



## 3. COUNTY PROFILE

The planning area for this HMP is the entirety of Sussex County. This chapter presents general information about the land, people, and assets of Sussex County. This information provides a baseline for understanding the economic, structural, and population assets at risk from the hazards addressed in this HMP.

### 3.1 LOCATION

Sussex County is the northernmost county in New Jersey. It is bordered to the north by New York State, to the south by Warren and Morris Counties, to the east by Passaic County and to the west by the Delaware River and the Commonwealth of Pennsylvania. The County has 536 square miles of land and 1,417 miles of roads (NJDOT 2022). Today there are 24 municipalities in Sussex County—eight boroughs, 15 townships, and one town:

- Borough of Andover
- Borough of Branchville
- Borough of Franklin
- Borough of Hamburg
- Borough of Hopatcong
- Borough of Ogdensburg
- Borough of Stanhope
- Borough of Sussex
- Town of Newton
- Township of Andover
- Township of Byram
- Township of Frankford
- Township of Fredon
- Township of Green
- Township of Hampton
- Township of Hardyston
- Township of Lafayette
- Township of Montague
- Township of Sandyston
- Township of Sparta
- Township of Stillwater
- Township of Vernon
- Township of Walpack
- Township of Wantage

Figure 3-1 shows the County and its municipalities.

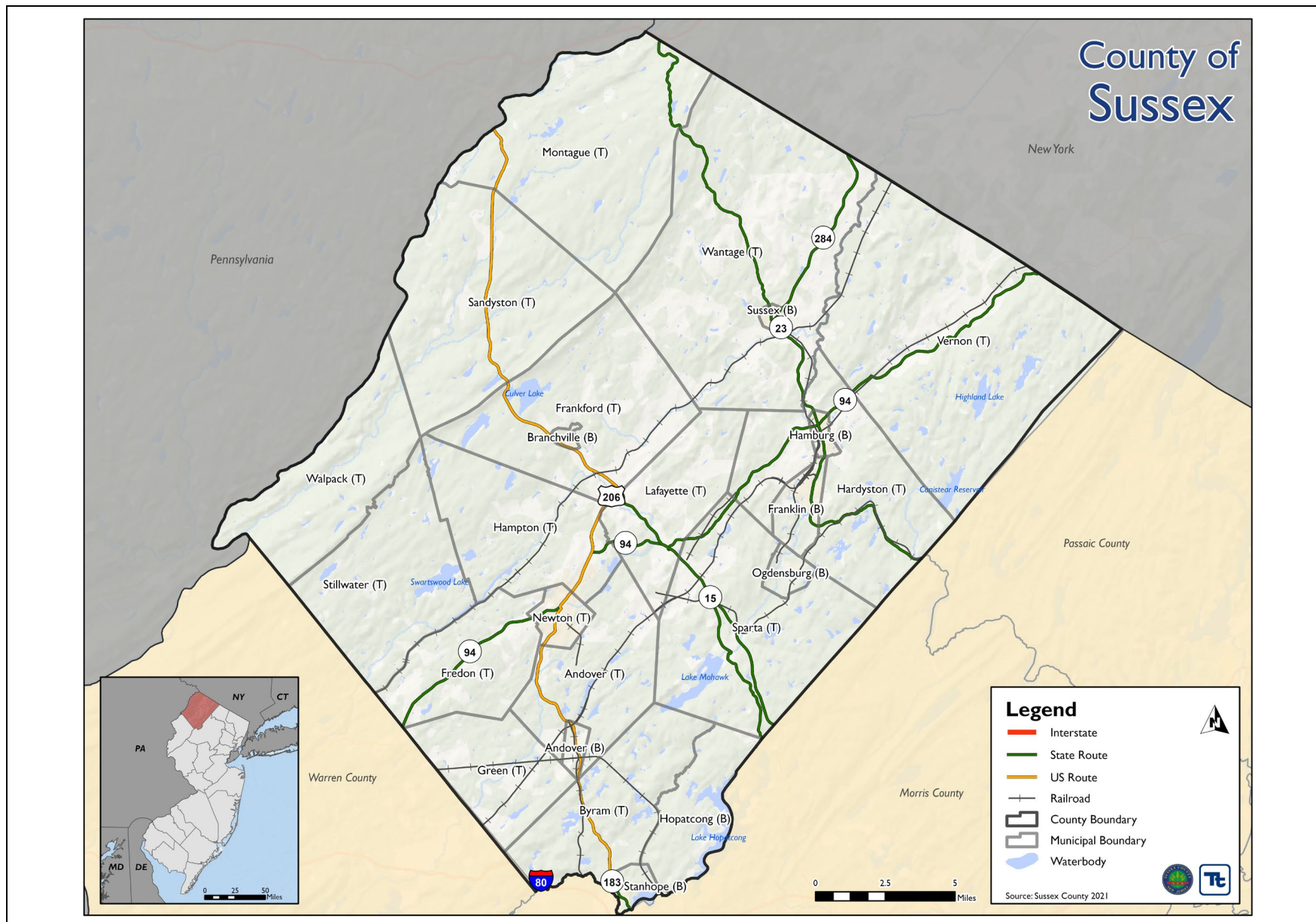
### 3.2 HISTORY

#### 3.2.1 Early Inhabitants

The area now known as Sussex County was first occupied by Paleo-Indians, who moved into the area around 11,000 B.C. The Paleo-Indians lived in small groups and traveled in search of game and plants to eat. The Lenape Native Americans arrived in modern day Sussex County around the year 1000. The “Little Ice Age” that came to North America in the early 17th century caused crop failures and froze rivers, leading to many deaths. More death followed as European settlers arrived in the 17th century, who introduced infectious diseases into the area. All these factors made the Native populations decline dramatically. After 1750, very few Native Americans were left in Sussex County. The Treaty of Easton in 1758, forced what few Native Americans remained in New Jersey to move west to the Mississippi River drainage or north to Ontario or Quebec Canada, opening land for the European settlers.



Figure 3-1. Sussex County Hazard Mitigation Plan Area







### 3.2.2 Formation of Sussex County

Sussex County was formed in 1753 from Morris County (NJDEP 1969), when residents in the area petitioned colonial authorities for a new county to be formed. At that time, four large townships had been created in this sparsely populated area: Walpack Township, Greenwich Township, Hardwick Township, and Newtown Township. On June 8, 1753, Sussex County was created from these four municipalities, which were a large portion of Morris County. Sussex County at this time encompassed present-day Sussex and Warren Counties, and a part of present-day New York State (NJDEP 1969).

In the early 19th century, southern residents of the county sought to gain court sessions in their part of the county, suggesting alternating locations—in Newton in the north and in either Oxford or Belvidere in the south. The state legislature eventually voted to divide Sussex County in two, using a line drawn from the juncture of the Flat Brook and Delaware River in a southeasterly direction to the Musconetcong River running through Yellow Frame in present-day Fredon Township (then part of Hardwick). On November 20, 1824, Warren County was created from the southern territory of what had been Sussex County, leaving Sussex County with the boundaries it has today.

### 3.2.3 Industry

#### Dairy Farming and Agriculture

Historically, Sussex County has been a scenic, rural county with small municipalities, plenty of open space, and agriculture. Early settlers' farms were chiefly focused on subsistence agriculture. Early Sussex County agricultural production centered on dairy farming. A few farms had orchards—typically apples and peaches. Farmers typically produced enough food to feed their families and perhaps sell or exchange the remaining food and products with their neighbors. Excess fruit and grain were turned into alcoholic beverages. This was the economic model until the mid-19th century when advances in food preservation and the introduction of railroads into the area allowed Sussex County to transport farm products throughout the region (The Heritage & Agriculture Association Inc. 2023).

#### Mining and Metal Processing

The Highlands Region of Northwestern New Jersey was proven to possess rich deposits of iron ore. In the mid-18th century, several colonists began mining iron in present-day Sussex County and establishing forges and furnaces to create pig bar iron. By the end of the 18th century, almost all the trees in Sussex County were cut to provide charcoal to fuel the forges and furnaces in iron production (Puffer n.d.).

Iron from the Andover mines was fashioned into cable wire for the bridge built at Niagara Falls and for the beams used to rebuild Princeton University's Nassau Hall in Princeton, New Jersey after a fire undermined the structure in 1855. During the American Civil War, Andover iron found its way into rifle barrels and cannonballs just as it had during the Revolution years before (Mining Artifacts and History n.d.).

In the 1870s, Thomas Edison built one of the world's largest ore-crushing mills near Ogdensburg, New Jersey. Completed in 1889, the factory was intended to process up to 1,200 tons of iron ore every day, but technical difficulties repeatedly thwarted production. In the 1890s, richer soft-grade iron ore deposits located in Minnesota rendered Edison's Ogdensburg operation unprofitable and he closed the works in 1900 (Engineering and Technology History 2017).

The Borough of Franklin is home to the Franklin Furnace, which is famous for rare zinc, iron, and manganese minerals. The Sterling Hill Mine, a former zinc mine in Ogdensburg, began operations when it was originally thought



to be a copper deposit. Declining deposits in the area, the expense of pumping groundwater from mine shafts, and misdirected investments by the owners led to the abandonment of the mines by the 1970s. Today, both Franklin Furnace and Sterling Hill Mine are operated as museums (Mining Artifacts and History n.d.).

## Railroads

The Sussex Railroad was chartered in 1848 to transport iron ore and products to the Morris Canal. Construction of the line began in 1853 and the connection was completed to the Town of Newton at the end of the following year. The line was extended to Branchville Borough and Lafayette Township by 1869 and to Franklin Borough in 1871 to provide service to the zinc mines. This was the first railroad company to establish service in Sussex County and it played a role in the economic development of the dairy and mining industry in the area. The Sussex Railroad operated until 1945 when the line merged with the Delaware, Lackawanna, and Western Railroad system. Today, the right-of-way has been converted into a recreational rail trail called the Sussex Branch Trail (Wright n.d.). The Lackawanna Cut-Off, formerly a portion of the Delaware, Lackawanna, and Western Railroad system, is being restored to provide passenger rail service between Port Morris Junction (Roxbury Township, Morris County) and Andover Township (USDOT, NJ TRANSIT, USACE 2008).

From 1886 to 1962, the New York, Susquehanna, and Western Railway and Blirstown Railway operated a branch that followed the valley of the Paulins Kill. These railways' principal business was in the transport of coal from northeastern Pennsylvania to New York City. In the late 1980s, the State of New Jersey purchased the abandoned railbed and transformed it into a recreational trail. The Paulinskill Valley Trail is a 27-mile scenic trail system that is used for hiking, cycling, jogging and horseback riding (NJDEP 2015).

## 3.3 PHYSICAL SETTING

### 3.3.1 Major Surface Waters

Numerous ponds, lakes, creeks, and rivers make up the waterscape of Sussex County. Most of the lakes in the County are along the eastern slope of the Kittatinny Ridge or in the Highlands province of eastern Sussex County. These areas are where topography and geology support the development of lakes. Most of the lakes serve recreational purposes and were developed as vacation areas in the past. The following are the most prominent lakes in Sussex County (Sussex County Natural Resources Inventory 2009):

- Lake Hopatcong (largest in New Jersey)
- Culvers Lake
- Lake Owassa
- Big Swartswood Lake
- Lake Mohawk
- Highland Lake
- Wawayanda Lake

Rivers and streams in Sussex County include the following (Sussex County Natural Resources Inventory 2009):

- Delaware River
- Wallkill River
- Flat Brook
- Paulins Kill
- Pequest River
- Musconetcong River
- Clove Brook
- Mill Brook
- Kymer Brook
- Lubbers Run
- Papakating Creek
- Pochuck Creek
- Wawayanda Creek
- Black Creek
- Pequannock River
- Pacack Brook
- Russia Brook
- Rockaway River

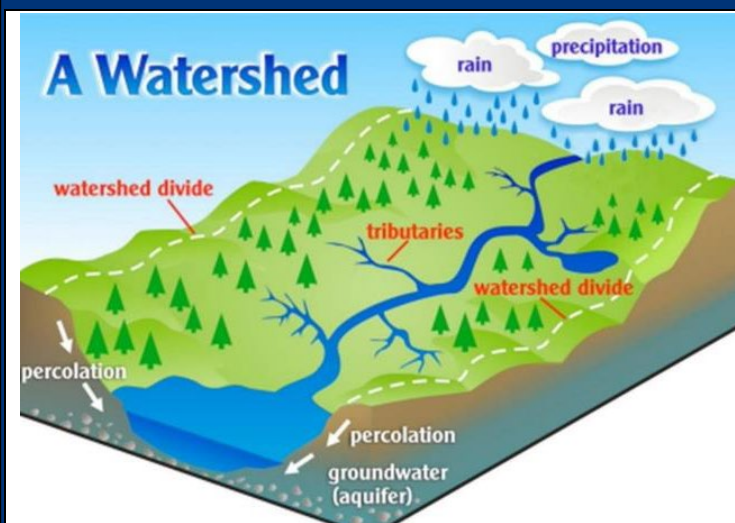
### 3.3.2 Watersheds

#### Delaware River Basin

The Delaware River extends 330 miles from the confluence of its east and west branches at Hancock, New York to the mouth of the Delaware Bay where it meets the Atlantic Ocean. It is the longest un-dammed river in the United States east of the Mississippi River, running through and draining parts of Pennsylvania, New Jersey, New York, and Delaware. (Delaware River Basin Commission 2023).

The Delaware River is fed by over 2,000 tributaries and its drainage basin covers approximately 13,600 square miles, including the 782 square mile Delaware Bay. Its hydrographic regions are divided between five physiographic areas – Appalachian Plateau, Ridge and Valley, New England, Piedmont, and Atlantic Coastal Plain (Delaware River Basin Commission 2023). The Sussex County portion of the Delaware River falls in the Appalachian Highlands region, which consists primarily of consolidated sedimentary rock. The area's sub-region, known as Ridge and Valley, consists of mountain ridges in the north and rolling hills in the south (Sussex County Natural Resources Inventory 2009).

A **watershed** is the area of land that drains into a body of water such as a river, lake, stream, or bay. It is separated from other systems by high points such as hills or slopes. It includes the waterway and all land area that drains to it. Drainage basins generally refer to large areas that encompass the watersheds of many smaller rivers and streams. Watersheds can cross municipal and county boundaries (NOAA 2023).



Source: RCRC n.d.

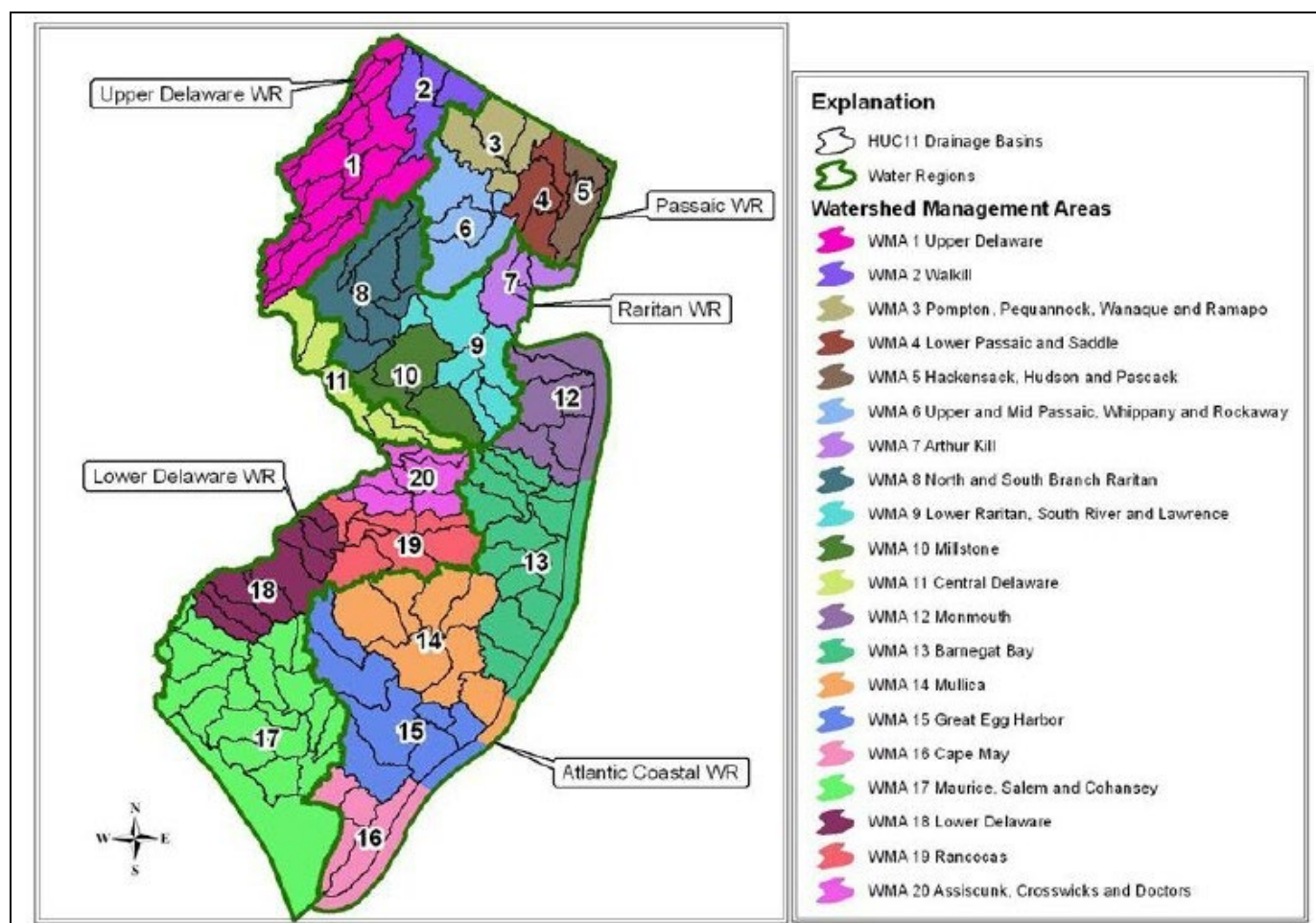
Approximately 8.6 million people live in the Delaware River Basin, of which 23-percent reside in the State of New Jersey. The total number of people served by the Delaware River Basin Water increased from 13.3 million to an estimated 14.2 million between 2016 and 2020 (Delaware River Basin Commission 2023).

#### Watershed Management Areas

New Jersey is divided into 20 Watershed Management Areas (WMA), which are made up of smaller watersheds, as shown in Figure 3-2 (State of New Jersey 2019). Sussex County is located in four of the 20 WMAs, as discussed further below: Upper Delaware (WMA 1); Wallkill (WMA 2); Pompton, Pequannock, Wanaque, Ramapo (WMA 3) and Upper and Mid Passaic, Whippany and Rockaway (WMA 6).



Figure 3-2. Watersheds of New Jersey



Source: New Jersey Geological and Water Survey 2007

### Watershed Management Area 1: Upper Delaware

WMA 1 includes portions of Sussex, Morris, and Hunterdon Counties and all of Warren County. This area is known as the Upper Delaware River Watershed and encompasses 746 square miles in the northwest corner of New Jersey. Within WMA 1, there are six major drainage basins: Delaware River, Flat Brook, Paulins Kill, Pequest River, Lopatcong and Pohatcong River Drainage, and the Musconetcong River (State of New Jersey 2019).

In Sussex County, WMA 1 covers the western and southern sections of the county, encompassing more than half of the county's land area. Principal waterways in Sussex County's portion of WMA 1 include: Flat Book, Paulins Kill, Pequest River, and a short stretch of the Musconetcong River (State of New Jersey 2019).

### Watershed Management Area 2: Walkill River Watershed

WMA 2, the Walkill River Watershed, includes 11 townships in Sussex County. The river's headwaters begin at Lake Mohawk in Sparta Township and the river flows north from there into New York, eventually emptying into the Hudson River. Within WMA 2, there are four subwatersheds: the Walkill River, Pochuck Creek, Papakating Creek and Rutgers Creek Tributaries (State of New Jersey 2019).



The Wallkill Watershed is 208 square miles in area and covers a variety of land uses, including rural and centralized residential development, agriculture, commercial, recreational and industrial usage. Also located within this watershed is the Wallkill National Wildlife Refuge. The refuge watershed/wetlands complex provides migratory and nesting habitats for numerous birds and is home to several endangered species (State of New Jersey 2019).

WMA 2 occupies the northern and northeastern parts of Sussex County, extending south through Sparta and northern Byram Townships. Papakating Creek begins in Frankford Township, and Clove Brook flows south from northern Wantage Township. Pochuck Creek drains part of Vernon and Hardyston Townships east of Pochuck Mountain and enters the Wallkill River several miles into New York State (State of New Jersey 2019).

#### Watershed Management Area 3: Pompton, Pequannock, Wanaque, Ramapo Watersheds

WMA 3 is in the Highlands Province. The Pequannock, Wanaque and Ramapo Rivers all flow into the Pompton River, which is a major tributary to the Upper Passaic River. WMA 3 contains some of the State's major water supply reservoirs, including the Wanaque Reservoir, which is the largest surface water reservoir in New Jersey. There are four watersheds in WMA 3: Pompton, Ramapo, Pequannock and Wanaque River Watersheds. WMA 3 lies mostly in Passaic County but also includes parts of Bergen, Morris and Sussex Counties (State of New Jersey 2019).

The Pequannock River flows south out of Vernon Township and continues into Hardyston Township where it turns southeast, forming the border between Morris and Passaic Counties. The Pequannock's confluence with the Passaic River occurs at the eastern end of the Great Piece Meadows, where Morris, Passaic and Essex Counties meet. For most of its run in Sussex County, the Pequannock River flows through Newark's water supply management lands (State of New Jersey 2019).

#### Watershed Management Area 6: Upper and Mid Passaic, Whippany, Rockaway Watersheds

WMA 6 represents the area drained by waters from the upper reaches of the Passaic River Basin, including the Passaic River from its headwaters in Morris County to the confluence of the Pompton River. WMA 6 is characterized by extensive suburban development and reliance upon groundwater sources for water supply. WMA 6 lies in portions of Morris, Somerset, Sussex, and Essex Counties and includes the Upper and Middle Passaic River, Whippany River, and Rockaway River Watersheds (State of New Jersey 2019).

The Rockaway River begins in Jefferson Township and its system's upper reaches are in eastern Sparta Township, where several streams merge to form Russia Brook. Russia Brook flows into Jefferson Township, where it meets the Rockaway River below Lake Swannanoa. From there, the Rockaway River flows into the Passaic River (State of New Jersey 2019).

### 3.3.3 Topography and Geology

The topography of Sussex County is among the most diverse in New Jersey. The eastern two-thirds lies within the Highlands physiographic province, which runs northeast from Reading, Pennsylvania, across New Jersey, and into southern New York State and western Connecticut. This province is characterized by forested ridges and glacially sculpted valleys. It also contains significant water resources affecting over 11 million residents.

The remainder of Sussex County lies within the Ridge and Valley physiographic province. This province is characterized by northeast-southwest trending ridges with fertile valleys in between. The province includes the Kittatinny Ridge, which runs 40 miles across the county. The Ridge has elevations of 1,200 to 1,500 feet above sea level, and an average width of 5 miles. High Point, the northernmost extent of the Kittatinny Ridge, has an elevation of 1,803 feet, which is the highest point in New Jersey (Sussex County Natural Resources Inventory 2009).



The lowest points in Sussex County are along the Delaware River at the mouth of Flat Brook (300 feet) and along the Wallkill River at the New York State line (380 feet). Located between the Highlands and Kittatinny Ridge, the Kittatinny Valley has elevations between 600 and 700 feet (Sussex County Natural Resources Inventory 2009).

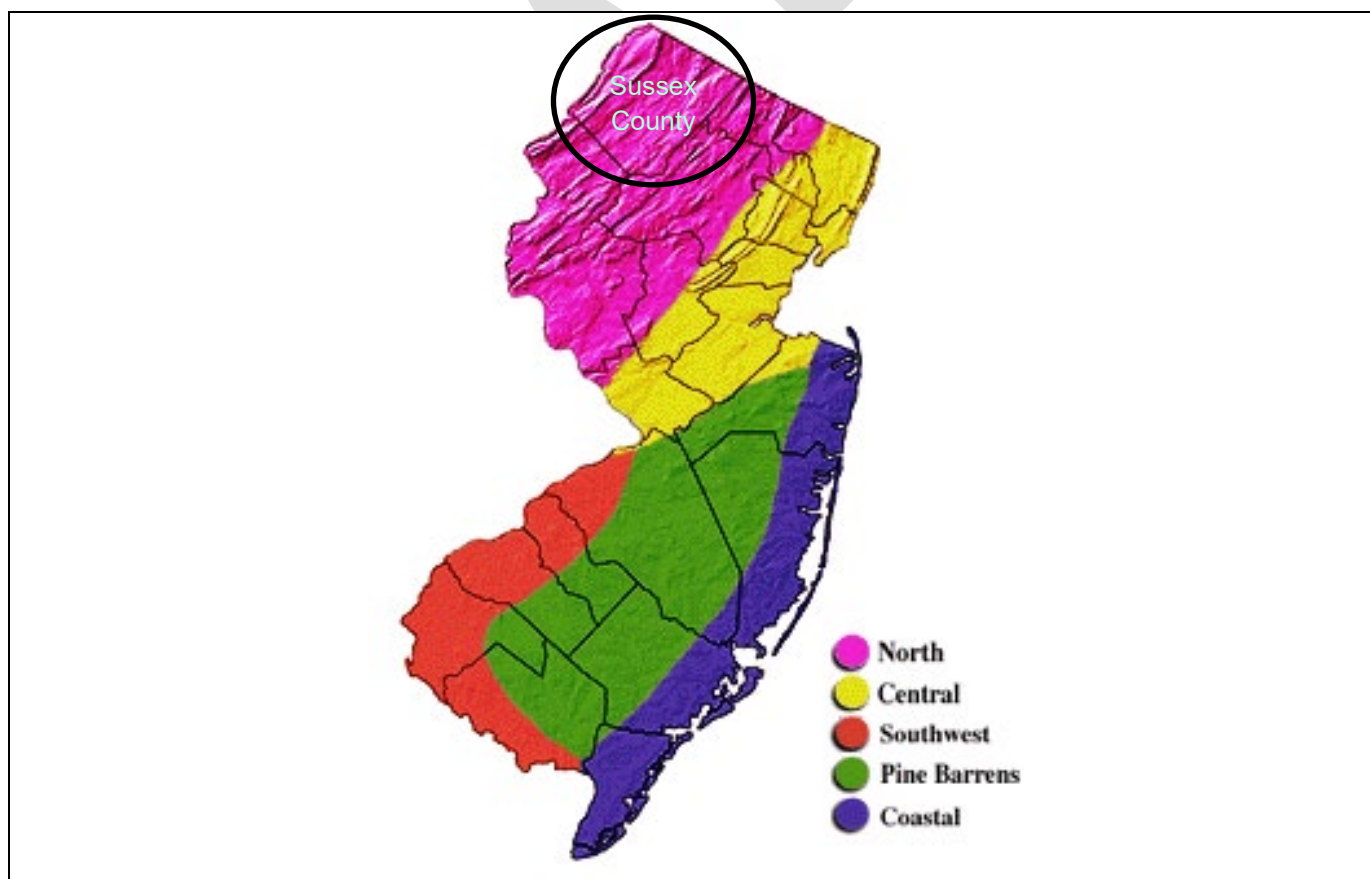
The Highlands is composed of Precambrian rock, the oldest bedrock in New Jersey. The portion that runs through Sussex County is predominately granite and gneiss, with a small portion of marble. To the west of the Highlands is the Valley and Ridge, composed of Paleozoic rock, which includes shale, siltstone, and sandstone along Kittatinny Valley and limestone, shale, and sandstone along the Delaware River Basin (NJ Geological Survey 2019).

## 3.3.4 Climate

### Historical Climate

Sussex County has a temperate climate with warm summers and cold winters. As shown of Figure 3-3, the County is in the North Zone of New Jersey's climate zones. The North Zone has a continental type of climate with minimal influence from the Atlantic Ocean, except when the winds contain an easterly component (ONJSC 1983). The average temperatures in Sussex County range from 25 °F in January to 71 °F in July, with extremes common in the summer and winter. The average yearly precipitation is 46 inches (NOAA 2023).

Figure 3-3. Climate Zones in New Jersey



Source: ONJSC 1983





The North Zone normally exhibits a colder temperature regime than other climate regions of the state. This difference is most dramatic in winter when average temperatures can be more than 10 °F cooler than in the Coastal Zone. Annual snowfall averages 40 to 50 inches in the North Zone as compared with an average of 10 to 15 inches in the extreme south (ONJSC 1983).

Clouds and precipitation in the North Zone are enhanced by orographic effects attributable to the area's highlands and mountains. Following a cold frontal passage, air forced to rise over the mountains produces clouds, and precipitation, while the rest of the state observes clear skies. The latter is due in part to subsiding air flowing off the highlands (ONJSC 1983). In the warm season, thunderstorms are responsible for most of the rainfall. Cyclones and frontal passages are less frequent during this time. Thunderstorms spawned in Pennsylvania and New York State often move into Northern New Jersey, where they often reach maximum development in the evening. This region has about twice as many thunderstorms as the coastal zone, where the nearby ocean helps stabilize the atmosphere (ONJSC 1983).

The Northern Climate Zone has the state's shortest growing season, at about 155 days. The average date for the last killing spring frost is May 4. The first frost in fall is around October 7. The exact dates vary significantly within the region as well as from year to year. Some valley locations have observed killing frost in mid-September and as late as mid-June (ONJSC 1983).

## Climate Change Projections

Climate change refers to major changes in temperature, precipitation, or wind patterns over a period of decades or longer. Due to the increase in greenhouse gas concentrations since the end of the 1890s, New Jersey has experienced a 3.5 °F increase in average temperature, which is faster than the rest of the Northeastern United States (2 °F) and the world (1.5 °F). This warming trend is expected to continue. By 2050, temperatures in New Jersey are expected to increase by 4.1 °F to 5.7 °F. Even in climate models that assume lower quantities of greenhouse gases in the future (low emissions scenario), New Jersey is predicted to experience an average annual temperature that is warmer than any to date. With higher quantities of greenhouse gases (high emissions scenario), future temperatures could be as much as 10 °F warmer. By the middle of the 21st century, 70 percent of summers in New Jersey will be hotter than the warmest summer experienced to date. The increase in temperatures is expected to be felt more during the winter months (December, January, and February), resulting in less intense cold waves, fewer sub-freezing days, and less snow accumulation (NJDEP 2020).

As temperatures increase, Earth's atmosphere can hold more water vapor, which leads to a greater potential for precipitation. Currently, New Jersey receives an average of 46 inches of precipitation each year. Since the end of the 20th century, New Jersey has experienced slight increases in the amount of precipitation it receives each year. Over the last 10 years, there has been a 7.9 percent increase in the state's annual precipitation. By 2050, annual precipitation in New Jersey could increase by 4 percent to 11 percent. However, small decreases in the amount of precipitation may occur in the summer months, resulting in greater potential for more frequent and prolonged droughts (NJDEP 2020).

With a warmer atmosphere, storms will have the potential to be more intense and occur more often. In New Jersey, extreme storms typically include coastal nor'easters, snowstorms, spring and summer thunderstorms, tropical storms, and on rare occasions hurricanes. Except for nor'easters, which occur between September and April, these events usually occur in the warmer months between April and October. Over the last 50 years, New Jersey storms that resulted in extreme rain increased by 71 percent, which is a faster rate than anywhere else in the United States. By the end of this century, heavy precipitation events are projected to occur two to five times more often and with more intensity than in the last century. New Jersey will experience more intense rain events, less snow, and more rainfall, likely increasing the number of flood events each year. (NJDEP 2020).



### 3.3.5 Land Cover

Table 3-1 and Figure 3-4 summarize land cover in Sussex County. More than half of the Highlands region contains rich and diverse forests, occupying 370,000 acres of land. Much of the forestland remains in large, unfragmented pieces, some larger than 5,000 acres. Most of the forestland is dominated by oak-hickory forest with northern hardwoods, hemlock, and swamp hardwoods. These forests contribute to the region's clean water and air, wildlife habitat, and recreational resources and serve as an excellent timber resource (Sussex County 2014).

Table 3-1. Sussex County Land Cover Classification

	Total Area in Category	
	Acres	% of Total
Agricultural	34,629	10.1%
Barren Land	2,125	0.6%
Forest	191,143	55.8%
Rangeland	0	0.0%
Urban Area	54,839	16.0%
Water	13,024	3.8%
Wetland	46,799	13.7%
<b>Total</b>	<b>342,558</b>	<b>100.0%</b>

Source: NJDEP 2015

## 3.4 LAND USE

### 3.4.1 Current Land Use

The 2014 Sussex County Strategic Growth Plan, published by the Sussex County Strategic Growth Advisory Committee, includes a build-out analysis that evaluates the resource base and the elements that affect the ability of land to sustain development. Lands that are permanently preserved or currently occupied, wetlands, excessive slopes, lands subject to regulatory restrictions (Category 1 streams and associated buffers), floodplains, etc. are not considered developable in this context. That analysis, presented in Table 3-1, indicates the amount of land that remains potentially developable (Sussex County 2014).

### 3.4.2 Land Use Trends

Hazard mitigation planning requires consideration of land use trends, which can impact the need for and priority of mitigation options over time. Land use trends impact hazard vulnerability and impacts. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

The New Jersey Municipal Land Use Law gives municipalities authority for zoning and land use planning. The Sussex County Economic Development Partnership facilitates the recruitment, retention, and expansion of businesses that will complement and be consistent with the character and environment of the County. The Sussex County Planning Board is responsible for approving site plan and subdivision applications within its jurisdiction. A development review committee reviews all applications and acts on behalf of the Planning Board.



Figure 3-4. Sussex County Land Use and Land Cover

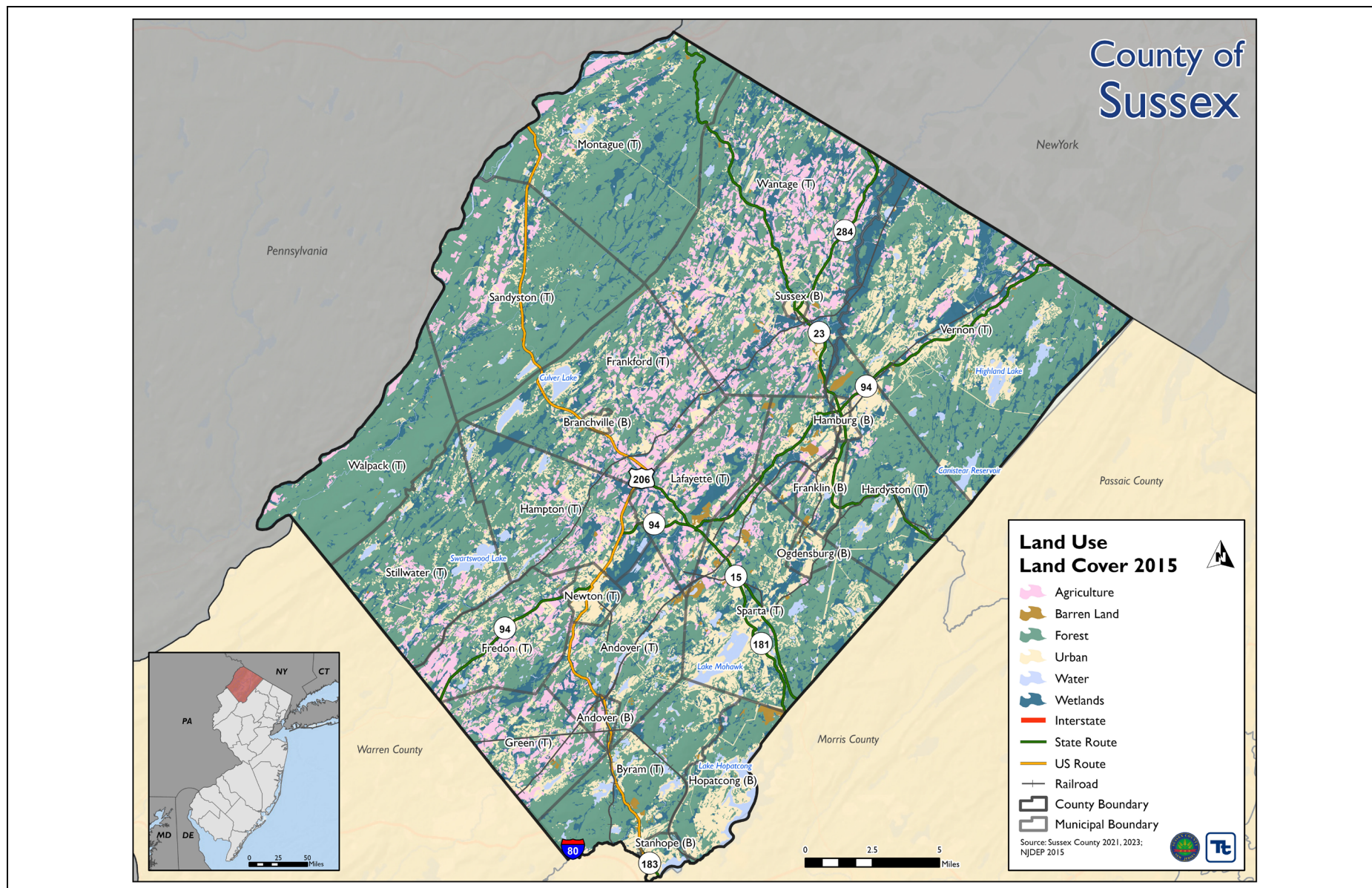






Table 3-2. Sussex County Residential Land Available for Development, by Jurisdiction

	Potential Units/Lots	% of County Total
Andover Borough	197	0.81
Andover Township	1,637	6.8
Branchville Borough	140	0.58
Byram Township	1,633	6.78
Frankford Township	1,210	5.02
Franklin Borough	1,317	5.47
Fredon Township	617	2.56
Green Township	531	2.29
Hamburg Borough	310	1.28
Hampton Township	1,808	7.51
Hardyston Township	749	3.11
Hopatcong Borough	761	3.16
Lafayette Township	576	2.39
Montague Township	1,328	5.52
Newton Town	780	3.24
Ogdensburg Borough	187	0.77
Sandyston Township	1,881	7.82
Sparta Township	1,080	4.49
Stanhope Borough	311	1.29
Stillwater Township	889	3.69
Sussex Borough	131	0.54
Vernon Township	3,316	13.77
Walpack Township	—	—
Wantage Township	2,675	11.11
<b>Sussex County (Total)</b>	<b>24,064</b>	<b>100</b>

Source: Sussex County 2014

Note: The Highlands is not included in this calculation as the regulations and master plan had not yet been completed when the calculations were performed. It can be assumed that development in the Highlands core will be significantly curtailed in the future. In addition, allowance was made for substandard lots in lake communities.

According to the Sussex County Department of Planning and Economic Development, 308 permits for new residential buildings were issued from 2015 to 2017, with the largest number for multi-family use; more recent data is not posted at this time (Sussex County 2018). New development in the last five years and potential future development in the next five years has been identified by each municipal Planning Partner. An exposure analysis was conducted to determine the relationship between the identified potential new development and natural hazard areas evaluated in this HMP update. The results of this analysis are reviewed with each jurisdiction's annex, and summaries are included at the end of each hazard's vulnerability assessment (Chapters 6 through 18).



## Highlands Region

The Highlands Region is found in New Jersey as well as New York, Pennsylvania, and Connecticut. The New Jersey Highlands is a 1,343 square mile area in the northwest portion of New Jersey, noted for its scenic beauty and environmental significance and serving as a vital source of drinking water for over half of New Jersey residents. The Highlands stretches from Phillipsburg (Warren County) in southwest New Jersey to Ringwood (Passaic County) in the northeast. The Highlands Region lies within portions of seven counties—Hunterdon, Somerset, Sussex, Warren, Morris, Passaic, and Bergen—and includes 88 municipalities (New Jersey Highlands Council n.d.). The Highlands Water Protection and Planning Act (the Highlands Act) designates 398,000 acres as the Highlands Preservation Area, which is identified as an area of exceptional natural resource value. The remainder of the Highlands Region that is not located within the Preservation Area is designated the Highlands Planning Area. The distinction between the Preservation and Planning Area is that municipal and county conformance with the Highlands Regional Master Plan is required in the Preservation Area, and voluntary in the Planning Area (NJDEP 2022).

Sussex County is partially in the New Jersey Highlands Region Preservation Area. The County recognizes the unique value of the Highlands Region and seeks to protect and enhance it, ensuring that land use and development activities occur in a manner and location that is consistent with the Highlands Regional Master Plan. The Highlands Area in Sussex County covers 129,749 acres in the eastern portion of the County: 70,769 acres in the Preservation Area and 58,980 acres in the Planning Area, as seen in Figure 3-5 (New Jersey Highlands Council 2010). The Townships of Byram, Green, Hardyston, Sparta and Vernon, and the Boroughs of Franklin, Hamburg, Hopatcong, Ogdensburg, and Stanhope are within the Highlands boundary.

The New Jersey Highlands Council is a regional planning agency that works with the municipalities and counties in the Highlands Region to encourage a comprehensive regional approach to implementing the Highlands Act. The Highlands Council has identified areas of existing development as well as areas of potential growth for the Highlands Region. These areas include the Existing Community Zone (both in-fill of new development and re-development) and Designated Centers. The New Jersey Highlands Council considers hazard areas such as floodplains when evaluating new and re-development in the region. In addition, the New Jersey Department of Environmental Protection (NJDEP) Sewer Service Areas indicate the planned method of wastewater disposal for specific areas; i.e., whether wastewater will be collected to a regional treatment facility or treated on site and disposed of through a surface water or groundwater discharge.

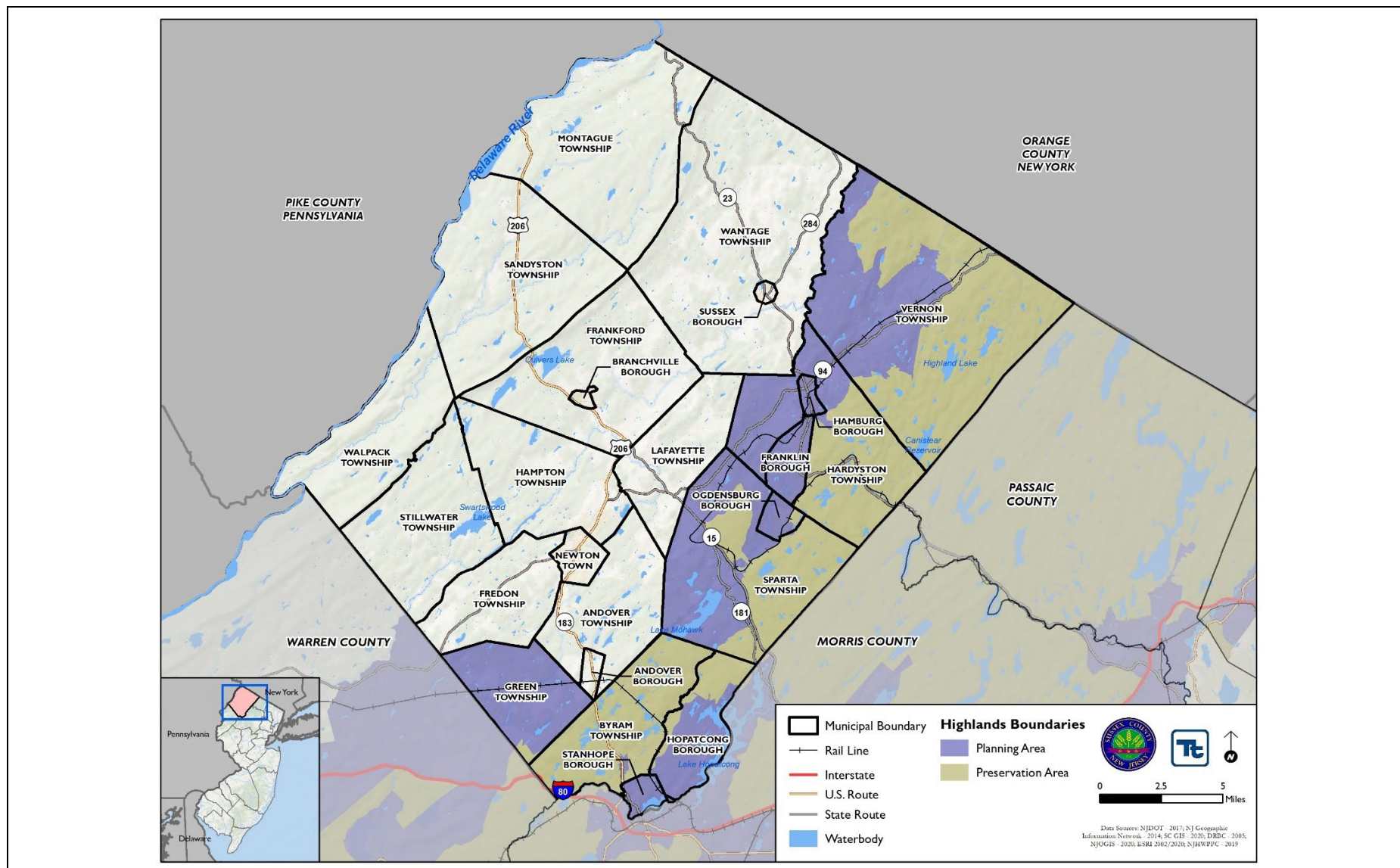
## Open Space and Parkland

Public and conservation open space accounts for more than one-third of the County's total land area. Overall, open space in Sussex County includes federal, state, county, municipal, and water supply management land (Sussex County 2016):

- Federal:
  - The National Park Service manages 5,354 acres (federal land) in western Sussex County in the municipalities of Sandyston and Stillwater. This area is part of the Delaware Water Gap National Recreation Area, a 55,857-acre unit of the National Park System located in New Jersey and Pennsylvania.
  - The U.S. Fish and Wildlife Service manages 21,924 acres of land in the County, known as the Wallkill River National Wildlife Refuge, located in the Townships of Vernon and Wantage.



Figure 3-5. Highlands in Sussex County, New Jersey







- State:
  - The New Jersey Division of Fish and Wildlife manages 12 Wildlife Management Areas in Sussex County, totaling 23,019 acres.
  - The New Jersey Division of Parks and Forestry has six state parks, one state forest, and three long-distance trails (Paulinskill Valley Trail, Sussex Branch Trail, and Appalachian Trail) in Sussex County.
  - The New Jersey Natural Lands Trust, an independent agency within NJDEP, manages 15 Natural Lands Trust properties in Sussex County, focused on fish and wildlife habitat conservation.
- County and Municipal
  - Sussex County owns 441 acres of open-space land in Franklin, Frankford, Hardyston, Newton, Sparta, and Vernon municipalities.
  - On the municipal level, there are 4,499 acres of land used for parks, recreation areas, municipal buildings, and support services.
- Private:
  - The County includes 1,274 acres of private land that is used as open space or protected via conservation easements.
  - There are 10,175 acres of open space used for utilities in Sussex County. This land is primarily in Hardyston Township and Vernon Township, with the largest parcel being a 2,223-acre watershed in Vernon.
  - Various non-profit organizations also own open space in Sussex County, totaling 5,599 acres, including The Nature Conservancy (1,755 acres), New Jersey Audubon (570 acres), and The Orange YMCA (607 acres).
  - There is 18,202 acres of preserved farmland in the County.

## Agriculture

Agriculture is an integral part of the natural landscapes that make up the County. Agricultural land includes pasturelands and grazing lands associated with horse or cattle raising operations; orchards, vineyards, nurseries, and other horticultural areas; and lands used in support of agricultural activities, such as farmsteads, associated barns, stables, and corrals (NJDEP 2012).

The U.S. Department of Agriculture's 2022 Census of Agriculture reports 71,688 acres of farmland in Sussex County, a significant increase from the 59,766 acres of farmland reported in the 2017 survey. In 2022, there were 1,052 active farms in the County, an increase of 4 percent from 2017. Table 3-3 outlines the top crop items grown in Sussex County in 2017 and 2022, along with the number of acres devoted to these crops. Soybeans for beans are the predominant crop in the County. Sussex County ranks second in the state for total acres of soybeans.

Table 3-3. Sussex County Farmland by Crop (Acres): 2017 and 2022

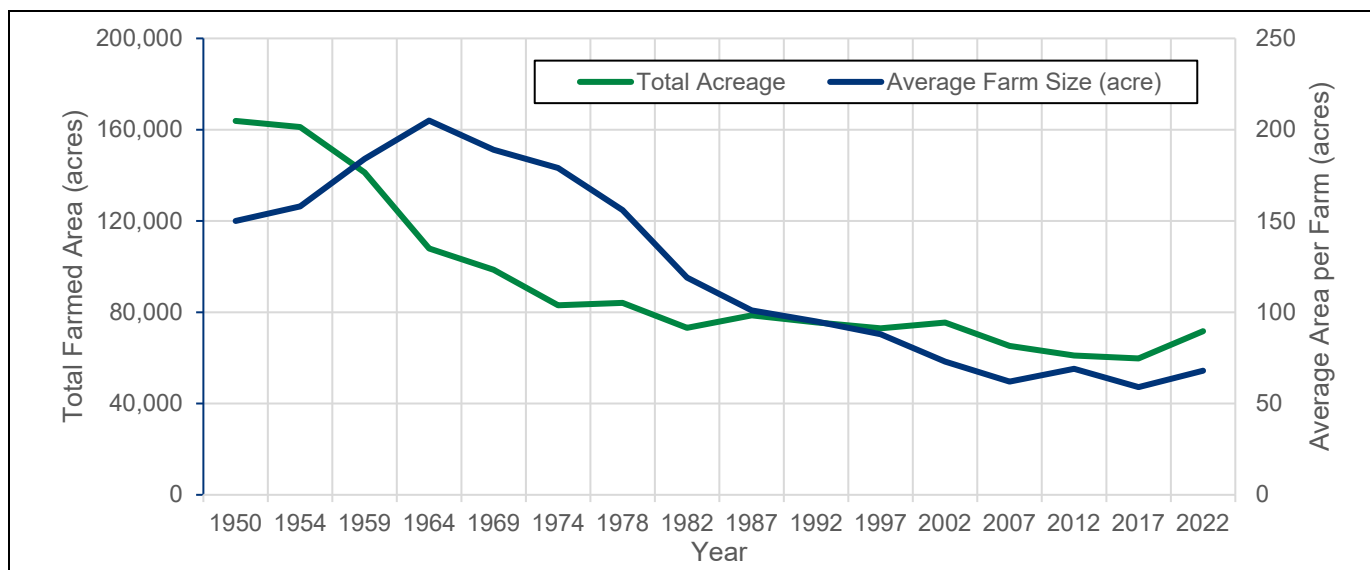
Crop Type	Area Devoted to Crop (acres)	
	2017	2022
Soybeans for beans	666	3,310
Corn for grain	2,697	4,788
Forage - land used for all hay and haylage, grass silage, and green chop	13,944	18,028
Corn for silage/greenchop	1,193	1,134
Vegetables harvested for sale	564	955

Source: USDA 2024



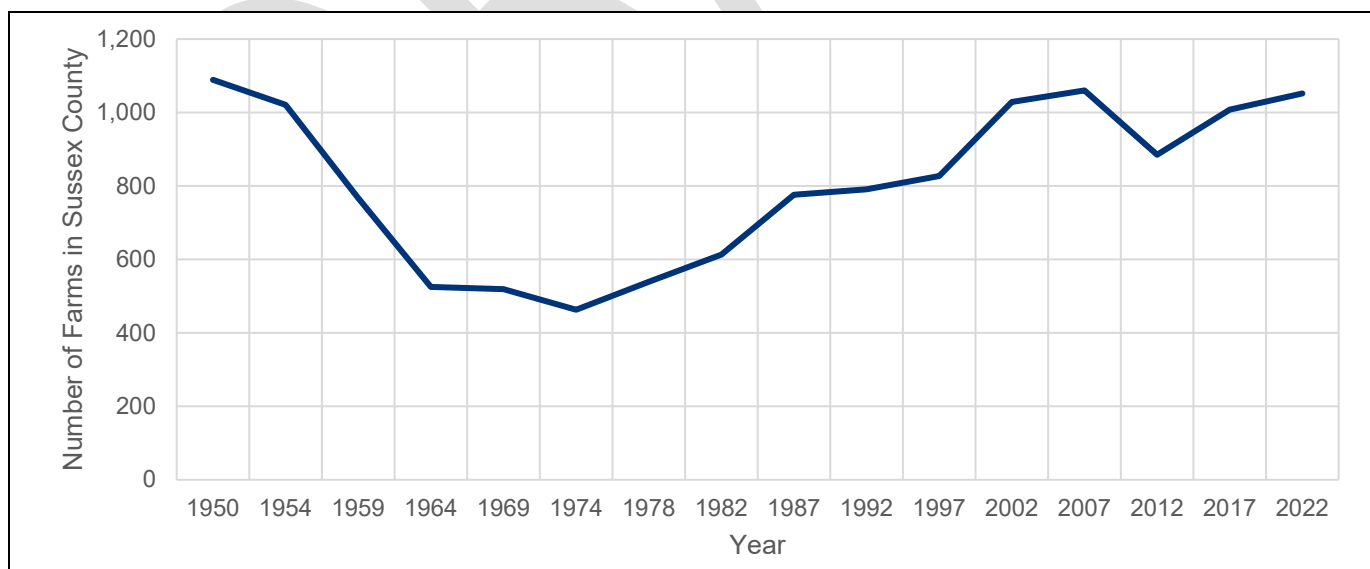
The agricultural industry in Sussex County continues to face many threats to its long-term sustainability. The dairy industry—long the cornerstone of Sussex County’s farms—is experiencing an extended and steady decline. A growing number of dairy farmers must find other sources of revenue to supplement their agricultural activities. While many have adjusted their operations to produce different livestock products or crops, such as cattle and nursery goods, others find selling their lands to be a more attractive option. Consequently, the County’s stock of cropland and pastureland has decreased for several decades (Sussex County 2008). Figure 3-6 and Figure 3-7 show the average farm size, total acreage of farms, and number of farms in Sussex County from 1950 to 2022 (USDA 2024).

Figure 3-6. Historical Farmed Area in Sussex County (Total and Average)



Source: USDA 2024

Figure 3-7. Historical Number of Farms in Sussex County



Source: USDA 2024



Sussex County has adopted a Comprehensive Farmland Preservation Plan that lays out a strategy for preservation of this vital resource. Since 1983, over 12,000 acres have been permanently protected from conversion to nonagricultural uses through permanent deed-restrictions (Sussex County 2008).

## 3.5 POPULATION AND DEMOGRAPHICS

### 3.5.1 Current Population

According to the 2020 U.S. Census, Sussex County has a population of 144,221. Vernon Township accounts for 15.5 percent of the population.

### 3.5.2 Population Trends

Population trend information was evaluated to estimate future shifts that could significantly change the character of the area. Population trends can provide a basis for making decisions on the type of mitigation approaches to consider and the locations in which these approaches should be applied. This information can also be used to support planning decisions regarding future development in vulnerable areas.

As seen in Table 3-4, Sussex County's population increased from 1960 through 2010 then declined between 2010 and 2020. Forecasts from the New Jersey Department of Labor project an ongoing decline in the County's population through 2034 as seen in Table 3-5. Changes in population have not been geographically uniform throughout the County, with some areas having experienced a decline in population prior to 2010. The 2020 U.S. Census data included in the Hazus hazard-simulation model are believed to be sufficient and appropriate to support the risk assessment and mitigation planning efforts of this HMP. Figure 3-8 shows the 2020 U.S. Census population density in Sussex County.

### 3.5.3 Socially Vulnerable Populations

Hazard mitigation planning needs to consider socially vulnerable populations. These populations can be more susceptible to hazard events based on a number of factors including their physical and financial ability to react or respond during a hazard, and the location and construction quality of their housing. This HMP considers several socially vulnerable population groups: persons over the age of 65, persons under the age of 5, non-English speaking households, people with disabilities, and people living below the poverty level. Table 3-6 and Table 3-7 show population statistics for these socially vulnerable populations, for each municipality in the County based on the 2010 and 2020 Census data. Distributions of population density (persons per square mile) for social vulnerability metrics are shown in Figure 3-9.



Table 3-4. Historical Population Change in Sussex County

	Population						
	1960	1970	1980	1990	2000	2010	2020
Andover Borough	734	813	892	700	658	606	595
Andover Township	2,177	3,040	4,505	5,438	6,033	6,319	5,996
Branchville Borough	963	911	870	851	845	841	791
Byram Township	1,616	4,592	7,502	8,048	8,254	8,350	8,028
Frankford Township	2,170	2,777	4,654	5,114	5,420	5,565	5,302
Franklin Borough	3,624	4,236	4,486	4,977	5,160	5,045	4,912
Fredon Township	804	1,372	2,281	2,763	2,860	3,437	3,235
Green Township	854	1,343	2,450	2,709	3,220	3,601	3,627
Hamburg Borough	1,532	1,820	1,832	2,566	3,105	3,277	3,266
Hampton Township	1,174	2,091	3,916	4,438	4,943	5,196	4,893
Hardyston Township	2,206	3,499	4,553	5,275	6,171	8,213	8,125
Hopatcong Borough	3,391	9,052	15,531	15,586	15,888	15,147	14,362
Lafayette Township	1,100	1,202	1,614	1,902	2,300	2,538	2,358
Montague Township	879	1,131	2,066	2,832	3,412	3,847	3,792
Newton Town	6,563	7,297	7,748	7,521	8,244	7,997	8,374
Ogdensburg Borough	1,212	2,222	2,737	2,722	2,638	2,410	2,258
Sandyston Township	1,019	1,303	1,485	1,732	1,825	1,998	1,977
Sparta Township	6,717	10,819	13,333	15,157	18,080	19,722	19,600
Stanhope Borough	1,814	3,040	3,638	3,393	3,584	3,610	3,526
Stillwater Township	1,339	2,158	3,887	4,253	4,267	4,099	4,004
Sussex Borough	1,656	2,038	2,418	2,201	2,145	2,130	2,024
Vernon Township	2,155	6,059	16,302	21,211	24,686	23,943	22,358
Walpack Township	248	384	150	67	41	16	7
Wantage Township	3,308	4,329	7,268	9,487	10,387	11,358	10,811
<b>Sussex County</b>	<b>49,255</b>	<b>77,528</b>	<b>116,119</b>	<b>130,943</b>	<b>144,166</b>	<b>149,265</b>	<b>144,221</b>

Source: New Jersey Department of Labor 2001; U.S. Census 2023

Table 3-5. Historical and Projected Population Change in Sussex County

Historical Sussex County Population							Projected Sussex County Population	
1960	1970	1980	1990	2000	2010	2020	2029	2034
49,255	77,528	116,119	130,943	144,166	149,265	144,221	137,300	136,600

Source: State of New Jersey 2017; U.S. Census 2020; U.S. Census 2010; New Jersey Department of Labor 2001





Figure 3-8. Population Density in Sussex County

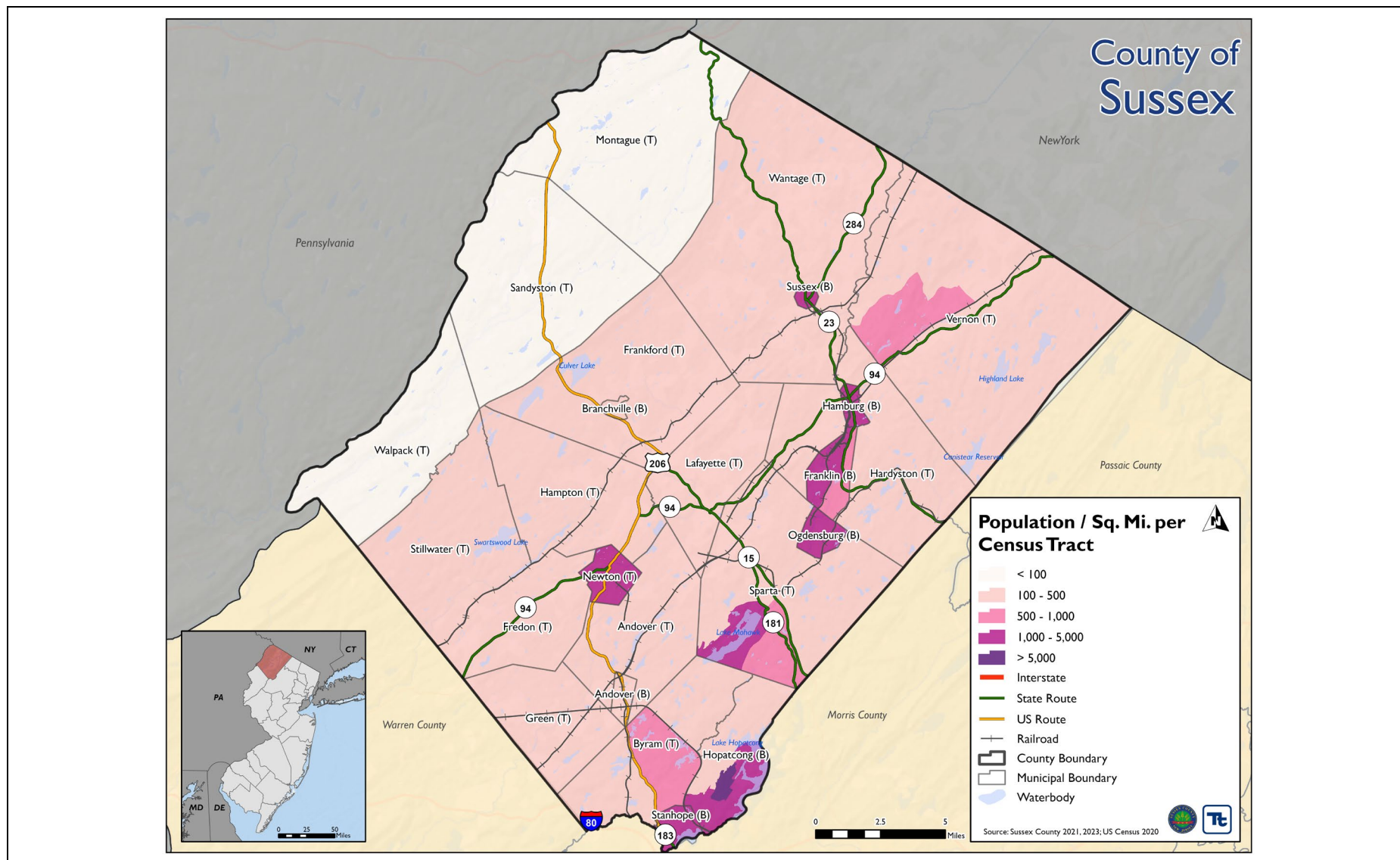




Table 3-6. Sussex County Population and Demographic Statistics 2010 Census

	Total Population	65 and Older		Below Poverty Level	
		Population	% of Total Jurisdiction Population	Population	% of Total Jurisdiction Population
Andover Borough	606	73	12.0%	28	4.6%
Andover Township	6,319	1,012	16.0%	91	1.4%
Branchville Borough	841	141	16.8%	46	5.5%
Byram Township	8,350	843	10.1%	104	1.2%
Frankford Township	5,565	921	16.5%	124	2.2%
Franklin Borough	5,045	659	13.1%	323	6.4%
Fredon Township	3,437	469	13.6%	52	1.5%
Green Township	3,601	388	10.8%	50	1.4%
Hamburg Borough	3,277	385	11.7%	212	6.5%
Hampton Township	5,196	768	14.8%	142	2.7%
Hardyston Township	8,213	1,194	14.5%	348	4.2%
Hopatcong Borough	15,147	1,489	9.8%	262	1.7%
Lafayette Township	2,538	325	12.8%	52	2.0%
Montague Township	3,847	536	13.9%	140	3.6%
Newton Town	7,997	1,481	18.5%	810	10.1%
Ogdensburg Borough	2,410	275	11.4%	104	4.3%
Sandyston Township	1,998	234	11.7%	57	2.9%
Sparta Township	19,722	2,198	11.1%	251	1.3%
Stanhope Borough	3,610	374	10.4%	74	2.0%
Stillwater Township	4,099	459	11.2%	199	4.9%
Sussex Borough	2,130	261	12.3%	176	8.3%
Vernon Township	23,943	2,019	8.4%	403	1.7%
Walpack Township	16	4	25.0%	0	0.0%
Wantage Township	11,358	1,342	11.8%	163	1.4%
<b>Sussex County</b>	<b>149,265</b>	<b>17,850</b>	<b>12.0%</b>	<b>4,211</b>	<b>2.8%</b>

Source: U.S. Census Bureau, Census 2010



Table 3-7. Sussex County Population and Demographic Statistics 2020 Census, American Community Survey 5-Year Estimates

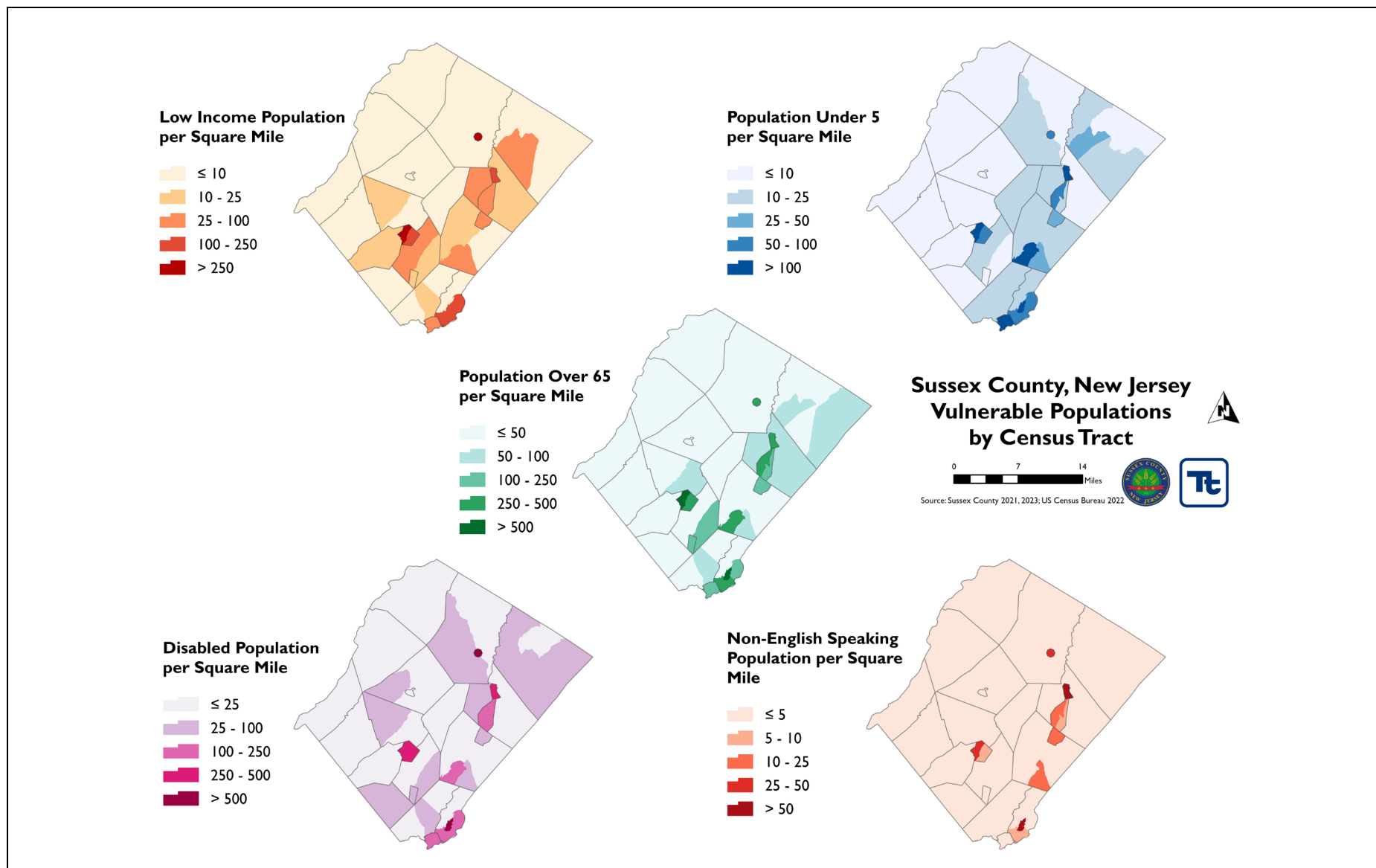
	Total	65 and Older		5 and Younger		Non-English-Speaking		Disability		Below Poverty Level	
	Population	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total
Andover Borough	595	81	0.3%	27	0.4%	13	0.7%	62	0.4%	32	0.4%
Andover Township	5,996	1,370	5.4%	243	3.7%	0	0.0%	525	3.3%	266	3.6%
Branchville Borough	791	163	0.6%	39	0.6%	28	1.5%	84	0.5%	35	0.5%
Byram Township	8,028	1,112	4.4%	445	6.8%	103	5.3%	610	3.9%	178	2.4%
Frankford Township	5,302	1,000	3.9%	235	3.6%	0	0.0%	552	3.5%	148	2.0%
Franklin Borough	4,912	1,174	4.6%	228	3.5%	131	6.8%	851	5.4%	285	3.9%
Fredon Township	3,235	638	2.5%	131	2.0%	28	1.5%	294	1.9%	176	2.4%
Green Township	3,627	739	2.9%	125	1.9%	49	2.5%	471	3.0%	150	2.0%
Hamburg Borough	3,266	451	1.8%	143	2.2%	332	17.2%	240	1.5%	174	2.4%
Hampton Township	4,893	1,155	4.5%	202	3.1%	98	5.1%	737	4.7%	348	4.8%
Hardyston Township	8,125	1,642	6.5%	322	5.0%	100	5.2%	925	5.9%	463	6.3%
Hopatcong Borough	14,362	2,003	7.9%	601	9.2%	339	17.6%	1,518	9.7%	631	8.6%
Lafayette Township	2,358	511	2.0%	170	2.6%	33	1.7%	253	1.6%	200	2.7%
Montague Township	3,792	843	3.3%	211	3.2%	82	4.3%	395	2.5%	176	2.4%
Newton Town	8,374	1,787	7.0%	261	4.0%	203	10.6%	1,196	7.6%	733	10.0%
Ogdensburg Borough	2,258	374	1.5%	72	1.1%	41	2.1%	194	1.2%	127	1.7%
Sandyston Township	1,977	319	1.3%	110	1.7%	0	0.0%	225	1.4%	76	1.0%
Sparta Township	19,600	2,622	10.3%	1,160	17.8%	134	7.0%	1,550	9.9%	754	10.3%
Stanhope Borough	3,526	484	1.9%	225	3.5%	0	0.0%	304	1.9%	30	0.4%
Stillwater Township	4,004	1,037	4.1%	97	1.5%	0	0.0%	555	3.5%	274	3.7%
Sussex Borough	2,024	298	1.2%	87	1.3%	8	0.4%	348	2.2%	365	5.0%
Vernon Township	22,358	3,687	14.5%	992	15.3%	95	4.9%	2,318	14.8%	877	12.0%
Walpack Township	7	7	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Wantage Township	10,811	1,954	7.7%	374	5.8%	105	5.5%	1,490	9.5%	822	11.2%
<b>Sussex County</b>	<b>144,221</b>	<b>25,451</b>	<b>100.0%</b>	<b>6,500</b>	<b>100.0%</b>	<b>1,922</b>	<b>100.0%</b>	<b>15,697</b>	<b>100.0%</b>	<b>7,320</b>	<b>100.0%</b>

Source: U.S. Census Bureau 2020 Decennial Total Population; U.S. Census Bureau 2021 ACS Vulnerable Population Totals

Note: Persons per household = 2.57. Number used to calculate Non-English Speaking population.



Figure 3-9. Socially Vulnerable Populations in Sussex County







## Age

Children are considered vulnerable to hazard events because they are dependent on others to safely access resources during emergencies and may experience increased health risks from hazard exposure. Older people are more likely to lack the physical and economic resources necessary for response to hazard events and are more likely to suffer health-related consequences. Those living on their own may have more difficulty evacuating their homes. Older people are more likely to live in senior care and living facilities where emergency preparedness occurs at the discretion of facility operators.

According to the 2021 American Community Survey 5-Year Estimates, the median age in Sussex County was 44.9 years. The 2021 American Community Survey reports 4.5 percent of the population of Sussex County is under the age of 5 and 17.6 percent is 65 or older.

## Income

Economically disadvantaged populations are more vulnerable because they may not have funds to evacuate during a hazard event. The U.S. Census Bureau identifies households with two adults and two children with an annual household income below \$25,926 per year as *low income* (Census 2021). The 2021 American Community Survey 5-Year Estimates indicates that 5.07 percent of persons live below the poverty level within the County.

The spatial U.S. Census data for household income provided in Hazus includes two income ranges (less than \$10,000 per year and \$10,000 to \$20,000 per year) that were totaled to provide the low-income data used in this study. This does not correspond exactly with the poverty thresholds based on U.S. Census Bureau data, but the difference is not believed to be significant for the purposes of this planning effort.

While the poverty threshold is typically used as a standard for identifying low-income populations, some households above the poverty threshold still struggle financially, making them socially vulnerable to hazard events. Therefore, this HMP also considers data available from United for ALICE (ALICE stands for Asset Limited, Income Constrained, Employed). This dataset identifies households with income above the federal poverty threshold but below the basic cost of living. It represents the growing number of families who are unable to afford the basics of housing, childcare, food, transportation, health care, and technology (United For ALICE 2024). Costs associated with hazard events could exceed the financial capacity of these households, making them highly vulnerable to hazard events. According to 2021 point-in-time-data from ALICE, 21 percent of households in Sussex County are ALICE households (compared to the state average of 26 percent). Table 3-8 presents ALICE data by jurisdiction.

## People With Disabilities

A disability is any impairment of the body or mind that makes it more difficult for the person with the condition to do certain activities and interact with the world around them (CDC 2024). Cognitive impairments can increase the level of difficulty that individuals might face during an emergency and reduce an individual's capacity to receive, process, and respond to emergency information or warnings. Individuals with a physical or sensory disability can face issues of mobility, sight, hearing, or reliance on specialized medical equipment. According to the 2021 American Community Survey 5-Year Estimates, 15,697 residents in Sussex County are living with a disability. This includes individuals with hearing, vision, cognitive, ambulatory, self-care, and independent living difficulties.



Table 3-8. Sussex County ALICE Data

Name	% Below ALICE Threshold	# of Households Below ALICE
Andover Borough	42%	119
Andover Township	25%	530
Branchville Borough	28%	90
Byram Township	19%	555
Frankford Township	21%	422
Franklin Borough	40%	880
Fredon Township	18%	201
Green Township	14%	172
Hamburg Borough	38%	529
Hampton Township	31%	608
Hardyston Township	27%	906
Hopatcong Borough	23%	1,301
Lafayette Township	23%	193
Montague Township	33%	490
Newton Town	44%	1,597
Ogdensburg Borough	25%	207
Sandyston Township	24%	179
Sparta Township	16%	1,121
Stanhope Borough	24%	302
Stillwater Township	25%	394
Sussex Borough	48%	383
Vernon Township	21%	1,833
Walpack Township	Unavailable	Unavailable
Wantage Township	36%	1,416
<b>Sussex County</b>	<b>21%</b>	<b>14,428</b>

Source: United For ALICE 2024

## Non-English Speakers

Individuals who lack a working proficiency in English are vulnerable because they can have difficulty with understanding information being conveyed to them. Cultural differences also can add complexity to how information is being conveyed to populations with limited proficiency of English. According to the 2021 American Community Survey 5-Year Estimates, 14,191 individuals over the age of 5 primarily speak a language other than English at home; within that group 3,808 individuals are reported as speaking English “less than very well.” Of the population speaking a language other than English at home, 7,306 speak Spanish, 1,500 speak Asian and Pacific Island languages, and 4,637 percent speak other Indo-European languages.

## Social Vulnerability Index

The U.S. Centers for Disease Control and Prevention (CDC) Social Vulnerability Index ranks counties and U.S. Census tracts on socioeconomic status, household composition and disability, minority status and language, and housing and transportation. Sussex County’s overall score for 2022 is 0.0458, indicating a low level of social vulnerability (CDC 2020). Only one census tract in the County, near the Town of Newton, has a high vulnerability, indicating that some residents may not have enough resources to respond to hazard events.



## 3.6 ECONOMY

### 3.6.1 Major Institutions

Sussex County has evolved from its early agricultural and milling start and now has an economy that features health and wellness, hospitality, and educational institutions. The County is a travel destination, with major resorts such as the Mountain Creek and Crystal Springs resorts. Furthermore, the County is home to two higher education institutions: the Sussex County Community College and Sussex County Technical School.

### 3.6.2 Employment

The U.S. Census Bureau's County Business Pattern provides an annual series of economic data by industry covering the majority of the country's economic activity. According to the 2021 Sussex County Business Pattern, the county had 3,133 business establishments providing more than \$1.5 million in payroll. Three industries dominate private employment in the County: health care & social assistance (9,372 people), retail trade (9,357 people), and educational services (8,694 people) (U.S. Census 2021). Table 3-9 summarizes labor force and employment data for Sussex County between 2020 and 2023.

Table 3-9. Sussex County Labor Force Estimates, 2020-2023

Year	Sussex County				New Jersey Unemployment Rate
	Labor Force	Employment	Unemployment	Unemployment Rate	
2020	76,200	69,300	6,900	9.0%	9.4%
2021	76,100	71,300	4,800	6.3%	6.7%
2022	77,600	74,600	3,000	3.9%	3.9%
2023	79,000	75,700	3,400	4.3%	4.4%

Source: NJ Department of Labor and Workforce Development 2024

Note: The COVID-19 Pandemic reached its height in 2020, which greatly impacted the unemployment rates in the county and state and nationwide.

### 3.6.3 Income

The median household income in the County, according to the 2021 ACS 5-year estimates, was \$111,308, which is above the state (\$96,341) and national (\$74,755) figures. Table 3-10 shows County, state, and national median household incomes between 2018 and 2022, as calculated by the U.S. Census Bureau.

### 3.6.4 Economic Trends

Sussex County originally developed as an agricultural, mining and manufacturing area and later as an area for summer recreation. For much of the last 50 years, the County's growth has been due to the automobile-driven suburbanization fueled by the migration of the middle-class population from New York City and New Jersey's urban centers. This migration led Sussex County to experience the highest rate of population growth of any county in the 13-county North Jersey region, with the population increasing 320% between 1950 and 2000. However, recent evidence suggests that the 50-year period of growth has ended. These changing patterns will continue to contribute to changing economic dynamics for the County (Sussex County 2014).



Table 3-10. Sussex County Median Household Income, 2018-2022

Year	Sussex County Median Household Income	New Jersey Median Household Income	National Median Household Income
2018	\$92,284	\$81,777	\$61,937
2019	\$100,281	\$85,786	\$65,712
2020	\$92,739	\$87,095	\$67,340
2021	\$99,695	\$89,227	\$69,717
2022	\$111,308	\$96,341	\$74,755

Source: U.S. Census 2023

## 3.7 GENERAL BUILDING STOCK

### 3.7.1 Existing Development

For the purposes of this plan, 71,937 structures were identified from available tax data and spatial data. These structures account for a replacement cost value (RCV) of \$68.5 billion. This total includes \$38.9 billion for replacement of building structures and \$29.5 billion for replacement of content. Residential buildings account for 86.8 percent of the total number of buildings in the County and 43.9 percent of the total building stock value. Table 3-11 presents building stock statistics by occupancy class for Sussex County.

According to 2020 Census data, 55,915 households are located in Sussex County. A household includes all the people who occupy a housing unit as their usual residence. The Census data identified 62,709 housing units in the county. A housing unit is a house, apartment, mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters (or if vacant, intended for occupancy as separate living quarters). According to the 2020 Census, there are 6,794 vacant housing units in the County (U.S. Census 2020).

Figure 3-10 through Figure 3-12 show the distribution of value density for residential, commercial, and industrial buildings in Sussex County. Value density is the dollar value of structures per unit area, including building content value. The densities are shown in units of \$1,000 per square mile. Value distribution maps can assist communities in visualizing areas of high loss potential and in evaluating aspects of the study area in relation to hazard risks.

### 3.7.2 New Development

Sussex County examined recent development over the last 5 years and anticipated new development in the next 5 years. Each Planning Partner provided a list by address of major development that has taken place within these timeframes. Identifying these changes and integrating new development into the risk assessment provides communities information to consider when developing a mitigation strategy to reduce hazard vulnerabilities in the future. Figure 3-13 shows the major development projects in 2019, 2020, 2021, 2022, and 2023. Individual development projects are detailed in Volume II in each jurisdictional annex.

An analysis was conducted to determine hazard exposure of these development sites. Projects built on multiple parcels were assessed as one unit. If one parcel identified within the project boundary intersected a spatial hazard layer, the entire project was considered “exposed” to the hazard area of concern.





Table 3-11. Building Stock Count and Replacement Cost Value by Occupancy Class

Jurisdiction	Residential		Commercial		Industrial		Other <sup>a</sup>	
	Building Count	Total RCV	Building Count	Total RCV	Building Count	Total RCV	Building Count	Total RCV
Andover Borough	234	\$142,263,689	69	\$498,237,303	2	\$2,017,529	21	\$51,089,264
Andover Township	2,146	\$1,245,225,989	157	\$2,039,145,588	14	\$71,509,962	260	\$657,011,182
Branchville Borough	339	\$155,612,477	71	\$379,204,591	1	\$27,822,150	15	\$35,748,807
Byram Township	3,345	\$1,483,046,989	111	\$1,356,919,630	2	\$4,451,182	218	\$317,726,421
Frankford Township	2,779	\$1,484,519,098	179	\$893,680,202	6	\$30,961,282	565	\$1,082,632,420
Franklin Borough	1,807	\$903,170,006	166	\$1,015,308,039	10	\$82,537,735	75	\$226,961,358
Fredon Township	1,215	\$734,104,099	43	\$96,238,972	6	\$46,009,669	351	\$666,070,175
Green Township	1,376	\$980,692,255	29	\$141,599,251	4	\$96,523,717	288	\$602,767,644
Hamburg Borough	1,473	\$598,295,772	94	\$918,837,503	8	\$103,211,784	18	\$188,890,852
Hampton Township	2,307	\$1,081,973,396	104	\$664,961,317	1	\$8,158,893	349	\$718,930,004
Hardyston Township	3,963	\$1,780,399,976	190	\$1,283,877,956	19	\$116,665,959	229	\$500,514,731
Hopatcong Borough	7,643	\$2,401,316,005	184	\$702,463,546	0	\$0	177	\$328,840,378
Lafayette Township	960	\$627,400,911	98	\$533,647,550	25	\$73,543,576	380	\$908,036,672
Montague Township	1,870	\$790,954,372	94	\$454,119,286	7	\$16,027,928	204	\$398,574,062
Newton Town	2,245	\$1,685,402,594	286	\$3,078,695,919	19	\$284,072,385	126	\$650,949,129
Ogdensburg Borough	910	\$435,539,309	52	\$392,012,851	0	\$0	30	\$126,857,443
Sandyston Township	1,093	\$472,194,510	89	\$312,853,723	7	\$40,886,148	337	\$524,137,122
Sparta Township	7,366	\$3,993,793,883	427	\$5,199,126,279	41	\$234,946,801	293	\$889,033,327
Stanhope Borough	1,448	\$683,497,404	66	\$268,451,804	7	\$151,246,067	31	\$125,558,353
Stillwater Township	1,978	\$875,599,201	141	\$218,518,520	0	\$0	368	\$517,491,054
Sussex Borough	554	\$523,480,774	80	\$1,466,945,703	6	\$48,324,309	37	\$148,341,398
Vernon Township	11,176	\$4,561,668,158	402	\$1,111,839,958	36	\$128,880,414	425	\$1,014,475,046
Walpack Township	11	\$3,552,150	21	\$15,836,396	0	\$0	19	\$48,627,166
Wantage Township	4,174	\$2,430,988,341	192	\$957,518,461	6	\$13,327,010	1,137	\$2,125,969,991
<b>Sussex County (Total)</b>	<b>62,412</b>	<b>\$30,074,691,358</b>	<b>3,345</b>	<b>\$24,000,040,348</b>	<b>227</b>	<b>\$1,581,124,500</b>	<b>5,953</b>	<b>\$12,855,233,999</b>

Source: Sussex County 2023; NJOGIS, Civil Solutions, Spatial Data Logic; RS Means 2022

a. "Other" includes government, religion, agriculture, and education occupancies



Figure 3-10. Distribution of Residential Building Stock Value Density in Sussex County

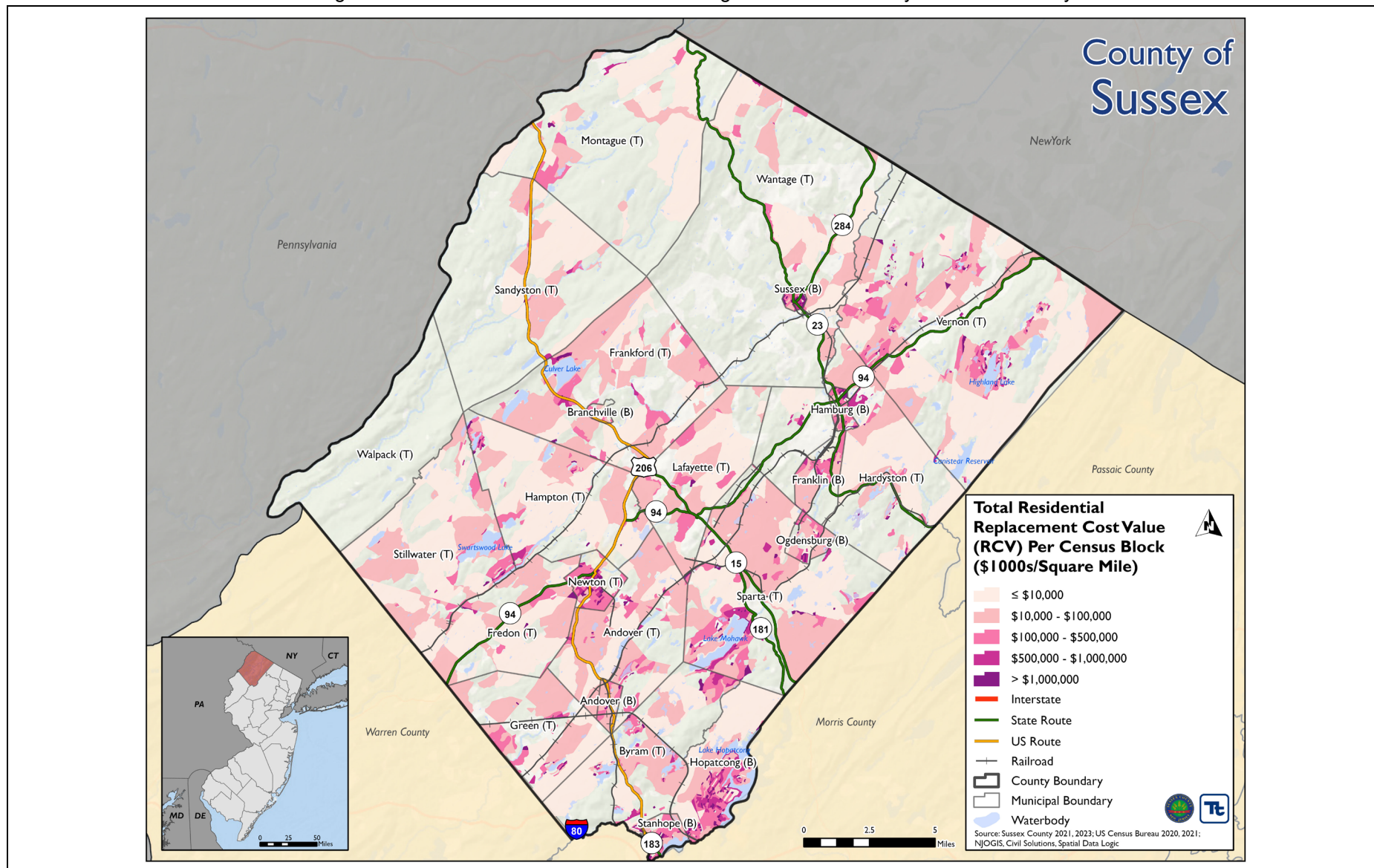
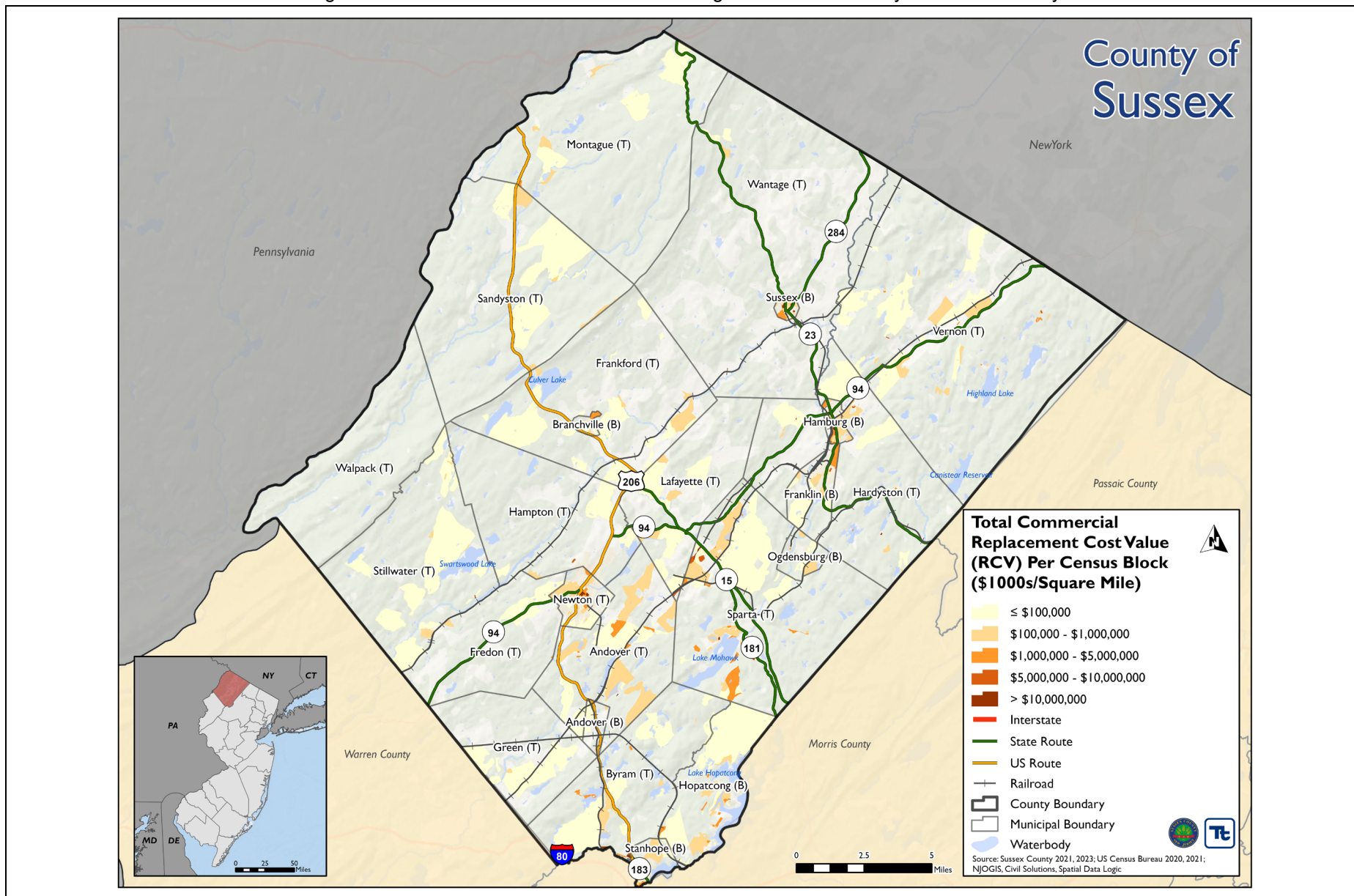






Figure 3-11. Distribution of Commercial Building Stock Value Density in Sussex County





**County of Sussex**

Montague (T)  
Wantage (T)  
Sandyston (T)  
Frankford (T)  
Branchville (B)  
Walpack (T)  
Stillwater (T)  
Newton (T)  
Fredon (T)  
Andover (T)  
Green (T)  
Byram (T)  
Stanhope (B)  
Hopatcong (B)  
Sparta (T)  
Ogdensburg (B)  
Franklin (B)  
Hardyston (T)  
Hamburg (B)  
Sussex (B)  
Vernon (T)  
Highland Lake  
Conestogah Reservoir  
Lake Mohawk  
Lake Hopatcong

Pennsylvania  
New York  
Passaic County  
Warren County  
Morris County

**Total Industrial Replacement Cost Value (RCV) Per Census Block (\$1000s/Square Mile)**

- ≤ \$10,000
- \$10,000 - \$100,000
- \$100,000 - \$500,000
- \$500,000 - \$1,000,000
- > \$1,000,000

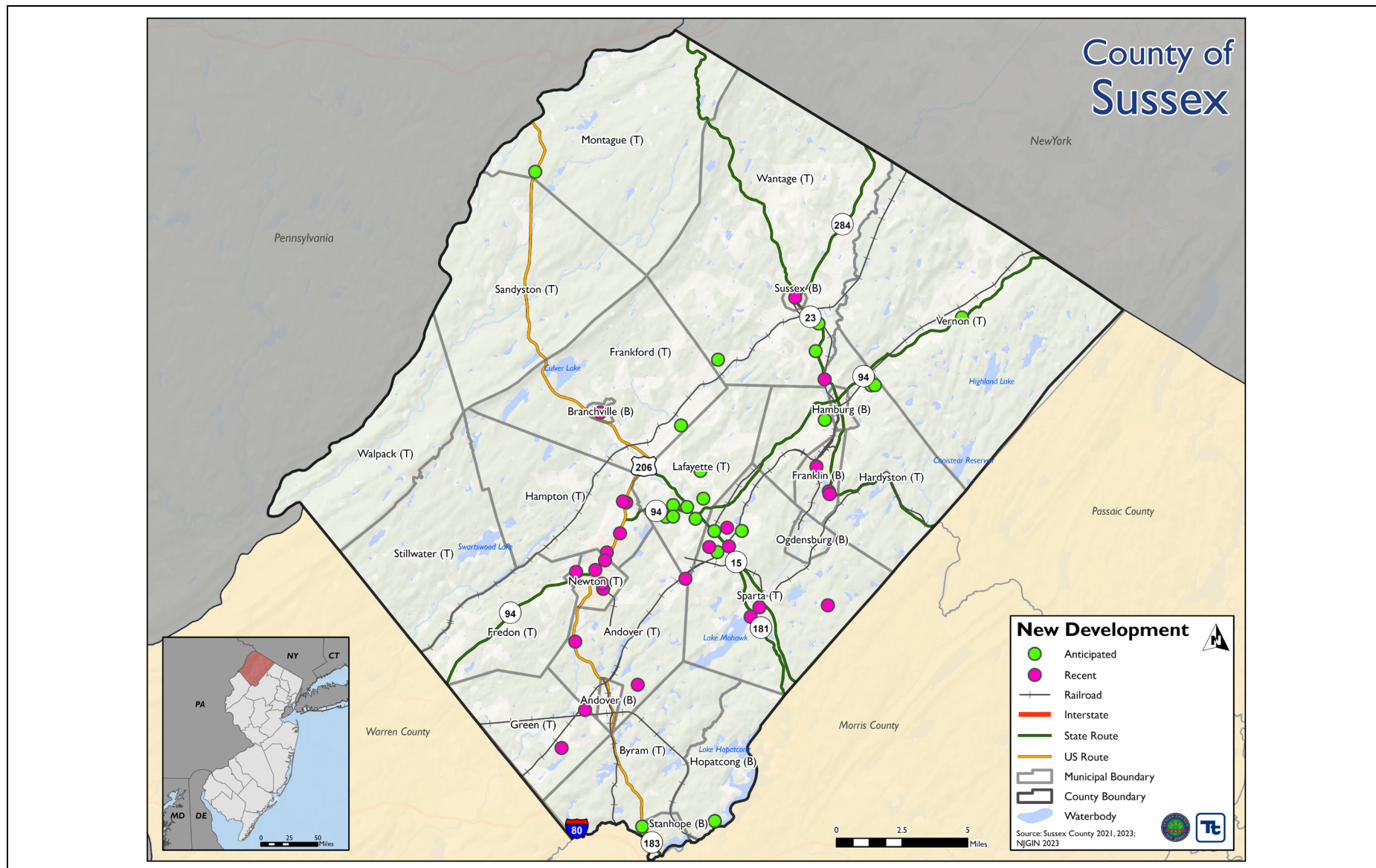
Interstate  
State Route  
US Route  
Railroad  
County Boundary  
Municipal Boundary  
Waterbody

Source: Sussex County 2021, 2023; US Census Bureau 2020, 2021; NJOGIS, Civil Solutions, Spatial Data Logic





Figure 3-13. Sussex County New Development





## 3.8 COMMUNITY LIFELINES

Facilities that are essential to the health and welfare of the population and that maintain essential and emergency functions are designated as critical facilities. These typically include police and fire stations, schools, emergency operations centers, and infrastructure such as roads, bridges and utilities that provide water, electricity, and communications. Facilities that use or store hazardous materials are designated as critical facilities as well. All of these facilities are especially important after any hazard event (FEMA 1997).

FEMA defines some types of critical facilities, as well as public services or activities, as “community lifelines.” Community lifelines provide the fundamental services in a community that, when stabilized, enable all other aspects of society. Following a disaster event, intervention is required to stabilize lifelines. FEMA defines eight categories of community lifelines as summarized in Table 3-12.

A comprehensive inventory of community lifelines in Sussex County was developed from various sources, including input from the Steering Committee and Planning Partnership. The following sections describe the inventory of community lifelines that was used for the risk assessment in this HMP. Although many lifeline facilities could fall within numerous categories, the lifeline facilities identified for this planning effort have been categorized according to their primary function.

### 3.8.1 Safety and Security

Figure 3-14 shows the location of safety and security facilities. Table 3-13 lists the number of each facility type.

#### Emergency Facilities

Sussex County has a highly coordinated and interconnected network of emergency facilities and services at the County and municipal level. The Sussex County Sheriff’s Office Division of Emergency Management (DEM) serves as the primary coordinating agency between local, state, and federal agencies. In response to an emergency event, the Sussex County DEM will work with county and municipal health agencies, healthcare providers, emergency facilities, and first responders to provide aid to residents of the County.

The DEM develops, maintains, and executes Sussex County’s Emergency Operations Plan for disaster relief before, during, and after any type of natural or human-caused disaster. The DEM also assists municipalities in preparing emergency response plans.

There are 44 fire department facilities in Sussex County. Law enforcement and public safety are maintained by the New Jersey State Police Department, Sussex County Sheriff’s Office, and local police departments. In 2019, Sussex County and Morris County entered into a shared service agreement allowing for all Sussex County inmates to be housed at the Morris County Correctional Facility. The Sussex County Bureau of Corrections personnel supervise inmates during transports for admission at the Morris County Correctional Facility, court hearings and medical appointments.

Table 3-12. FEMA-Defined Categories of Community Lifelines









Community Lifeline Category	Types of Facilities and Services Included
 <b>Safety and security</b>	Law enforcement/security, fire service, search and rescue, government service, community safety
 <b>Food, hydration, shelter</b>	Food, hydration, shelter, agriculture
 <b>Health and medical</b>	Medical care, public health, patient movement, medical supply chain, fatality management
 <b>Energy</b>	Power grid, fuel
 <b>Communications</b>	Infrastructure, responder communications, alerts warnings and messages, finance, 911 and dispatch
 <b>Transportation</b>	Highway/roadway/motor vehicle, mass transit, railway, aviation, maritime
 <b>Hazardous materials</b>	Facilities, hazmat, pollutants, contaminants
 <b>Water systems</b>	Potable water infrastructure, wastewater management





Figure 3-14. Safety and Security Community Lifelines In Sussex County

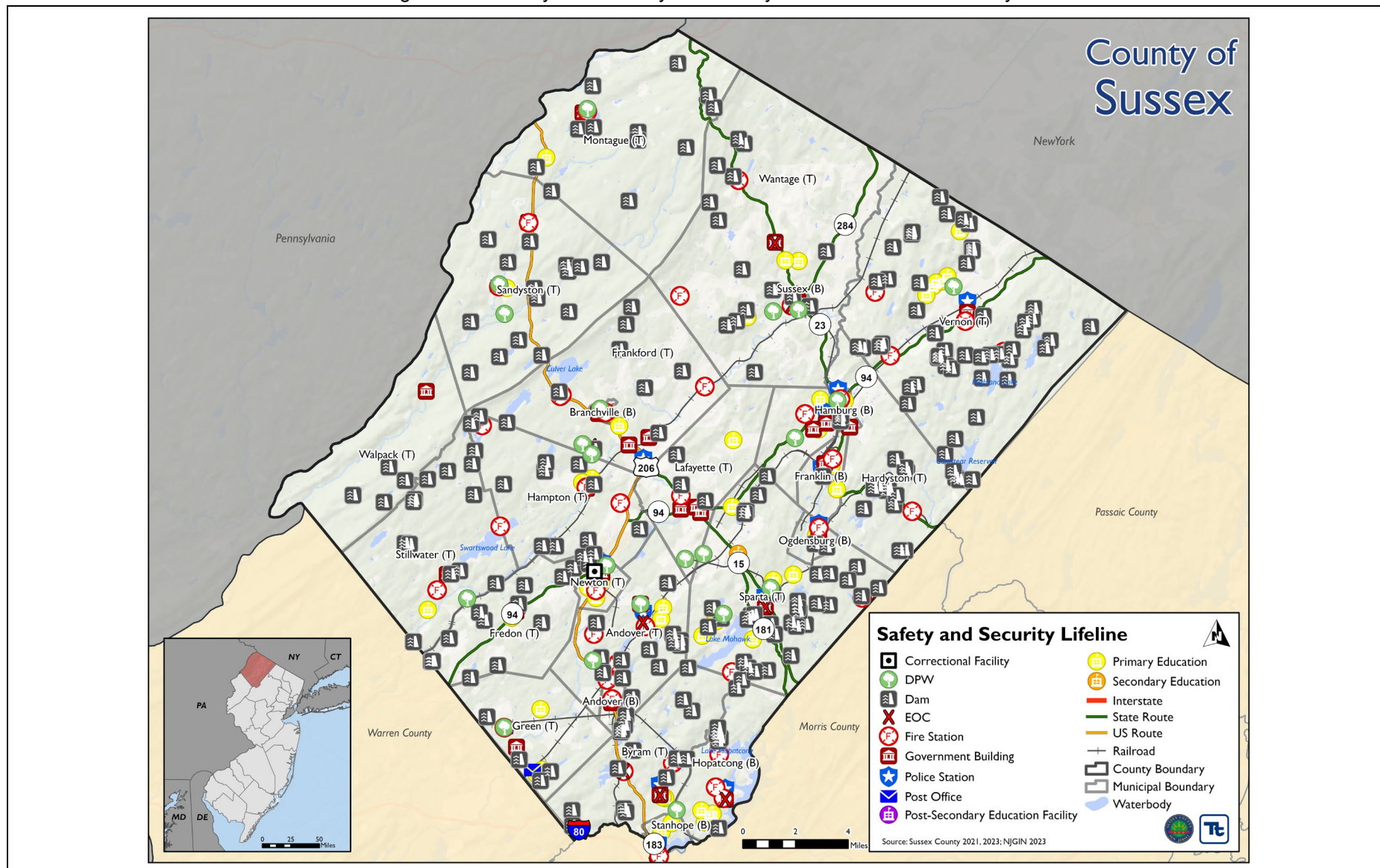




Table 3-13. Sussex County Safety and Security Community Lifelines

Facility Type	Number of Facilities
Correctional Facility	1
Dam	239
Public Works Facility	21
Emergency Operations Center	9
Fire Station	44
Government Building	37
Police Station	12
Post Office	3
Post-Secondary Education Facility	1
Primary Education	51
Secondary Education	3
<b>Total</b>	<b>421</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

## Dams

Table 3-14 lists the number of dams in Sussex County by hazard class, as identified in the U.S. Army Corps of Engineers (USACE) National Inventory of Dams.

Table 3-14. Dams in Sussex County

	Definition	Number of Dams in Sussex County
Class I	High-Hazard Potential—Failure of the dam may result in probable loss of life and/or extensive property damage	40
Class II	Significant-Hazard Potential—Failure of the dam may result in significant property damage; however, loss of life is not envisioned.	39
Class III	Low-Hazard Potential—Failure of the dam is not expected to result in loss of life and/or significant property damage.	60
Class IV	Small-Dam Low-Hazard Potential—Failure of the dam is not expected to result in loss of life or significant property damage.	0
<b>Total</b>		<b>139</b>

Source: USACE 2023

a. Class definitions per NJDEP

## Schools

More than 50 schools, ranging from elementary to post-secondary education, service the County. Several municipalities have their own school systems, and others are serviced by regional school districts. The primary higher education school in Sussex County is Sussex County Community College in Newton. In times of need, schools can function as shelters and are an important resource to the community.





### 3.8.2 Food, Hydration, Shelter

Figure 3-15 shows the location of food, hydration, and shelter facilities in Sussex County. Table 3-15 lists the number of each facility type.

Table 3-15. Sussex County Food, Hydration, Shelter Community Lifelines

Facility Type	Number of Facilities
Food Pantry	7
Shelter	29
<b>Total</b>	<b>36</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

#### Shelters

Sussex County has 29 sheltering facilities, many of which are schools. With support of the American Red Cross and local jurisdictions, the County maintains an inventory of suitable shelter locations and can assist with the coordination of shelter availability as necessitated by local emergency operation plans. County-wide sheltering policies and procedures are documented in the following plans, which are maintained by the Sussex County DEM:

- Sussex County Emergency Operations Plan
- Sussex County Emergency Operations Plan, Mass Sheltering Plan Annex

#### Support Agencies for Socially Vulnerable Populations

Sussex County and partnering agencies offer assistance to socially vulnerable populations and underserved communities. The list below identifies relevant programs and agencies (Sussex County n.d.).

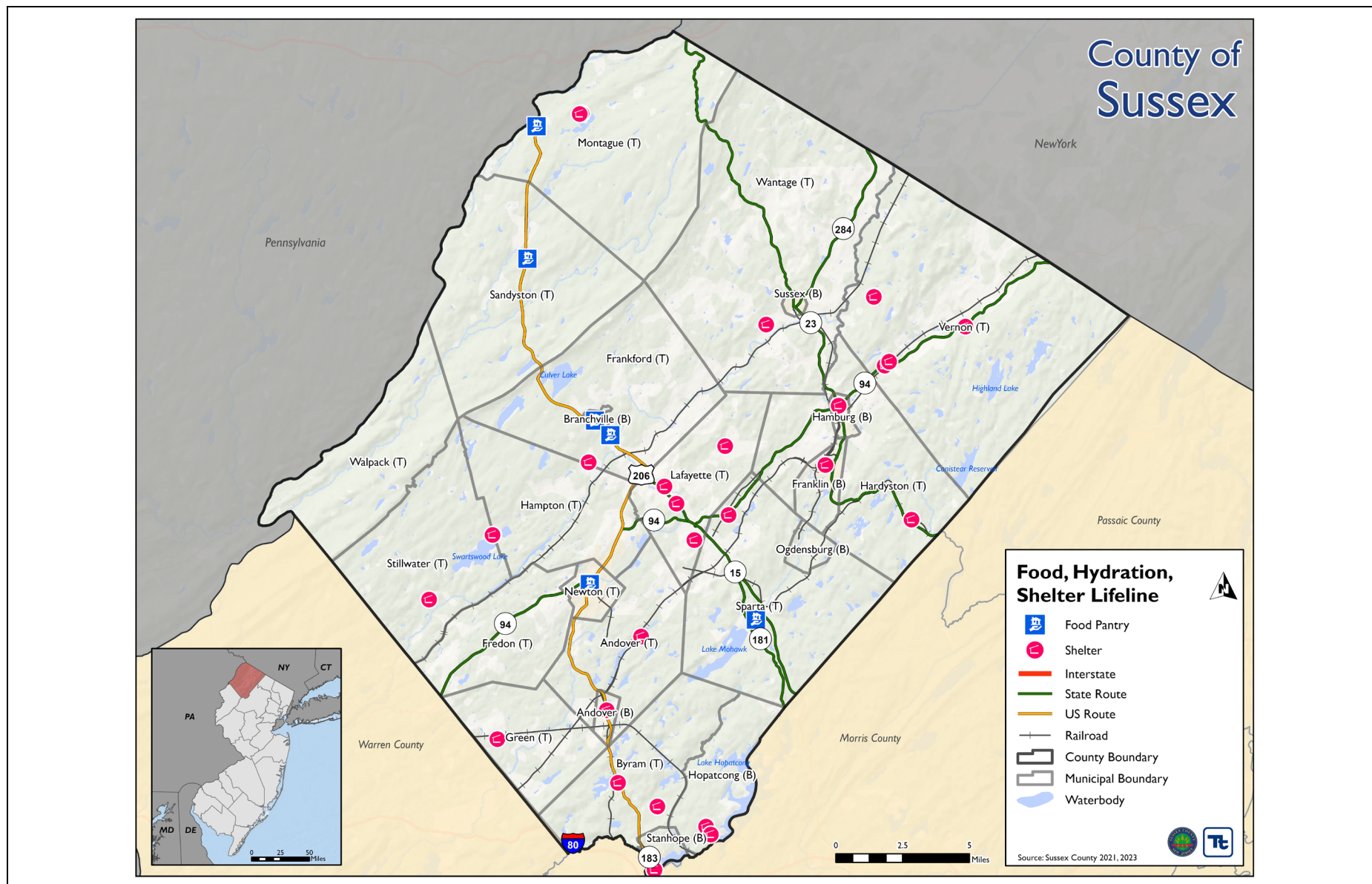
- Adult Protective Services
- Advance Housing, Inc.
- AMTRAK - Office of AMTRAK Access
- Assisted Transportation
- Assurance Wireless
- Birth Haven
- Bridgeway Rehabilitation Services
- Bridging Health & Human Services
- Byram Senior Transportation
- Capitol Care
- Catastrophic Illness in Children Relief Fund
- Catholic Charities – SSVF (Supportive Service for Veteran Families)
- Family Partners of Morris/Sussex
- Family Promise of Sussex County
- Food Bank
- Ginnie's House, Sussex County Children's Advocacy Center
- Greyhound Customers with Disabilities Travel Assistance Line
- Hopatcong Senior Transportation
- Hope and Serenity Recovery Community Center
- Intensive Family Support Services of Sussex County
- KEEP, Inc.
- Kinship Navigator/Kinship Care
- Legal Services of New Jersey
- Legal Services of New Jersey Hotline
- Office of Special Education Programs
- Pass it Along
- Pathstone Senior Community Service Employment Program
- Pathways 2 Prosperity
- People Help of Sussex County
- PerformCare
- Project Child Find
- Project Self-Sufficiency
- Residential Recovery Program
- Safe Haven
- Samaritan Inn, Inc.
- SEPTA (Pennsylvania)



- Center for Evaluation and Counseling
- Center for Prevention & Counseling
- Child & Family Resource Services
- Community Health Law Project - North Jersey Office
- Community Hope
- Community Justice Center
- Court Appointed Special Advocate (CASA)
- DASI - Domestic Violence & Sexual Assault Services
- DASI Cell Phone Program
- DASI Safe House
- DAWN Center for Independent Living (Denville)
- Daytop New Jersey
- Department of Community Affairs, Workforce 55+ Senior Citizen
- Department of Health (Division of HIV, STD and TB Services)
- Department of Health (Office of Minority and Multicultural Health)
- Division of Aging Services (PAAD & Senior Gold)
- Division of Child Protection and Permanency (formerly DYFS)
- Division of Family Health Services
- Division of Housing and Community Resources
- Division of Housing and Community Resources - Local Homeless Prevention
- Division on Civil Rights
- Early Head Start
- Energy Assistance Programs
- Equal Employment Opportunity Commission (EEOC)
- Family Intervention Services - A division of Center for Family Services
- Legal Services of Northwest Jersey
- LogistiCare Complaint Line
- LogistiCare Medicaid Transportation Services
- LogistiCare Where's my ride line
- Medicare.Gov
- Morris/Sussex/Warren Employment & Training Services
- MTA - New York (Accessible Transportation)
- NAMI-Sussex
- National Academy of Elder Law Attorneys, Inc.
- New Jersey Child Care Helpline
- New Jersey Higher Education Student Assistance Authority
- New Jersey Housing and Mortgage Finance Agency
- New Jersey Housing Resource Center
- New Jersey State Bar Association
- New Jersey State Parent Information & Resource Center
- New Jersey Task Force on Child Abuse and Neglect
- New Jersey's Specialized Child Study Team
- NewBridge Services
- Newton Medical Center
- Newton Medical Center Behavioral Health
- Newton Senior Shuttle
- NJ Find a Ride
- NJ Parent Link
- NJ TRANSIT
- NJ Transit Reduced Fare Program
- Skylands Ride
- Social Security Administration
- Sparta Senior Transportation
- Special Child Health Services,
- Special Supplemental Nutrition Program for Women, Infants and Children (WIC)
- Summit Oaks Hospital
- Sussex County Division of Senior Services
- Sussex County Office of the Public Defender
- Sussex County Probation Department
- Sussex County Prosecutor's Office
- Sussex County Public Health Nursing
- Sussex County Recovery Community Center
- Sussex County Surrogate
- Sussex Division of Social Services
- Today's Choice Pregnancy Resource Center
- United Way of Northern New Jersey
- U.S. Department of Justice, Civil Rights Division
- Veterans & Veteran Family Services
- Weatherization Assistance Program
- Women, Infants and Children Program - WIC
- YMCA
- Youth Advocate Program (YAP)
- Zufall Health Center



Figure 3-15. Food, Hydration, and Shelter Community Lifelines in Sussex County





### 3.8.3 Health and Medical

Sussex County has a dynamic health care industry that includes hospitals, adult day care centers, and long-term care facilities. The two major health centers in the County are Newton Memorial Hospital in the Town of Newton and Saint Claire's Hospital in Sussex Borough. Figure 3-16 shows the location of health and medical facilities. Table 3-16 lists the number of each facility type.

Table 3-16. Sussex County Health and Medical Community Lifelines

Facility Type	Number of Facilities
EMS	21
Medical Center	8
<b>Total</b>	<b>29</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

### 3.8.4 Energy

Jersey Central Power & Light is the primary electric and gas utility company in Sussex County. Sussex Rural Electric Cooperative also provides electric to many of the communities. A portion of the Susquehanna-Roseland line, owned by Public Service Electric & Gas, runs through Fredon, Andover Township, Byram, and Hopatcong in southern Sussex County. Figure 3-17 shows the location of energy facilities. Table 3-17 lists the number of each facility type.

Table 3-17. Sussex County Energy Community Lifelines

Facility Type	Number of Facilities
Fuel	3
Public Solar Facility	41
Substation	9
<b>Total</b>	<b>53</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

### 3.8.5 Communications

Figure 3-18 shows the location of communications facilities. Table 3-18 lists the number of each facility type.

Table 3-18. Sussex County Communication Community Lifelines

Facility Type	Number of Facilities
Communication Facility	5
Radio Tower	3
<b>Total</b>	<b>8</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*





Figure 3-16. Health and Medical Community Lifelines in Sussex County

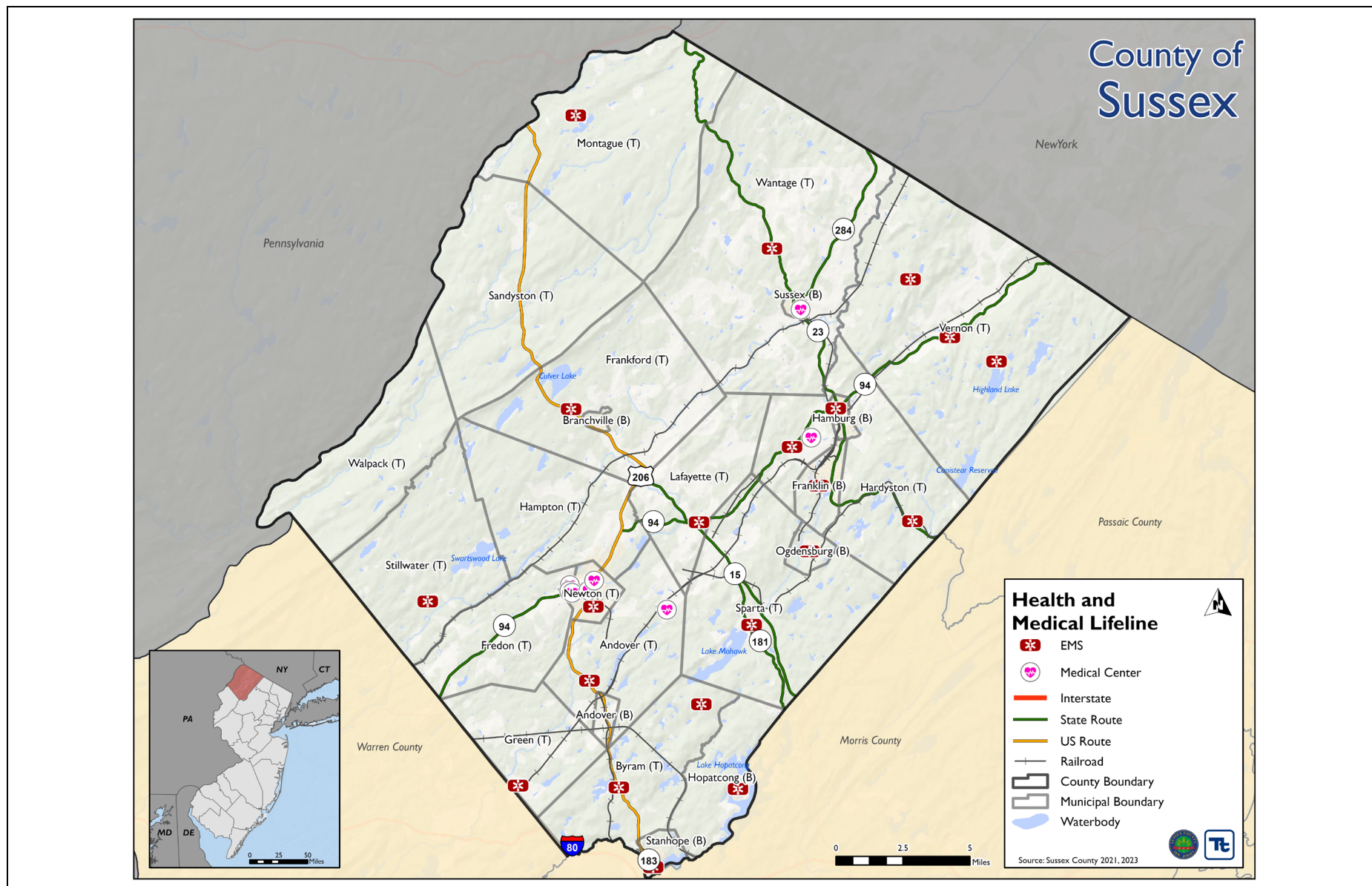






Figure 3-17. Energy Community Lifelines in Sussex County

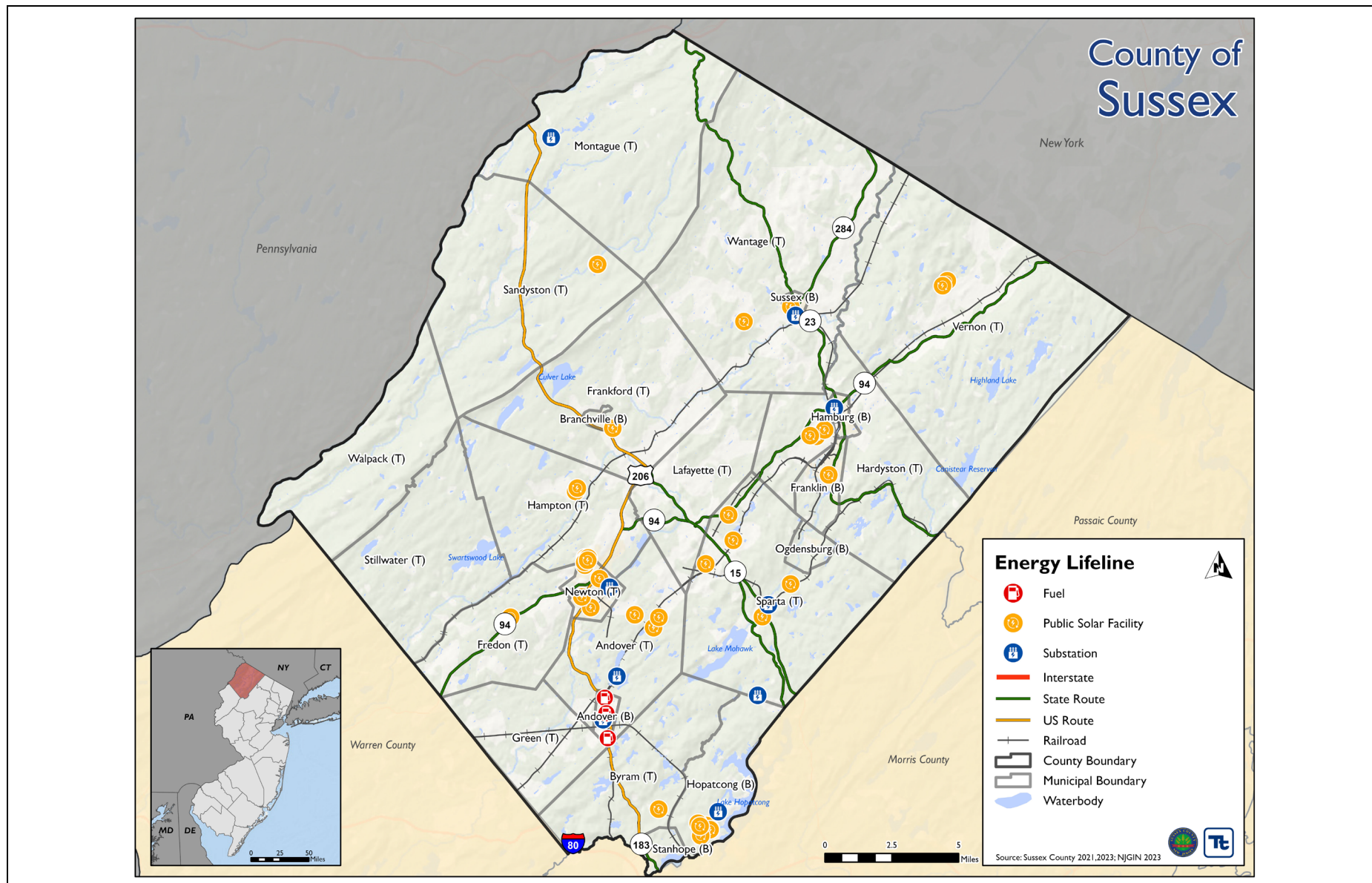
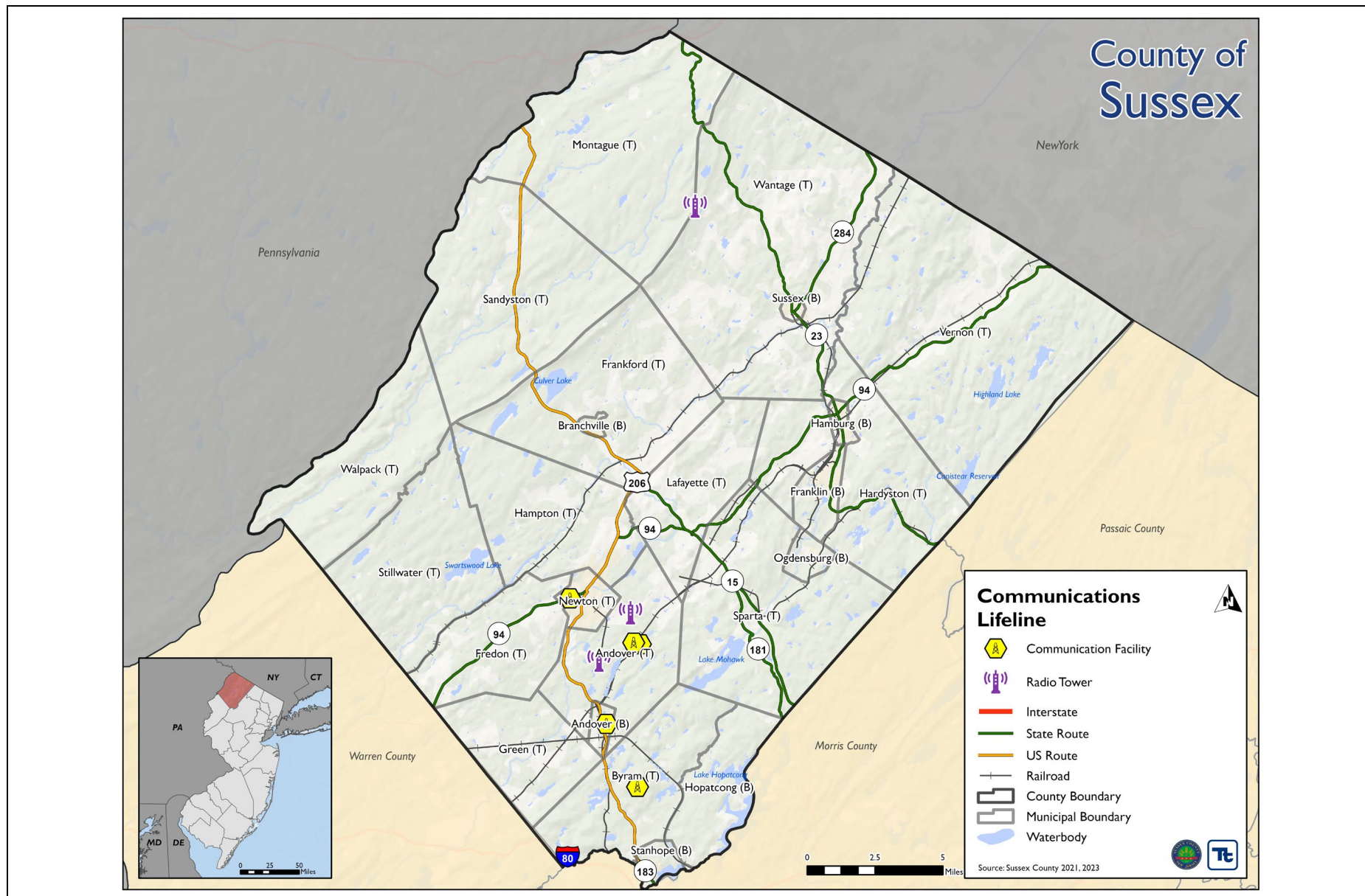




Figure 3-18. Communications Community Lifelines in Sussex County





## Emergency Warnings and Responder Communications

Sussex County DEM operates an emergency operations center in the Borough of Branchville, which is a specially designed facility where public organizations and private-sector agencies meet to decide and coordinate emergency response to community-wide disasters. Additionally, the Sheriff's Department operates a 24-hour 9-1-1 center. The communications center provides regular dispatch services for the sheriff's office and serves as a public-safety answering point for enhanced 911 calls. The center serves 13 municipalities with 911 answering/emergency dispatch service.

## Communications

Sussex County is served by a variety of communications systems, including traditional land line, fiber optic, and cellular service provided by multiple companies, such as Verizon, Direct TV, Comcast, and AT&T. Each carrier has individual plans for emergency situations during hazard events and post-disaster recovery efforts. Sussex County has an extensive radio communications network that is utilized by emergency services agencies, hospitals, law enforcement, public works, transportation, and other supporting organizations.

### 3.8.6 Transportation

Figure 3-19 shows the location of transportation facilities in Sussex County. Table 3-19 lists the number of each facility type. In 2020, an estimated 11.9 million tons of domestic freight moved into, out of, or within Sussex County, by all modes of transportation (truck, rail, pipeline, water, and air). For domestic freight traveling to, from, or within Sussex County, 97 percent travels by truck, 2 percent by rail, and 1 percent by other modes (NJTPA 2020).

Table 3-19. Sussex County Transportation Community Lifelines

Facility Type	Number of Facilities
Airport	2
<b>Total</b>	<b>2</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

## Highway, Roadways, and Associated Systems

Interstate 80, State Routes (SR) 15, 23, 94, 181, and 284, and U.S. Route 206 are all major highways in Sussex County. Heavily traversed County roads include County Routes (CR) 605, 607, 611, 613, 616, 617, 620, 622, 629, 650, 661, and 669. Many of the County roads connect to state or U.S. routes, including CR 602 to U.S. 206, CR 616 to SR 94, CR 661 to SR 15, and CR 650 to SR 23 (NJ DOT 2017).

There are 1,417 miles of roadway in Sussex County—911 miles are maintained by local municipalities, 311 miles are maintained by Sussex County, 111 miles are maintained by the New Jersey Department of Transportation, 70 miles are maintained by a state or local park services, and 13 miles are maintained by a federal agency. The County Division of Public Works Office of Roads is responsible for the county-owned highways (NJ DOT 2022).

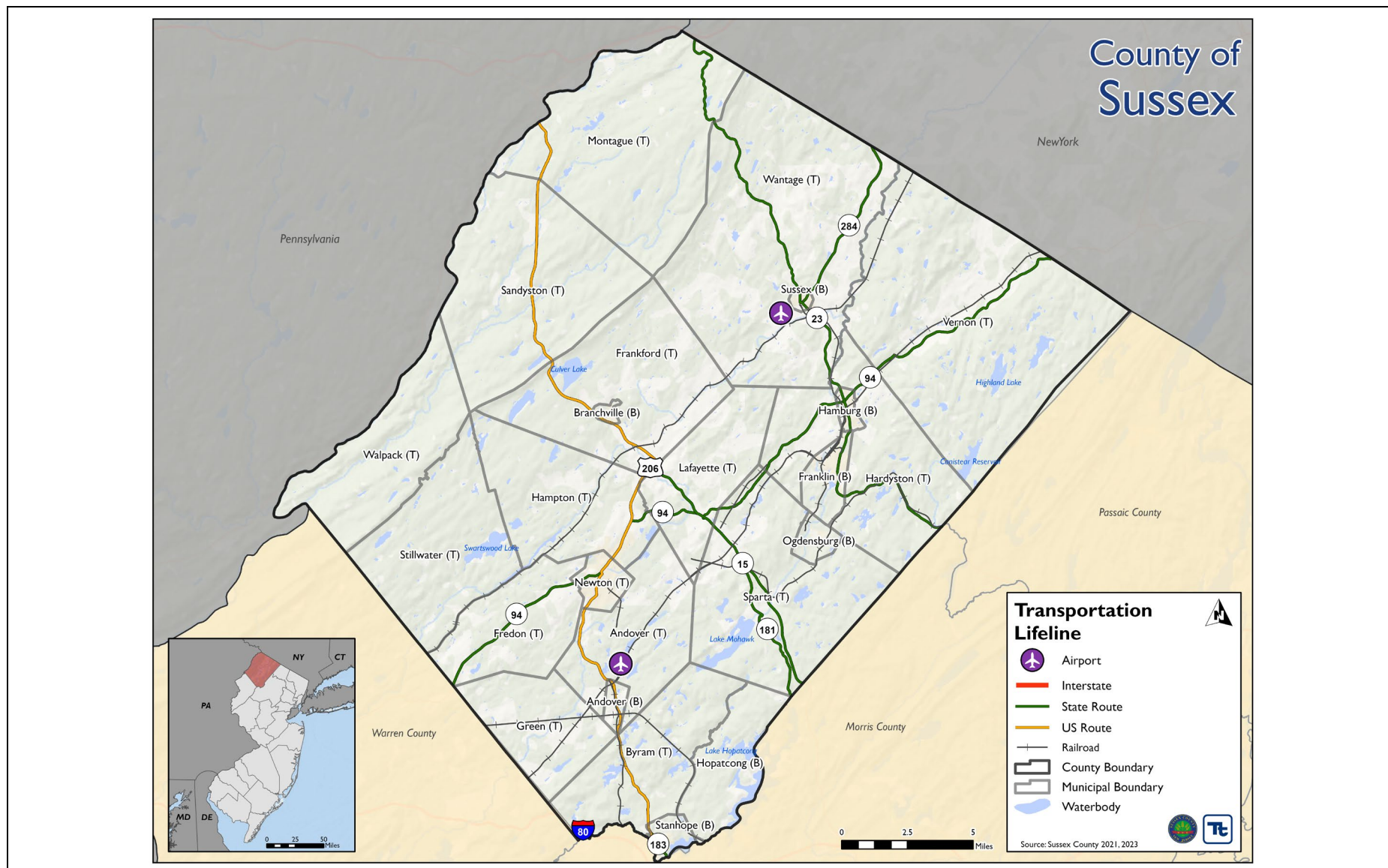
## Evacuation Routes

The County has identified evacuation routes for severe weather and can assist with the coordination and communication of evacuation routing as necessitated by the execution of local emergency operation plans.





Figure 3-19. Transportation Community Lifelines in Sussex County





## Bus and Other Transit Facilities

Transportation services provided by the County are offered through the Sussex County Skylands Ride program. Skylands Ride provides deviated fixed route, demand response, and assisted transportation services, as described below (Sussex County 2021, Sussex County n.d.):

- Assisted transportation
  - Target population is senior citizens ages 60 and over
  - Transportation services available Monday through Friday in Sussex County
  - Services include medical transportation, shopping and vital errands for seniors who require a higher level of assistance and meet eligibility criteria
- Employment transportation
  - Demand-response bus service to and from work, training and post-secondary education for the general public including senior citizens and people with disabilities
  - Alternative for all commuters not served by regularly scheduled public transit
  - In-County trips
  - Monday – Friday, 5:30 a.m. – 6 p.m.
  - Fully accessible fleet, all lift-equipped
- Veterans
  - Service available Thursdays, excluding County holidays
  - Trips provided for medical appointments to out-of-county Veterans Administration facilities (East Orange, Morristown and Lyons, NJ, Castle Point, NY) and state veteran services offices
  - Available to Sussex County veterans with a minimum of 90 days of active U. S. military service
  - Fully accessible fleet, all lift-equipped
- Hardyston and Vernon paratransit service
  - Service available Monday – Friday, excluding County holidays
  - Service area includes intra-county, and out-of-county
  - Target populations are senior citizens age 60+ and persons with disabilities of any age
  - Trip destinations include senior center and nutrition sites, shopping, medical appointments, community services, and other local errands
  - Fully accessible fleet, all lift-equipped

## Railroad Facilities

Passenger rail service does not enter Sussex County; residents travel to Morris and Warren Counties to use rail service. However, the Lackawanna Cut-Off, formerly a portion of the Delaware, Lackawanna, and Western Railroad system, is being restored to provide passenger rail service between Port Morris Junction (Roxbury Township, Morris County) and Andover Township (USDOT, NJ TRANSIT, USACE 2008). The County maintains a freight rail that is operated by regional and short line railroads.





## Airports

There are two airports in Sussex County. The Aero-Flex Airport is owned by the New Jersey Forest Fire Service as a base for aerial firefighting. The Sussex Airport is a small public use airport, which can be used for private events, skydiving activities, or operational procedures.

### 3.8.7 Hazardous Materials

Figure 3-20 shows the location of hazardous material facilities. Table 3-20 lists the number of each facility type.

Table 3-20. Sussex County Hazardous Materials Community Lifelines

Facility Type	Number of Facilities
Hazardous Material Facility	21
Solid Hazardous Waste Facility	6
<b>Total</b>	<b>27</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

## Hazardous Materials Facilities

Abandoned hazardous waste sites on the U.S. Environmental Protection Agency's (EPA's) National Priorities List (NPL) are those that the EPA has determined present "a significant risk to human health or the environment." These sites are eligible for remediation under the Superfund Trust Fund Program. Superfund sites are polluted locations requiring a long-term response to clean up hazardous material contaminations. The EPA's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) reports that Sussex County has 10 Superfund sites. Three of these are on the NPL, located in Sparta Township, Byram Township, and Franklin Borough (EPA 2023, CERCLIS 2021).

The biennial EPA Hazardous Waste Report collects data on the generation, management, and minimization of hazardous waste. This report details data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage, and disposal facilities. The 2021 biennial report lists seven facilities in Sussex County (EPA 2023).

## Nuclear Facilities

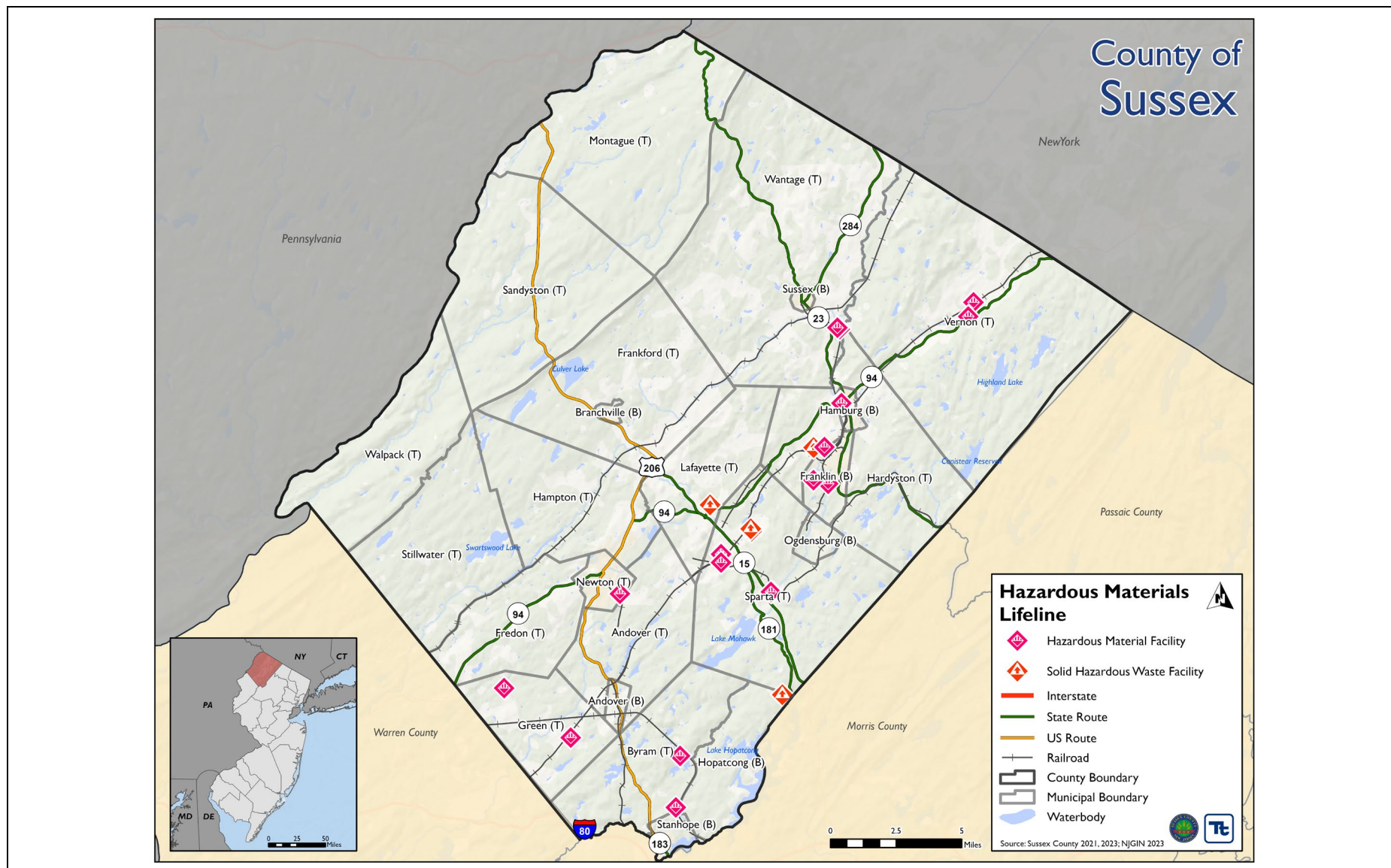
Although there are no nuclear facilities within Sussex County limits, the County is within 50 miles of Indian Point Energy Center, located in Buchanan, New York. Indian Point Energy Center provided about 25 percent of the power for New York City and Westchester County in the State of New York before it permanently stopped generating electricity on April 30, 2021 (U.S. EIA 2021).

## Hazardous Substances In-Transit

Incidents involving hazardous substances in transit can occur anywhere in Sussex County. Major highways in the County over which hazardous materials are transported daily include U.S. Route 206 and State Highway 15. A portion of Interstate 80 runs through and near the southern portion of the County. U.S. Route 209 runs parallel and close to the northwestern border of Sussex County although it does not enter County. Freight rail in Sussex County is operated by regional and short line railroads.



Figure 3-20. Hazardous Materials Community Lifelines in Sussex County





### 3.8.8 Water Systems

Figure 3-21 shows the location of water system facilities. Table 3-21 lists the number of each facility type.

Table 3-21. Sussex County Water System Community Lifelines

Facility Type	Number of Facilities
Potable Pump Station	10
Potable Water Treatment	2
Wastewater Pump	14
Wastewater Treatment	3
Water Tower	1
Well	13
<b>Total</b>	<b>43</b>

*Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.*

#### Potable Water

There are community water supply systems in Sussex County that serve municipalities, places with higher density development, and some lake communities. Twenty-one of the County's municipalities are partially or fully served by public water. The Townships of Lafayette, Sandyston, and Walpack do not have public water supply systems (Sussex County 2017).

Approximately 95 percent of Sussex County residents rely on groundwater for domestic water. It is pumped to residents from aquifers through private on-site wells, community wells, or municipal wells (Sussex County 2014). The following surface water bodies are used for potable water supply in Sussex County (Sussex County 2014):

- Morris Lake in Sparta Township – used by the Town of Newton
- Lake Rutherford in Wantage Township – used by the Borough of Sussex
- Branchville Reservoir in Frankford Township – used by the Borough of Branchville
- Franklin Pond in the Borough of Franklin – used by the Borough as an emergency water supply
- Lake Hopatcong – used as emergency water supply for several municipalities
- Canistear Reservoir in Vernon Township – located on the Newark water supply management lands
- Heaters Pond in Ogdensburg – used as an emergency water supply

#### Wastewater Facilities

The Sussex County Municipal Utilities Authority (SCMUA) operates the County's largest sewer treatment plant, located in Hardyston Township. The SCMUA also operates other wastewater facilities in the County, including the Hampton Commons facility in Hampton Township. The Town of Newton owns and operates its own wastewater treatment plant. The Musconetcong Sewer Authority owns and operates a wastewater treatment plant in Mount Olive (Morris County), which provides sewer service into Stanhope, Byram, and Hopatcong in Sussex County as well as portions of Morris County. Smaller treatment plants throughout the County serve schools and commercial and industrial sites. There are no combined sewers in Sussex County (Sussex County 2017). Table 3-22 lists the wastewater districts, franchise areas, and served municipalities





Figure 3-21. Water System Community Lifelines in Sussex County

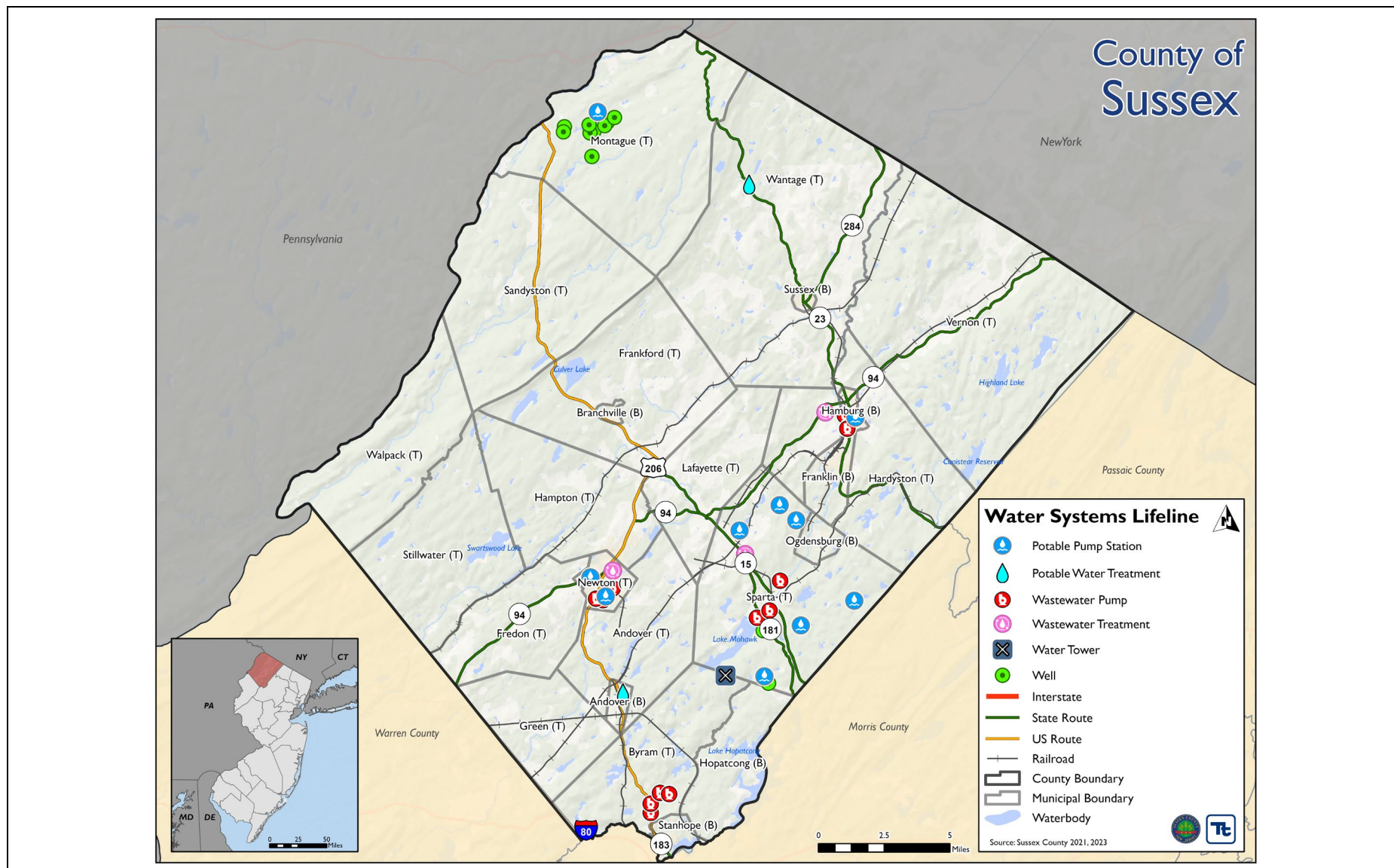






Table 3-22. Sussex County Wastewater Districts, Franchise Areas, and Served Municipalities

Wastewater Utility	Municipalities Served
Sussex County Municipal Utilities Authority	Andover Borough, Andover Twp., Branchville, Frankford, Franklin, Green, Hamburg, Hardyston, Lafayette, Montague, Ogdensburg, Sandyston, Sparta, Stillwater, Sussex, Vernon, Walpack, Wantage
Musconetcong Sewer Authority District	Byram, Hopatcong, Stanhope
Hardyston Township Municipal Utilities Authority	All of Hardyston Township, except Aqua NJ area
Town of Newton	Newton
Aqua NJ – Wallkill (owns Wallkill Sewer Company)	Portion of Hardyston Township
Andover Utility Company Inc.	Portion of Andover Township
Montague Sewer Company (owned by Utilities Inc.)	Portion of Montague
Vernon Township Municipal Utilities Authority	Portion of Vernon Township

Source: Sussex County 2017

### 3.8.9 Lifeline Distribution by Jurisdiction

Table 3-24 summarizes the inventory of all community lifelines in Sussex County by jurisdiction.

## 3.9 OTHER CRITICAL FACILITIES

Some facilities that are identified as critical for hazard mitigation in Sussex County do not fit in any of FEMA's community lifeline categories. These include senior centers and religious centers. Figure 3-22 shows the location in Sussex County of these other critical facilities. Table 3-23 lists the number of each facility type.

Table 3-23. Sussex County Other Critical Facilities

Facility Type	Number of Facilities
Senior Center	4
Religious Center	2
<b>Total</b>	<b>6</b>

Note: This table may not include all facilities in the County. Some facilities may have been missed in the data collection process.

Senior facilities are highly vulnerable to the potential impacts of disasters. Understanding the location and numbers of these types of facilities can help manage effective response post-disaster. There are four senior facilities located in the inventory for the risk assessment. Adult care and long-term care facilities are located in Andover Borough, Andover Township, Hampton Township, Hopatcong Borough, Newton Town, and Sparta Township.



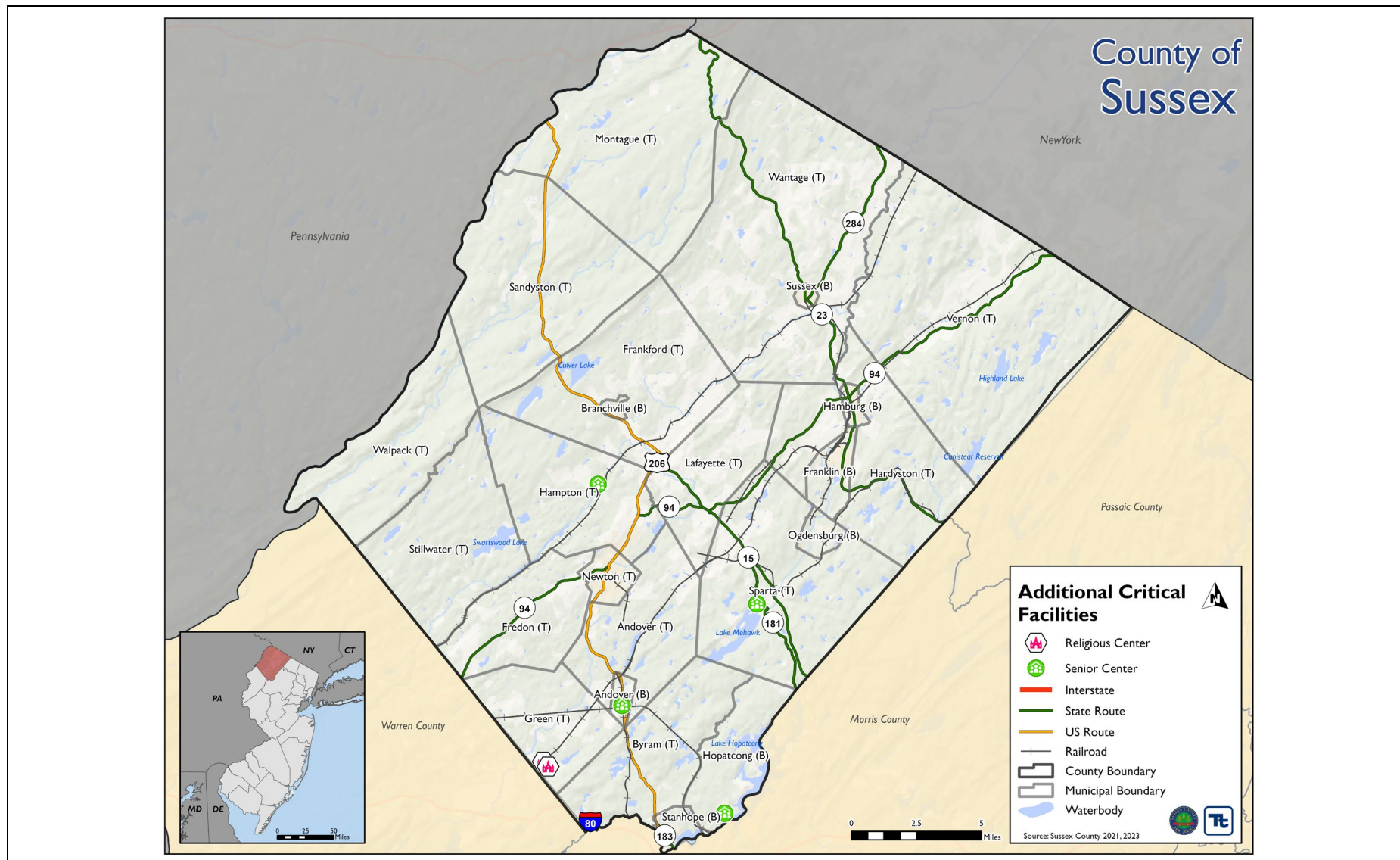
Table 3-24. Number of Critical Facilities in Sussex County, by Jurisdiction

	Number of Facilities in Jurisdiction									
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Total
Andover (B)	1	4	1	0	0	3	0	1	1	11
Andover (T)	4	4	1	0	2	24	1	0	0	36
Branchville (B)	0	0	1	0	0	3	0	0	0	4
Byram (T)	1	1	3	2	2	24	0	7	0	40
Frankford (T)	0	1	2	0	1	19	0	0	0	23
Franklin (B)	0	1	1	2	1	6	0	0	0	11
Fredon (T)	0	1	0	0	0	16	0	0	0	17
Green (T)	0	0	1	2	1	15	0	0	2	21
Hamburg (B)	0	1	1	4	1	8	0	4	0	19
Hampton (T)	0	6	0	0	0	18	0	0	1	25
Hardyston (T)	0	3	1	3	3	22	0	1	0	33
Hopatcong (B)	0	8	2	1	1	17	0	0	1	30
Lafayette (T)	0	0	4	1	1	9	0	0	0	15
Montague (T)	0	1	3	0	1	17	0	10	0	32
Newton (T)	1	8	3	1	6	22	0	6	0	47
Ogdensburg (B)	0	0	0	0	1	6	0	0	0	7
Sandyston (T)	0	2	1	0	0	22	0	0	0	25
Sparta (T)	0	7	2	7	1	52	0	13	1	83
Stanhope (B)	0	0	1	0	1	5	0	0	0	7
Stillwater (T)	0	0	3	0	1	18	0	0	0	22
Sussex (B)	0	2	0	0	1	6	0	0	0	9
Vernon (T)	0	2	4	2	3	62	0	0	0	73
Walpack (T)	0	0	0	0	0	5	0	0	0	5
Wantage (T)	1	1	1	2	1	22	1	1	0	30
Sussex County (Total)	8	53	36	27	29	421	2	43	6	625

Source: NJGIN 2023; Sussex County 2021, 2023



Figure 3-22. Other Critical Facilities in Sussex County





## 3.10 NATURAL, HISTORIC AND CULTURAL RESOURCES

### 3.10.1 Natural Resources

Sussex County created a Natural Resources Inventory (NRI) in 2014 as part of its Strategic Growth Plan and Open Space and Recreation Plan. The NRI addresses various natural resources, including geology, water, land use, endangered species, and topography.

#### Natural Heritage Priority Sites

There are 77 Natural Heritage Priority Sites in Sussex County, about 20 percent of the total sites in the state. The sites in Sussex County are among the largest geographically, indicating the extent to which the county's natural communities are still intact. Sussex County has six large Natural Heritage Priority Sites (Sussex County 2014):

- The Kittatinny Mountain Macrosite and High Point Macrosite occur along the Kittatinny Ridge and are largely contained in already preserved lands.
- The Wallkill River Macrosite, much of which falls within preserved lands, and the adjacent Papakating Creek, an unpreserved region, fall in the central valley.
- Wawayanda Macrosite and the adjoining Bearfort Mountain Macrosite are located in northeastern Sussex County in the Highlands. These sites are partly contained in already preserved areas and watershed lands.

The state has given each priority site a biodiversity ranking from B1 to B5, indicating the relative importance of that area. Table 3-25 defines each biodiversity ranking and indicates the number of Natural Heritage Priority Sites in Sussex County with each ranking (Sussex County 2014).

Table 3-25. Biodiversity Rank Definition of Rank Number in Sussex

Rank	Rank Description	Number of Sites
B1	Outstanding significance, such as the only known occurrence of a species or ecological community, the best or an excellent occurrence of a globally critically imperiled species or community, or a concentration of four or more good or excellent occurrences of a globally critically imperiled species or community	2
B2	Very high significance, most outstanding occurrence of something	6
B3	High significance, viable occurrence of globally imperiled community	17
B4	Moderate significance, viable occurrence of globally rare community	36
B5	Of general biodiversity interest	16
<b>Total</b>		<b>77</b>

Source: Sussex County 2014

There is one large area of the highest-ranking critical forest habitat for federal threatened and endangered species. This area is located in the eastern region of Sparta and the southern region of Hardyston. Much of this region is encompassed by Sparta Mountain Wildlife Management Area, the Wallkill River Preserve and Weldon Brook Wildlife Management Area (Sussex County 2014).





The second highest ranking critical forest habitat for state endangered species encompasses a large portion of the county. The largest area of this ranking runs in a large swathe along the Kittatinny Ridge and falls within the Delaware Gap National Recreation Area, High Point State Park, Stokes State Forest, Flatbrook Wildlife Management Area, and Walpack Wildlife Management Area. Another area of this ranking is located in eastern Vernon and Hardyston, parts of which are included within Wawayanda State Park and Hamburg Mountain Wildlife Management Area. A third area of critical habitat for state endangered species is located at the southern tip of the county, centered around Byram. A fourth area is located in western Vernon Township near the Walkill River National Wildlife Refuge. Other smaller areas of this ranking are scattered through the Kittatinny Valley in central Sussex County (Sussex County 2014).

### Other Sussex County Natural Resources

Below are a number of additional natural resources in (Sussex County 2014):

- Lakes, rivers, ponds and reservoirs account for 12,827 acres of the county. Most of Sussex County's lakes serve recreational purposes.
- Approximately 95 percent of Sussex County residents rely on groundwater for consumption.
- Sussex County had 194,259 acres in upland forest; this amounts to 57 percent of the County's land area.
- Wetlands total 47,670 acres, or 14 percent of the County land area. Of this, 30,744 acres, or 9 percent of the County, is forested wetland, and 16,926 acres, or 5 percent of the County, is other wetland such as herbaceous wetland, disturbed wetland, or agricultural wetland.

### 3.10.2 Historic and Cultural Resources

Throughout Sussex County, numerous state and federally listed historic sites pay visual tribute to the County's rich cultural heritage. In addition to sites currently on the state and national registers, many more have been made eligible for listing, but have not yet been listed. To be eligible for listing on the state and national register a site must meet several "criteria for significance in American history, archeology, architecture, engineering or culture, and possessing integrity of location, design, setting, materials, workmanship, feeling and association".

Historic sites in Sussex County range from barns to cabins to archeological sites to schoolhouses to the Morris Canal. There are 36 state or federally registered historic sites and districts across 14 of the County's 24 municipalities. An additional 58 sites in the County have been deemed eligible for listing but are not currently on the state or federal register. Only three municipalities—Branchville Borough, Hampton Township, and Lafayette Township—contain no properties on the register or eligible for listing.