



3. COUNTY PROFILE

The planning area for this HMP is the entirety of Passaic County. This chapter presents general information about the land, people, and assets of Passaic 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

Passaic County covers 197 square miles in northeastern New Jersey, as shown in Figure 3-1. The County is bordered to the north by New York State, to the south by Essex and Morris Counties, to the east by Bergen County, and to the west by Sussex County. The County's shape divides it into northern and southern sections. The northern section is older suburban and rural to semi-rural, entirely in the Highlands Preservation and Planning Areas, with scenic vistas and environmentally sensitive forested areas surrounding reservoirs. Southern Passaic County is suburban and urban and includes the Cities of Passaic, Clifton, and Paterson. The County is in the U.S. Census-defined New York-New Jersey Metropolitan Statistical Area.

3.2 HISTORY

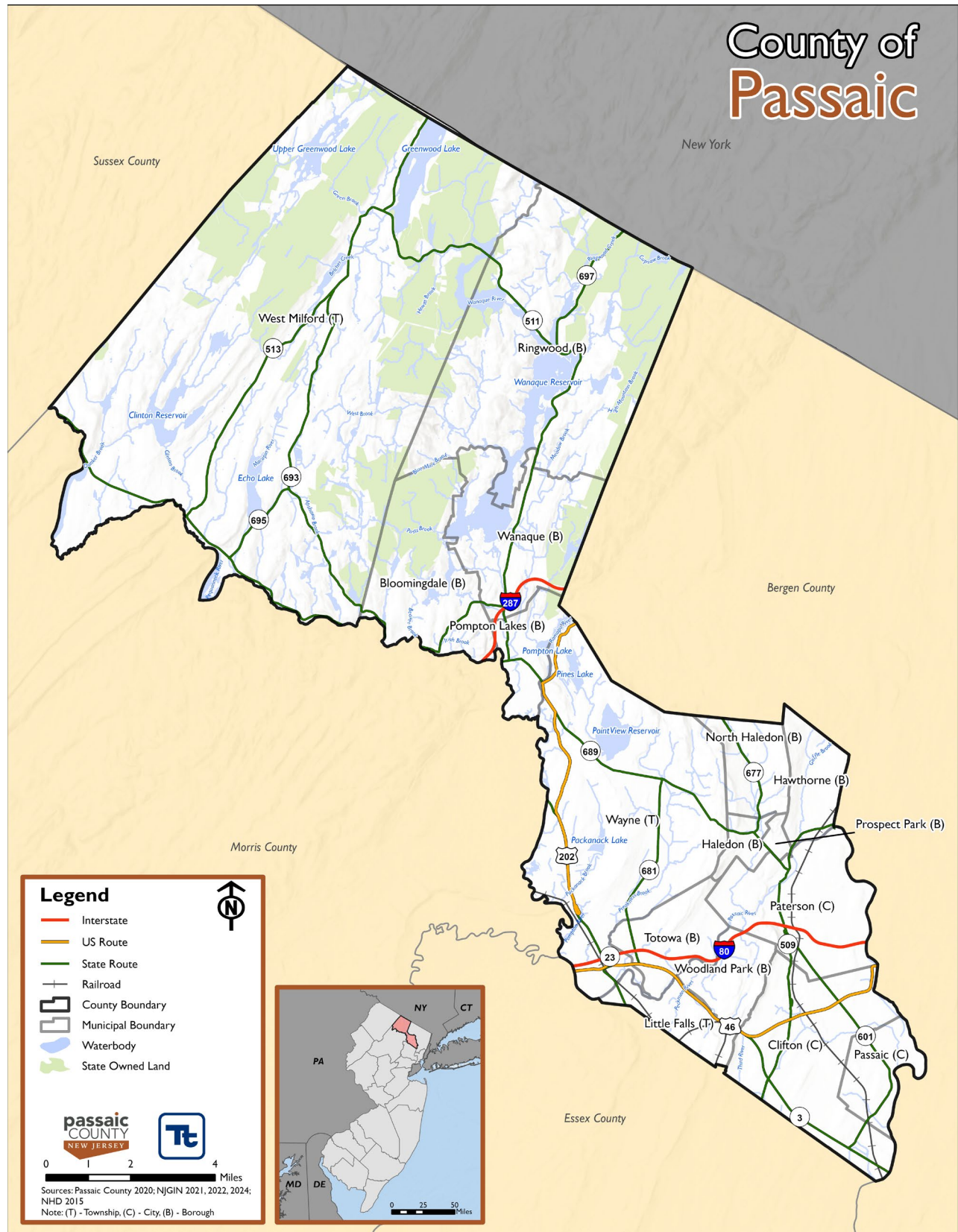
Prior to European settlement, Passaic County was home to the Lenni Lenape tribe for thousands of years (Scott 1929). Dutch settlers began arriving in the late 1700s, gradually purchasing land from the Lenape and establishing fur trading posts along the Passaic River (Britannica 2024). The Passaic River has been key to the growth and success of the region, providing fresh water for residents and agriculture, facilitating trade and commerce, and powering mills and other industry. The river's energy was first harnessed in the late eighteenth century with construction of the Great Falls Raceway and Power System (ASCE n.d.).

Passaic County was formed in 1837 from sections of Bergen and Essex Counties. The County grew steadily in population and economic activity through the mid-nineteenth century. Completion of the Dundee Dam and Dundee Canal in 1861 marked a shift in the County's growth. These structures enabled the provision of significantly more fresh water, which served as the launching pad for an industrial boom, primarily for wool and cotton mills, and a tenfold population increase by World War I (Auerbach 1998). Textile mills and factories became the backbone of the County's local economy, drawing in immigrants from all over the world. Between 1880 and 1910, Passaic County's population grew from 6,500 to nearly 55,000, largely due to mass immigration from Hungary, Slovakia, Poland, and other European countries (Britannica 2024). By the 1920s, Passaic County's population had grown to about 70,000 (Auerbach 1998). To accommodate the growth, residential development intensified along the Passaic River, particularly in the City of Passaic.

Industry and manufacturing allowed Passaic County to steadily grow through World War II and afterward. By the 1970s, however, recessions and energy crises led to the loss of manufacturing jobs. Between 1969 and 1975, the number of manufacturing jobs in New Jersey fell from 900,000 to 700,000 (Sullivan 1981). Despite numerous urban renewal and revitalization efforts, Passaic County was unable to reverse the decline caused by the eroding industrial base. Between 1970 and 1980, the County's population fell nearly 3 percent. This trend was reversed by a new influx of immigrants, primarily from Central and South America. The County's population has continued to grow, recording population highs in each of the 2000, 2010, and 2020 decennial census counts.



Figure 3-1. Passaic County 2025 HMP Planning Area





3.3 JURISDICTIONS WITHIN THE COUNTY

Passaic County contains 16 incorporated boroughs (B), cities (C), and townships (T):

- Bloomingdale (B)
- Clifton (C)
- Haledon (B)
- Hawthorne (B)
- Little Falls (T)
- North Haledon (B)
- Passaic (C)
- Paterson (C)
- Pompton Lakes (B)
- Prospect Park (B)
- Ringwood (B)
- Totowa (B)
- Wanaque (B)
- Wayne (T)
- West Milford (T)
- Woodland Park (B)

The boundaries of these municipalities are shown in Figure 3-1.

3.4 PHYSICAL SETTING

3.4.1 Water Resources

Surface Water Bodies

Numerous ponds, lakes, creeks, and rivers make up the waterscape of Passaic County. The major waterways within the County include Upper Greenwood Lake, Greenwood Lake, Clinton Reservoir, Echo Lake, Monksville Reservoir, the Wanaque River, Wanaque Reservoir, Lake Isoco, Pompton Lake, Point View Reservoir, the Passaic River, the Pompton River, the Peckman River, and the Third River. The reservoirs in northern Passaic County provide drinking water to nearly 4 million residents in New Jersey's urban core, roughly half of the state's population (Passaic County Department of Planning and Economic Development 2013).

The Pompton and Pequannock Rivers create the border between Passaic and Morris Counties. The Passaic River forms the border between Bergen and Passaic Counties.

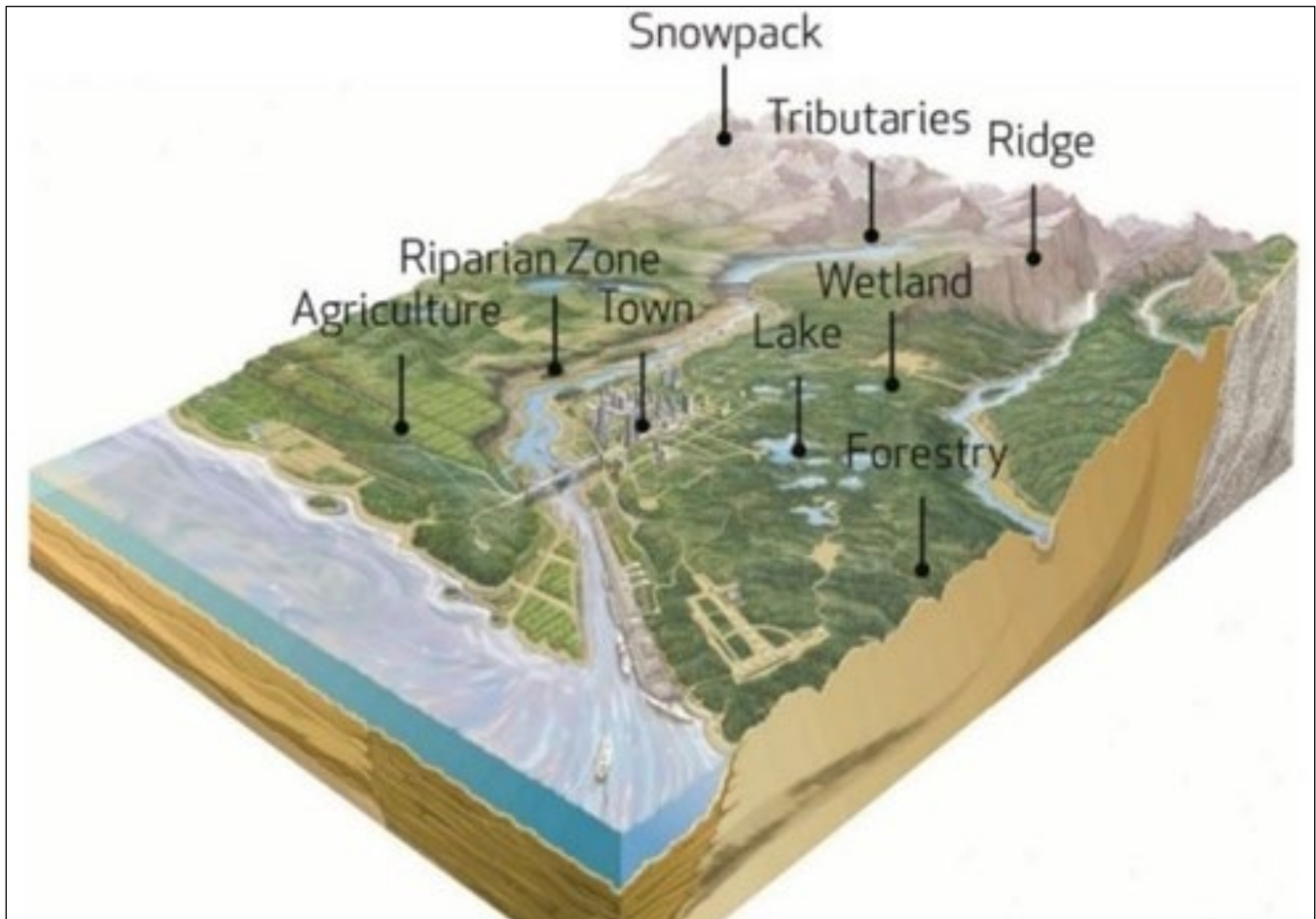
Watersheds

As shown in Figure 3-2, 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 in the area such as hills or slopes. It includes not only the waterway itself but also the entire land area that drains to it. Drainage basins generally refer to large watersheds that encompass the watersheds of many smaller rivers and streams.

Passaic River Basin

The Passaic River is the second largest and the longest river in New Jersey, with a main stem approximately 80 miles long. The Passaic River Basin is about 935 square miles and covers seven New Jersey counties and two New York State counties. The major tributaries of the Passaic River Basin include the Whippany, Rockaway, Pequannock, Wanaque, Ramapo, Pompton, Saddle, Third, and Second Rivers. The Passaic River flows from its source in Mendham Township (Morris County) through the Great Swamp National Wildlife Refuge and then turns northeast. In the City of Paterson (Passaic County), the river plunges over the Great Falls and then flows south into Newark Bay and ultimately the Atlantic Ocean (Passaic River Institute 2014).

Figure 3-2. Watershed Hydrological System



Source: *State of New Jersey All-Hazard Mitigation Plan 2024*

The Passaic River Basin covers 1,134 square miles and receives an average of 50.08 inches of rain each year. The basin has three distinct geophysical regions: the Highlands, where most of the major tributaries originate; the Central Basin, where approximately 27,000 acres of freshwater wetlands exist; and the Lower Valley, which defines the stretch of river from Little Falls to Newark Bay.

The upper section of the river is nearly 50 miles long and drains about 200 square miles. About half of this section is undeveloped and the other portion is mainly suburban residential and commercial. This section of the Passaic River and its tributaries (Pequannock, Rockaway, Wanaque, Ramapo, and Pompton Rivers) are a source of drinking water for millions of northern New Jersey residents. Interconnected systems deliver water through the New Jersey District Water Supply Commission, serving 107 municipalities; the Passaic Valley Water Commission serving the Cities of Clifton, Paterson, and Passaic and numerous surrounding municipalities; and the New Jersey American Water Company, which serves 42 municipalities (Passaic River Institute 2014).

The Passaic River Basin has one of the most densely developed floodplains in the eastern U.S. It has a population density of 8,656 people per square mile with 2.5 million residents (50,000 living in the floodplain) and approximately 20,000 homes, businesses, and public buildings. The main stem of the Passaic River and its major tributaries have a 1 percent annual chance flood area that covers 60 square miles (Passaic County Department of Planning and Economic Development 2013).



New York-New Jersey Harbor Estuary

An estuary is a body of water where rivers meet the ocean and saltwater meets fresh water. The New York-New Jersey Harbor Estuary is positioned at the confluence of the Hudson River and smaller rivers such as the East, Hackensack, and Raritan Rivers. It opens into the New York Bight and Long Island Sound. The watershed of the Harbor Estuary encompasses a large area that includes the Hudson River watershed up to the Troy Dam, as well as the watersheds of the Raritan, Passaic, and Hackensack Rivers. Figure 3-3 shows the watershed boundary, identified on the map as the HEP (Harbor and Estuary Program) boundary. The map also shows a core area with the most direct drainage to the estuary. Passaic County is entirely in the estuary's overall watershed, and most of its southern portion is within the core area (NY-NJ Harbor & Estuary Program 2017).

Figure 3-3. New York-New Jersey Harbor Estuary



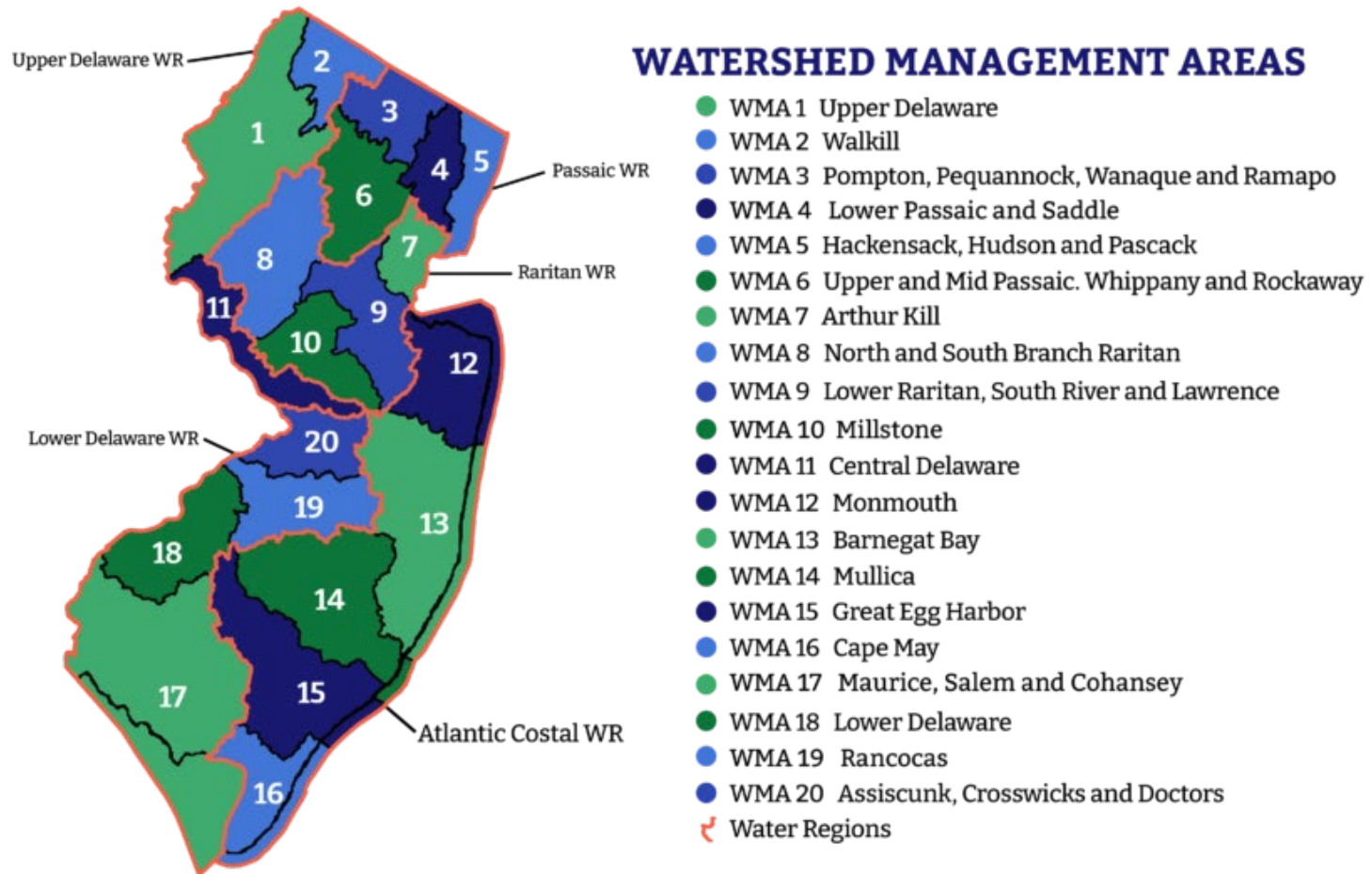
Source: (NY-NJ Harbor & Estuary Program 2017)

Watershed Management Areas

In New Jersey, the State is divided into 20 Watershed Management Areas (WMA), which are made up of smaller watersheds. As shown in Figure 3-4, Passaic County is located in three of the 20 WMAs: Wallkill (WMA 2); Pompton, Pequannock, Wanaque, Ramapo (WMA 3); and Lower Passaic, Saddle River (WMA 4). The following sections describe these three WMAs.



Figure 3-4. Watershed Management Areas in New Jersey



Source: (Cucinotta 2023)



Watershed Management Area 2: Walkkill River Watershed

Approximately 8 square miles (3.9 percent) of Passaic County is located in WMA 2. Only the Township of West Milford is located in this area. This WMA is known as the Walkkill River Watershed and includes 11 townships in Sussex County. The Walkkill River headwaters begin at Lake Mohawk in Sparta Township, and from there the river flows north into New York, eventually emptying into the Hudson River. Within WMA 2, there are four sub-watersheds: the Walkkill River, Pochuck Creek, Papakating Creek, and Rutgers Creek.

The Walkkill Watershed is 208 square miles in area and encompasses land uses including rural and centralized residential development along with agriculture, commercial, recreational, and industrial usage. Also located within this watershed area is the Walkkill National Wildlife Refuge. The refuge watershed/wetlands complex provides migratory and nesting habitats for numerous birds and waterfowl and is home to several endangered species.

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

Approximately 135 square miles (68.6 percent) of Passaic County is located in WMA 3. The Boroughs of Bloomingdale, Pompton Lakes, Ringwood, and Wanaque, and the Townships of Wayne and West Milford are all located within WMA 3. This WMA is located within the Highlands Province of New Jersey. The Pequannock, Wanaque, and Ramapo Rivers all flow into the Pompton River. The Pompton River is, in turn, a major tributary to the Upper Passaic River.

WMA 3 contains some of the state's major water supply reservoir systems, 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. WMA 3 lies mostly in Passaic County but also includes parts of Bergen, Morris, and Sussex Counties.

Watershed Management Area 4: Lower Passaic, Saddle River

Approximately 54 square miles (27.5 percent) of Passaic County is in WMA 4. The Cities of Clifton, Passaic, and Paterson, the Boroughs of Haledon, Hawthorne, North Haledon, Prospect Park, Totowa, and West Paterson, and the Townships of Little Falls and Wayne are all located within WMA 4. This WMA includes the Lower Passaic River (from the Pompton River confluence downstream to the Newark Bay) and its tributaries, including the Saddle River. The WMA 4 drainage area is approximately 180 square miles and lies within portions of Passaic, Essex, Hudson, Morris, and Bergen Counties.

Two watersheds comprise WMA 4: the Lower Passaic River Watershed and Saddle River Watershed. The Lower Passaic River Watershed originates from the confluence of the Pompton River downstream to Newark Bay. This 33-mile section meanders through Bergen, Hudson, Passaic, and Essex Counties and includes several falls, culminating with the Great Falls in Paterson. This watershed has a drainage area of approximately 129 square miles. The major tributaries to this section of the Passaic River are the Saddle River, Preakness Brook, Second River, and Third River. The Saddle River is one of the larger tributaries to the Lower Passaic River. The Saddle River Watershed has a drainage area of approximately 51 square miles. Land in this watershed is extensively developed and contains many older cities and industrial centers including Newark, Paterson, Clifton, and East Orange.



3.4.2 Topography and Geology

The name “Passaic” is derived from the Lenni Lenape word for valley, *pasaeck*. Northern Passaic County is generally characterized by long, even ridges that are separated by narrow, continuous valleys. This area of the county is part of the Appalachian Mountain chain, which extends from Newfoundland, Canada to central Alabama. The highest elevation in Passaic County is at Bearfort Ridge in West Milford, at 1,480 feet above sea level. The municipalities of West Milford, Ringwood, Bloomingdale, Wanaque, and Pompton Lakes are in northern Passaic County (Passaic County Planning Department 2014).

In the southern portion of the County, the terrain becomes progressively less variable, and valleys are wider toward the east. The last major ridge is Garret Mountain, which is over 500 feet tall and is the location of Garret Mountain Reservation and Rifle Camp Park. Garret Mountain is the northernmost part of First Watchung Mountain, which is one of several national natural landmarks in New Jersey. The lowest elevation of Passaic County is located to the east of Garret Mountain, along the Passaic River in the City of Clifton (Passaic County Planning Department 2014).

Passaic County is located within two of the four major physiographic regions of New Jersey:

- The Highlands Province occupies an area of approximately 980 square miles and lies within portions of Hunterdon, Morris, and Passaic Counties and small parts of Bergen and Somerset Counties. This mountainous belt is approximately 10 miles wide at the Delaware River and 25 miles wide near the New York State border. In general, this part of New Jersey has a rugged topography that consists of discontinuous rounded ridges separated by deep narrow valleys (Dalton 2003).
- The Piedmont Province has an area of approximately 1,600 square miles and makes up about one-fifth of New Jersey. It occupies all of Essex, Hudson and Union Counties, most of Bergen, Hunterdon, and Somerset Counties, and parts of Mercer, Middlesex, Morris, and Passaic Counties. The Piedmont Province is mainly underlain by slightly folded and faulted sedimentary rocks of the Triassic and Jurassic period and igneous rocks of the Jurassic period. The elevation of the Piedmont Province generally ranges from 300 to 400 feet above sea level, with the highest point at 914 feet on Barren Ridge (Dalton 2003).

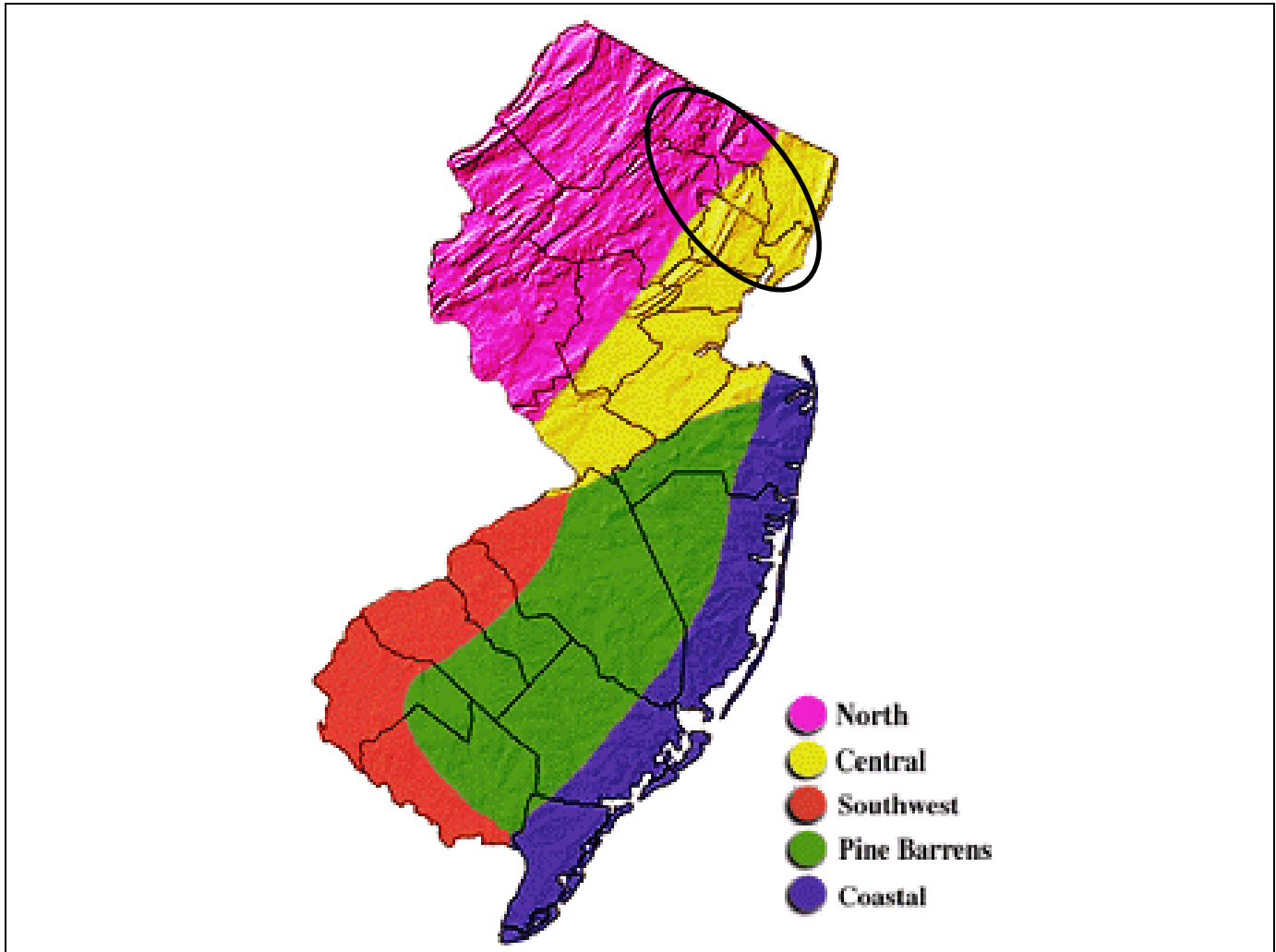
Surficial materials in Passaic County include till, glacial lake and glacial river sand and gravel deposits, glacial lake and clay deposits, post-glacial floodplain and stream terrace deposits, peat and organic silt and clay deposited in wetlands, and bedrock with thin or no soil cover (NJDEP 2016).

3.4.3 Climate

Current Climate

The broad, undulating flow from west to east across the middle latitudes of North America exerts a major influence on New Jersey’s weather. The state is divided into five climate zones, as shown on; see Figure 3-5, with variations in day-to-day weather based on geology, distance from the Atlantic Ocean, and prevailing atmospheric flow patterns.

Figure 3-5. Climate Zones of the State of New Jersey



Source: Rutgers University 2019.

Note: The black oval indicates the location of Passaic County.

Passaic County is in two of the five zones (Office of the New Jersey State Climatologist n.d.):

- The **Northern Climate Zone** covers approximately one-quarter of New Jersey and consists mainly of elevated highlands and valleys that are part of the Appalachian Uplands. This zone has a continental climate with minimal influence from the Atlantic Ocean, except when winds are easterly. Prevailing winds are from the southwest in summer and from the northwest in winter. The highlands and mountains play a role in making the climate of this zone different from the rest of the state. Clouds and precipitation are enhanced by cold frontal passage when the air, forced to rise over the mountains, produces clouds and precipitation while the rest of the state has clear skies. Annual snowfall averages 40 to 50 inches. In warm months, thunderstorms are responsible for most of the rainfall. This climate zone has the shortest growing season, about 155 days.
- The **Central Climate Zone** has a northeast to southwest orientation, running from New York Harbor and the Lower Hudson River to the Great Bend of the Delaware River near the City of Trenton. The northern edge of the Central Zone is often the boundary between freezing and non-freezing precipitation in the



state. Areas to the south of the Central Climate Zone tend to have nearly twice as many days with temperatures above 90°F than the 15 to 20 commonly observed in the central portion of the state

The 30-year average annual temperature in Passaic County is 51.2 degrees Fahrenheit (°F), peaking in July at 73.5 °F and hitting its lowest in January at 28.4 °F. Over the past three decades, Passaic County has experienced increasingly hotter monthly average maximum temperatures. Today, its 30-year average maximum temperature for July, its hottest month, is 84 °F. The County receives 48.60 inches of precipitation during the average year, most of which falls between June and October. Spring and summer frontal systems can produce high rainfall amounts and spawn tornados. Tropical storm systems can affect the Northern Atlantic Seaboard from late summer to late fall (Office of the New Jersey State Climatologist 2024).

Past and Projected Climate Change

Climate change includes major changes in temperature, precipitation, or wind patterns, which occur over several decades or longer. Records show ongoing changes in all these factors, and scientists predict the changes to continue

Temperature

The Office of the State Climatologist at Rutgers University has been tracking temperature and precipitation records in the State of New Jersey since 1895. Their data reveals a significant increase in the state's average annual temperature by 3.5 °F over the past century. This warming trend in the State of New Jersey is more pronounced than in the rest of the Northeast region, which has seen a 2 °F increase, and the global average increase of 1.5 °F (NJDEP 2020).

Since 1970, the rate of warming in the State of New Jersey has accelerated. Analysis of data up to the end of 2019 shows that the 10 warmest years on record have all occurred since 1990, while the 10 coldest years were all before 1940. The warmest year on record was 2012, with an average annual temperature 4.1 °F above the long-term average (1895-2019) and 3.0 °F above the 30-year normal. The recent 10-year average annual temperature is about 3 °F above the 1901-1960 period average.

Projections indicate that the State of New Jersey will continue to warm. Global climate models, which consider future greenhouse gas emissions, predict unprecedented warming in the 21st century. Under both high and low greenhouse gas emission scenarios, annual temperatures are expected to be as warm as the warmest years in the historical record. By 2050, average annual temperatures in New Jersey could be 1 °F to 6 °F warmer, and by 2100, they could be 3 °F to 9 °F warmer under a lower emissions scenario, and 6 °F to 13 °F warmer under a higher emissions scenario (NJDEP 2020).

Precipitation

As temperatures increase, Earth's atmosphere can hold more water vapor, which leads to a greater potential for precipitation. Since the end of the 20th century, New Jersey has experienced slight increases in the amount of precipitation it receives each year, and over the last 10 years there has been a 7.9 percent increase. By 2050, annual precipitation in New Jersey could increase by 4 percent to 11 percent.

Weather Extremes

New Jersey's four warmest winters have occurred since 1998, and the eight warmest summers since 1999 (NJDEP 2020). From 1990 to 2019, there were 43 instances of months with top-5 warmest average temperatures,



while no months recorded a top five coldest average temperature in the same period. The last top five coldest month was December 1989.

With projected ongoing change, summers will be hotter and winters will see fewer cold waves and less snow (NJDEP 2020). The State of New Jersey can expect that by the middle of the 21st century, 70 percent of summers will be hotter than the warmest summer experienced to date. Heatwaves are projected to increase in frequency, duration, and spatial extent, resulting in adverse impacts such as lower agricultural yields, higher energy consumption, reduced power plant efficiency, increased air pollution, negative effects on human health, greater water loss through evapotranspiration. and potential summer droughts (NJDEP 2020)

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). An increase in average annual temperatures leading to more intense heat waves and fewer cold waves will extend the growing season.

Extreme storms, including nor'easters and thunderstorms, have become more frequent, with a 71 percent increase in extreme rain events over the past 50 years. By 2050, total annual precipitation is expected to increase, largely in the form of more intense rain events. 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 total rainfall. Small decreases in the amount of precipitation may occur in the summer, resulting in greater potential for more frequent and prolonged droughts. New Jersey could also experience an increase in the number of flood events (NJDEP 2020).

3.4.4 Land Cover

Passaic County has a significantly varied landscape. As shown in Table 3-1, nearly half of all land cover is forested (47.3 percent in 2020), and just over a third (37.3 percent) is designated as urban areas, which includes residential, industrial, transportation, and recreational land. The northern half of the County overlaps with the Highlands Region and contains most of the County’s forested land, including state and county parkland, preserved watershed lands, and agriculture. Much of the County’s urbanized area is in the south. Roughly 7 percent of the County’s area is wetlands, less than 1 percent is barren, and less than one-half percent is agriculture. There have been negligible changes in the land cover composition since the pervious HMP, which used 2016 data. Figure 3-6 shows land cover in Passaic County.

Table 3-1. Passaic County Land Cover: 2007, 2016 and 2020

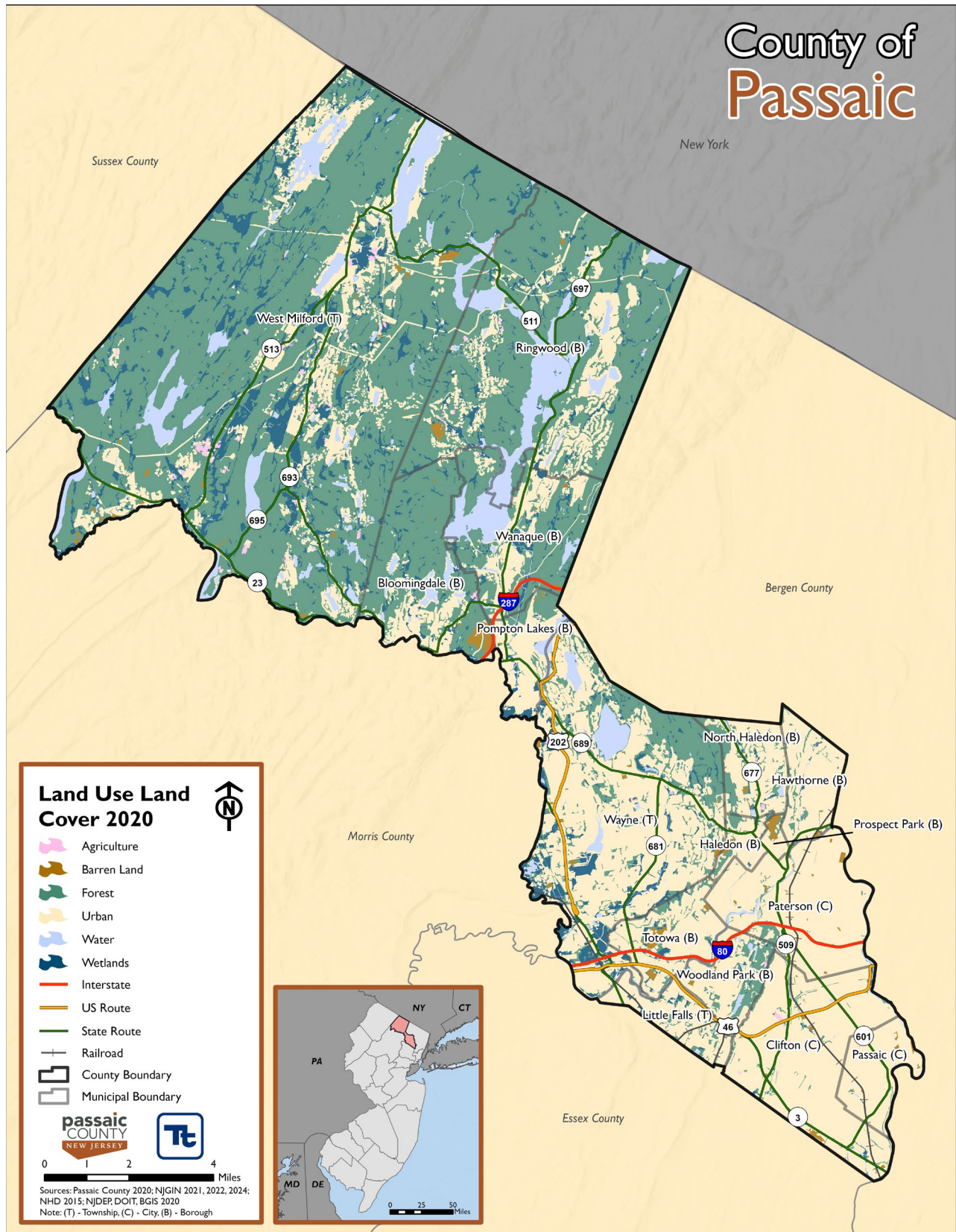
Land Cover Category	2007 Data		2016 Data		2020 Data	
	Acreage	Percent	Acreage	Percent	Acreage	Percent
Agriculture	442.9	0.4%	453.08	0.36%	455.4	0.4%
Barren	896.1	0.7%	1,135.75	0.89%	1,016.3	0.8%
Forest	60,634.3	47.8%	60,263.20	47.5%	60,109.6	47.3%
Urban Area	46,913.4	37.0%	47,110.79	37.1%	47,434.9	37.3%
Wetlands	8,852.2	7.0%	10,368.33	8.2%	8,844.5	7.0%

Source: NLCD, NJDEP, DOIT, BGIS 2020

Note: Urban land includes residential, industrial, transportation, and recreational land. Open water is excluded from the data.



Figure 3-6. Land Cover in Passaic County





3.5 LAND USE

3.5.1 Current Land Use

Figure 3-7 shows land use patterns in Passaic County. Most of the County's land use is designated as forest, recreational land, and other greenspaces, much of which is concentrated to the north and overlaps with the Highlands Region. The southern half of the County is more urbanized, containing mostly medium- and high-density residential, commercial, and industrial uses. There are several commercial and industrial corridors concentrated along key transportation routes, such as U.S. 202, County Routes 504, 665, 640, 646, 601, and 624, and NJ TRANSIT's Main Line regional rail route (Passaic County Department of Planning & Economic Development 2024).

The current distribution of land uses in the county is generally as follows:

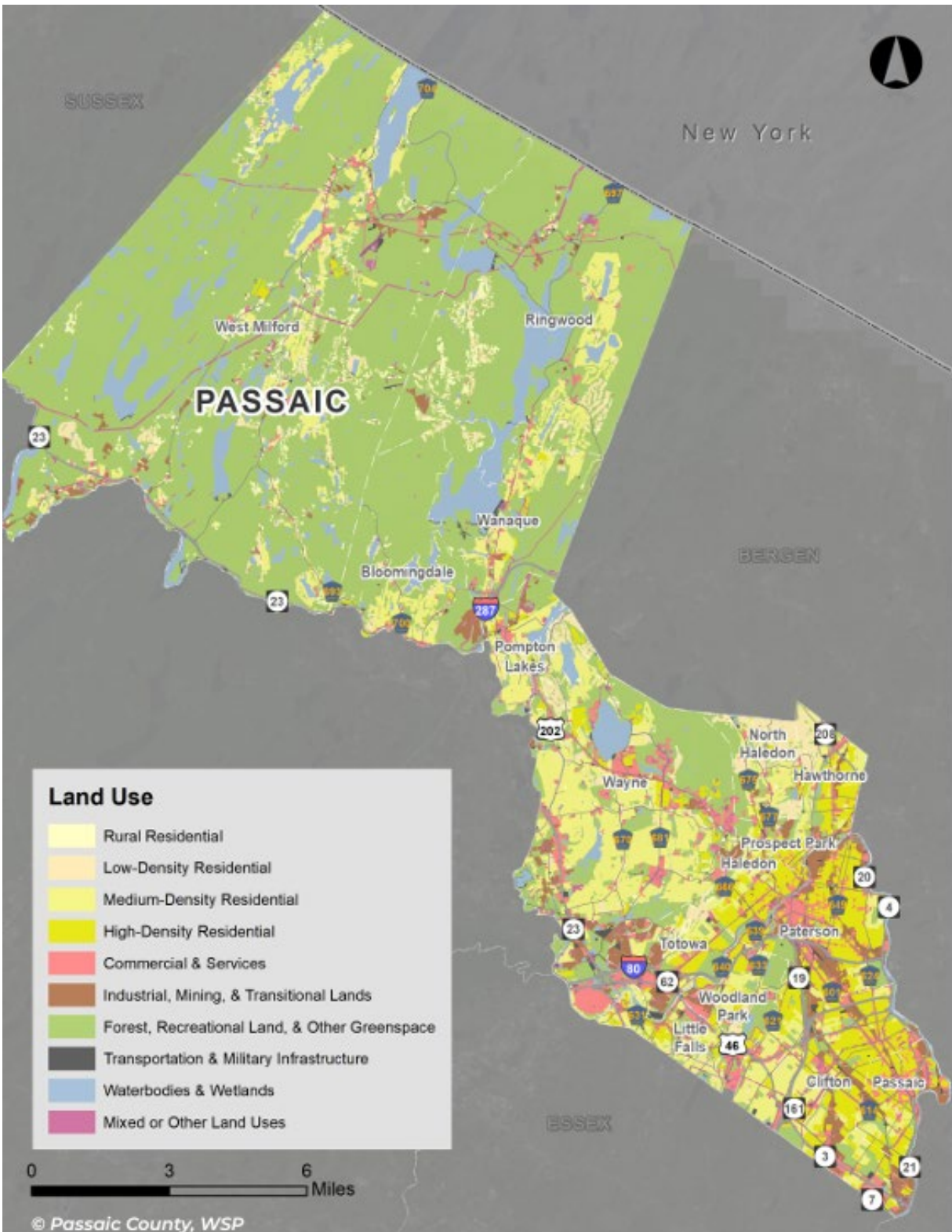
- **Residential**—In Passaic County, 86 percent of the buildings are residential. According to 2020 Decennial Census, 177,075 households are in Passaic County. A household includes all the people who occupy a housing unit as their usual residence. The 2020 Decennial Census also reported a total of 185,367 housing units in Passaic County (U.S. Census Bureau 2020). 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). Of these, approximately 4.5 percent are vacant.
- **Commercial**—Almost 13 percent of all buildings in Passaic County are commercial. Most commercial buildings are concentrated in the southern, more urbanized portion of the County.
- **Industrial**—Fewer than 1 percent of buildings in Passaic County are industrial.
- **Agriculture**—Passaic County does not contain Agricultural Resource Areas or Priority Areas. Based on the 2022 Census of Agriculture, Passaic County contains 99 farms covering a cumulative 1,830 acres, the majority of which are less than 50 acres each (USDA 2024).
- **Parks and Open Space**—Based on the most recent Parks, Recreation, and Open Space Master Plan, Passaic County contains 56,837 acres of dedicated park, recreation, and open space areas. Of these areas, non-profit organizations and similar organizations control 1,803 acres; the federal government controls 57 acres; the State of New Jersey controls 29,849 acres; municipalities control 4,837 acres; the Newark Watershed Conservation and Development Corporation controls 16,351 acres; and 3,940 acres are controlled by the County or its non-profit partners and are part of the Passaic County Park System (Passaic County Planning Department 2014). The Passaic County Park System has 11 park, recreation, and open space areas, as listed in Table 3-2.

3.5.2 New Jersey Highlands Region

The Highlands Region spans portions of New Jersey, New York, Pennsylvania, and Connecticut. The New Jersey Highlands is a 1,343-square-mile area in the northwest portion of New Jersey, as shown in Figure 3-8. It is noted for its scenic beauty and environmental significance and serves as a source of drinking water for over half of New Jersey residents. The New Jersey Highlands stretches from Phillipsburg in Warren County to Ringwood in Passaic County. It covers portions of seven counties—Hunterdon, Somerset, Sussex, Warren, Morris, Passaic and Bergen—and 88 municipalities.



Figure 3-7. Land Use in Passaic County



Source: (Passaic County Department of Planning & Economic Development 2024)

Note: Land use classifications have been consolidated into 10 categories on the map to improve readability.

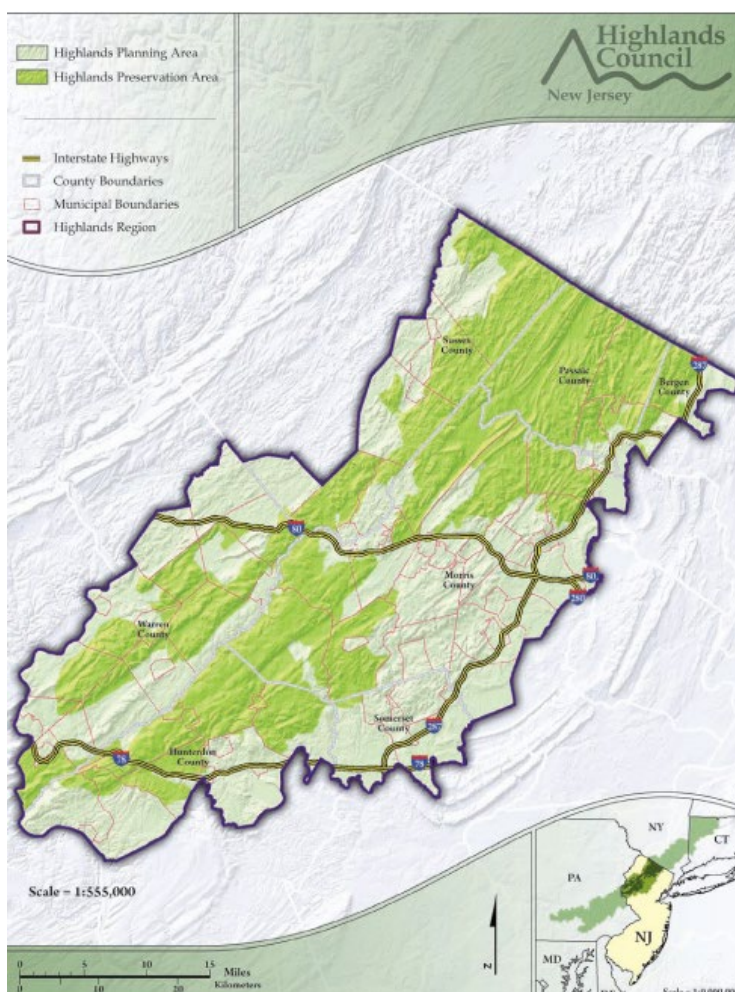


Table 3-2. Passaic County Park System Assets

County Park	Acreage	Location
Apshawa Preserve	594	Township of West Milford
Friendship Park	44	Borough of Bloomingdale
Garret Mountain Reservation	310	City of Paterson and Borough of Woodland Park
Goffle Brook Park	100	Borough of Hawthorne
Peckman Preserve	12	Township of Little Falls
Pompton Aquatic Park	29	Township of Wayne and Borough of Pompton Lakes
Preakness Valley Park	377	Township of Wayne and Borough of Totowa
Rifle Camp Park	169	Borough of Woodland Park
San Cap Park	224	Township of West Milford
Tranquility Ridge Park	2,062	Township of West Milford and Borough of Ringwood
Weasel Brook Park	19	City of Clifton

Source: (Passaic County Planning Department 2014)

Figure 3-8. New Jersey Highlands Region



Source: (NJ Highlands Council 2023)



The Highlands Act designated approximately 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 lies within 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.

In Passaic County, the Highlands Area covers 78,789 acres in the northern portion of the County. The Township of West Milford and Borough of Ringwood are entirely within the Highlands Preservation Area, while the Boroughs of Wanaque and Bloomingdale are primarily in the Preservation Area and partially in the Planning Areas. The Borough of Pompton Lakes is entirely within the Planning Area (Passaic County Department of Planning and Economic Development 2013).

The New Jersey Highlands Council assists with planning and considers hazard areas such as floodplains when evaluating new and re-development in the region. Passaic County works to ensure new development is consistent with the Highlands Regional Master Plan, completed in 2008. The Highland Regional Master Plan emphasizes the need for compatible growth opportunities that include infill development, re-development, adaptive re-use, and brownfields redevelopment, and also establishes the framework for a voluntary transfer of development rights program to support land preservation efforts. The plan identified “Existing Community Zones,” which consist of areas with regionally significant concentrated development signifying existing communities, as well as areas for potential new development, such as designated centers and sewer service areas. Existing Community Zones are designated as two sub-types (New Jersey Highlands Council 2008):

- Environmentally Constrained Sub-Zones, which consists of critical habitat, steep slopes, and forested land that should be protected from further fragmentation
- Lake Community Sub-Zones, which are areas within 1,000 feet of lakes that are targeted for policies to prevent water quality degradation, watershed pollution, and ecosystem harm

3.5.3 Land Use Trends

Land use trends can impact the need for and priority of mitigation options over time. They can also significantly affect vulnerability to hazards and potential impacts from hazard events. For example, significant development in a hazard area increases the building stock and population exposed to that hazard. Local zoning and planning authority are provided for under the New Jersey Municipal Land Use Law, which gives municipalities zoning and planning authority.

Passaic County’s access to major cities, mass transit, higher education institutions, and a large working-age population makes it an attractive place for new development. The County uses best available data to avoid potential exposure of development to hazard events where possible. The County discourages development in vulnerable areas, areas with high population density, and the Special Flood Hazard Area; and encourages higher regulatory standards at the local level.

The County’s Division of Economic Development initiates large-scale real estate development projects, promotes the redevelopment of brownfield sites, and encourages the creation of local partnerships between the Passaic County business community and residents. Passaic County’s 2015 Comprehensive Economic Development Strategy (CEDS) emphasized the use of technology to support economic development, including access to high-speed telecommunications, as one of seven primary goals of the strategy (Passaic County Department of Planning and Economic Development 2015).



Passaic County has received federal support to incentivize development and investment. In 2017, census tracts in the City of Paterson, City of Passaic, City of Clifton, and Borough of Prospect Park were designated as “Opportunity Zones,” which refer to low-income rural or urban communities that have long experienced stagnant growth or declining populations (Passaic County Department of Planning and Economic Development n.d.). This federal program allows investors to defer paying taxes on capital gains reinvested into a Qualified Opportunity Fund, which are funds required to invest 90 percent of capital in Opportunity Zones. Since its enactment, no Opportunity Zone projects have been built in Passaic County.

3.6 POPULATION AND DEMOGRAPHICS

3.6.1 Current Population

The 2020 U.S. Decennial Census counted Passaic County’s population as 524,118, an increase of 4.6 percent from the 2010 Decennial Census (501,226). The 2022 American Community Survey 5-Year Estimates (ACS) showed a County population of 519,986. FEMA’s Hazus model, which is used in the risk assessment for this HMP, incorporates population data from the 2020 Decennial Census.

Figure 3-9 shows population per square mile in Passaic County. Northern Passaic County is not as densely populated as southern Passaic County for the following reasons (Passaic County Planning Department 2014):

- Historical development patterns associated with the Passaic River, which is in the southern portion of the county, and its historic use as a power source for mills and factories
- Historical development of major transportation networks in the second half of the twentieth century
- The passage of the Highlands Act, restricting development in the northern portion of the county

3.6.2 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.

Table 3-3 shows population statistics for Passaic County and its municipalities from the 2000, 2010, and 2020 decennial Census and the 2022 ACS 5-Year Estimates. The County experienced consistent population growth from 1980 through 2020, hitting its all-time high in 2020. The 4.6 percent growth in County population between 2010 and 2020 was slightly slower than the statewide growth rate of 5.7 percent (U.S. Census Bureau 2020).

Based on the 2022 ACS 5-Year Estimates, Passaic County may have experienced some population loss from 2020 to 2022, but this may be attributable to the collection and analysis methods used by the ACS versus the Decennial Census. The most recent state estimates (from 2014) predict continued growth in the County through 2034, as shown in Figure 3-10 and Table 3-4.



Figure 3-9. Passaic County Population per Square Mile

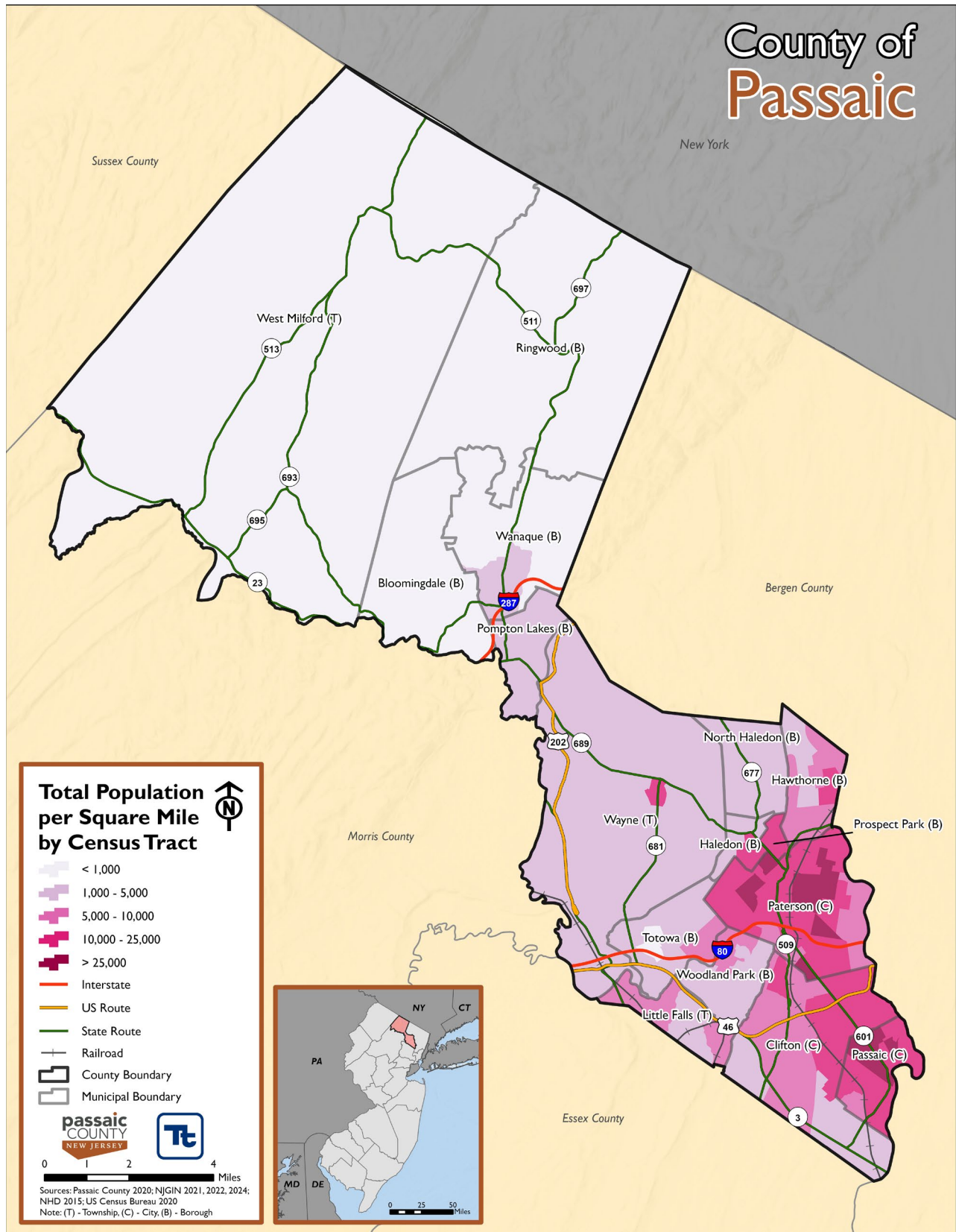


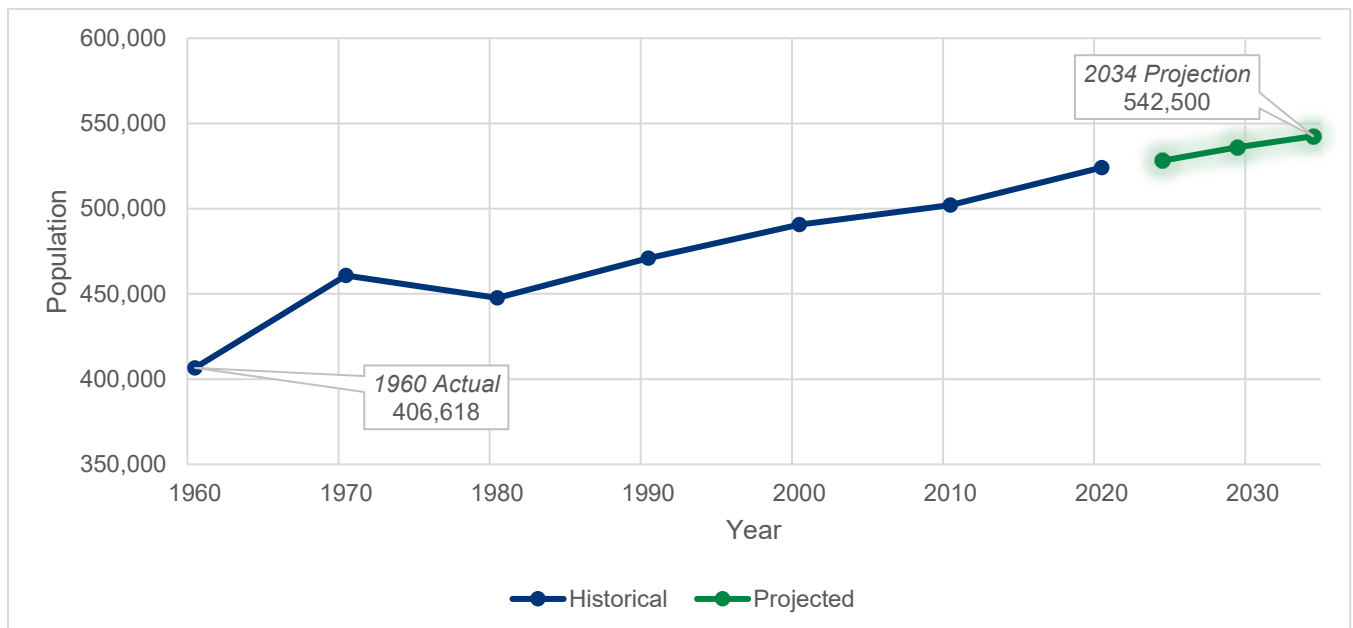


Table 3-3. Passaic County Population Change 2000 to Present

Jurisdiction	Population			
	2000	2010	2020	2022
Bloomington (B)	7,610	7,656	7,777	7,726
Clifton (C)	78,672	84,136	90,296	89,451
Haledon (B)	8,252	8,318	9,052	8,945
Hawthorne (B)	18,218	18,791	19,637	19,456
Little Falls (T)	10,855	14,432	13,360	14,229
North Haledon (B)	7,920	8,417	8,927	8,801
Passaic (C)	67,861	69,781	70,537	70,048
Paterson (C)	149,222	146,199	159,732	157,864
Pompton Lakes (B)	10,640	11,097	11,127	11,052
Prospect Park (B)	5,779	5,865	6,372	6,299
Ringwood (B)	12,396	12,228	11,735	11,692
Totowa (B)	9,892	10,804	11,065	10,975
Wanaque (B)	10,266	11,116	11,317	11,217
Wayne (T)	54,069	54,717	54,838	54,143
West Milford (T)	26,410	25,850	24,862	24,797
Woodland Park (B)	1,098	11,819	13,484	13,291
Passaic County	490,669	501,226	524,118	519,986

Source: (Passaic County Office of Emergency Management 2020, U.S. Census Bureau 2020)

Figure 3-10. Historical and Projected Population Change in Passaic County



Source: (Passaic County Office of Emergency Management 2020, U.S. Census Bureau 2020)



Table 3-4. Historical and Projected Population Change in Passaic County

Historical Passaic County Population							Projected Passaic County Population		
1960	1970	1980	1990	2000	2010	2020	2024	2029	2034
406,618	460,782	447,585	470,951	490,669	502,010	524,118	528,100	536,100	542,500

Source: (Passaic County Office of Emergency Management 2020, U.S. Census Bureau 2020)

3.6.3 Socially Vulnerable Populations

Social vulnerability is the susceptibility of an individual or social group to the negative impacts of natural hazards and disasters due to characteristics that influence one’s ability to prepare for, respond to, cope with, or recover from a disaster. These factors include financial circumstances, health, age, ability to communicate effectively, chronic or terminal illness, or an access and functional need (FEMA 2019). Historical discriminatory policies such as redlining have also placed communities of color and low-income communities at greater risk of impacts from disasters. According to FEMA’s *Guide to Expanding Mitigation: Making the Connection to Equity* (2020), populations who may be disproportionately impacted by disaster include the following groups:

- Individuals experiencing homelessness or displacement
- Institutionalized populations, such as those in prisons and nursing homes, or individuals going through reentry
- Members of the LGBTQ+ community
- People of color
- Populations over the age of 65 or under the age of 5
- Populations with limited cognitive or physical abilities
- Renters
- Service workers and migrant laborers
- Tribal and first nation communities
- Underserved communities with a low socioeconomic status
- Women

Federal regulations require that hazard mitigation plans consider socially vulnerable populations. This HMP considers five socially vulnerable population groups: persons over the age of 65, persons under the age of 5, non-English speaking households, people living with disabilities, and people living below the poverty level. Table 3-5 shows statistics for these populations for each municipality in the County based on 2022 ACS 5-Year Estimates. Figure 3-11 shows the density of each population subset by census tract throughout the County.

Age

Children are 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. People older than 65 are more likely to experience health or medical conditions that contribute to a lack the physical and economic resources necessary for response to hazard events, making them more likely to suffer adverse impacts that impede recovery. Older people who live alone may have more difficulty evacuating their homes. These individuals are also more likely to live in senior care and living facilities where emergency preparedness occurs at the discretion of facility operators. According to the 2022 ACS 5-Year Estimates, 33,502 people (6.4 percent of the County’s population) are under the age of 5 and 78,440 people (15.1 percent of the County’s total population) are over 65.



Table 3-5. Passaic County Socially Vulnerable Population

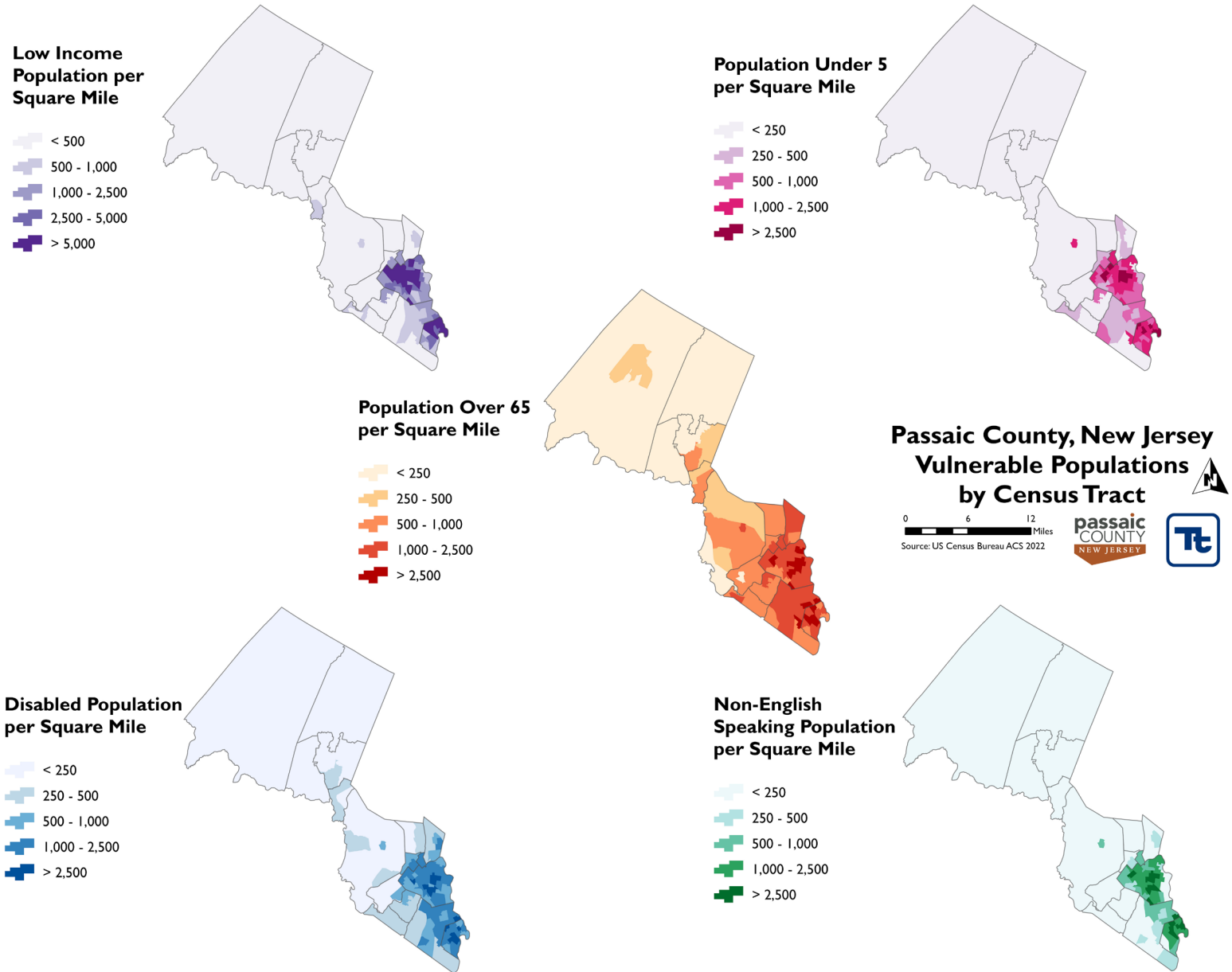
Jurisdiction	Total*	Over 65		Under 5		Non-English Speaking		Living with Disability		Living Below Poverty Level	
	Population	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total
Bloomingtondale (B)	7,726	1,134	14.7%	247	3.2%	104	1.3%	588	7.6%	694	9.0%
Clifton (C)	89,451	15,686	17.5%	4,886	5.5%	10,618	11.9%	10,296	11.5%	6,444	7.2%
Haledon (B)	8,945	1,471	16.4%	554	6.2%	928	10.4%	1,031	11.5%	764	8.5%
Hawthorne (B)	19,456	4,044	20.8%	748	3.8%	902	4.6%	1,827	9.4%	950	4.9%
Little Falls (T)	14,229	2,189	15.4%	470	3.3%	601	4.2%	1,073	7.5%	461	3.2%
North Haledon (B)	8,801	2,165	24.6%	487	5.5%	199	2.3%	790	9.0%	306	3.5%
Passaic (C)	70,048	6,280	9.0%	5,783	8.3%	15,704	22.4%	5,489	7.8%	15,265	21.8%
Paterson (C)	157,864	18,141	11.5%	12,442	7.9%	34,885	22.1%	12,756	8.1%	37,143	23.5%
Pompton Lakes (B)	11,052	1,771	16.0%	565	5.1%	228	2.1%	799	7.2%	960	8.7%
Prospect Park (B)	6,299	625	9.9%	521	8.3%	714	11.3%	903	14.3%	1,080	17.1%
Ringwood (B)	11,692	1,997	17.1%	496	4.2%	104	0.9%	943	8.1%	262	2.2%
Totowa (B)	10,975	2,126	19.4%	407	3.7%	344	3.1%	1,302	11.9%	420	3.8%
Wanaque (B)	11,217	2,502	22.3%	464	4.1%	295	2.6%	1,486	13.2%	693	6.2%
Wayne (T)	54,143	10,856	20.1%	2,863	5.3%	2,009	3.7%	4,348	8.0%	1,429	2.6%
West Milford (T)	24,797	4,665	18.8%	1,633	6.6%	263	1.1%	1,995	8.0%	754	3.0%
Woodland Park (B)	13,291	2,788	21.0%	936	7.0%	1,055	7.9%	1,081	8.1%	1,370	10.3%
Passaic County	519,986	78,440	15.1%	33,502	6.4%	68,953	13.3%	46,707	9.0%	68,995	13.3%

*Note: Socially vulnerable population data is only available at the municipal level using the ACS 5-Year Estimates. Total population and percentages of total in this table reflect the 2022 ACS 5-Year Estimates.

Source: (US Census Bureau 2022)



Figure 3-11. Passaic County Vulnerable Population Density





Language Proficiency

Individuals who lack a working proficiency in English are vulnerable because they may have difficulty understanding information conveyed to them. Cultural differences can also add complexity to how information is conveyed to populations with limited proficiency of English (Centers for Disease Control and Prevention 2025). According to 2022 ACS 5-Year Estimates, 13.3 percent of residents of the County's population over the age of 5 primarily speak a language other than English at home and are reported to speak English "less than very well." Nearly half of these (47 percent) speak Spanish (U.S. Census Bureau 2022).

People Living 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. Additional accommodations may be necessary for individuals with disabilities and access and functional needs during the response and recovery phases of a disaster. According to the 2022 ACS 5-Year Estimates, 46,707 residents of Passaic County (9.0 percent of the County population) are living with a disability.

Income

Individuals living below the federal poverty level are more at risk of experiencing debilitating impacts from the hazards assessed in this plan because they may not have the financial means to adequately prepare, respond and recover. For example, FEMA recommends that people keep a small cash reserve in case of disaster. This can be difficult for those who struggle to afford adequate food. Insurance—such as home insurance or flood insurance—is another indicator of faster recovery from disasters for which many living in poverty may not have sufficient resources. The 2022 ACS 5-Year Estimates identified 68,995 individuals (13.3 percent of the total County population) living below the poverty level.

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 2022 point-in-time-data from ALICE, 35 percent of the 179,292 households in Passaic County are ALICE households (compared to the state average of 26 percent). See Table 3-6 for ALICE data by jurisdiction.

3.7 ECONOMY

A healthy economy promotes job growth, high employment rates, and more income, all of which give residents the ability to prepare for and quickly recover from disasters when they occur. Passaic County is in the New York-Newark-Jersey City Metropolitan Statistical Area (MSA), as shown in Figure 3-12. An MSA is an area defined by the U.S. Office of Management and Budget that is linked by significant social and economic interactions and has at least one urbanized area with a population of 50,000 or more (U.S. Census 2008). The New York-Newark-



Jersey City MSA is the largest in the nation, home to nearly 20 million people (U.S. Bureau of Economic Analysis 2024).

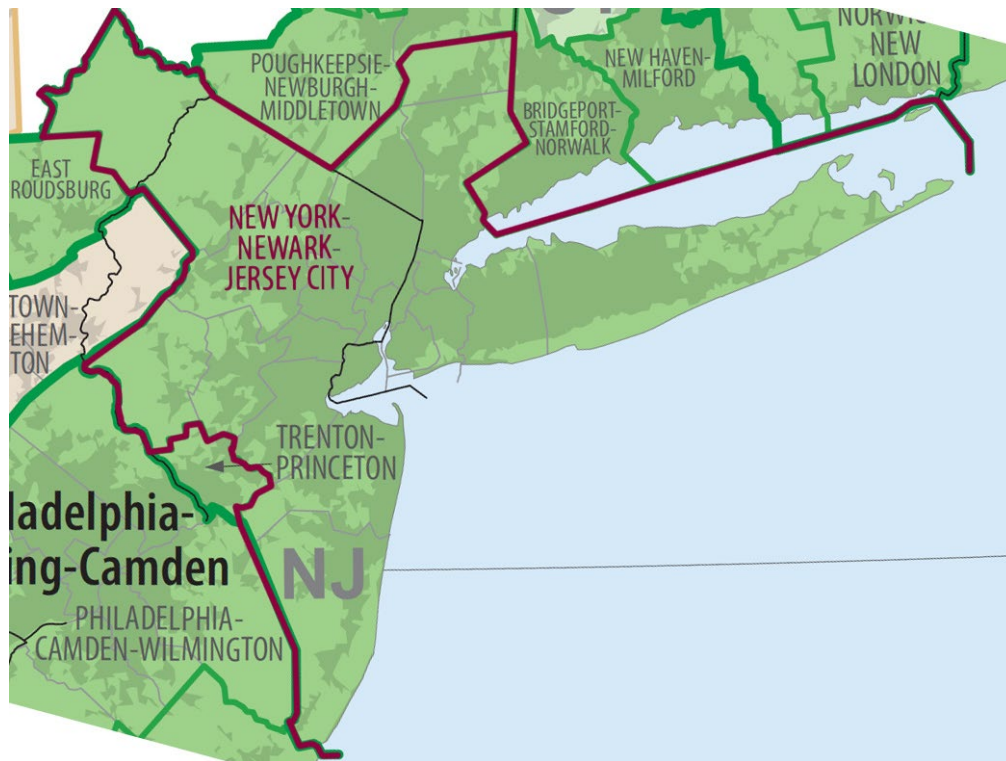
Table 3-6. Passaic County ALICE Data

Name	# of Households Below ALICE	% Below ALICE Threshold
Bloomingtondale (B)	826	28%
Clifton (C)	14,035	43%
Haledon (B)	1,373	43%
Hawthorne (B)	2,579	34%
Little Falls (Twp)	1,696	30%
North Haledon (B)	745	25%
Passaic (C)	13,118	65%
Paterson (C)	33,284	67%
Pompton Lakes (B)	1,141	26%
Prospect Park (B)	1,211	64%
Ringwood (B)	936	22%
Totowa (B)	1,211	32%
Wanaque (B)	1,283	30%
Wayne (Twp)	4,727	25%
West Milford (Twp)	2,817	29%
Woodland Park (B)	2,223	42%
Passaic County	62,752	35%

Source: *United For ALICE 2024*



Figure 3-12. New York-Newark-Jersey City MSA



Source: (U.S. Census Bureau 2020)

3.7.1 Gross Domestic Product

Gross domestic product (GDP) is an estimate of the value of the goods and services produced in an area and can be used to compare the size and growth of a region's economy. In 2023, the New York-Newark-Jersey City MSA recorded a GDP of nearly \$2.3 billion, the most of any MSA in the country and a small increase (1.6 percent) over the previous year. Between 2013 and 2023, the New York-Newark-Jersey City MSA experienced growth but at a slower rate than other metropolitan areas. The compound annual growth rate of GDP for the New York-Newark-Jersey City MSA was 1.8 percent, whereas nationally, metropolitan areas recorded 2.5 percent growth (U.S. Bureau of Economic Analysis 2024).

In 2023, Passaic County produced \$27.5 million in GDP, accounting for 3.4 percent of New Jersey's total GDP and a 2 percent increase over the previous year (U.S. Bureau of Economic Analysis 2024).

3.7.2 Major Institutions

Major institutions are large organizations such as universities, hospitals, or businesses that fuel a region's economic activity, such as employment and real estate. The location of their physical assets is often tied to their function or identify and influences the immediate economy because they drive a need for housing, transportation, food, entertainment and other needs for the people that run the organizations as well as those that are served by them. Passaic County contains several universities, major hospitals, and regional employers (Passaic County Department of Planning and Economic Development n.d.):

- Institutions of higher education in the County include the following institutions:



- **William Paterson University** is a public university with a 370-acre campus in the Town of Wayne. Approximately 8,500 students are enrolled. The university offers 57 undergraduate and 22 graduate programs.
- **Montclair State University** is a public university with a 252-acre campus spanning three municipalities, including the City of Clifton and the Town of Little Falls in Passaic County. It has an enrollment of over 20,000 students and offers 250 undergraduate and graduate programs and certificates.
- **Passaic County Community College** has several campuses across Passaic County in the Cities of Paterson and Passaic, the Borough of Wanaque, and the Township of Wayne. The College has 11,000 students and offers numerous programs.
- **Berkeley College** is a private for-profit college with multiple campuses in the New York metropolitan area, including one campus in Passaic County at Garrett Mountain in the Borough of Woodland Park.
- Major healthcare centers include St. Joseph's Health in the City of Clifton, St. Joseph's Wayne Medical Center in the City of Wayne, Preakness Healthcare Center in the City of Wayne, and St. Mary's Hospital in the City of Passaic.
- Other major employers include BAE Systems, Driscoll Foods, Accurate Box Company, Maquet Cardiovascular, and UPS.

3.7.3 Employment

In 2023, Passaic County contained a quarterly average of 14,584 private businesses and employed 146,195 individuals; total wages exceeded \$8.7 billion, with an average weekly wage per employee of \$1,150 (Bureau of Labor Statistics 2024). Since the last plan update, Passaic County has added 1,922 establishments, a nearly 14 percent increase to 14,771 businesses, and employed an additional 5,698 workers, an increase of 3 percent to a total of 171,394 (Bureau of Labor Statistics 2024). The following are the major employment sectors in Passaic County (see Table 3-7) (U.S. Census Bureau 2022):

- Health care and social assistance (North American Industry Classification System [NAICS] 62)
- Retail trade (NAICS 44-45)
- Manufacturing (NAICS 31-33)
- Wholesale trade (NAICS 42)
- Accommodation and food services (NAICS 72)

These five sectors collectively employ nearly two-thirds (63 percent) of all workers in Passaic County.

Table 3-7. Major Sectors of Employment, by NAICS Code, in Passaic County

NAICS Code	NAICS Description	Number of establishments	Number of employees	Annual payroll (\$1,000)	First-quarter payroll (\$1,000)
21	Mining, quarrying, and oil and gas extraction	3	111	\$18,500	\$6,950
22	Utilities	12	874	\$112,748	\$30,673
23	Construction	1,334	8,571	\$679,813	\$147,774
31-33	Manufacturing	611	16,887	\$1,156,366	\$276,363
42	Wholesale trade	804	11,775	\$934,053	\$235,422
44-45	Retail trade	1,866	22,709	\$877,444	\$197,822



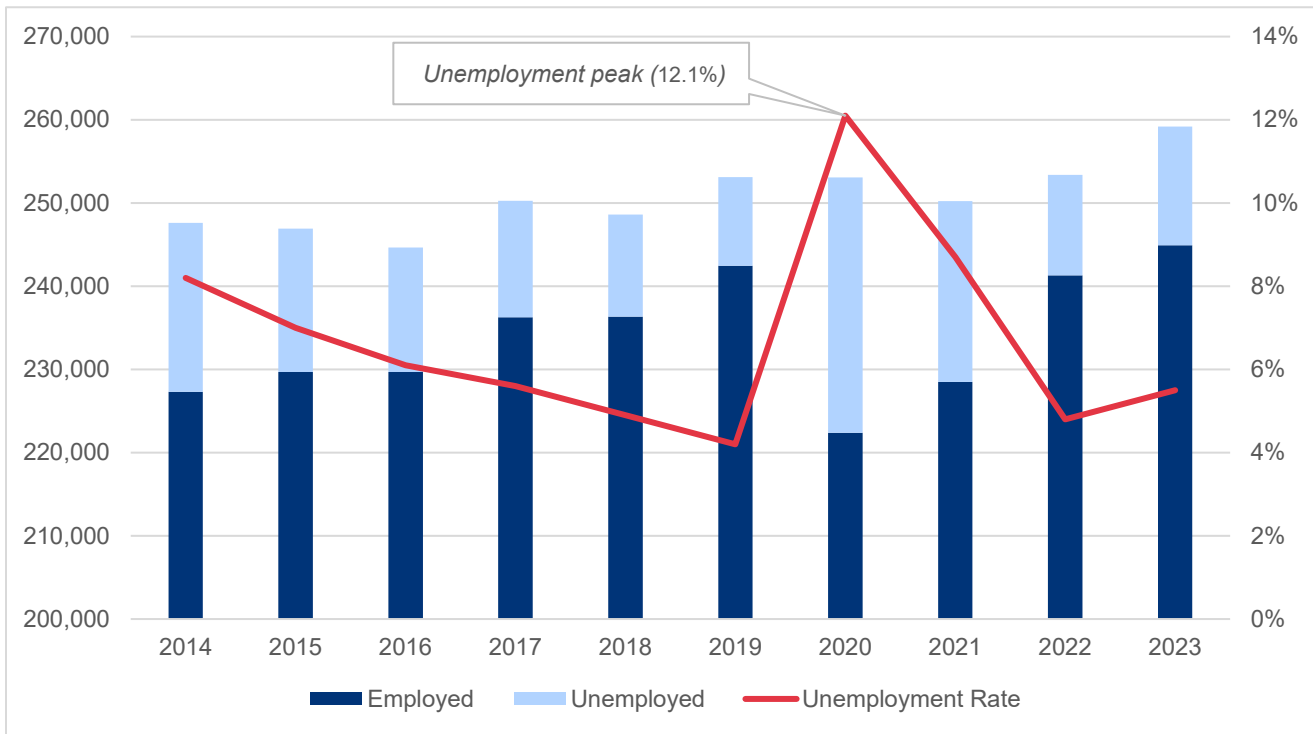
NAICS Code	NAICS Description	Number of establishments	Number of employees	Annual payroll (\$1,000)	First-quarter payroll (\$1,000)
48-49	Transportation and warehousing	545	7,048	\$294,371	\$89,114
51	Information	136	1,355	\$103,921	\$26,395
52	Finance and insurance	464	4,156	\$437,372	\$125,823
53	Real estate and rental and leasing	434	2,095	\$138,967	\$29,776
54	Professional, scientific, and technical services	984	6,058	\$472,471	\$109,208
55	Management of companies and enterprises	136	2,327	\$353,484	\$90,091
56	Administrative and support and waste management and remediation services	787	8,898	\$491,086	\$104,606
61	Educational services	145	3,188	\$125,312	\$30,449
62	Health care and social assistance	1,495	27,831	\$1,576,303	\$360,959
71	Arts, entertainment, and recreation	142	1,743	\$60,628	\$11,413
72	Accommodation and food services	1,085	11,230	\$284,820	\$63,733
81	Other services (except public administration)	1,341	7,233	\$286,424	\$63,480
99	Industries not classified	30	33	\$1,344	\$292
0	Total for all sectors	12,356	144,122	\$8,405,442	\$2,000,343

Source: (U.S. Census Bureau 2022)

Until the onset of the COVID-19 pandemic in 2020, unemployment had steadily fallen since 2014, hitting a low of 4.2 percent in 2019. Unemployment peaked in 2020 at 12.1 percent and remained high the next year at 8.7 percent. In recent years, employment has approximately returned to pre-pandemic levels, averaging 5.5 percent in 2023, as shown in Figure 3-13. The County sees a labor force participation rate of 66 percent.



Figure 3-13. Unemployment Rates in Passaic County 2014 to 2023



Source: (Bureau of Labor Statistics 2024)

3.7.4 Income

In 2023, the average per capita income in Passaic County was \$60,002, the third lowest of all counties in New Jersey (U.S. Bureau of Economic Analysis 2024). Passaic County income is 73.1 percent of the state average (\$82,102) and 86 percent of the national average (\$69,810) (US Census Bureau 2023). The median household income in Passaic is \$79,955, compared to the state average of \$96,346. The County’s poverty rate of 14 percent exceeds the state average of 10 percent.

3.7.5 Home Ownership

More than half (54.4 percent) of Passaic County residents own their home, which is nearly 10 percentage points lower than the state average of 63.7 percent (US Census Bureau 2023).

3.7.6 Economic Trends

Over the past decade, Passaic County’s economy has remained relatively stable. Between 2013 and 2023, County GDP did not grow, recording a 0 percent compound annual growth rate (U.S. Bureau of Economic Analysis 2024). In that period, Passaic County experienced some income growth, but at a slower rate than the state and national averages: County incomes grew at a 3.7 percent compound annual rate, compared to 4.2 percent for the state and 4.6 percent for the nation (U.S. Bureau of Economic Analysis 2024).



The North Jersey Transportation Planning Authority (NJTPA), the metropolitan planning organization that includes Passaic County, projects continued modest growth in the region on track with the rest of the region. NJTPA projections anticipate Passaic County will experience an average 0.4 percent increase in employment every year through 2050 (NJTPA 2021).

Passaic County’s 2015 CEDS notes that the County contains several commercial and industrial parks, which provide expanding companies with opportunities for growth (Passaic County Department of Planning and Economic Development 2015). The CEDS identified one action related to hazard mitigation: Action 5C aims to work regionally to reduce flooding, which included sub-tasks to reduce development in flood-prone areas.

3.8 GENERAL BUILDING STOCK

3.8.1 Existing Development

For this HMP update, 103,253 structures were identified from available tax data and spatial data. These structures account for a replacement cost value (RCV) of \$95.6 billion, of which \$54 billion is the value of structures and \$41 billion is the value of contents. Table 3-8 presents building stock statistics for Passaic County, and Table 3-9 shows the distribution by occupancy class. Residential buildings account for 86 percent of the total buildings in the County and 48 percent of the total RCV.

Table 3-8. Building Stock Count and Replacement Cost Value in Passaic County

	Count	Structure RCV	Contents RCV	Total RCV
Bloomingtondale (B)	2,406	\$845,438,851	\$512,824,076	\$1,358,262,927
Clifton (C)	20,935	\$8,953,588,853	\$6,879,637,937	\$15,833,226,790
Haledon (B)	1,898	\$726,784,782	\$550,569,877	\$1,277,354,659
Hawthorne (B)	6,079	\$2,301,137,115	\$1,645,205,682	\$3,946,342,797
Little Falls (T)	2,915	\$1,910,476,344	\$1,504,192,981	\$3,414,669,325
North Haledon (B)	2,952	\$1,356,946,842	\$804,340,011	\$2,161,286,853
Passaic (C)	5,784	\$6,601,947,132	\$4,781,219,239	\$11,383,166,371
Paterson (C)	16,686	\$9,755,519,226	\$8,875,394,214	\$18,630,913,440
Pompton Lakes (B)	3,271	\$1,183,738,947	\$770,521,310	\$1,954,260,257
Prospect Park (B)	1,016	\$301,121,711	\$191,115,534	\$492,237,246
Ringwood (B)	4,369	\$1,659,833,795	\$1,037,346,081	\$2,697,179,876
Totowa (B)	3,765	\$2,902,415,003	\$2,597,574,014	\$5,499,989,017
Wanaque (B)	3,183	\$1,406,615,486	\$946,276,354	\$2,352,891,840
Wayne (T)	15,577	\$9,179,124,328	\$6,692,889,784	\$15,872,014,112
West Milford (T)	9,452	\$3,437,286,824	\$2,185,476,654	\$5,622,763,478
Woodland Park (B)	2,965	\$1,788,541,435	\$1,312,836,435	\$3,101,377,870
Passaic County (Total)	103,253	\$54,310,516,675	\$41,287,420,183	\$95,597,936,857

Source: NJOIT, Microsoft 2019, RS Means 2024



Table 3-9. Building Stock Count and Replacement Cost Value by Occupancy Class

	Residential		Commercial		Industrial		Other ^a	
	Count	Total RCV	Count	Total RCV	Count	Total RCV	Count	Total RCV
Bloomingtondale (B)	2,080	\$1,003,682,868	308	\$254,235,586	3	\$5,291,934	15	\$95,052,539
Clifton (C)	18,295	\$7,442,872,485	2,400	\$5,625,214,383	123	\$1,912,378,326	117	\$852,761,596
Haledon (B)	1,544	\$606,039,869	323	\$320,482,315	13	\$105,057,150	18	\$245,775,326
Hawthorne (B)	5,086	\$2,253,250,678	918	\$1,039,713,043	53	\$475,358,294	22	\$178,020,782
Little Falls (T)	2,413	\$1,589,328,556	438	\$1,070,632,102	32	\$296,631,941	32	\$458,076,726
North Haledon (B)	2,587	\$1,662,589,688	350	\$350,146,789	1	\$1,891,098	14	\$146,659,278
Passaic (C)	4,793	\$5,837,028,985	819	\$3,969,982,088	31	\$616,037,682	141	\$960,117,616
Paterson (C)	13,239	\$5,590,973,425	2,882	\$6,939,139,877	273	\$4,100,101,789	292	\$2,000,698,349
Pompton Lakes (B)	2,882	\$1,287,390,437	352	\$448,064,420	18	\$51,717,768	19	\$167,087,632
Prospect Park (B)	897	\$335,118,971	111	\$100,553,619	1	\$8,500,733	7	\$48,063,922
Ringwood (B)	3,993	\$1,954,768,014	324	\$439,269,971	19	\$110,359,636	33	\$192,782,255
Totowa (B)	3,164	\$1,648,736,373	533	\$2,502,634,194	48	\$1,205,946,642	20	\$142,671,808
Wanaque (B)	2,745	\$1,489,029,587	393	\$435,321,472	21	\$162,934,346	24	\$265,606,435
Wayne (T)	14,046	\$8,470,872,138	1,378	\$4,751,066,029	59	\$1,295,196,512	94	\$1,354,879,433
West Milford (T)	8,100	\$3,854,727,812	1,157	\$1,048,854,435	29	\$120,264,119	166	\$598,917,112
Woodland Park (B)	2,567	\$1,575,837,173	369	\$1,188,965,354	14	\$192,427,765	15	\$144,147,578
Passaic County (Total)	88,431	\$46,602,247,059	13,055	\$30,484,275,677	738	\$10,660,095,735	1,029	\$7,851,318,386

Source: NJOIT, Microsoft 2019, RS Means 2024

a. Other = Government, Religion, Agricultural, and Education



Figure 3-14, Figure 3-15, and Figure 3-16 show the distribution and value density of residential, commercial, and industrial buildings in Passaic County based on the New Jersey Property Tax System. 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 specific hazard risks.

3.8.2 New Development

New development that has occurred in the last five years and potential future development in the next five years has been identified by each municipality. An exposure analysis was conducted to determine the relationship between the identified potential new development and natural hazard areas evaluated in the HMP update. The results of this spatial analysis have been reviewed with each jurisdiction and are documented in each jurisdiction annex. In addition, the summary of this analysis and hazard-specific maps are included at the end of the vulnerability assessment provided in each hazard profile chapter in this volume.

Since 2020, Passaic County municipalities have issued permits authorizing the construction of 3,177 new housing units, as summarized in Table 3-10 (New Jersey Department of Community Affairs 2024). Permit issuance peaked in 2020 but fell off in the years following the COVID-19 pandemic. The City of Paterson authorized the creation of 1,664 units, the most of any municipality. Several municipalities did not issue any permits for new construction of housing between 2020 and 2023, including the Borough of Haledon, the Borough of Prospect Park, the Town of Wayne, and the Borough of Woodland Park. In 2023, the most recent year with complete data, municipalities issued new construction permits to enable 578 new housing units to be built.

Table 3-10. Housing Units Authorized by Building Permits for New Construction in Passaic County

Jurisdiction	2020	2021	2022	2023
Bloomingtondale (B)	5	3	2	3
Clifton (C)	20	9	313	3
Haledon (B)	0	0	0	0
Hawthorne (B)	35	120	6	2
Little Falls (T)	215	54	112	2
North Haledon (B)	180	0	0	0
Passaic (C)	60	43	0	81
Paterson (C)	489	483	322	390
Pompton Lakes (B)	0	7	0	3
Prospect Park (B)	0	0	0	0
Ringwood (B)	1	5	5	1
Totowa (B)	1	0	50	77
Wanaque (B)	0	18	2	2
Wayne (T)	0	0	0	0
West Milford (T)	10	14	15	14
Woodland Park (B)	0	0	0	0
Passaic County (Total)	1,016	756	827	578

Source: (New Jersey Department of Community Affairs 2024)



Figure 3-14. Distribution of Residential Building Stock Value Density in Passaic County

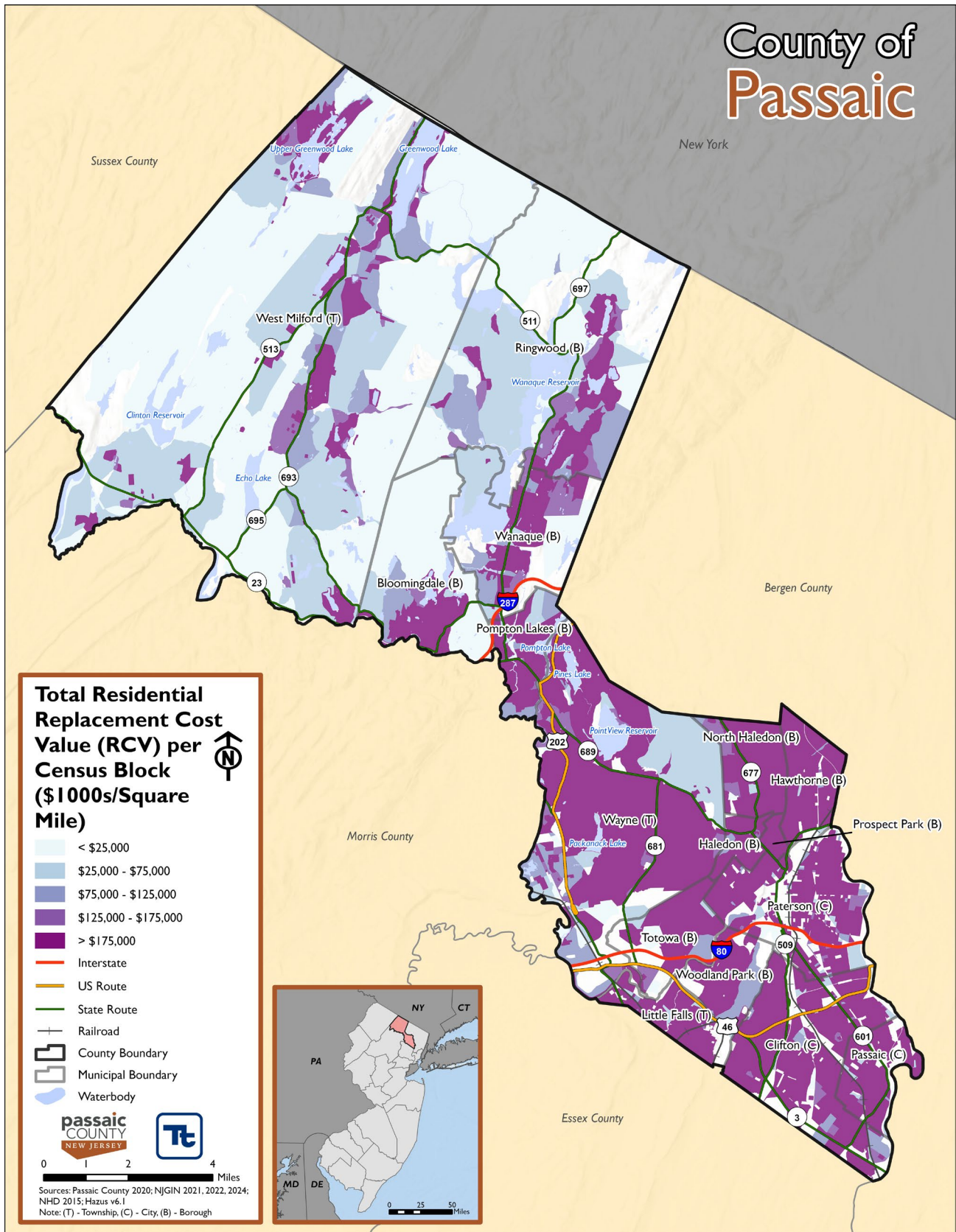




Figure 3-15. Distribution of Commercial Building Stock Value Density in Passaic County

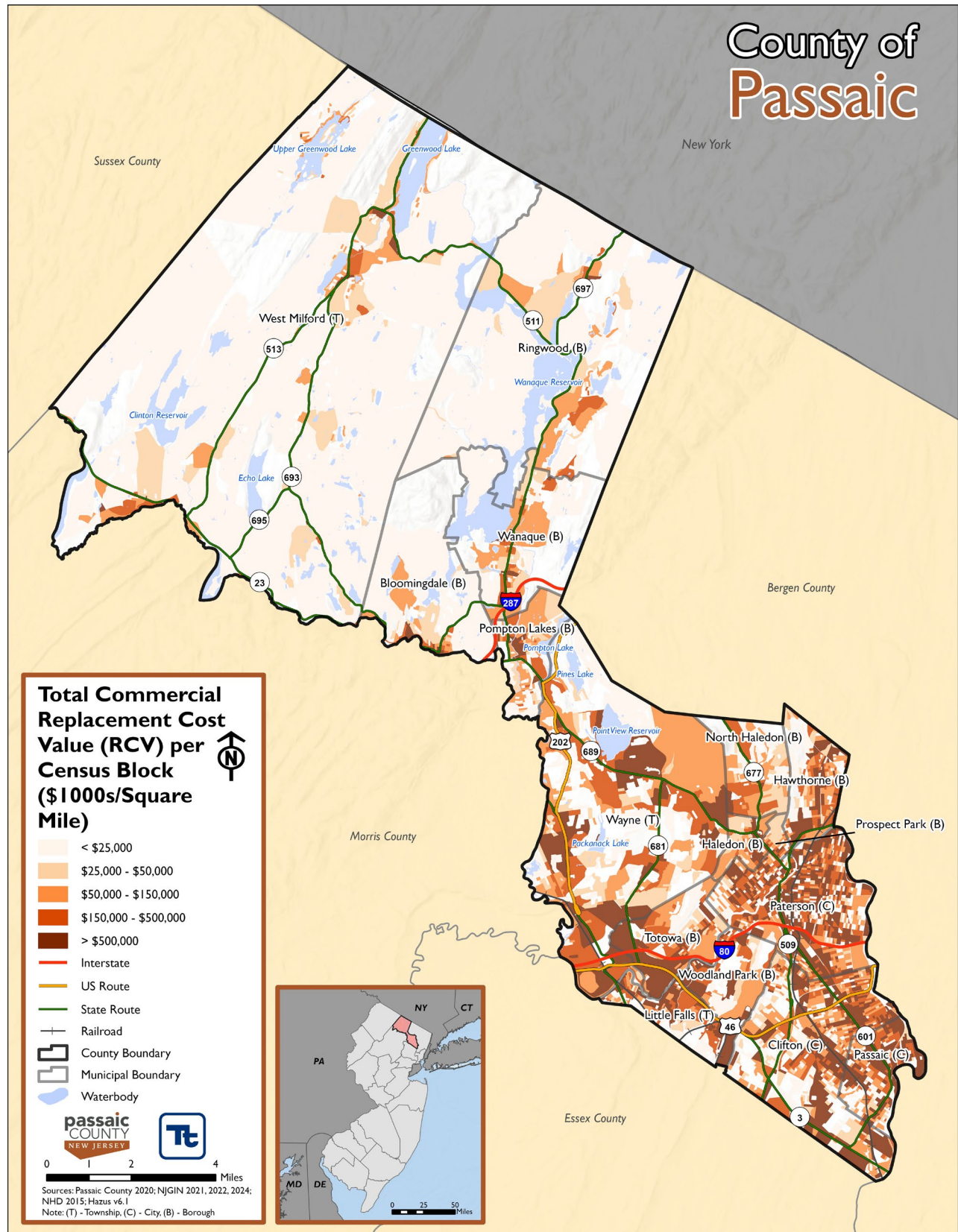
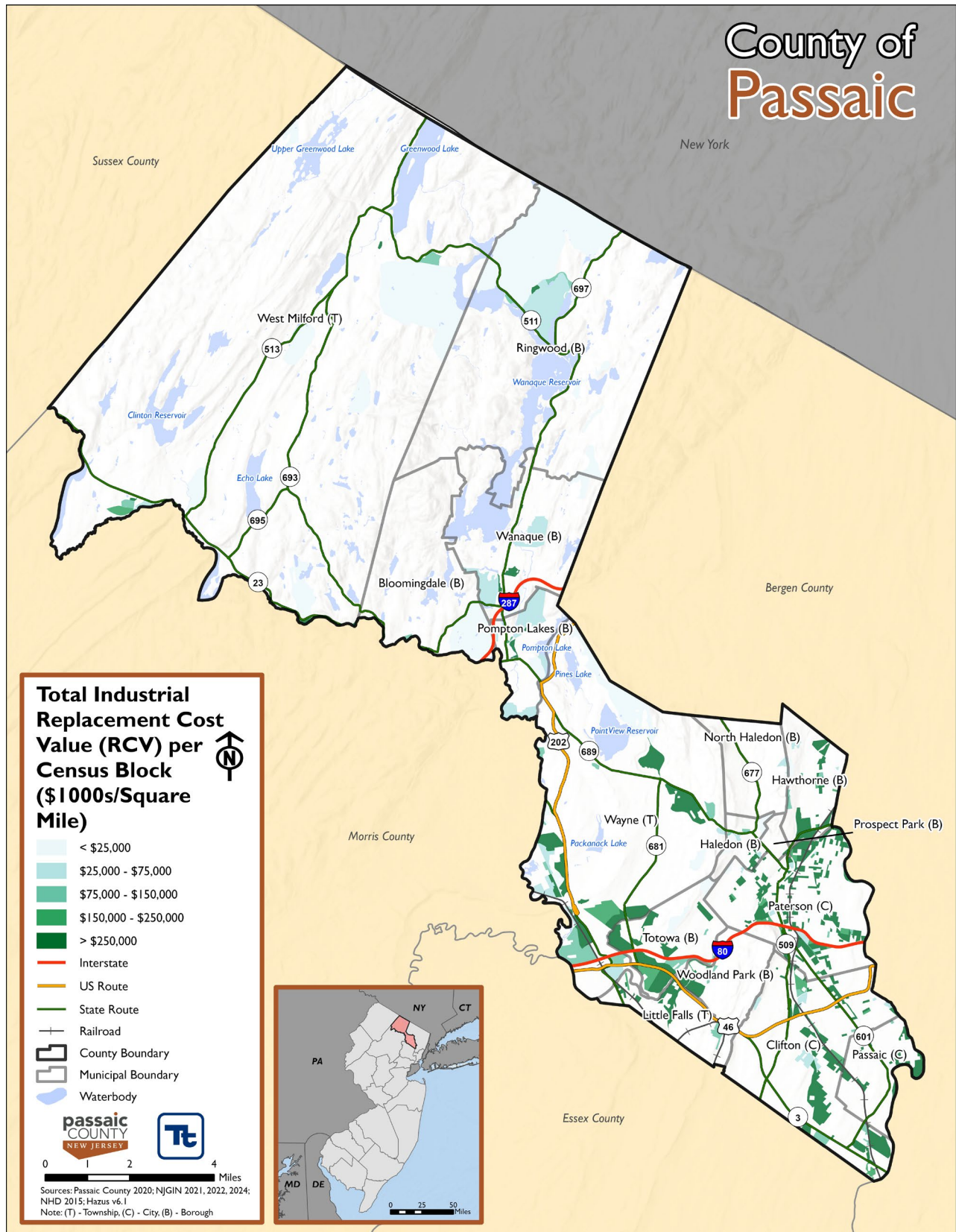




Figure 3-16. Distribution of Industrial Building Stock Value Density in Passaic County













3.9 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 3-11.

Table 3-11. FEMA-Defined Categories of Community Lifelines

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



A comprehensive inventory of community lifelines in Passaic 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.

3.9.1 Safety and Security

Table 3-12 lists safety and security community lifelines by facility type, and Figure 3-17 shows the location of these facilities in Passaic County. The sections below generally describe the assets in this category

Table 3-12. Safety and Security Community Lifelines in Passaic County

Facility Type	Number of Facilities
Alternative Education Facility	95
Correctional Facility	17
County Building	49
Dam	18
DPW	24
EOC	17
Fire Station	62
Military Barracks	1
Municipal Hall	18
Police Station	26
Post-Secondary Education Facility	3
Primary Education Facility	111
Public Health Department	16
Secondary Education Facility	20
Total Safety and Security Facilities	477

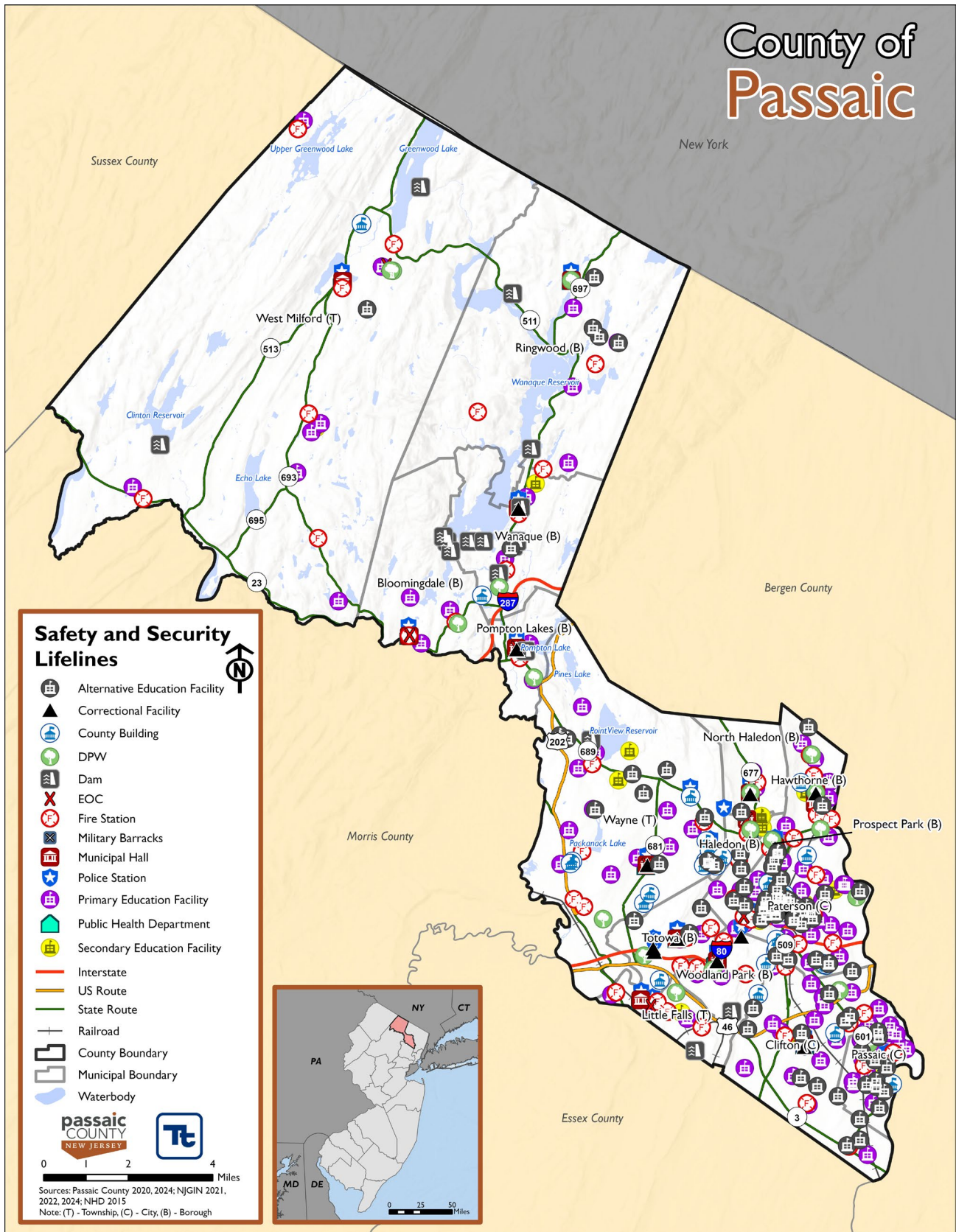
Government Services and Emergency Facilities

County and municipal buildings and public works facilities are essential to the continuity of operations before, during, and after disasters. Each municipality is responsible for maintaining its own police department, fire department, and emergency operations center (EOC).

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



Figure 3-17. Safety and Security Facilities in Passaic County





Schools

More than 200 schools, ranging from elementary to post-secondary education, service the County. Schools can function as shelters in times of needs and are important resource for the community.

Dams and Levees

Table 3-13 lists the number of dams in Passaic County by hazard class, as identified by the State of New Jersey.

Table 3-13. Dams by Hazard Classification in Passaic County

Hazard Ranking	Number of Dams
High	50
Significant	22
Low	62
Total	134

Source: (NJOEM 2024)

3.9.2 Food, Hydration, Shelter

Table 3-14 lists food, hydration, and shelter community lifelines by facility type, and Figure 3-18 shows the location of these facilities in Passaic County. The sections below generally describe the assets in this category

Table 3-14. Food, Hydration, Shelter Community Lifelines in Passaic County

Facility Type	Number of Facilities
Emergency Housing	18
Total Food, Hydration, Shelter Facilities	18

Emergency Housing

There are 18 emergency housing facilities in the County, including schools, community centers, and municipal buildings—16 are in the City of Paterson, one in the City of Clifton, and one in the Town of West Milford.

Socially Vulnerable Populations and Underserved Community Support Facilities

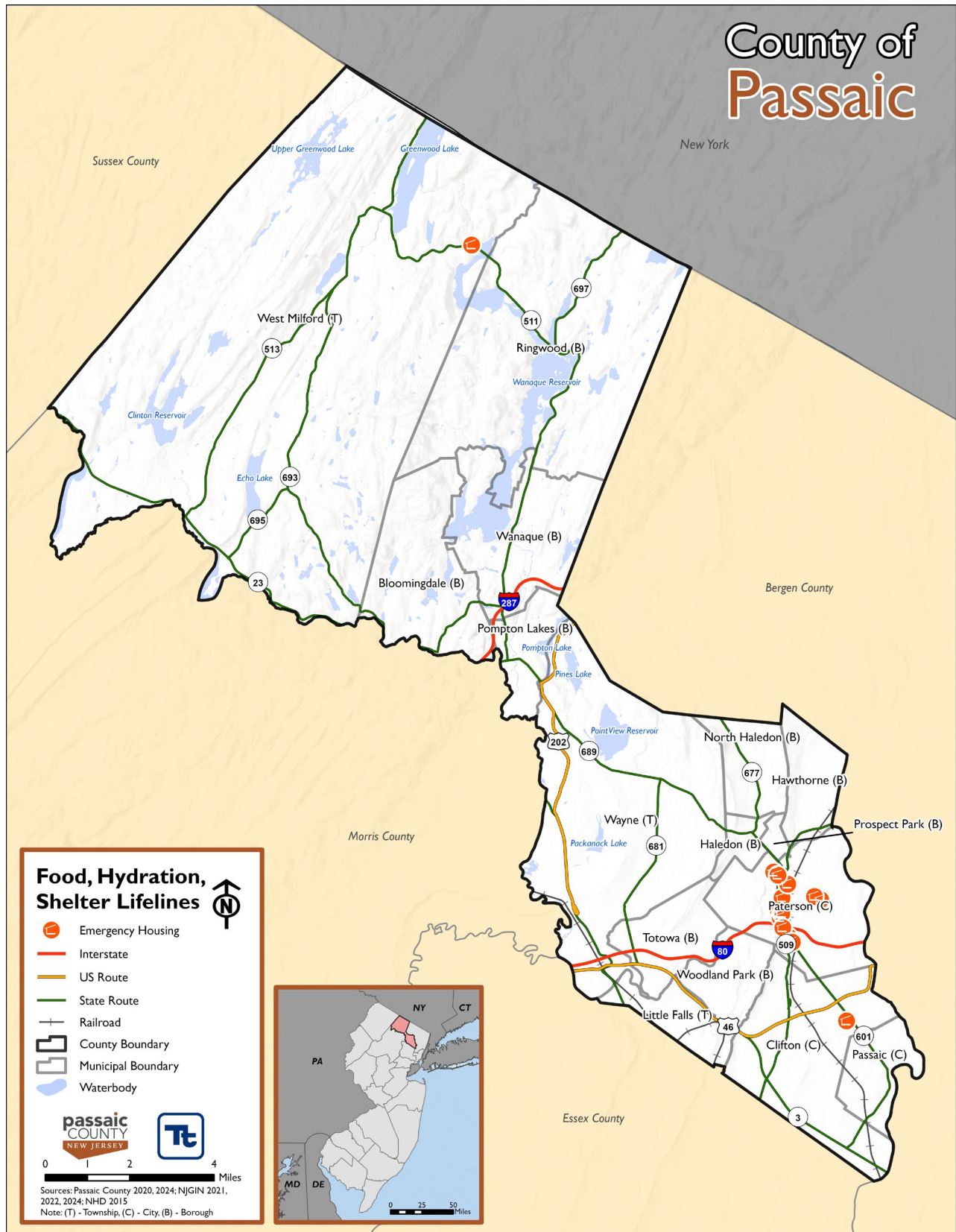
Passaic County Department of Human Services is the key agency in the planning area that provides support to socially vulnerable and historically underserved residents. Its services include a “211” hotline for social service referrals and information, homeless prevention and housing, mental health and addiction treatment, mortgage and foreclosure counseling, rental and utility assistance, and at-risk youth programs.

Additionally, Passaic County has a Safe Stable Sheltering and Housing Task Force as part of its Impact Passaic initiative to address the region’s housing insecurity. The 2020 Passaic Needs Assessment identified housing affordability and poverty as a key obstacle faced by many residents (Passaic County Department of Human Services 2020).

Several non-governmental organizations actively provide supplementary services to those provided by the county, including the United Way of Passaic County, Catholic Charities Diocese of Paterson, Eva’s Village, Boys & Girls Club of Paterson and Passaic, Harbor House, and Turning Point.



Figure 3-18. Food, Hydration, and Shelter Facilities in Passaic County





3.9.3 Health and Medical

Table 3-15 lists health and medical community lifelines by facility type, and Figure 3-19 displays the location of these facilities in Passaic County. The sections below generally describe the assets in this category

Table 3-15. Health and Medical Community Lifelines in Passaic County

Facility Type	Number of Facilities
Addiction Treatment Center	26
EMS	45
Hospital	2
Long Term Care and Rehab Center	1
Medical Facility	11
Pharmacy	54
Senior Care Facility	37
Urgent Care	5
Total Health and Medical Facilities	181

Hospitals and Medical Facilities

The three major healthcare facilities in Passaic County are St. Joseph's Regional Medical Center in the City of Paterson, St. Joseph's Hospital (Kindred Hospital) in Wayne Township, and Saint Mary's General Hospital in the City of Passaic.

There are 54 pharmacies, 26 addiction treatment centers, 11 medical facilities, five urgent care facilities, and one long-term care and rehabilitation center in Passaic County.

EMS Facilities

Most municipalities have at least one EMS facility within their jurisdiction. The City of Paterson contains 12 EMS facilities, and the City of Clifton contains eight.

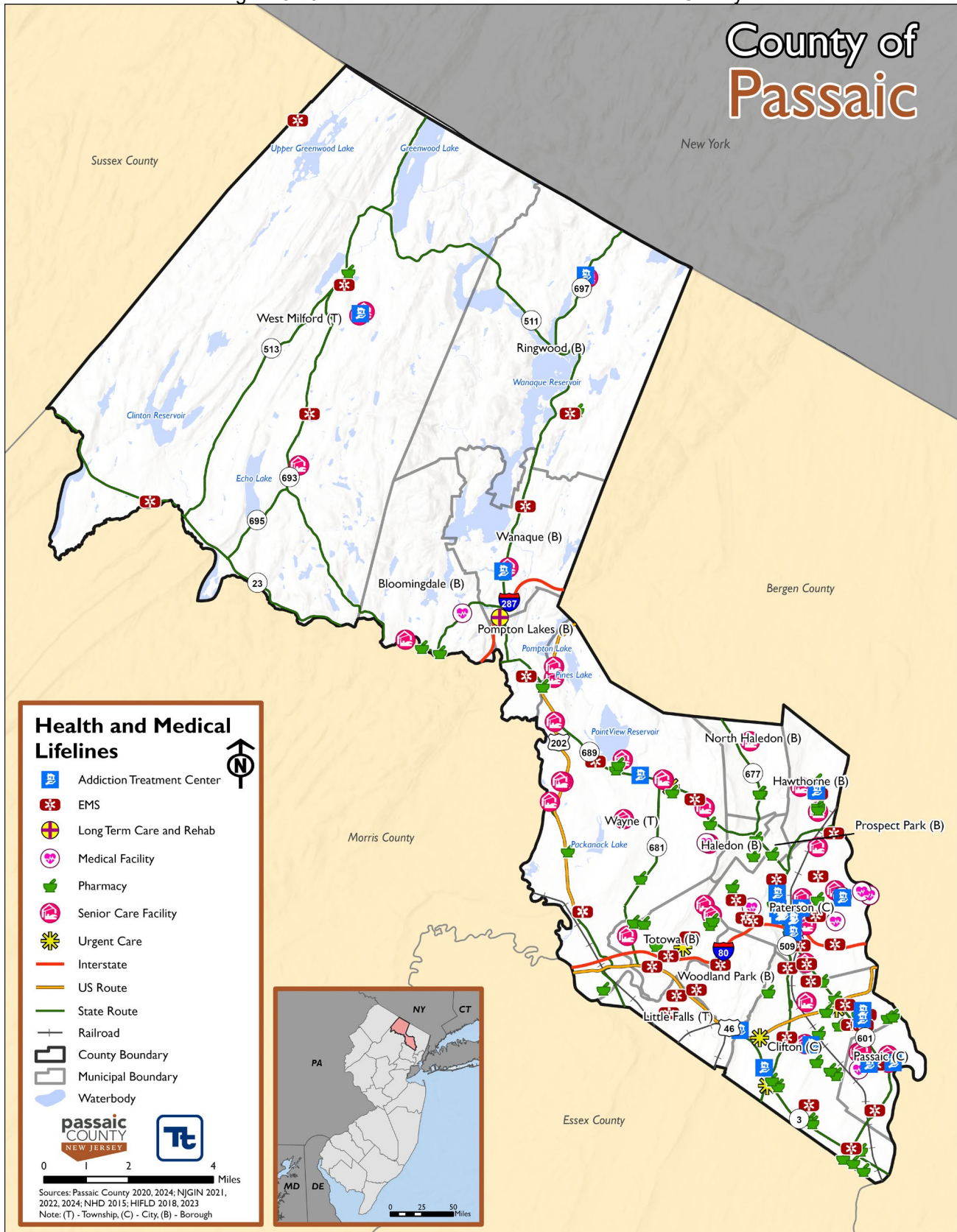
The Boroughs of Bloomingdale, Haledon, and Prospect Park do not have their own EMS facilities. The Borough of Bloomingdale utilizes the Tri-Boro First-Aid Squad located in Butler. The Boroughs of Haledon and Prospect utilize the City of Paterson's EMS.

Senior Care and Living Facilities

There are 37 senior care facilities in the County. Residents may require additional support during hazard events, such as mobility assistance to evacuate or move to a safe location or backup generators to provide consistent power for medical equipment.



Figure 3-19. Health and Medical Facilities in Passaic County





3.9.4 Energy

Table 3-16 lists energy community lifelines by facility type, and Figure 3-20 displays the location of these facilities in Passaic County. Public Service Electric and Gas (PSE&G) is the primary electric and gas utility company in Passaic County with Jersey Central Power and Light (JCP&L) and Orange & Rockland also providing electricity to the communities. Table 3-17 identifies the electric service providers to the municipalities of Passaic County.

Table 3-16. Energy Community Lifelines in Passaic County

Facility Type	Number of Facilities
Electric Substation	15
Natural Gas Facility	1
Power Plant	4
Total Energy Facilities	20

Table 3-17. Utility Providers in Passaic County

Provider	Service	Service Areas
Algonquin Gas Transmission	Natural Gas	Bloomingtondale, Pompton Lakes, and Wanaque
Butler Electric	Electric	Bloomingtondale and West Milford
First Energy Corp./JCP&L	Electric	Bloomingtondale, Pompton Lakes, Ringwood, Wanaque, Wayne, and West Milford
Orange & Rockland	Electric	West Milford and Ringwood
PSE&G	Electric	Clifton, Haledon, Hawthorne, Little Falls, North Haledon, Passaic, Paterson, Pompton Lakes, Prospect Park, Totowa, Wayne, and West Paterson
	Natural Gas	Countywide
Tennessee Gas Transmission Pipeline	Natural Gas	Ringwood and West Milford
Texas Eastern Gas Pipeline	Natural Gas	Bloomingtondale, Pompton Lakes, and Wanaque
Transcontinental Gas Pipeline (Transco Energy)	Natural Gas	Clifton and Little Falls

Source: (Passaic County Board of County Commissioners 2023, Passaic County Office of Emergency Management 2020)

3.9.5 Communications

Table 3-18 lists the communications community lifelines by facility type, and Figure 3-21 displays the location of communications facilities in Passaic County. Passaic County has a network of communication facilities such as utility towers, communication towers, stations, radio towers and cell towers. These facilities are controlled by both public and private institutions. Telecommunication providers in Passaic County include AT&T, Optimum, Sprint, and Verizon New Jersey (Passaic County Board of County Commissioners 2023).

Table 3-18. Communications Community Lifelines in Passaic County

Facility Type	Number of Facilities
Communication Facility	10
Communication Tower	4
Total Communications Facilities	14



Figure 3-20. Energy Facilities in Passaic County

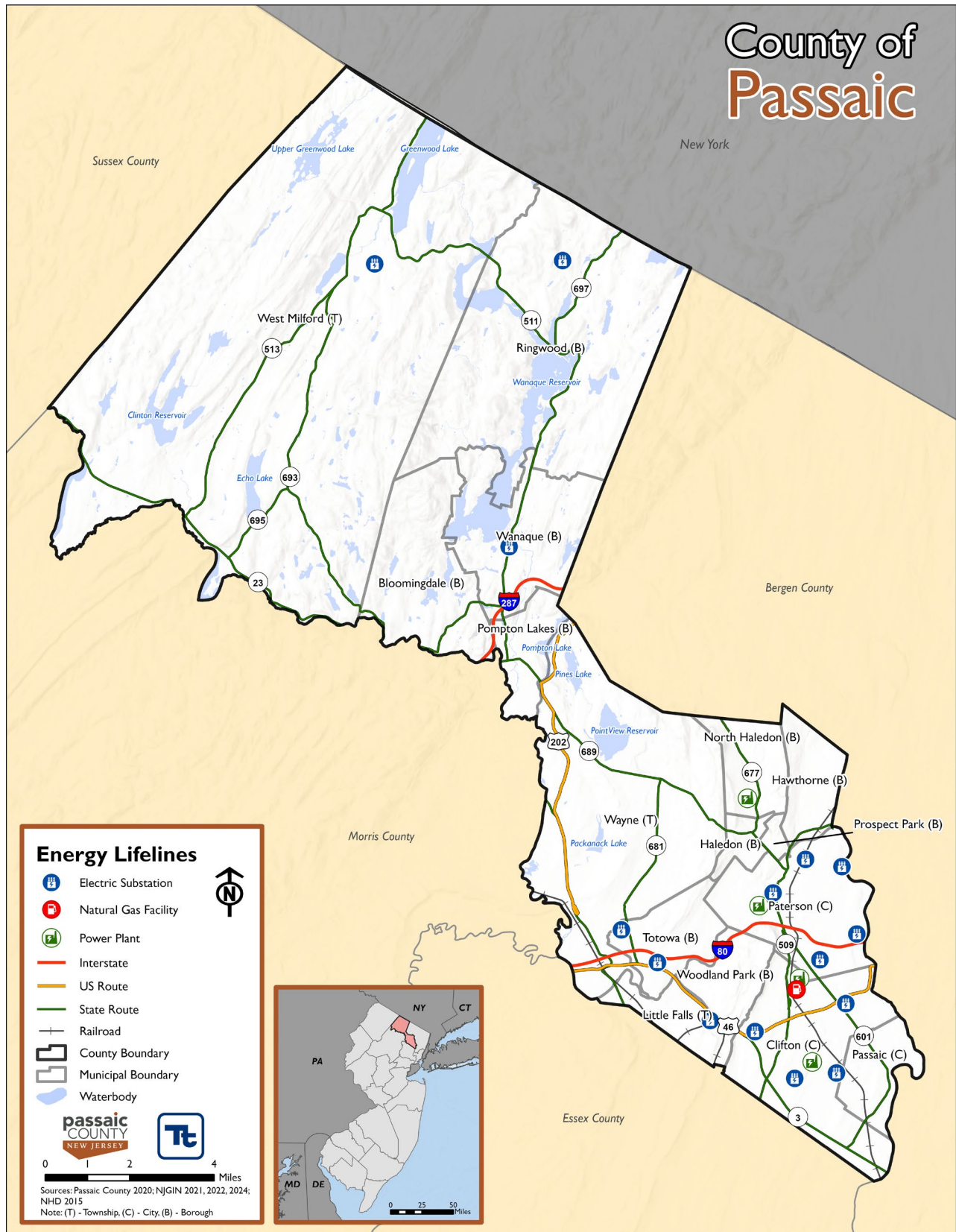
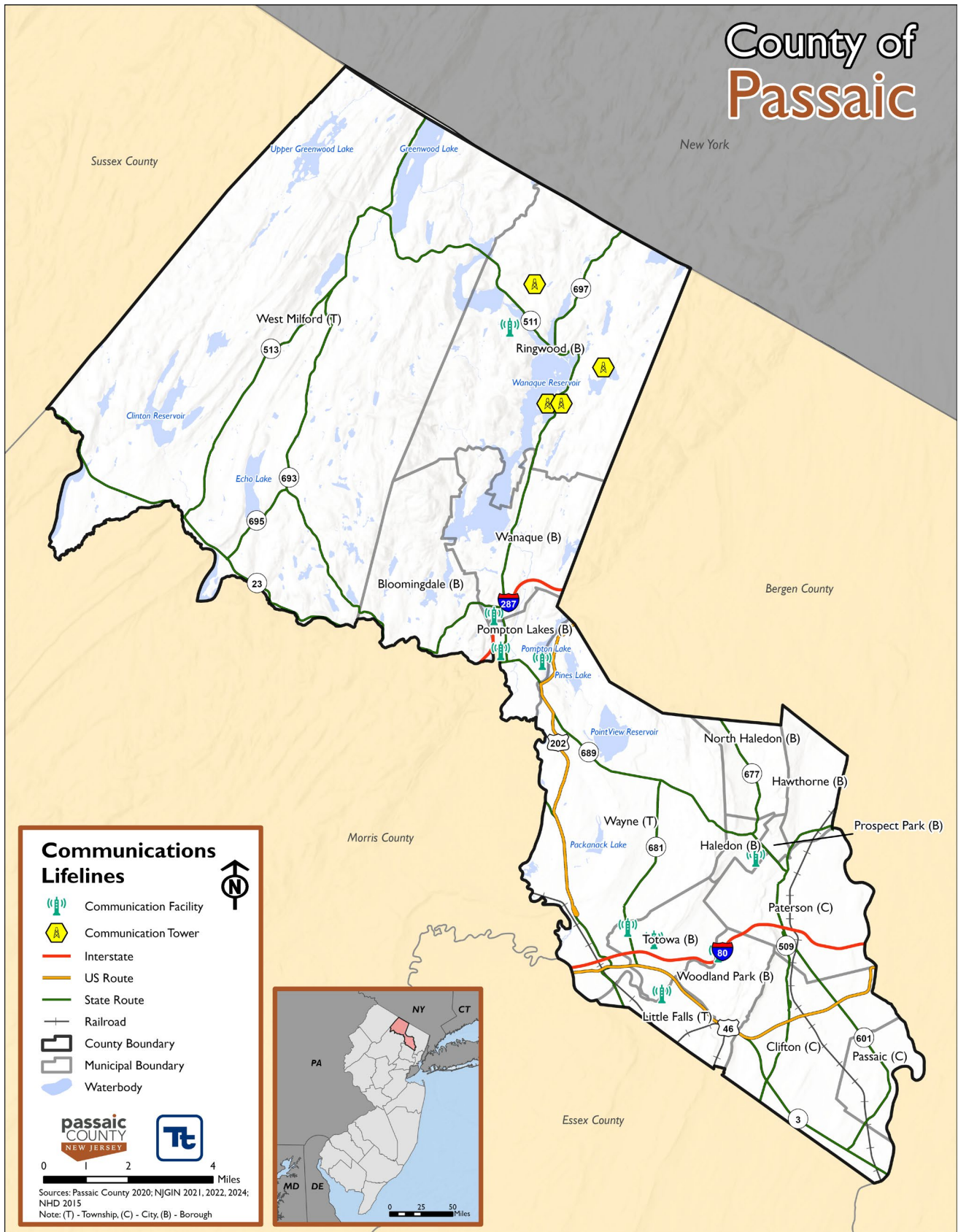




Figure 3-21. Communications Facilities in Passaic County





3.9.6 Transportation

Table 3-19 lists transportation facilities by type, and Figure 3-22 displays the location of these assets in Passaic County. The County’s transportation system includes automobile, bus, freight, passenger train, and air. The County is 11 miles from the George Washington Bridge, 13 miles from the Lincoln Tunnel, and 17 miles from the Holland Tunnel. It is at the crossroads of several of New Jersey’s major highways (Routes 80, 287, 3, 20, 21, 23, 46, the Garden State Parkway, and the New Jersey Turnpike), which link the County to New York, Pennsylvania, and Connecticut. The County’s location provides ready accessibility to three international airports (Newark Liberty, LaGuardia, and John F. Kennedy Airports) along with major international shipping ports (Port Newark and the Elizabeth Marine Terminal). Major freight rail service includes Norfolk Southern and New York, Susquehanna and Western. New Jersey Transit provides passenger rail services.

Table 3-19. Transportation Community Lifelines in Passaic County

Facility Type	Number of Facilities
Airport	5
Bridge	134
Bus Facility	19
Train Station	17
Total Transportation Facilities	175

3.9.7 Hazardous Materials

Table 3-20 lists the hazardous materials community lifelines by facility type, and Figure 3-23 displays the location of these facilities in Passaic County. The sections below generally describe the assets in this category

Table 3-20. Hazardous Materials Community Lifelines in Passaic County

Facility Type	Number of Facilities
Chemical Storage	10
Hazardous Waste Facility	11
Total Hazardous Materials Facilities	21

Superfund Sites

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) enables the federal government to respond to hazardous material releases, including cleanup of inactive yet still polluted hazardous material sites, referred to as “Superfund” sites.

The U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation and Liability Information System reports that there is one Superfund site that is on the federal National Priorities List in Passaic County. Abandoned hazardous waste sites on the National Priorities List include 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. The Passaic County site is a historic iron mining site, including mine shafts, pits, landfills, and open waste dumps, located in the Borough of Ringwood (EPA n.d.). Another site, W.R. Grace & Co., Inc./Wayne Interim Storage in the Township of Wayne, was previously listed on the National Priorities List but was removed from the list in 2012 upon the completion of long-term remediation actions (EPA n.d.).



Figure 3-22. Transportation Facilities in Passaic County

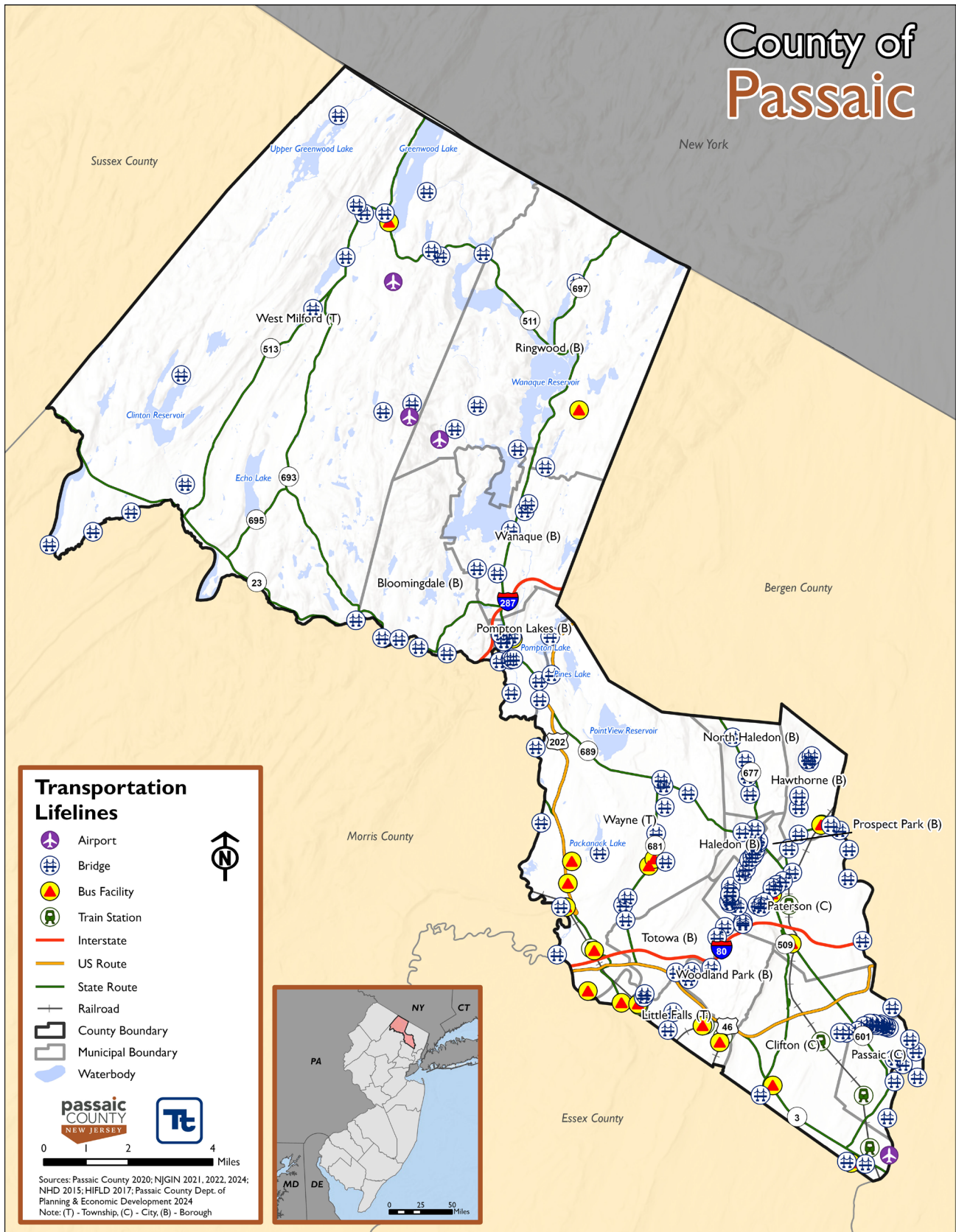
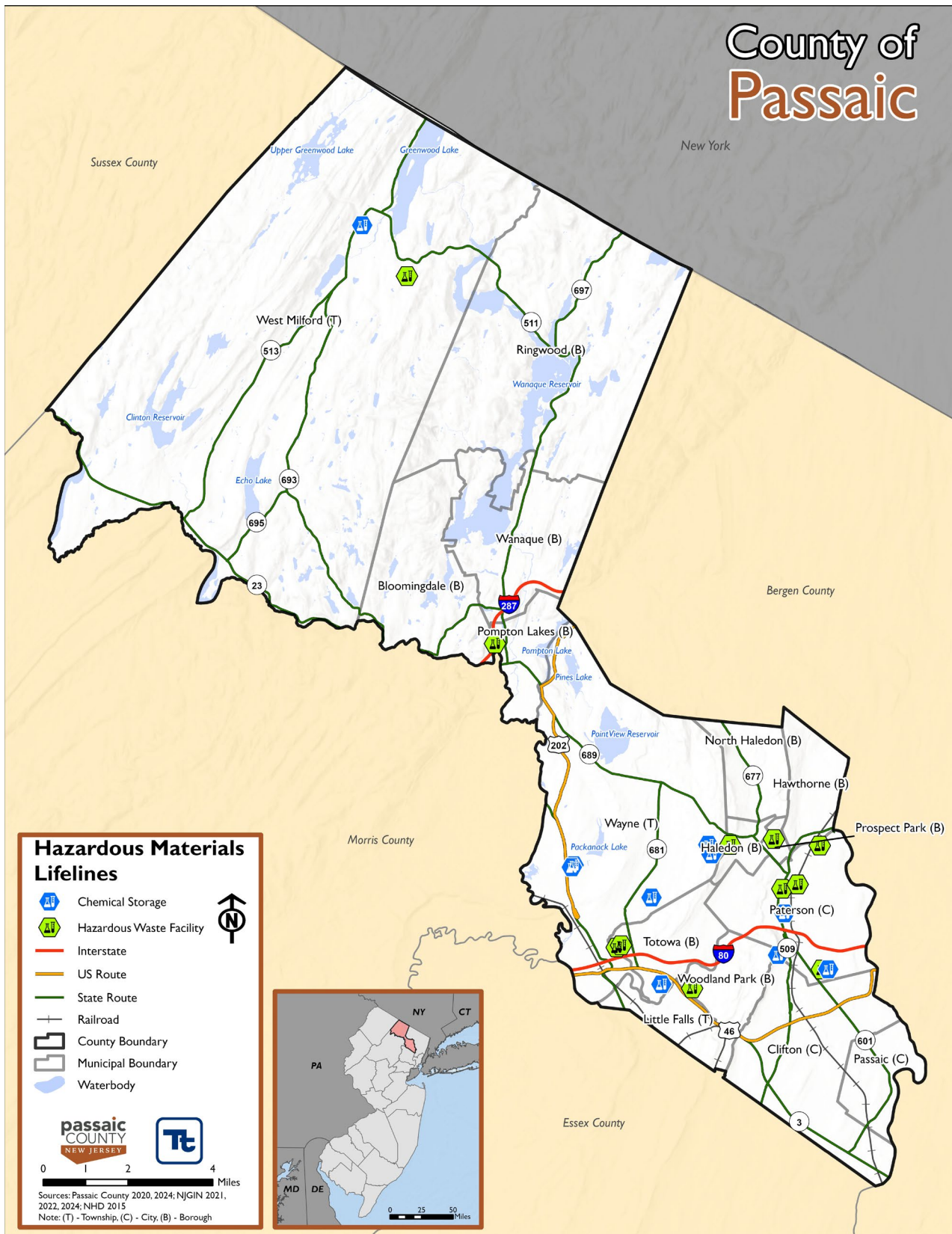




Figure 3-23. Hazardous Materials Facilities in Passaic County





Toxic Release Inventory

The EPA 2023 Toxics Release Inventory (TRI) database indicates there are 20 TRI facilities in Passaic County. TRI facilities are those required to report on chemical storage and use based on volumes of specified chemicals stored and used (EPA 2023).

3.9.8 Water Systems

Table 3-21 lists water system community lifelines by facility type, and Figure 3-24 displays the location of these facilities in Passaic County. The sections below generally describe the assets in this category

Table 3-21. Water Systems Community Lifelines in Passaic County

Facility Type	Number of Facilities
Potable Water Pump Station	22
Potable Water Treatment Facility	10
Wastewater Pump Station	30
Wastewater Treatment Facility	7
Water Tank	10
Water Tower	1
Water Utility Building	1
Well	80
Total Water Systems Facilities	161

Potable Water

Water suppliers in Passaic County include the following (Passaic County Board of County Commissioners 2023):

- Bloomingdale Water and Sewer
- Hawthorne Water Department
- American Water Resources
- North Jersey District Water Supply Commission
- Passaic Valley Water Commission
- Pompton Lakes Municipal Utilities Association
- Ringwood Water Department
- Totowa Water Department
- Wanaque Water Department
- Wayne Township Division of Water and Sewer
- West Milford Water and Sewer (SUEZ North America)
- Woodland Park Water Company

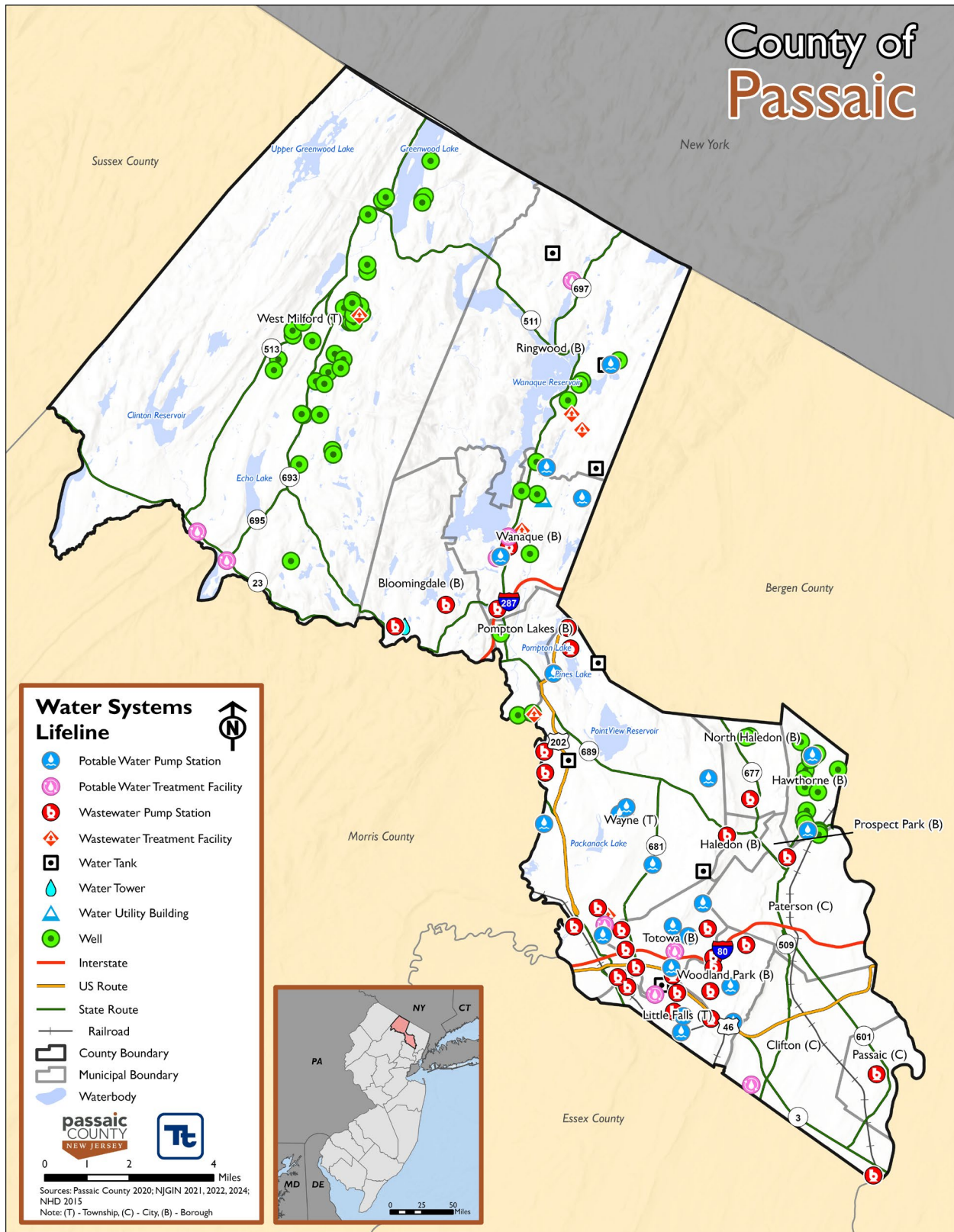
The northern region of Passaic County contains a large area of lakes and reservoirs, including the Wanaque and Monksville Reservoir, that provide water for communities. In addition, many communities rely on well water and private service providers, which includes the Passaic Valley Water Commission and United Water. Passaic County contains 22 potable water pump stations, 10 potable water treatment facilities, and 80 wells.

Wastewater Facilities

Several communities in the County provide public wastewater services, while others rely on private providers for wastewater treatment, including the Passaic Valley Sewerage Commission, Wanaque Valley Regional Sewerage Authority and Wayne Township Division of Water and Sewer (Passaic County Board of County Commissioners 2023). There are seven wastewater treatment facilities and 30 wastewater pump stations in Passaic County.



Figure 3-24. Water Systems Facilities in Passaic County





3.9.9 Other Critical Facilities

Some facilities that are identified as critical for hazard mitigation in Passaic County do not fit in any of FEMA's community lifeline categories. Table 3-22 lists these facilities by type, and Figure 3-25 displays the locations in Passaic County.

Table 3-22. Other Critical Facilities in Passaic County

Facility Type	Number of Facilities
Daycare	240
Library	3
Major Employer	19
Museum	1
Senior Center	1
Total Facilities	264

3.9.10 Critical Facilities by Jurisdiction

Table 3-23 lists all community lifelines and other critical facilities identified in the asset inventory for this HMP by category and jurisdiction.



Figure 3-25. Other Critical Facilities in Passaic County

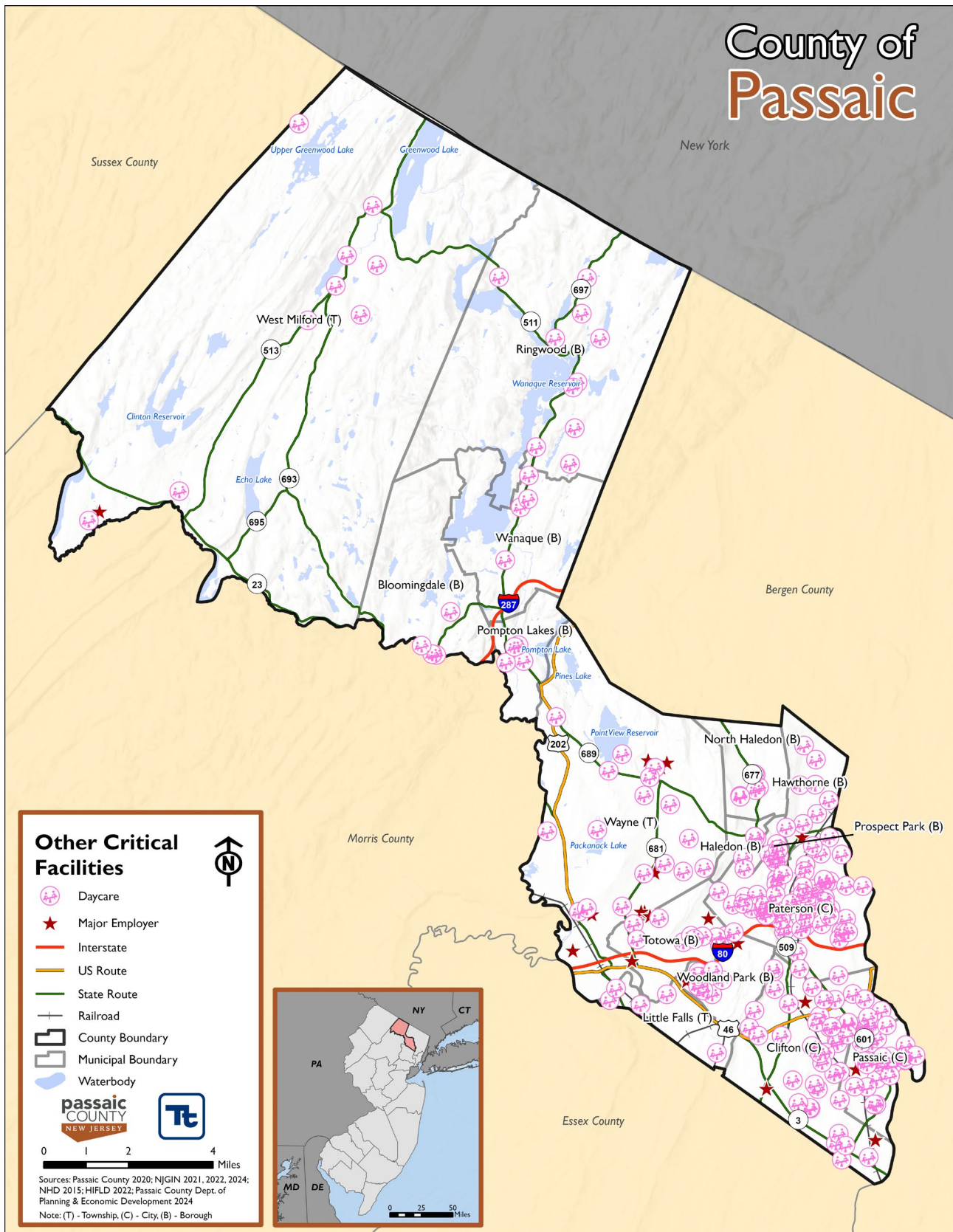




Table 3-23. Inventoried Critical Facilities by Jurisdiction

Jurisdiction	Number of Facilities in Jurisdiction									
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Total
Bloomington (B)	0	0	0	0	4	13	4	3	4	28
Clifton (C)	0	7	1	0	41	45	20	2	52	168
Haledon (B)	1	0	0	1	2	13	9	1	3	30
Hawthorne (B)	0	0	0	0	8	26	9	24	11	78
Little Falls (T)	1	1	0	0	4	16	13	7	5	47
North Haledon (B)	0	1	0	0	3	13	4	3	7	31
Passaic (C)	0	0	0	0	10	41	13	1	28	93
Paterson (C)	0	6	16	7	43	120	24	1	71	288
Pompton Lakes (B)	3	0	0	1	1	12	11	4	4	36
Prospect Park (B)	0	0	0	1	1	13	1	0	4	20
Ringwood (B)	5	1	0	0	4	17	8	16	10	61
Totowa (B)	3	2	0	3	15	22	3	14	11	73
Wanaque (B)	0	1	0	0	5	21	5	13	5	50
Wayne (T)	0	0	0	5	29	63	26	22	25	170
West Milford (T)	0	1	1	2	9	24	21	45	11	114
Woodland Park (B)	1	0	0	1	2	18	4	5	13	44
Passaic County (Total)	14	20	18	21	181	477	175	161	264	1,331



3.10 NATURAL, HISTORIC AND CULTURAL RESOURCES

The natural, historic, and cultural resources found in Passaic County contribute to its unique community character. If damaged by a hazard event, these resources may be challenging to restore to their original state due to regulation and cost. Identifying these resources is critical to protecting them from potential damage by a hazard event.

3.10.1 Natural

Passaic County contains 56,837 acres of dedicated park, recreation, and open space areas (Passaic County Department of Planning and Economic Development 2013). In addition to those discussed in Section 3.5, parks in Passaic County include the Paterson Great Falls National Historical Park, managed by the National Park Service. Additionally, Passaic County is home to the New Jersey State Botanical Gardens, which is a part of Ringwood State Park and managed by the NJDEP Division of Parks and Forestry.

3.10.2 Historic

Passaic County has developed a rich and varied history over the past several centuries due to its early urbanization. The County Department of Cultural and Historic Affairs oversees more than a dozen historic sites, many of which focus on the region's roots in industrialization, engineering, and scientific discovery. There are 42 properties in the County listed on the New Jersey and National Registers of Historic Places, of which 19 are in the City of Paterson, the most of any municipality (NJDEP Historic Preservation Office 2024). Listed properties include several of the County's natural and cultural resources as well, such as the New Jersey State Botanical Gardens and the Great Falls.

3.10.3 Cultural

As storied and diverse region, Passaic County contains many museums and cultural centers that embody the region's history, including the Folklife Center of Northern New Jersey, the Turkish Cultural Center, Clifton Jewish Center, and Ringwood Manor Association of the Arts.