,659,000	\$36,229,334
Fayette	17	\$45,742,063	\$8,149,200	\$53,891,263
Gilmer	3	\$88,806,230	\$12,320,500	\$101,126,730
Grant	2	\$0	\$110,800	\$110,800



County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Greenbrier	26	\$91,878,077	\$16,983,045	\$108,861,122
Hampshire	13	\$51,732,644	\$6,344,846	\$58,077,490
Hancock	7	\$661,500	\$1,665,100	\$2,326,600
Hardy	14	\$35,915,524	\$4,951,035	\$40,866,559
Harrison	32	\$59,641,712	\$28,244,182	\$87,885,894
Jackson	8	\$26,973,856	\$3,734,500	\$30,708,356
Jefferson	1	\$0	\$275,000	\$275,000
Kanawha	183	\$727,085,454	\$222,177,658	\$949,263,112
Lewis	15	\$60,094,272	\$5,063,110	\$65,157,382
Lincoln	7	\$825,000	\$806,000	\$1,631,000
Logan	20	\$27,166,000	\$7,794,417	\$34,960,417
Marion	23	\$225,207,022	\$16,460,858	\$241,667,880
Marshall	9	\$47,197,174	\$2,068,804	\$49,265,978
Mason	19	\$66,160,708	\$9,258,850	\$75,419,558
McDowell	11	\$1,125,000	\$995,000	\$2,120,000
Mercer	24	\$141,218,789	\$26,864,535	\$168,083,324
Mineral	11	\$125,084,763	\$8,915,339	\$134,000,102
Mingo	11	\$15,995,822	\$4,415,300	\$20,411,122
Monongalia	26	\$1,403,786,789	\$176,426,031	\$1,580,212,820
Monroe	5	\$652,903	\$439,427	\$1,092,330
Morgan	23	\$79,299,467	\$12,994,309	\$92,293,776
Nicholas	10	\$7,669,634	\$1,320,500	\$8,990,134
Ohio	23	\$16,293,184	\$7,504,209	\$23,797,393
Pendleton	4	\$900,000	\$166,900	\$1,066,900
Pleasants	6	\$28,974,523	\$2,157,372	\$31,131,895
Pocahontas	3	\$316,399	\$116,500	\$432,899
Preston	21	\$67,502,734	\$7,605,169	\$75,107,903
Putnam	25	\$62,473,873	\$28,718,225	\$91,192,098
Raleigh	37	\$123,974,745	\$23,973,688	\$147,948,433
Randolph	26	\$117,387,933	\$15,978,196	\$133,366,129
Ritchie	0	\$0	\$0	\$0
Roane	9	\$1,625,400	\$965,840	\$2,591,240
Summers	0	\$0	\$0	\$0
Taylor	6	\$24,092,343	\$4,622,700	\$28,715,043
Tucker	6	\$17,575,145	\$2,123,600	\$19,698,745
Tyler	1	\$0	\$10,000	\$10,000
Upshur	5	\$2,000	\$367,000	\$369,000
Wayne	7	\$727,769	\$871,000	\$1,598,769



County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure & Contents)
Webster	0	\$0	\$0	\$0
Wetzel	7	\$760,000	\$500,900	\$1,260,900
Wirt	0	\$0	\$0	\$0
Wood	23	\$56,764,157	\$12,626,882	\$69,391,039
Wyoming	4	\$191,500	\$97,000	\$288,500
<b>Total</b>	<b>827</b>	<b>\$4,087,369,694</b>	<b>\$715,994,591</b>	<b>\$4,803,364,285</b>

Source: WVBRIM 2022

**Table 5.6-11: State Facilities Located in the Major Roadway Hazard Area by Agency**

Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Adjutant General's Office State of West Virginia	2	\$100,000	\$70,000	\$170,000
Administration, Secretary of Department of Administration	1	\$0	\$112,000	\$112,000
Agriculture, Department of State of West Virginia	5	\$2,584,053	\$2,225,000	\$4,809,053
Air and Environmental Quality Boards State of West Virginia	1	\$0	\$60,000	\$60,000
Alcohol Beverage Control Administration State of West Virginia	1	\$8,398,535	\$5,375,000	\$13,773,535
Architects, Board of State of West Virginia	1	\$0	\$17,000	\$17,000
Armory Board State of West Virginia	41	\$189,611,055	\$44,335,000	\$233,946,055
Arts, Culture & History, Department of State of West Virginia	3	\$7,067,274	\$214,200	\$7,281,474
Attorney General, Office of The State of West Virginia	1	\$0	\$40,000	\$40,000
Aviation, Division of	1	\$2,000,000	\$250,000	\$2,250,000
Bar, State State of West Virginia	1	\$1,230,000	\$250,000	\$1,480,000
Barbers & Cosmetologists, Board of State of West Virginia	1	\$0	\$100,000	\$100,000
Blue Ridge Community & Technical College	4	\$17,395,660	\$8,697,301	\$26,092,961
Bluefield State College	1	\$121,244,089	\$20,360,000	\$141,604,089
Board of Treasury Investments	1	\$0	\$70,000	\$70,000
Bridgevalley Community & Tech College	2	\$44,146,767	\$21,740,000	\$65,886,767
Cedar Lakes Conference Center State of West Virginia	0	\$0	\$0	\$0
Chiropractic Examiners Board State of West Virginia	1	\$0	\$100,000	\$100,000
Commission For National and Community Service, WV	1	\$0	\$80,000	\$80,000
Concord University	0	\$0	\$0	\$0
Conservation Agency, West Virginia State of West Virginia	13	\$0	\$385,545	\$385,545
Consolidated Public Retirement Board Department of Administration	1	\$0	\$1,500,000	\$1,500,000
Consumer Advocate, Division of WV Public Service Commission	1	\$0	\$150,000	\$150,000
Corrections, Division of State of West Virginia	22	\$211,598,722	\$25,755,694	\$237,354,416
Courthouse Facilities Improvement Authority	1	\$300,000	\$200,000	\$500,000
Dentistry, Board of State of West Virginia	0	\$0	\$0	\$0
Department of Transportation	1	\$0	\$0	\$0





Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Dietitians, Board of Licensed	1	\$0	\$20,000	\$20,000
Eastern Panhandle Instructional Coop	7	\$300,000	\$1,205,000	\$1,505,000
Eastern WV Community & Tech. College	4	\$9,673,410	\$810,000	\$10,483,410
Economic Development Authority State of West Virginia	1	\$750,000	\$100,000	\$850,000
Economic Development, WV Dept of	1	\$0	\$3,000,000	\$3,000,000
Education, Department of State of West Virginia	24	\$16,904,100	\$6,077,780	\$22,981,880
Educational Broadcasting Authority State of West Virginia	2	\$3,142,000	\$1,500,000	\$4,642,000
Enterprise Resource Planning Board, WV	1	\$0	\$2,000,000	\$2,000,000
Environmental Protection, Division of State of West Virginia	19	\$39,500	\$5,401,033	\$5,440,533
Ethics Commission, West Virginia Department of Administration	1	\$65,000	\$65,000	\$130,000
Examiners In Counseling, Board of State of West Virginia	1	\$0	\$6,000	\$6,000
Fairmont State University	1	\$211,509,751	\$13,786,800	\$225,296,551
Fire Commission State of West Virginia	1	\$0	\$500,000	\$500,000
Fleet Management Office, Dept of Admin State of West Virginia	1	\$0	\$50,000	\$50,000
Forestry, Division of State of West Virginia	12	\$307,488	\$1,260,300	\$1,567,788
General Services Division Department of Administration	13	\$233,626,223	\$21,328,174	\$254,954,397
Geological and Economic Survey State of West Virginia	1	\$5,104,467	\$1,439,002	\$6,543,469
Glenville State College	1	\$88,806,230	\$12,031,000	\$100,837,230
Governor, Office of The State of West Virginia	1	\$0	\$2,000,000	\$2,000,000
Health & Human Resources, Department of State of West Virginia	91	\$337,863,312	\$71,785,052	\$409,648,364
Higher Education Policy Commission, WV	9	\$83,870,000	\$21,767,246	\$105,637,246
Highways, Division of State of West Virginia	105	\$130,899,095	\$26,175,626	\$157,074,721
Homeland Security & Emergency Management Division	1	\$0	\$205,000	\$205,000
Insurance Commissioner, Office of The State of West Virginia	4	\$0	\$1,395,000	\$1,395,000
Investment Management Board, WV State of West Virginia	1	\$0	\$2,500,000	\$2,500,000
Joint Committee on Government & Finance State of West Virginia	1	\$0	\$73,871	\$73,871
Justice & Community Services, Div. of	1	\$0	\$750,000	\$750,000
Juvenile Services, Division of	19	\$35,624,045	\$5,714,100	\$41,338,145
Labor, Division of State of West Virginia	1	\$0	\$975,000	\$975,000
Land Division/Dept of Agriculture State of West Virginia	2	\$144,407	\$5,000	\$149,407
Landscape Architects, Board of State of West Virginia	1	\$0	\$2,500	\$2,500
Library Commission State of West Virginia	2	\$0	\$333,918	\$333,918
Lottery Commission State of West Virginia	3	\$48,700,000	\$13,000,000	\$61,700,000
Marshall University	1	\$78,454,356	\$4,269,858	\$82,724,214
Military Affairs, Secretary of and Public Safety	1	\$0	\$350,000	\$350,000
Miner's Health Safety, Division of and Training, State of West Virginia	3	\$1,950,000	\$1,525,000	\$3,475,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Motor Vehicles, Division of State of West Virginia	18	\$1,000,000	\$6,760,710	\$7,760,710
Mountain State Esc	1	\$1,000,000	\$250,000	\$1,250,000
Mountwest Community & Technical College	1	\$2,813,114	\$200,000	\$3,013,114
National Coal Heritage Area Authority	1	\$0	\$100,000	\$100,000
Natural Resources, Division of State of West Virginia	9	\$6,550,000	\$2,774,900	\$9,324,900
New River Community & Technical College	4	\$12,993,665	\$4,230,000	\$17,223,665
Northern Community & Tech College, WV College Square	1	\$8,900,000	\$2,000,000	\$10,900,000
Occupational Therapy Board State of West Virginia	0	\$0	\$0	\$0
Office of Technology/Is&C Department of Administration	5	\$0	\$22,382,000	\$22,382,000
Osteopathic Medicine, WV Board of State of West Virginia	1	\$0	\$25,000	\$25,000
Osteopathic Medicine, WV School of	10	\$66,788,139	\$8,271,623	\$75,059,762
Parks, West Virginia State C\O Division of Natural Resources	29	\$105,084,045	\$17,174,682	\$122,258,727
Pharmacy, Board of State of West Virginia	1	\$850,000	\$80,000	\$930,000
Physical Therapy, Board of State of West Virginia	1	\$0	\$80,000	\$80,000
Pierpont Community and Technical College	3	\$9,616,296	\$3,700,000	\$13,316,296
Practical Nurses, Board of State of West Virginia	1	\$0	\$60,000	\$60,000
Prosecuting Attorneys Institute, WV	1	\$0	\$121,000	\$121,000
Psychologists Examiners, Board of State of West Virginia	1	\$0	\$45,000	\$45,000
Public Service Commission State of West Virginia	2	\$14,844,069	\$3,365,000	\$18,209,069
Purchasing, Division of Department of Administration	2	\$155,000	\$1,196,000	\$1,351,000
Rail Authority State of West Virginia	0	\$0	\$0	\$0
Real Estate Commission State of West Virginia	1	\$0	\$150,000	\$150,000
Regional Jail & Corr. Fac. Authority State of West Virginia	3	\$82,227,048	\$3,438,000	\$85,665,048
Registered Nurses, Board of State of West Virginia	1	\$0	\$250,000	\$250,000
Rehabilitation Services Division of Commerce	22	\$0	\$10,409,024	\$10,409,024
Respiratory Care, WV Board of	1	\$0	\$100,000	\$100,000
School Building Authority, West Virginia	1	\$500,000	\$300,000	\$800,000
Schools For The Deaf and The Blind State of West Virginia	1	\$50,683,070	\$5,064,200	\$55,747,270
Senior Services, Bureau of State of West Virginia	2	\$0	\$155,000	\$155,000
Shepherd University	0	\$0	\$0	\$0
Southern Educational Services Coop	1	\$500,000	\$500,000	\$1,000,000
Southern WV Community & Tech College	2	\$18,882,800	\$4,015,000	\$22,897,800
Speech Pathology & Audiology Examiners West Virginia Board of	1	\$0	\$20,000	\$20,000
State Police, West Virginia Dept of Military Affairs & Public Safety	70	\$51,068,766	\$15,890,600	\$66,959,366
Supreme Court of Appeals State of West Virginia	61	\$0	\$6,027,400	\$6,027,400
Tax Appeals, WV Office of	1	\$0	\$130,000	\$130,000
Tax Department State of West Virginia	6	\$0	\$5,400,000	\$5,400,000
Treasurer of State State of West Virginia	3	\$0	\$1,201,000	\$1,201,000
University Physicians and Surgeons	12	\$13,530,000	\$3,690,000	\$17,220,000
Unknown	44	\$0	\$0	\$0
Veterans Assistance, Department of State of West Virginia	14	\$36,419,640	\$16,490,300	\$52,909,940





Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Veterinary Medicine, Board of State of West Virginia	1	\$0	\$25,000	\$25,000
Water Development Authority State of West Virginia	1	\$6,500,000	\$1,000,000	\$7,500,000
West Liberty University	1	\$2,782,000	\$6,000	\$2,788,000
West Virginia Parkways Authority	16	\$52,904,000	\$20,213,500	\$73,117,500
West Virginia State University - Institute	1	\$130,503,950	\$9,519,200	\$140,023,150
West Virginia State University - Malden	1	\$1,114,000	\$115,000	\$1,229,000
West Virginia University	1	\$1,364,812,628	\$170,618,604	\$1,535,431,232
West Virginia University Arthurdale	1	\$31,259	\$43,669	\$74,928
West Virginia University At Parkersburg	0	\$0	\$0	\$0
West Virginia University Beckley	1	\$280,215	\$240,287	\$520,502
West Virginia University Bruceton Mills	0	\$0	\$0	\$0
West Virginia University Charleston	1	\$14,207	\$777,591	\$791,798
West Virginia University Fort Ashby	0	\$0	\$0	\$0
West Virginia University Granville	1	\$18,789,502	\$986,000	\$19,775,502
West Virginia University Jacksons Mill	0	\$0	\$0	\$0
West Virginia University Kearneysville	0	\$0	\$0	\$0
West Virginia University Keyser	1	\$119,654,403	\$6,972,839	\$126,627,242
West Virginia University Montgomery	1	\$4,857,375	\$0	\$4,857,375
West Virginia University Reedsville	0	\$0	\$0	\$0
West Virginia University Union	1	\$452,903	\$53,427	\$506,330
West Virginia University Wardensville	1	\$6,858,061	\$784,035	\$7,642,096
West Virginia University Weston	0	\$0	\$0	\$0
Workforce West Virginia	9	\$0	\$564,000	\$564,000
WV Public Employees Grievance Board	1	\$0	\$285,000	\$285,000
WVsom Clinic Inc Dba Robert C Byrd Clinic	1	\$0	\$2,250,000	\$2,250,000
<b>Total (WV State)</b>	<b>827</b>	<b>\$4,087,369,694</b>	<b>\$715,994,591</b>	<b>\$4,803,364,285</b>

Source: WVBRIM 2022

Table 5.6-12 and Table 5.6-13 show the number of State facilities that are located within 1 mile of a facility that stores EHS by county as well as agency. The State has 580 facilities located in this hazard area with a replacement cost value of \$4.3 billion. Kanawha County has the most State facilities (137) impacted by this hazard, but Monongalia County has the highest replacement cost (\$1.6 billion). The Supreme Court of Appeals has the most facilities (66) impacted by this hazard, while West Virginia University has the highest replacement cost value (\$1.5 billion).

**Table 5.6-12: State Facilities Located in the EHS Fixed Facility Hazard Area by County**

County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Barbour	7	\$0	\$1,168,389	\$1,168,389
Berkeley	33	\$23,948,308	\$13,192,520	\$37,140,828
Boone	3	\$0	\$164,000	\$164,000
Braxton	4	\$5,000	\$232,000	\$237,000
Brooke	3	\$140,000	\$115,000	\$255,000
Cabell	29	\$187,788,608	\$10,743,758	\$198,532,366
Calhoun	0	\$0	\$0	\$0



County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Clay	0	\$0	\$0	\$0
Doddridge	3	\$0	\$312,000	\$312,000
Fayette	11	\$35,239,337	\$3,746,700	\$38,986,037
Gilmer	3	\$88,806,230	\$12,320,500	\$101,126,730
Grant	3	\$0	\$380,800	\$380,800
Greenbrier	14	\$68,106,139	\$11,396,798	\$79,502,937
Hampshire	13	\$56,902,644	\$6,093,350	\$62,995,994
Hancock	2	\$11,500	\$25,100	\$36,600
Hardy	8	\$2,024,381	\$3,342,000	\$5,366,381
Harrison	27	\$56,251,142	\$27,889,182	\$84,140,324
Jackson	2	\$0	\$74,500	\$74,500
Jefferson	6	\$246,443,250	\$27,359,895	\$273,803,145
Kanawha	137	\$705,852,403	\$191,109,787	\$896,962,190
Lewis	5	\$403,000	\$215,800	\$618,800
Lincoln	0	\$0	\$0	\$0
Logan	9	\$18,000,000	\$3,037,600	\$21,037,600
Marion	21	\$223,239,022	\$16,362,858	\$239,601,880
Marshall	12	\$78,685,692	\$4,537,974	\$83,223,666
Mason	6	\$387,595	\$588,650	\$976,245
McDowell	1	\$925,000	\$40,000	\$965,000
Mercer	18	\$165,657,424	\$17,317,685	\$182,975,109
Mineral	6	\$122,401,425	\$7,705,839	\$130,107,264
Mingo	11	\$15,995,822	\$4,415,300	\$20,411,122
Monongalia	20	\$1,388,600,322	\$173,635,604	\$1,562,235,926
Monroe	5	\$652,903	\$439,427	\$1,092,330
Morgan	9	\$4,782,671	\$1,440,309	\$6,222,980
Nicholas	4	\$510,000	\$130,000	\$640,000
Ohio	21	\$15,763,272	\$4,533,800	\$20,297,072
Pendleton	4	\$900,000	\$166,900	\$1,066,900
Pleasants	3	\$130,000	\$95,000	\$225,000
Pocahontas	0	\$0	\$0	\$0
Preston	6	\$7,928,228	\$1,613,800	\$9,542,028
Putnam	13	\$21,457,335	\$10,644,225	\$32,101,560
Raleigh	26	\$90,380,245	\$12,003,288	\$102,383,533
Randolph	17	\$11,878,784	\$3,984,080	\$15,862,864
Ritchie	0	\$0	\$0	\$0
Roane	4	\$0	\$350,400	\$350,400
Summers	4	\$151,200	\$251,300	\$402,500



County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Taylor	4	\$102,240	\$558,700	\$660,940
Tucker	1	\$2,151,700	\$0	\$2,151,700
Tyler	4	\$0	\$540,210	\$540,210
Upshur	2	\$0	\$115,000	\$115,000
Wayne	5	\$300,000	\$751,000	\$1,051,000
Webster	4	\$0	\$330,000	\$330,000
Wetzel	4	\$760,000	\$125,900	\$885,900
Wirt	2	\$0	\$110,000	\$110,000
Wood	19	\$27,120,087	\$5,909,782	\$33,029,869
Wyoming	2	\$0	\$183,400	\$183,400
<b>Total</b>	<b>580</b>	<b>\$3,670,782,909</b>	<b>\$581,800,110</b>	<b>\$4,252,583,019</b>

Source: WVBRIM 2022

**Table 5.6-13: State Facilities Located in the EHS Fixed Facility Hazard Area by Agency**

Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Adjutant General's Office State of West Virginia	5	\$735,000	\$293,000	\$1,028,000
Administration, Secretary of Department of Administration	0	\$0	\$0	\$0
Agriculture, Department of State of West Virginia	5	\$75,000	\$30,000	\$105,000
Air and Environmental Quality Boards State of West Virginia	1	\$0	\$60,000	\$60,000
Alcohol Beverage Control Administration State of West Virginia	1	\$8,398,535	\$5,375,000	\$13,773,535
Architects, Board of State of West Virginia	1	\$0	\$17,000	\$17,000
Armory Board State of West Virginia	14	\$28,173,472	\$4,378,000	\$32,551,472
Arts, Culture & History, Department of State of West Virginia	3	\$7,067,274	\$214,200	\$7,281,474
Attorney General, Office of The State of West Virginia	1	\$0	\$40,000	\$40,000
Aviation, Division of	0	\$0	\$0	\$0
Bar, State State of West Virginia	1	\$1,230,000	\$250,000	\$1,480,000
Barbers & Cosmetologists, Board of State of West Virginia	1	\$0	\$100,000	\$100,000
Blue Ridge Community & Technical College	2	\$0	\$7,360,729	\$7,360,729
Bluefield State College	0	\$0	\$0	\$0
Board of Treasury Investments	0	\$0	\$0	\$0
Bridgevalley Community & Tech College	2	\$44,146,767	\$21,740,000	\$65,886,767
Cedar Lakes Conference Center State of West Virginia	0	\$0	\$0	\$0
Chiropractic Examiners Board State of West Virginia	1	\$0	\$100,000	\$100,000
Commission For National and Community Service, WV	1	\$0	\$80,000	\$80,000
Concord University	1	\$158,888,424	\$14,040,500	\$172,928,924
Conservation Agency, West Virginia State of West Virginia	8	\$0	\$907,110	\$907,110



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Consolidated Public Retirement Board Department of Administration	1	\$0	\$1,500,000	\$1,500,000
Consumer Advocate, Division of WV Public Service Commission	1	\$0	\$150,000	\$150,000
Corrections, Division of State of West Virginia	16	\$77,252,240	\$4,725,874	\$81,978,114
Courthouse Facilities Improvement Authority	1	\$300,000	\$200,000	\$500,000
Dentistry, Board of State of West Virginia	0	\$0	\$0	\$0
Department of Transportation	1	\$0	\$0	\$0
Dietitians, Board of Licensed	0	\$0	\$0	\$0
Eastern Panhandle Instructional Coop	9	\$1,100,000	\$2,025,000	\$3,125,000
Eastern WV Community & Tech. College	2	\$1,500,000	\$70,000	\$1,570,000
Economic Development Authority State of West Virginia	1	\$750,000	\$100,000	\$850,000
Economic Development, WV Dept of	1	\$0	\$3,000,000	\$3,000,000
Education, Department of State of West Virginia	19	\$5,403,548	\$2,613,580	\$8,017,128
Educational Broadcasting Authority State of West Virginia	1	\$30,000	\$0	\$30,000
Enterprise Resource Planning Board, WV	1	\$0	\$2,000,000	\$2,000,000
Environmental Protection, Division of State of West Virginia	16	\$37,000	\$3,027,761	\$3,064,761
Ethics Commission, West Virginia Department of Administration	1	\$65,000	\$65,000	\$130,000
Examiners In Counseling, Board of State of West Virginia	1	\$0	\$6,000	\$6,000
Fairmont State University	1	\$211,509,751	\$13,786,800	\$225,296,551
Fire Commission State of West Virginia	1	\$0	\$500,000	\$500,000
Fleet Management Office, Dept of Admin State of West Virginia	0	\$0	\$0	\$0
Forestry, Division of State of West Virginia	5	\$15,000	\$668,000	\$683,000
General Services Division Department of Administration	11	\$235,432,105	\$21,703,174	\$257,135,279
Geological and Economic Survey State of West Virginia	0	\$0	\$0	\$0
Glennville State College	1	\$88,806,230	\$12,031,000	\$100,837,230
Governor, Office of The State of West Virginia	1	\$0	\$2,000,000	\$2,000,000
Health & Human Resources, Department of State of West Virginia	65	\$250,675,474	\$57,749,317	\$308,424,791
Higher Education Policy Commission, WV	7	\$77,270,000	\$20,167,246	\$97,437,246
Highways, Division of State of West Virginia	47	\$84,188,854	\$15,336,936	\$99,525,790
Homeland Security & Emergency Management Division	0	\$0	\$0	\$0
Insurance Commissioner, Office of The State of West Virginia	3	\$0	\$145,000	\$145,000
Investment Management Board, WV State of West Virginia	1	\$0	\$2,500,000	\$2,500,000
Joint Committee on Government & Finance State of West Virginia	0	\$0	\$0	\$0
Justice & Community Services, Div. of	1	\$0	\$750,000	\$750,000
Juvenile Services, Division of	13	\$7,518,350	\$1,878,250	\$9,396,600
Labor, Division of State of West Virginia	1	\$0	\$975,000	\$975,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Land Division/Dept of Agriculture State of West Virginia	1	\$129,407	\$0	\$129,407
Landscape Architects, Board of State of West Virginia	1	\$0	\$2,500	\$2,500
Library Commission State of West Virginia	2	\$0	\$333,918	\$333,918
Lottery Commission State of West Virginia	2	\$48,700,000	\$11,500,000	\$60,200,000
Marshall University	1	\$78,454,356	\$4,269,858	\$82,724,214
Military Affairs, Secretary of and Public Safety	1	\$0	\$350,000	\$350,000
Miner's Health Safety, Division of and Training, State of West Virginia	1	\$0	\$25,000	\$25,000
Motor Vehicles, Division of State of West Virginia	15	\$1,000,000	\$6,315,710	\$7,315,710
Mountain State Esc	1	\$1,000,000	\$250,000	\$1,250,000
Mountwest Community & Technical College	0	\$0	\$0	\$0
National Coal Heritage Area Authority	2	\$1,000,000	\$200,000	\$1,200,000
Natural Resources, Division of State of West Virginia	7	\$50,000	\$1,586,900	\$1,636,900
New River Community & Technical College	2	\$1,058,000	\$1,030,000	\$2,088,000
Northern Community & Tech College, WV College Square	1	\$8,900,000	\$2,000,000	\$10,900,000
Occupational Therapy Board State of West Virginia	1	\$0	\$10,000	\$10,000
Office of Technology/Is&C Department of Administration	4	\$0	\$21,732,000	\$21,732,000
Osteopathic Medicine, WV Board of State of West Virginia	1	\$0	\$25,000	\$25,000
Osteopathic Medicine, WV School of	9	\$66,788,139	\$8,258,723	\$75,046,862
Parks, West Virginia State C\O Division of Natural Resources	11	\$17,337,155	\$1,845,382	\$19,182,537
Pharmacy, Board of State of West Virginia	0	\$0	\$0	\$0
Physical Therapy, Board of State of West Virginia	0	\$0	\$0	\$0
Pierpont Community and Technical College	4	\$10,016,296	\$3,800,000	\$13,816,296
Practical Nurses, Board of State of West Virginia	0	\$0	\$0	\$0
Prosecuting Attorneys Institute, WV	1	\$0	\$121,000	\$121,000
Psychologists Examiners, Board of State of West Virginia	1	\$0	\$45,000	\$45,000
Public Service Commission State of West Virginia	2	\$14,844,069	\$3,365,000	\$18,209,069
Purchasing, Division of Department of Administration	0	\$0	\$0	\$0
Rail Authority State of West Virginia	1	\$524,381	\$2,827,000	\$3,351,381
Real Estate Commission State of West Virginia	1	\$0	\$150,000	\$150,000
Regional Jail & Corr. Fac. Authority State of West Virginia	2	\$57,701,000	\$2,406,000	\$60,107,000
Registered Nurses, Board of State of West Virginia	1	\$0	\$250,000	\$250,000
Rehabilitation Services Division of Commerce	16	\$0	\$9,438,599	\$9,438,599
Respiratory Care, WV Board of	0	\$0	\$0	\$0
School Building Authority, West Virginia	0	\$0	\$0	\$0
Schools For The Deaf and The Blind State of West Virginia	1	\$50,683,070	\$5,064,200	\$55,747,270
Senior Services, Bureau of State of West Virginia	2	\$0	\$155,000	\$155,000
Shepherd University	1	\$246,443,250	\$27,131,195	\$273,574,445
Southern Educational Services Coop	1	\$500,000	\$500,000	\$1,000,000
Southern WV Community & Tech College	1	\$15,882,800	\$3,515,000	\$19,397,800
Speech Pathology & Audiology Examiners West Virginia Board of	0	\$0	\$0	\$0



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
State Police, West Virginia Dept of Military Affairs & Public Safety	42	\$18,775,501	\$3,067,000	\$21,842,501
Supreme Court of Appeals State of West Virginia	66	\$0	\$5,052,100	\$5,052,100
Tax Appeals, WV Office of	1	\$0	\$130,000	\$130,000
Tax Department State of West Virginia	6	\$0	\$5,400,000	\$5,400,000
Treasurer of State State of West Virginia	2	\$0	\$711,000	\$711,000
University Physicians and Surgeons	10	\$13,530,000	\$3,590,000	\$17,120,000
Unknown	38	\$0	\$0	\$0
Veterans Assistance, Department of State of West Virginia	12	\$36,419,640	\$16,470,300	\$52,889,940
Veterinary Medicine, Board of State of West Virginia	0	\$0	\$0	\$0
Water Development Authority State of West Virginia	1	\$6,500,000	\$1,000,000	\$7,500,000
West Liberty University	3	\$6,273,888	\$531,000	\$6,804,888
West Virginia Parkways Authority	7	\$27,863,500	\$9,145,000	\$37,008,500
West Virginia State University - Institute	1	\$130,503,950	\$9,519,200	\$140,023,150
West Virginia State University - Malden	0	\$0	\$0	\$0
West Virginia University	1	\$1,364,812,628	\$170,618,604	\$1,535,431,232
West Virginia University Arthurdale	0	\$0	\$0	\$0
West Virginia University At Parkersburg	0	\$0	\$0	\$0
West Virginia University Beckley	1	\$280,215	\$240,287	\$520,502
West Virginia University Bruceton Mills	0	\$0	\$0	\$0
West Virginia University Charleston	1	\$14,207	\$777,591	\$791,798
West Virginia University Fort Ashby	1	\$2,747,022	\$705,000	\$3,452,022
West Virginia University Granville	1	\$18,789,502	\$986,000	\$19,775,502
West Virginia University Jacksons Mill	0	\$0	\$0	\$0
West Virginia University Kearneysville	0	\$0	\$0	\$0
West Virginia University Keyser	1	\$119,654,403	\$6,972,839	\$126,627,242
West Virginia University Montgomery	1	\$4,857,375	\$0	\$4,857,375
West Virginia University Reedsville	1	\$7,728,228	\$1,041,300	\$8,769,528
West Virginia University Union	1	\$452,903	\$53,427	\$506,330
West Virginia University Wardensville	0	\$0	\$0	\$0
West Virginia University Weston	0	\$0	\$0	\$0
Workforce West Virginia	5	\$0	\$377,000	\$377,000
WV Public Employees Grievance Board	0	\$0	\$0	\$0
WVsom Clinic Inc DbA Robert C Byrd Clinic	1	\$0	\$2,250,000	\$2,250,000
<b>Total (WV State)</b>	<b>580</b>	<b>\$3,670,782,909</b>	<b>\$581,800,110</b>	<b>\$4,252,583,019</b>

Source: WVBRIM 2022

Table 5.6-14 and Table 5.6-15 show the number of State facilities that are located within ½ mile of fixed facilities that do not store EHS by county as well as agency. The State has 682 facilities located in this hazard area with a replacement cost value of \$4.3 billion. Kanawha County has the most State facilities (141) impacted by this hazard, but Monongalia County has the highest replacement cost (\$1.6 billion). The Division of Highways has the most facilities (103) impacted by this hazard, while West Virginia University has the highest replacement cost value (\$1.5 billion).

**Table 5.6-14: State Facilities Located in the Non-EHS Fixed Facility Hazard Area by County**

County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Barbour	6	\$40,000	\$361,300	\$401,300
Berkeley	35	\$30,697,808	\$16,188,020	\$46,885,828
Boone	2	\$1,800	\$3,000	\$4,800
Braxton	9	\$2,414,153	\$3,218,600	\$5,632,753
Brooke	1	\$140,000	\$55,000	\$195,000
Cabell	30	\$157,346,692	\$9,950,683	\$167,297,375
Calhoun	4	\$18,400	\$360,000	\$378,400
Clay	1	\$0	\$0	\$0
Doddridge	10	\$66,424,435	\$8,477,500	\$74,901,935
Fayette	13	\$34,392,063	\$3,649,200	\$38,041,263
Gilmer	3	\$88,806,230	\$12,320,500	\$101,126,730
Grant	5	\$423,675	\$1,119,800	\$1,543,475
Greenbrier	16	\$10,754,319	\$6,811,345	\$17,565,664
Hampshire	10	\$56,888,994	\$6,004,900	\$62,893,894
Hancock	5	\$71,500	\$1,655,100	\$1,726,600
Hardy	14	\$36,439,905	\$7,778,035	\$44,217,940
Harrison	31	\$61,757,944	\$25,653,682	\$87,411,626
Jackson	6	\$26,973,856	\$3,660,000	\$30,633,856
Jefferson	8	\$246,743,250	\$27,981,195	\$274,724,445
Kanawha	141	\$556,236,680	\$172,124,803	\$728,361,483
Lewis	14	\$65,761,624	\$6,608,083	\$72,369,707
Lincoln	5	\$800,000	\$806,000	\$1,606,000
Logan	15	\$27,166,000	\$7,776,417	\$34,942,417
Marion	21	\$226,007,022	\$16,200,858	\$242,207,880
Marshall	6	\$43,094,243	\$1,441,804	\$44,536,047
Mason	0	\$0	\$0	\$0
McDowell	2	\$200,000	\$180,000	\$380,000
Mercer	14	\$14,795,400	\$4,903,400	\$19,698,800
Mineral	5	\$125,084,763	\$8,265,339	\$133,350,102
Mingo	1	\$150,000	\$50,000	\$200,000
Monongalia	28	\$1,400,852,820	\$176,793,029	\$1,577,645,849
Monroe	0	\$0	\$0	\$0
Morgan	9	\$5,334,971	\$1,233,800	\$6,568,771
Nicholas	9	\$5,469,634	\$1,295,500	\$6,765,134
Ohio	16	\$12,563,184	\$4,926,609	\$17,489,793
Pendleton	3	\$900,000	\$96,900	\$996,900
Pleasants	6	\$28,974,523	\$2,157,372	\$31,131,895





County	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Pocahontas	3	\$0	\$75,000	\$75,000
Preston	15	\$67,948,475	\$7,629,500	\$75,577,975
Putnam	19	\$42,845,227	\$18,223,225	\$61,068,452
Raleigh	39	\$79,252,829	\$14,176,263	\$93,429,092
Randolph	13	\$27,318,784	\$4,067,000	\$31,385,784
Ritchie	8	\$8,289,491	\$1,246,400	\$9,535,891
Roane	6	\$1,505,400	\$655,840	\$2,161,240
Summers	4	\$151,200	\$251,300	\$402,500
Taylor	1	\$981,700	\$224,000	\$1,205,700
Tucker	2	\$129,600	\$56,600	\$186,200
Tyler	2	\$1,000,000	\$110,000	\$1,110,000
Upshur	8	\$19,372,708	\$4,061,000	\$23,433,708
Wayne	9	\$11,051,919	\$2,693,564	\$13,745,483
Webster	3	\$2,093,012	\$442,100	\$2,535,112
Wetzel	6	\$760,000	\$125,900	\$885,900
Wirt	3	\$0	\$138,500	\$138,500
Wood	34	\$101,423,969	\$20,573,605	\$121,997,574
Wyoming	3	\$11,500	\$477,000	\$488,500
<b>Total</b>	<b>682</b>	<b>\$3,697,861,702</b>	<b>\$615,334,571</b>	<b>\$4,313,196,273</b>

Source: WVBRIM 2022

**Table 5.6-15: State Facilities Located in the Non-EHS Fixed Facility Hazard Area by Agency**

Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Adjutant General's Office State of West Virginia	4	\$835,000	\$308,000	\$1,143,000
Administration, Secretary of Department of Administration	0	\$0	\$0	\$0
Agriculture, Department of State of West Virginia	7	\$2,584,053	\$2,240,000	\$4,824,053
Air and Environmental Quality Boards State of West Virginia	1	\$0	\$60,000	\$60,000
Alcohol Beverage Control Administration State of West Virginia	1	\$8,398,535	\$5,375,000	\$13,773,535
Architects, Board of State of West Virginia	1	\$0	\$17,000	\$17,000
Armory Board State of West Virginia	45	\$234,639,652	\$45,306,064	\$279,945,716
Arts, Culture & History, Department of State of West Virginia	2	\$7,067,274	\$214,200	\$7,281,474
Attorney General, Office of The State of West Virginia	1	\$0	\$40,000	\$40,000
Aviation, Division of	0	\$0	\$0	\$0
Bar, State State of West Virginia	0	\$0	\$0	\$0
Barbers & Cosmetologists, Board of State of West Virginia	0	\$0	\$0	\$0
Blue Ridge Community & Technical College	2	\$0	\$6,872,720	\$6,872,720



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Bluefield State College	0	\$0	\$0	\$0
Board of Treasury Investments	0	\$0	\$0	\$0
Bridgevalley Community & Tech College	2	\$44,146,767	\$21,740,000	\$65,886,767
Cedar Lakes Conference Center State of West Virginia	0	\$0	\$0	\$0
Chiropractic Examiners Board State of West Virginia	1	\$0	\$100,000	\$100,000
Commission For National and Community Service, WV	1	\$0	\$80,000	\$80,000
Concord University	0	\$0	\$0	\$0
Conservation Agency, West Virginia State of West Virginia	11	\$0	\$855,545	\$855,545
Consolidated Public Retirement Board Department of Administration	1	\$0	\$1,500,000	\$1,500,000
Consumer Advocate, Division of WV Public Service Commission	1	\$0	\$150,000	\$150,000
Corrections, Division of State of West Virginia	16	\$109,821,437	\$11,976,076	\$121,797,513
Courthouse Facilities Improvement Authority	0	\$0	\$0	\$0
Dentistry, Board of State of West Virginia	0	\$0	\$0	\$0
Department of Transportation	1	\$0	\$0	\$0
Dietitians, Board of Licensed	0	\$0	\$0	\$0
Eastern Panhandle Instructional Coop	9	\$1,100,000	\$1,800,000	\$2,900,000
Eastern WV Community & Tech. College	4	\$10,097,085	\$1,406,000	\$11,503,085
Economic Development Authority State of West Virginia	0	\$0	\$0	\$0
Economic Development, WV Dept of	0	\$0	\$0	\$0
Education, Department of State of West Virginia	20	\$5,403,548	\$2,596,500	\$8,000,048
Educational Broadcasting Authority State of West Virginia	3	\$5,168,084	\$2,000,000	\$7,168,084
Enterprise Resource Planning Board, WV	1	\$0	\$2,000,000	\$2,000,000
Environmental Protection, Division of State of West Virginia	16	\$25,500	\$3,678,667	\$3,704,167
Ethics Commission, West Virginia Department of Administration	1	\$65,000	\$65,000	\$130,000
Examiners In Counseling, Board of State of West Virginia	1	\$0	\$6,000	\$6,000
Fairmont State University	1	\$211,509,751	\$13,786,800	\$225,296,551
Fire Commission State of West Virginia	1	\$0	\$500,000	\$500,000
Fleet Management Office, Dept of Admin State of West Virginia	0	\$0	\$0	\$0
Forestry, Division of State of West Virginia	8	\$165,000	\$678,000	\$843,000
General Services Division Department of Administration	7	\$75,761,251	\$2,600,000	\$78,361,251
Geological and Economic Survey State of West Virginia	0	\$0	\$0	\$0
Glenville State College	1	\$88,806,230	\$12,031,000	\$100,837,230
Governor, Office of The State of West Virginia	1	\$0	\$2,000,000	\$2,000,000
Health & Human Resources, Department of State of West Virginia	78	\$301,314,922	\$67,627,552	\$368,942,474
Higher Education Policy Commission, WV	8	\$79,270,000	\$21,267,246	\$100,537,246
Highways, Division of State of West Virginia	103	\$131,541,678	\$25,773,626	\$157,315,304
Homeland Security & Emergency Management Division	1	\$0	\$205,000	\$205,000



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Insurance Commissioner, Office of The State of West Virginia	3	\$0	\$145,000	\$145,000
Investment Management Board, WV State of West Virginia	1	\$0	\$2,500,000	\$2,500,000
Joint Committee on Government & Finance State of West Virginia	1	\$0	\$73,871	\$73,871
Justice & Community Services, Div. of	1	\$0	\$750,000	\$750,000
Juvenile Services, Division of	14	\$12,567,200	\$2,738,300	\$15,305,500
Labor, Division of State of West Virginia	0	\$0	\$0	\$0
Land Division/Dept of Agriculture State of West Virginia	1	\$129,407	\$0	\$129,407
Landscape Architects, Board of State of West Virginia	1	\$0	\$2,500	\$2,500
Library Commission State of West Virginia	2	\$0	\$333,918	\$333,918
Lottery Commission State of West Virginia	3	\$48,700,000	\$13,000,000	\$61,700,000
Marshall University	1	\$78,454,356	\$4,269,858	\$82,724,214
Military Affairs, Secretary of and Public Safety	1	\$0	\$350,000	\$350,000
Miner's Health Safety, Division of and Training, State of West Virginia	1	\$0	\$25,000	\$25,000
Motor Vehicles, Division of State of West Virginia	15	\$1,000,000	\$6,399,000	\$7,399,000
Mountain State Esc	0	\$0	\$0	\$0
Mountwest Community & Technical College	1	\$2,813,114	\$200,000	\$3,013,114
National Coal Heritage Area Authority	1	\$0	\$100,000	\$100,000
Natural Resources, Division of State of West Virginia	5	\$130,000	\$1,281,900	\$1,411,900
New River Community & Technical College	2	\$2,945,665	\$1,200,000	\$4,145,665
Northern Community & Tech College, WV College Square	1	\$8,900,000	\$2,000,000	\$10,900,000
Occupational Therapy Board State of West Virginia	1	\$0	\$10,000	\$10,000
Office of Technology/Is&C Department of Administration	2	\$0	\$2,850,000	\$2,850,000
Osteopathic Medicine, WV Board of State of West Virginia	1	\$0	\$25,000	\$25,000
Osteopathic Medicine, WV School of	9	\$0	\$90,325	\$90,325
Parks, West Virginia State C\O Division of Natural Resources	15	\$25,605,318	\$3,139,982	\$28,745,300
Pharmacy, Board of State of West Virginia	0	\$0	\$0	\$0
Physical Therapy, Board of State of West Virginia	0	\$0	\$0	\$0
Pierpont Community and Technical College	3	\$10,016,296	\$800,000	\$10,816,296
Practical Nurses, Board of State of West Virginia	0	\$0	\$0	\$0
Prosecuting Attorneys Institute, WV	1	\$0	\$121,000	\$121,000
Psychologists Examiners, Board of State of West Virginia	1	\$0	\$45,000	\$45,000
Public Service Commission State of West Virginia	2	\$14,844,069	\$3,365,000	\$18,209,069
Purchasing, Division of Department of Administration	1	\$155,000	\$750,000	\$905,000
Rail Authority State of West Virginia	1	\$524,381	\$2,827,000	\$3,351,381
Real Estate Commission State of West Virginia	1	\$0	\$150,000	\$150,000
Regional Jail & Corr. Fac. Authority State of West Virginia	2	\$60,227,048	\$2,614,000	\$62,841,048
Registered Nurses, Board of State of West Virginia	1	\$0	\$250,000	\$250,000
Rehabilitation Services Division of Commerce	18	\$0	\$10,292,374	\$10,292,374
Respiratory Care, WV Board of	0	\$0	\$0	\$0
School Building Authority, West Virginia	0	\$0	\$0	\$0



Agency	Number of Structures	Replacement Cost Value (Structure Only)	Replacement Cost Value (Contents Only)	Total Replacement Cost Value (Structure + Contents)
Schools For The Deaf and The Blind State of West Virginia	1	\$50,683,070	\$5,064,200	\$55,747,270
Senior Services, Bureau of State of West Virginia	2	\$0	\$155,000	\$155,000
Shepherd University	1	\$246,443,250	\$27,131,195	\$273,574,445
Southern Educational Services Coop	1	\$500,000	\$500,000	\$1,000,000
Southern WV Community & Tech College	0	\$0	\$0	\$0
Speech Pathology & Audiology Examiners West Virginia Board of	1	\$0	\$20,000	\$20,000
State Police, West Virginia Dept of Military Affairs & Public Safety	53	\$48,121,522	\$15,628,600	\$63,750,122
Supreme Court of Appeals State of West Virginia	55	\$0	\$5,286,400	\$5,286,400
Tax Appeals, WV Office of	1	\$0	\$130,000	\$130,000
Tax Department State of West Virginia	6	\$0	\$5,400,000	\$5,400,000
Treasurer of State State of West Virginia	2	\$0	\$711,000	\$711,000
University Physicians and Surgeons	10	\$13,530,000	\$3,440,000	\$16,970,000
Unknown	28	\$0	\$0	\$0
Veterans Assistance, Department of State of West Virginia	14	\$36,419,640	\$16,490,300	\$52,909,940
Veterinary Medicine, Board of State of West Virginia	0	\$0	\$0	\$0
Water Development Authority State of West Virginia	1	\$6,500,000	\$1,000,000	\$7,500,000
West Liberty University	1	\$2,782,000	\$6,000	\$2,788,000
West Virginia Parkways Authority	11	\$15,780,500	\$9,780,000	\$25,560,500
West Virginia State University - Institute	1	\$130,503,950	\$9,519,200	\$140,023,150
West Virginia State University - Malden	0	\$0	\$0	\$0
West Virginia University	1	\$1,364,812,628	\$170,618,604	\$1,535,431,232
West Virginia University Arthurdale	0	\$0	\$0	\$0
West Virginia University At Parkersburg	1	\$51,935,381	\$9,834,823	\$61,770,204
West Virginia University Beckley	1	\$280,215	\$240,287	\$520,502
West Virginia University Bruceton Mills	0	\$0	\$0	\$0
West Virginia University Charleston	1	\$14,207	\$777,591	\$791,798
West Virginia University Fort Ashby	0	\$0	\$0	\$0
West Virginia University Granville	0	\$0	\$0	\$0
West Virginia University Jacksons Mill	1	\$11,287,734	\$3,312,473	\$14,600,207
West Virginia University Kearneysville	0	\$0	\$0	\$0
West Virginia University Keyser	1	\$119,654,403	\$6,972,839	\$126,627,242
West Virginia University Montgomery	1	\$4,857,375	\$0	\$4,857,375
West Virginia University Reedsville	0	\$0	\$0	\$0
West Virginia University Union	0	\$0	\$0	\$0
West Virginia University Wardensville	1	\$6,858,061	\$784,035	\$7,642,096
West Virginia University Weston	1	\$2,165,145	\$75,000	\$2,240,145
Workforce West Virginia	6	\$0	\$367,000	\$367,000
WV Public Employees Grievance Board	1	\$0	\$285,000	\$285,000
WVsom Clinic Inc DbA Robert C Byrd Clinic	1	\$0	\$2,250,000	\$2,250,000
<b>Total (WV State)</b>	<b>682</b>	<b>\$3,697,861,702</b>	<b>\$615,334,571</b>	<b>\$4,313,196,273</b>

Source: WVBRIM 2022

Damages to transportation infrastructure and their closure is common following a hazardous materials release. Similar to the fixed-site hazardous materials release, the greatest risk to the population and the built environment would be from an explosion from hazardous materials in transport. Proximity, intensity, and the structural integrity of the building itself are all factors in the subsequent vulnerability and expected damage.



Table 5.6-16 shows the mileage of roads affected by each type of hazardous materials release. West Virginia has a total of 510.17 miles located within ½ mile of pipelines, 1,239.60 miles located within ½ mile of rail lines, 566.32 miles within 1 mile of fixed facilities storing EHS, and 800.73 miles located within ½ mile of fixed facilities that do not store EHS.

**Table 5.6-16: State Roads Located in Hazmat Buffer Areas**

County	State Roads Located Within The Hazmat Pipe 1/2 Mile Buffer Hazard Area	State Roads Located Within The Hazmat Rail 1/2 Mile Buffer Hazard Area	State Roads Located Within The Hazmat Tier II Facility EHM 1 Mile Buffer Hazard Area	State Roads Located Within The Hazmat Tier II Facility Non-EHM 1/2 Mile Buffer Hazard Area
	Mileage of Roadway	Mileage of Roadway	Mileage of Roadway	Mileage of Roadway
Barbour	3.41	2.65	0.64	13.13
Berkeley	0.00	16.08	25.12	20.21
Boone	10.45	70.40	6.65	5.32
Braxton	17.83	21.97	5.12	9.05
Brooke	23.73	14.67	36.17	9.10
Cabell	9.76	28.74	8.88	17.57
Calhoun	7.24	0.00	2.39	24.75
Clay	9.43	0.00	0.00	1.91
Doddridge	18.60	0.00	3.21	33.62
Fayette	0.00	54.33	17.28	8.61
Gilmer	5.83	2.41	1.15	25.37
Grant	1.23	7.25	1.09	5.62
Greenbrier	0.00	16.61	6.35	3.36
Hampshire	0.00	9.16	1.07	4.36
Hancock	7.59	19.64	11.88	8.24
Hardy	2.21	1.73	0.00	5.01
Harrison	12.58	21.49	31.93	39.53
Jackson	4.90	21.79	1.58	8.94
Jefferson	0.00	36.28	9.67	26.07
Kanawha	30.04	61.97	59.38	59.43
Lewis	0.00	0.00	0.00	0.00
Lincoln	19.09	25.36	5.67	14.21
Logan	6.57	78.46	13.30	16.64
Marion	18.41	4.75	6.53	3.33
Marshall	25.90	31.26	19.31	13.19
Mason	12.81	67.35	10.04	10.20
McDowell	12.59	75.20	9.49	15.83
Mercer	2.14	28.02	15.47	11.21
Mineral	10.35	12.45	9.21	8.19
Mingo	2.78	43.28	7.66	0.12
Monongalia	13.71	17.03	15.32	23.60





County	State Roads Located Within The Hazmat Pipe 1/2 Mile Buffer Hazard Area	State Roads Located Within The Hazmat Rail 1/2 Mile Buffer Hazard Area	State Roads Located Within The Hazmat Tier II Facility EHM 1 Mile Buffer Hazard Area	State Roads Located Within The Hazmat Tier II Facility Non-EHM 1/2 Mile Buffer Hazard Area
	Mileage of Roadway	Mileage of Roadway	Mileage of Roadway	Mileage of Roadway
Monroe	0.38	2.05	5.84	3.80
Morgan	0.00	4.79	4.39	3.32
Nicholas	16.85	18.99	13.06	15.70
Ohio	8.98	0.00	12.14	4.51
Pendleton	1.92	0.00	0.00	1.32
Pleasants	0.00	20.59	6.68	17.55
Pocahontas	0.00	1.07	0.00	6.15
Preston	10.29	15.49	16.61	13.03
Putnam	7.39	48.97	30.92	33.41
Raleigh	13.52	50.28	29.26	22.53
Randolph	2.22	4.97	2.08	4.04
Ritchie	17.84	0.00	2.43	71.74
Roane	5.69	0.00	3.82	5.35
Summers	3.22	38.10	9.47	5.28
Taylor	1.17	8.79	0.00	2.88
Tucker	10.80	0.00	3.60	1.92
Tyler	16.39	14.73	8.57	17.38
Upshur	7.59	4.50	4.18	3.67
Wayne	20.22	29.51	8.24	14.81
Webster	0.00	3.61	5.17	7.02
Wetzel	28.14	48.66	4.94	34.71
Wirt	0.00	0.00	4.43	7.87
Wood	16.42	42.30	34.18	47.77
Wyoming	31.95	91.87	14.76	9.23
<b>Total</b>	<b>510.17</b>	<b>1,239.60</b>	<b>566.32</b>	<b>800.73</b>

Source: WVBRIM 2022

## CRITICAL FACILITIES AND COMMUNITY LIFELINES

Similar to State assets, potential losses to critical facilities caused by a hazardous materials release are difficult to monetize. The degree of damages to the asset depends on the scale of the incident. Critical facilities need to remain in operation before, during, and after disaster events. Loss of use will impact the services they provide to the State which may have public safety and economic implications.

Table 5.6-17 shows critical facilities that are located within ½ mile of pipelines. There are 48 facilities located in this hazard area with Kanawha County having the greatest number (31) of facilities. The safety and security sector owns or leases 42 of the 48 critical facilities located within ½ mile of pipelines.

*Table 5.6-17: Critical Facilities Located in the Pipeline Hazard Area by County*

County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Barbour	0	0	0	0	0	0	0	0
Berkeley	0	0	0	0	0	0	0	0
Boone	0	0	0	0	0	0	0	0
Braxton	0	0	0	0	0	1	0	1
Brooke	0	0	0	0	0	0	0	0
Cabell	0	0	0	0	0	3	0	3
Calhoun	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0
Doddridge	0	0	0	0	0	1	0	1
Fayette	0	0	0	0	0	0	0	0
Gilmer	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0
Greenbrier	0	0	0	0	0	0	0	0
Hampshire	0	0	0	0	0	0	0	0
Hancock	0	0	0	0	0	1	0	1
Hardy	0	0	0	0	0	0	0	0
Harrison	0	0	0	0	0	0	0	0
Jackson	0	0	0	0	0	0	0	0
Jefferson	0	0	0	0	0	0	0	0
Kanawha	3	0	1	0	0	26	1	31
Lewis	0	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0
Logan	0	0	0	0	0	0	0	0
Marion	0	0	0	0	0	2	0	2
Marshall	0	0	0	0	0	2	0	2
Mason	0	0	0	0	0	0	0	0
McDowell	0	0	0	0	0	0	0	0
Mercer	0	0	0	0	0	0	0	0
Mineral	0	0	0	0	0	0	0	0
Mingo	0	0	0	0	0	2	0	2
Monongalia	1	0	0	0	0	0	0	1
Monroe	0	0	0	0	0	0	0	0
Morgan	0	0	0	0	0	0	0	0
Nicholas	0	0	0	0	0	0	0	0
Ohio	0	0	0	0	0	1	0	1
Pendleton	0	0	0	0	0	0	0	0
Pleasants	0	0	0	0	0	0	0	0



County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Pocahontas	0	0	0	0	0	0	0	0
Preston	0	0	0	0	0	0	0	0
Putnam	0	0	0	0	0	2	0	2
Raleigh	0	0	0	0	0	1	0	1
Randolph	0	0	0	0	0	0	0	0
Ritchie	0	0	0	0	0	0	0	0
Roane	0	0	0	0	0	0	0	0
Summers	0	0	0	0	0	0	0	0
Taylor	0	0	0	0	0	0	0	0
Tucker	0	0	0	0	0	0	0	0
Tyler	0	0	0	0	0	0	0	0
Upshur	0	0	0	0	0	0	0	0
Wayne	0	0	0	0	0	0	0	0
Webster	0	0	0	0	0	0	0	0
Wetzel	0	0	0	0	0	0	0	0
Wirt	0	0	0	0	0	0	0	0
Wood	0	0	0	0	0	0	0	0
Wyoming	0	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>42</b>	<b>1</b>	<b>48</b>

Source: WVBRIM 2022

Table 5.6-18 shows critical facilities that are located within ½ mile of rail lines. There are 105 facilities located in this hazard area with Kanawha County having the greatest number (55) of facilities. The safety and security sector owns or leases 79 of the 105 critical facilities located within ½ mile of rail lines.

**Table 5.6-18: Critical Facilities Located in the Rail Line Hazard Area by County**

County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Barbour	0	0	0	0	0	1	0	1
Berkeley	0	0	0	0	0	5	0	5
Boone	0	0	0	0	0	1	0	1
Braxton	0	0	0	0	0	0	0	0
Brooke	0	0	0	0	0	0	0	0
Cabell	0	0	0	0	0	5	1	6
Calhoun	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0
Doddridge	0	0	0	0	0	0	0	0
Fayette	0	0	0	0	0	0	0	0
Gilmer	0	0	0	0	0	0	0	0



County	Communi cations	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Grant	0	0	0	0	0	0	0	0
Greenbrier	0	0	1	0	0	0	0	1
Hampshire	0	0	0	0	0	0	0	0
Hancock	0	0	1	0	0	1	0	2
Hardy	0	0	1	0	0	2	1	4
Harrison	0	0	0	0	1	1	0	2
Jackson	0	0	0	0	0	0	0	0
Jefferson	0	0	1	0	0	1	0	2
Kanawha	6	0	1	0	4	41	3	55
Lewis	0	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0
Logan	0	0	0	0	0	2	0	2
Marion	0	0	0	0	1	0	0	1
Marshall	0	0	0	0	0	0	0	0
Mason	0	0	0	0	1	2	0	3
McDowell	0	0	0	0	0	5	0	5
Mercer	0	0	0	0	0	0	0	0
Mineral	0	0	0	0	0	0	0	0
Mingo	0	0	0	0	0	2	0	2
Monongalia	1	0	0	0	0	0	0	1
Monroe	0	0	0	0	0	0	0	0
Morgan	0	0	0	0	0	0	0	0
Nicholas	0	0	0	0	0	0	0	0
Ohio	0	0	0	0	0	0	0	0
Pendleton	0	0	0	0	0	0	0	0
Pleasants	0	0	0	0	0	1	0	1
Pocahontas	0	0	0	0	0	0	0	0
Preston	0	0	0	0	1	0	0	1
Putnam	0	0	0	0	0	2	0	2
Raleigh	0	0	0	0	0	1	0	1
Randolph	0	0	0	0	0	2	0	2
Ritchie	0	0	0	0	0	0	0	0
Roane	0	0	0	0	0	0	0	0
Summers	0	0	0	0	0	1	0	1
Taylor	0	0	0	0	0	0	0	0
Tucker	0	0	0	0	0	0	0	0
Tyler	0	0	0	0	0	0	0	0
Upshur	0	0	0	0	0	0	1	1



County	Communi cations	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Wayne	0	0	0	0	0	0	0	0
Webster	0	0	0	0	0	0	0	0
Wetzel	0	0	0	0	0	0	0	0
Wirt	0	0	0	0	0	0	0	0
Wood	0	0	0	0	0	3	0	3
Wyoming	0	0	0	0	0	0	0	0
<b>Total</b>	<b>7</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>8</b>	<b>79</b>	<b>6</b>	<b>105</b>

Source: WVBRIM 2022

Table 5.6-19 shows critical facilities that are located within 1/2 mile of major roadways. There are 150 facilities located in this hazard area with Kanawha County having the greatest number (65) of facilities. The safety and security sector owns or leases 120 of the 150 critical facilities located within ½ of major roadways.

**Table 5.6-19: Critical Facilities Located in the Major Roadway Hazard Area by County**

County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Barbour	0	0	0	0	0	1	0	1
Berkeley	0	0	0	0	0	0	0	0
Boone	0	0	0	0	0	1	0	1
Braxton	0	0	0	0	0	1	0	1
Brooke	0	0	0	0	0	0	0	0
Cabell	0	0	0	0	0	5	1	6
Calhoun	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0
Doddridge	0	0	0	0	0	2	0	2
Fayette	0	0	0	0	0	1	0	1
Gilmer	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0
Greenbrier	0	0	1	0	0	3	0	4
Hampshire	0	0	0	0	0	4	0	4
Hancock	0	0	1	0	0	1	0	2
Hardy	0	0	1	0	0	3	0	4
Harrison	0	0	0	0	2	1	0	3
Jackson	0	0	0	0	0	0	0	0
Jefferson	0	0	0	0	0	0	0	0
Kanawha	6	0	2	0	4	49	4	65
Lewis	0	0	0	0	1	0	0	1
Lincoln	0	0	0	0	0	0	0	0
Logan	0	0	0	0	0	4	0	4





County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Marion	0	0	0	0	1	4	0	5
Marshall	0	0	0	0	0	0	0	0
Mason	0	0	0	0	1	2	0	3
McDowell	0	0	0	0	0	5	0	5
Mercer	0	0	0	0	0	3	0	3
Mineral	0	0	0	0	0	1	0	1
Mingo	0	0	0	0	0	2	0	2
Monongalia	0	0	0	0	0	3	0	3
Monroe	0	0	0	0	0	0	0	0
Morgan	0	0	0	0	0	0	0	0
Nicholas	0	0	0	0	0	1	1	2
Ohio	0	0	1	0	0	4	0	5
Pendleton	0	0	0	0	0	0	0	0
Pleasants	0	0	0	0	0	1	0	1
Pocahontas	0	0	0	0	0	0	0	0
Preston	0	0	0	0	1	0	0	1
Putnam	0	0	0	0	0	3	0	3
Raleigh	0	0	0	0	1	5	0	6
Randolph	0	0	0	0	0	3	0	3
Ritchie	0	0	0	0	0	0	0	0
Roane	0	0	0	0	0	2	0	2
Summers	0	0	0	0	0	0	0	0
Taylor	0	0	0	0	0	1	0	1
Tucker	0	0	0	0	0	1	0	1
Tyler	0	0	0	0	0	0	0	0
Upshur	0	0	0	0	0	0	1	1
Wayne	0	0	0	0	0	0	0	0
Webster	0	0	0	0	0	0	0	0
Wetzel	0	0	0	0	0	0	0	0
Wirt	0	0	0	0	0	0	0	0
Wood	0	0	0	0	0	3	0	3
Wyoming	0	0	0	0	0	0	0	0
<b>Total</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>11</b>	<b>120</b>	<b>7</b>	<b>150</b>

Source: WVBRIM 2022

Table 5.6-20 shows critical facilities that are located within 1 mile of fixed facilities that store EHS. There are 108 facilities located in this hazard area with Kanawha County having the greatest number (49) of facilities. The safety and security sector owns or leases 88 of the 108 critical facilities located within 1 mile of fixed facilities with EHS.



*Table 5.6-20: Critical Facilities Located in the EHS Hazard Area by County*

County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Barbour	0	0	0	0	0	1	0	1
Berkeley	0	0	0	0	0	4	0	4
Boone	0	0	0	0	0	0	0	0
Braxton	0	0	0	0	0	1	0	1
Brooke	0	0	0	0	0	0	0	0
Cabell	0	0	0	0	0	6	1	7
Calhoun	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0
Doddridge	0	0	0	0	0	0	0	0
Fayette	0	0	0	0	0	0	0	0
Gilmer	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0
Greenbrier	0	0	1	0	0	0	0	1
Hampshire	0	0	0	0	0	3	0	3
Hancock	0	0	1	0	0	0	0	1
Hardy	0	0	0	0	0	2	1	3
Harrison	0	0	0	0	2	1	0	3
Jackson	0	0	0	0	0	0	0	0
Jefferson	0	0	1	0	0	0	0	1
Kanawha	4	0	1	0	1	41	2	49
Lewis	0	0	0	0	0	0	0	0
Lincoln	0	0	0	0	0	0	0	0
Logan	0	0	0	0	0	2	0	2
Marion	0	0	0	0	1	3	0	4
Marshall	0	0	0	0	0	2	0	2
Mason	0	0	0	0	0	1	0	1
McDowell	0	0	0	0	0	0	0	0
Mercer	0	0	0	0	0	2	0	2
Mineral	0	0	0	0	0	0	0	0
Mingo	0	0	0	0	0	2	0	2
Monongalia	1	0	0	0	0	0	0	1
Monroe	0	0	0	0	0	0	0	0
Morgan	0	0	0	0	0	0	0	0
Nicholas	0	0	0	0	0	0	0	0
Ohio	0	0	1	0	0	3	0	4
Pendleton	0	0	0	0	0	0	0	0
Pleasants	0	0	0	0	0	0	0	0



County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Pocahontas	0	0	0	0	0	0	0	0
Preston	0	0	0	0	0	0	0	0
Putnam	0	0	0	0	0	2	0	2
Raleigh	0	0	0	0	1	5	0	6
Randolph	0	0	0	0	0	1	0	1
Ritchie	0	0	0	0	0	0	0	0
Roane	0	0	0	0	0	2	0	2
Summers	0	0	0	0	0	1	0	1
Taylor	0	0	0	0	0	0	0	0
Tucker	0	0	0	0	0	0	0	0
Tyler	0	0	0	0	0	0	0	0
Upshur	0	0	0	0	0	0	0	0
Wayne	0	0	0	0	0	0	0	0
Webster	0	0	0	0	1	0	0	1
Wetzel	0	0	0	0	0	0	0	0
Wirt	0	0	0	0	0	0	0	0
Wood	0	0	0	0	0	3	0	3
Wyoming	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>88</b>	<b>4</b>	<b>108</b>

Source: WVBRIM 2022

Table 5.6-21 shows critical facilities that are located within ½ mile of fixed facilities that do not store EHS. There are 116 facilities located in this hazard area with Kanawha County having the greatest number (50) of facilities. The safety and security sector owns or leases 87 of the 116 critical facilities located within ½ mile of fixed facilities without EHS.

**Table 5.6-21: Critical Facilities Located in the Non-EHS Fixed Facility Hazard Area by County**

County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Barbour	0	0	0	0	0	1	0	1
Berkeley	0	0	0	0	0	4	0	4
Boone	0	0	0	0	0	0	0	0
Braxton	0	0	0	0	0	2	0	2
Brooke	0	0	0	0	0	0	0	0
Cabell	0	0	0	0	0	4	1	5
Calhoun	0	0	0	0	0	0	0	0
Clay	0	0	0	0	0	0	0	0
Doddridge	0	0	0	0	0	2	0	2
Fayette	0	0	0	0	0	0	0	0



County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Gilmer	0	0	0	0	0	0	0	0
Grant	0	0	0	0	0	0	0	0
Greenbrier	0	0	0	0	0	2	0	2
Hampshire	0	0	0	0	0	1	0	1
Hancock	0	0	0	0	0	1	0	1
Hardy	0	0	1	0	0	3	1	5
Harrison	0	0	0	0	2	1	0	3
Jackson	0	0	0	0	0	0	0	0
Jefferson	0	0	1	0	0	1	0	2
Kanawha	4	0	3	0	3	37	3	50
Lewis	0	0	0	0	1	0	0	1
Lincoln	0	0	0	0	0	0	0	0
Logan	0	0	0	0	0	3	0	3
Marion	0	0	0	0	1	2	0	3
Marshall	0	0	0	0	0	0	0	0
Mason	0	0	0	0	0	0	0	0
McDowell	0	0	0	0	0	0	0	0
Mercer	0	0	0	0	0	1	0	1
Mineral	0	0	0	0	0	0	0	0
Mingo	0	0	0	0	0	0	0	0
Monongalia	1	0	0	0	0	1	0	2
Monroe	0	0	0	0	0	0	0	0
Morgan	0	0	0	0	0	0	0	0
Nicholas	0	0	0	0	0	1	1	2
Ohio	0	0	1	0	0	3	0	4
Pendleton	0	0	0	0	0	0	0	0
Pleasants	0	0	0	0	0	1	0	1
Pocahontas	0	0	0	0	0	0	0	0
Preston	0	0	0	0	1	0	0	1
Putnam	0	0	0	0	0	3	0	3
Raleigh	0	0	0	0	1	6	0	7
Randolph	0	0	0	0	0	0	0	0
Ritchie	0	0	0	0	0	0	0	0
Roane	0	0	0	0	0	2	0	2
Summers	0	0	0	0	0	1	0	1
Taylor	0	0	0	0	0	0	0	0
Tucker	0	0	0	0	0	0	0	0
Tyler	0	0	0	0	0	0	0	0



County	Communications	Energy	Food, Water, Shelter	Hazardous Material	Health & Medical	Safety & Security	Transportation	Total
Upshur	0	0	0	0	0	0	1	1
Wayne	0	0	0	0	0	0	0	0
Webster	0	0	0	0	1	0	0	1
Wetzel	0	0	0	0	0	0	0	0
Wirt	0	0	0	0	0	0	0	0
Wood	0	0	0	0	0	4	1	5
Wyoming	0	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>10</b>	<b>87</b>	<b>8</b>	<b>116</b>

Source: WVBRIM 2022

## POPULATION

Table 5.6-22 shows the total number of people exposed to hazardous materials releases from pipelines, the number of those people identified as “highly vulnerable” in the Centers for Disease Control and Prevention’s (CDC) SVI data, and the percentage of the exposed people who are considered highly vulnerable.

*Table 5.6-22: Population Located in the Pipeline Hazard Area by County*

County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Barbour	4,116	1,174	28.51%
Berkeley	0	0	0.00%
Boone	3,414	286	8.37%
Braxton	1,970	506	25.71%
Brooke	7,450	2,077	27.88%
Cabell	20,289	0	0.00%
Calhoun	844	0	0.00%
Clay	1,108	254	22.93%
Doddridge	3,398	0	0.00%
Fayette	0	0	0.00%
Gilmer	1,465	419	28.62%
Grant	383	306	79.70%
Greenbrier	26	21	80.26%
Hampshire	167	0	0.00%
Hancock	5,562	2,889	51.94%
Hardy	842	0	0.00%
Harrison	13,766	0	0.00%
Jackson	7,110	0	0.00%
Jefferson	0	0	0.00%
Kanawha	56,606	14,010	24.75%
Lewis	3,026	423	13.97%





County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Lincoln	5,097	1,462	28.68%
Logan	3,754	2,494	66.45%
Marion	28,187	4,314	15.30%
Marshall	19,074	2,311	12.12%
Mason	1,228	0	0.00%
McDowell	653	395	60.51%
Mercer	3,504	1,909	54.48%
Mineral	372	372	100.00%
Mingo	4,447	2,253	50.67%
Monongalia	35,422	7,899	22.30%
Monroe	938	0	0.00%
Morgan	0	0	0.00%
Nicholas	1,527	0	0.00%
Ohio	13,226	1,148	8.68%
Pendleton	287	0	0.00%
Pleasants	766	0	0.00%
Pocahontas	0	0	0.00%
Preston	2,812	0	0.00%
Putnam	17,429	0	0.00%
Raleigh	12,482	4,998	40.04%
Randolph	3,724	4	0.12%
Ritchie	1,958	0	0.00%
Roane	2,392	549	22.96%
Summers	642	297	46.23%
Taylor	1,499	371	24.72%
Tucker	1,365	0	0.00%
Tyler	3,652	0	0.00%
Upshur	7,038	0	0.00%
Wayne	14,357	0	0.00%
Webster	0	0	0.00%
Wetzel	4,616	0	0.00%
Wirt	295	0	0.00%
Wood	10,796	324	3.00%
Wyoming	3,049	883	28.97%
<b>Total</b>	<b>338,130</b>	<b>54,349</b>	<b>16.07%</b>

Source: CDC 2022

Table 5.6-23 shows the total number of people exposed to hazardous materials releases from rail lines, the number of those people identified as “highly vulnerable” in the CDC’s SVI data, and the percentage of the exposed people who are considered highly vulnerable.

*Table 5.6-23: Population Located in the Rail Line Hazard Area by County*

County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Barbour	3,830	1,580	41.26%
Berkeley	34,676	12,780	36.86%
Boone	7,939	273	3.44%
Braxton	1,699	70	4.11%
Brooke	5,786	1,782	30.79%
Cabell	43,394	15,087	34.77%
Calhoun	0	0	0.00%
Clay	0	0	0.00%
Doddridge	0	0	0.00%
Fayette	8,597	2,610	30.36%
Gilmer	42	0	0.00%
Grant	285	139	48.71%
Greenbrier	4,303	1,744	40.52%
Hampshire	884	411	46.53%
Hancock	3,559	1,745	49.02%
Hardy	1,435	0	0.00%
Harrison	16,664	5,260	31.57%
Jackson	2,756	0	0.00%
Jefferson	17,678	1,278	7.23%
Kanawha	63,414	16,915	26.67%
Lewis	211	0	0.00%
Lincoln	1,705	0	0.00%
Logan	8,515	5,335	62.66%
Marion	13,233	3,330	25.16%
Marshall	5,926	1,420	23.96%
Mason	6,895	0	0.00%
McDowell	3,217	2,057	63.96%
Mercer	10,797	5,964	55.24%
Mineral	1,715	102	5.93%
Mingo	7,179	4,270	59.48%
Monongalia	26,617	7,467	28.05%
Monroe	80	0	0.00%
Morgan	1,589	0	0.00%
Nicholas	814	0	0.00%
Ohio	351	0	0.00%
Pendleton	0	0	0.00%
Pleasants	900	0	0.00%
Pocahontas	279	0	0.00%



County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Preston	2,184	661	30.27%
Putnam	15,691	0	0.00%
Raleigh	14,341	8,629	60.17%
Randolph	5,193	2,017	38.83%
Ritchie	0	0	0.00%
Roane	0	0	0.00%
Summers	2,357	628	26.65%
Taylor	4,682	2,881	61.53%
Tucker	1	0	0.00%
Tyler	1,332	0	0.00%
Upshur	5,972	0	0.00%
Wayne	14,081	0	0.00%
Webster	842	0	0.00%
Wetzel	5,817	0	0.00%
Wirt	0	0	0.00%
Wood	15,384	3,950	25.67%
Wyoming	3,554	302	8.49%
<b>Total</b>	<b>398,396</b>	<b>110,687</b>	<b>27.78%</b>

Source: CDC 2022

Table 5.6-24 shows the total number of people exposed to hazardous materials releases from major roadways, the number of those people identified as “highly vulnerable” in the CDC’s SVI data, and the percentage of the exposed people who are considered highly vulnerable.

**Table 5.6-24: Population Located in the Major Roadway Hazard Area by County**

County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Barbour	5,748	1,649	28.68%
Berkeley	35,448	13,754	38.80%
Boone	6,490	782	12.05%
Braxton	1,604	529	32.96%
Brooke	9,763	996	10.20%
Cabell	60,639	16,462	27.15%
Calhoun	629	0	0.00%
Clay	139	0	0.00%
Doddridge	1,356	0	0.00%
Fayette	10,749	3,932	36.58%
Gilmer	1,755	851	48.48%
Grant	1,246	569	45.71%
Greenbrier	11,366	7,533	66.28%



County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Hampshire	2,418	991	40.97%
Hancock	6,453	2,109	32.68%
Hardy	2,287	0	0.00%
Harrison	26,079	4,350	16.68%
Jackson	7,710	0	0.00%
Jefferson	5,603	331	5.90%
Kanawha	86,520	21,236	24.54%
Lewis	6,146	2,122	34.53%
Lincoln	4,473	953	21.31%
Logan	9,085	5,578	61.40%
Marion	26,768	5,054	18.88%
Marshall	12,983	2,116	16.30%
Mason	10,233	0	0.00%
McDowell	1,443	1,304	90.36%
Mercer	23,710	13,859	58.45%
Mineral	3,951	165	4.18%
Mingo	7,858	4,946	62.95%
Monongalia	51,871	8,535	16.45%
Monroe	1,922	0	0.00%
Morgan	3,069	0	0.00%
Nicholas	3,451	0	0.00%
Ohio	24,736	3,621	14.64%
Pendleton	1,236	0	0.00%
Pleasants	1,023	0	0.00%
Pocahontas	1,488	0	0.00%
Preston	8,540	838	9.81%
Putnam	28,345	0	0.00%
Raleigh	37,856	18,691	49.37%
Randolph	10,279	5,012	48.76%
Ritchie	524	0	0.00%
Roane	4,125	2,428	58.85%
Summers	2,533	740	29.22%
Taylor	7,045	2,400	34.06%
Tucker	3,072	0	0.00%
Tyler	1,398	0	0.00%
Upshur	2,649	0	0.00%
Wayne	16,114	0	0.00%
Webster	0	0	0.00%
Wetzel	6,358	0	0.00%



County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Wirt	0	0	0.00%
Wood	15,939	627	3.94%
Wyoming	3,639	554	15.23%
<b>Total</b>	<b>627,862</b>	<b>155,616</b>	<b>24.79%</b>

Source: CDC 2022

Table 5.6-25 shows the total number of people exposed to hazardous materials releases from fixed facilities that do not store EHS, the number of those people identified as “highly vulnerable” in the CDC’s SVI data, and the percentage of the exposed people who are considered highly vulnerable.

**Table 5.6-25: Population Located in the EHS Fixed Facility Hazard Area by County**

County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Barbour	1,815	604	33.27%
Berkeley	34,598	13,045	37.71%
Boone	721	0	0.00%
Braxton	239	70	29.28%
Brooke	15,503	850	5.48%
Cabell	40,405	16,115	39.88%
Calhoun	403	0	0.00%
Clay	0	0	0.00%
Doddridge	296	0	0.00%
Fayette	6,727	2,643	39.29%
Gilmer	642	642	100.00%
Grant	194	190	98.26%
Greenbrier	3,775	3,336	88.37%
Hampshire	543	226	41.66%
Hancock	4,464	1,229	27.53%
Hardy	1,060	0	0.00%
Harrison	24,882	5,275	21.20%
Jackson	2,731	0	0.00%
Jefferson	8,044	2,234	27.77%
Kanawha	53,429	10,429	19.52%
Lewis	1,804	699	38.77%
Lincoln	750	0	0.00%
Logan	2,077	1,704	82.08%
Marion	16,320	4,331	26.53%
Marshall	9,697	2,337	24.10%
Mason	2,328	0	0.00%
McDowell	170	88	51.64%
Mercer	14,953	10,025	67.04%
Mineral	1,457	36	2.46%
Mingo	1,911	1,736	90.81%
Monongalia	54,318	9,205	16.95%
Monroe	490	0	0.00%
Morgan	1,494	0	0.00%
Nicholas	2,130	0	0.00%
Ohio	16,601	3,142	18.93%
Pendleton	161	0	0.00%
Pleasants	734	0	0.00%



County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Pocahontas	0	0	0.00%
Preston	2,396	464	19.38%
Putnam	10,631	0	0.00%
Raleigh	16,628	6,306	37.92%
Randolph	4,576	3,760	82.16%
Ritchie	212	0	0.00%
Roane	1,915	1,182	61.71%
Summers	1,099	73	6.61%
Taylor	1,153	571	49.48%
Tucker	55	0	0.00%
Tyler	1,152	0	0.00%
Upshur	5,080	0	0.00%
Wayne	6,179	0	0.00%
Webster	243	0	0.00%
Wetzel	2,321	0	0.00%
Wirt	195	0	0.00%
Wood	21,884	8,881	40.58%
Wyoming	451	56	12.47%
<b>Total</b>	<b>404,036</b>	<b>111,484</b>	<b>27.59%</b>

Source: CDC 2022

Table 5.6-26 shows the total number of people exposed to hazardous materials releases from fixed facilities that do not store EHS, the number of those people identified as “highly vulnerable” in the CDC’s SVI data, and the percentage of the exposed people who are considered highly vulnerable.

**Table 5.6-26: Population Located in the Non-EHS Fixed Facility Hazard Area by County**

County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Barbour	2,955	810	27.40%
Berkeley	24,284	13,789	56.78%
Boone	614	158	25.76%
Braxton	1,215	38	3.13%
Brooke	4,034	1,817	45.04%
Cabell	35,908	16,416	45.72%
Calhoun	3,610	0	0.00%
Clay	652	146	22.35%
Doddridge	6,386	0	0.00%
Fayette	4,118	2,281	55.39%
Gilmer	3,135	1,151	36.72%
Grant	336	257	76.30%
Greenbrier	2,675	1,746	65.28%
Hampshire	406	118	28.99%
Hancock	3,692	886	24.00%
Hardy	1,781	0	0.00%
Harrison	34,249	5,272	15.39%
Jackson	4,440	0	0.00%
Jefferson	13,123	916	6.98%
Kanawha	49,382	13,325	26.98%
Lewis	6,749	1,399	20.72%
Lincoln	2,123	211	9.94%
Logan	2,425	1,714	70.68%





County	Total Exposed Population	Highly Vulnerable Exposed Population	% Population Highly Vulnerable
Marion	12,254	2,333	19.04%
Marshall	7,116	1,447	20.33%
Mason	1,286	0	0.00%
McDowell	328	236	71.83%
Mercer	8,266	6,631	80.22%
Mineral	2,259	26	1.14%
Mingo	939	746	79.42%
Monongalia	43,020	8,642	20.09%
Monroe	162	0	0.00%
Morgan	979	0	0.00%
Nicholas	1,231	0	0.00%
Ohio	11,108	3,533	31.81%
Pendleton	90	0	0.00%
Pleasants	3,471	0	0.00%
Pocahontas	187	0	0.00%
Preston	1,633	92	5.62%
Putnam	17,224	0	0.00%
Raleigh	15,584	6,597	42.33%
Randolph	5,238	3,459	66.03%
Ritchie	6,183	0	0.00%
Roane	2,399	1,220	50.85%
Summers	691	21	3.02%
Taylor	1,904	576	30.24%
Tucker	267	0	0.00%
Tyler	1,804	0	0.00%
Upshur	5,654	0	0.00%
Wayne	5,977	0	0.00%
Webster	451	0	0.00%
Wetzel	5,046	0	0.00%
Wirt	784	0	0.00%
Wood	28,194	12,019	42.63%
Wyoming	424	147	34.62%
<b>Total</b>	<b>400,445</b>	<b>110,175</b>	<b>27.51%</b>

Source: CDC 2022

## Impacts on Socially Vulnerable Populations

Many communities and populations are especially vulnerable to hazmat, including low-income communities, migrant populations, populations whose primary language is not English, indigenous populations, communities of older adults, and those with respiratory and other health concerns. The elderly, persons over the age of 65 (19.9 percent of the population), the young, persons under the age of 5 (5.2 percent of the population), and individuals living below the U.S. Census poverty threshold (16.9 percent of the population) are considered highly vulnerable based on a variety of factors including their physical and financial ability to react or respond during a hazard, as well as the location and construction quality of their housing (U.S. Census Bureau 2023). Children are more susceptible to chemical exposure because they eat, breathe, and drink more relative to their body mass than adults do. Adults with compromised immune systems and pre-existing health conditions may also be more vulnerable to chemical exposures (U.S. EPA n.d.) In addition, members of immigrant communities may not speak English and may also be concerned about impacts to their immigration status and do not seek help. It can take



days to translate information into languages other than English, hindering communication about evacuations and health and safety alerts.

Certain populations are more vulnerable than others in the event of a hazardous materials release. In a recent study done by Virginia Tech, researchers used geospatial analysis to identify the year 2021 and year 2051 threats of flood-induced natech disaster and assess its exposure to different coastal populations and ecosystems. Findings reveal that block groups with higher proportions of minorities, people in poverty, and people without a vehicle experience significant exposure to a natech disaster compared to those who are living further away from the TRI and Superfund facilities (Crawford 2022).

### **FUTURE CHANGES THAT MAY IMPACT STATE VULNERABILITY**

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Understanding future changes that impact vulnerability in the State can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place. The State considered the following factors to examine potential conditions that may affect hazard vulnerability:

- Potential or projected development
- Projected changes in population
- Other identified conditions as relevant and appropriate, including the impacts of future conditions

#### **Potential or Projected Development**

Throughout the State, little new development is being conducted in areas that were not already developed. That is, development is occurring to fill in or redevelop areas that are already developed rather than clearing natural land for new structures and infrastructure. As such, projected development is not expected to significantly impact vulnerability to hazardous materials releases.

#### **Projected Changed in Population**

As shown in Section 2, the State is experiencing a net loss of population. This could lead to fewer people in areas vulnerable to hazardous materials releases, reducing overall vulnerability of the population to a release. On the other hand, as economic conditions decline in the State, more people may move into areas vulnerable to hazardous materials releases (such as areas immediately surrounding a major chemical facility) to take advantage of lower property values and rent levels. As the population in the State ages, more residents may face challenges quickly evacuating an area in the event of a hazardous materials incident.

#### **Other Factors of Change**

The number, types, and quantities of hazardous materials used in, stored in, and/or transported throughout the State may change over time.

## **5.6.3 Consequence Analysis**

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### **IMPACTS TO THE PUBLIC**

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Impacts to the public include potential for injury or loss of life and destruction or loss of land and property due to hazardous materials exposure (FEMA 2019). When hazardous substances are released in the air, water, or on land, they may contaminate the environment and pose greater danger to human health. The general population may



be exposed to a hazardous materials release through inhalation, ingestion, or dermal exposure. Exposure may be either acute or chronic, depending upon the nature of the substance and extent of release and concentration (FEMA 2019).

Population living and/or working near facilities that produce, store, or transport hazardous substances are at higher risk to exposure. Populations downstream, downwind, and downhill of a released substance are particularly vulnerable. Depending on the type of release and environmental conditions, people may be evacuated as a precaution or instructed to shelter in place. Similarly, populations living and/or working near major transportation routes are more vulnerable to a hazardous materials release because of the potential for chemicals to be transported on these major thoroughfares. Hazardous substances can also be transported via pipeline.

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### **IMPACTS TO RESPONDERS**

Hazardous materials release leaks are often fast-moving, causing impacts in a short time frame (FEMA 2019). Emergency response to hazardous materials releases will involve several first response organizations, ranging from local police to specific federal agencies. Emergency responders can be exposed to the chemicals themselves, heat, and/or cold during a hazardous materials incident.

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### **IMPACTS TO CONTINUITY OF OPERATIONS**

Releases of hazardous materials can impact the health of individuals who are required to ensure government operations continue and can damage the facilities, equipment, and supplies necessary to continue operations (FEMA 2019). Releases may also disrupt the distribution of gasoline, kerosene, diesel fuel, fuel oils, propane, and other petroleum products. This disruption could cause major problems for organizations and businesses that rely on such supplies as well as impact the average citizen relying on gas to attend work.

Many larger governments and large-scale organizations keep updated continuity of operations plans to guide them in maintaining critical functions in the event of a hazardous materials release. However, smaller governments and businesses may not have such plans. A hazardous materials release would likely halt critical and secondary functioning in these smaller organizations for significant period of time.

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### **IMPACTS TO PROPERTY, FACILITIES, AND INFRASTRUCTURE**

Depending on the substance, buildings may be vulnerable to damage in the event of a hazardous materials release. Hazardous material releases can damage and destroy public, commercial, and private property. Losses include both direct and indirect costs. Direct costs can be defined as the cost of materials, property damage, response cost, and remediation/clean-up cost for a specific release. All other costs and losses from hazardous material releases are indirect. These include (1) loss of productivity as a result of damage to land, facilities, or interruption of services, (2) loss of access to recreation lands and facilities, (3) cost of lost human productivity due to injury and death, (4) damages to ecosystems, and (5) the cost of litigation as a consequence of the release.

Additional impacts to property, facilities, and infrastructure are described in the Vulnerability Assessment section above.



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## IMPACTS TO THE ENVIRONMENT

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A hazardous substance release, whether fixed-site or in-transit can negatively impact the natural environment (FEMA 2019). Depending on the nature and amount of the substance, the release may contaminate the air, water, or soil, potentially causing concern for direct human and animal exposure, recreational usage, crop irrigation, and fish and wildlife consumption.

Oil spills and other hazardous releases of that caliber can significantly harm wildlife in the area. In addition to the harms posed to these creatures, this contamination can make its way up the food chain, affecting the seafood supply and, in turn, affecting humans. Additionally, open water and wetland environments will also experience significant exposure to hazmat events, which may indicate a loss of ecosystem services. Hazardous material releases could also significantly impact soils, including agricultural lands. Depending on the characteristic of the hazardous material and/or the volume of product involved, the affected area can be as small as several square feet or as large as many square miles that require soil remediation. Such environmental damage can linger for decades and result in extensive remediation costs.

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## IMPACTS TO THE ECONOMIC CONDITION OF THE STATE

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If a significant hazardous materials release were to occur, not only would life, safety, and building stock be at risk, but the economy of West Virginia would also be affected (FEMA 2019). A significant incident within an urban area may force businesses to close for an extended period of time because of contamination or because of direct damage caused by an explosion. The economic impacts of hazardous materials release include any physical damages caused by the toxic release, as well as the cost of cleaning up releases or resources contaminated by toxic releases. If the incident is large enough in scale, evacuations may be required, disrupting the commerce of the area involved. Exact impacts on the economy are difficult to predict, given the uncertainty of the size and scope of potential incidents.

Hazardous materials incidents can also lead to closures of major transportation routes in the State. Closures of railroads, airports, and highways as a result of these incidents can hinder delivery of goods and services. Potential impacts may be local, regional, or statewide, depending on the magnitude of the event and the extent of disruptions to services.

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## IMPACTS TO PUBLIC CONFIDENCE IN STATE GOVERNANCE

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The public confidence in the State's governance would mainly depend on how effective the State has been in the past at preparing and responding to hazardous materials incidents. Public confidence also depends on the size of the hazmat event and the preparation that the State and local governments and response agencies have in place for these events. In general, if the State is transparent in sharing relevant information with the public and proves that they have the capability to protect and assist the residents of West Virginia from hazardous materials and is also able to demonstrate its reliability to the public through availability of programs and services relevant to hazardous materials, then the public will remain confident in the State's governance.