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# 1.0 CHAPTER 1 – INTRODUCTION

## 1.1 Background

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In an effort to reduce the Nation's mounting natural disaster losses, the United States Congress passed the Disaster Mitigation Act of 2000 (DMA 2000 or DMA2K) to provide new and revitalized approaches to mitigation planning. Section 322 of DMA 2000 emphasizes the need for state and local entities to closely coordinate mitigation planning and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for Federal mitigation grant funds.

This 2020 New Castle County (NCC) Hazard Mitigation Plan Update (HMP) is conducted in coordination with the Federal Emergency Management Agency (FEMA) and the Delaware Emergency Management Agency (DEMA) to ensure that it meets all applicable DMA 2000 planning requirements. A Local Mitigation Plan Review Tool, included in the Plan Update, provides a summary of FEMA's current minimum standards of acceptability, and notes the location within this Plan where each planning requirement is met.

Hazard Mitigation is defined by the Federal Emergency Management Agency (FEMA) as "sustained action taken to reduce or eliminate long-term risk to people and property from hazards and their effects." The hazard mitigation planning process involves the coordination of actions taken to reduce injuries, deaths, property damage, economic losses, and degradation of natural resources due to natural and human-caused disasters. Hazard mitigation is considered one of four phases in emergency management activities. This includes:

- Preparedness - activities that involve planning and preparing for when a disaster strikes and include response capability actions to ensure an effective and efficient use of resources and efforts to minimize damage.
- Mitigation - activities that involve actions that reduce or eliminate the probability of an occurrence or reduce the impact of a disaster. The goal of the mitigation phase is to decrease the need for a respective response.
- Response - activities that involve providing emergency assistance to victims and minimizing property loss and can include preliminary or initial damage assessments. The response phase begins during or immediately after the onset of a disaster and informs the recovery process.
- Recovery - activities that include short and long-term activities that help return individuals and communities to normalcy as soon as possible. Recovery actions involve clean-up efforts, temporary housing, and repair or replacement of infrastructure.

## 1.2 Purpose

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This 2020 Plan Update is intended to enable the County and its municipalities to effectively respond to hazards as they occur and reduce the potential risks of these hazards to the health, safety, and welfare of residents. The overall goal for the Update is to continue to allow NCC municipalities to be eligible for a range of financial assistance following hazard events.

This 2026 Plan Update consists of a thorough review of the 2020 Plan and an update of relevant sections based on hazard occurrences within the past five years. The Update process included the review of data on potential hazards and reprioritized these hazards in terms of frequency and

severity, as well as exploring new hazards to incorporate. The process also involved the review of county and municipal capabilities, as well as mitigation goals and objectives, and actions.

## 1.3 Scope

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The NCC County EMA contracted with Vision Planning and Consulting (VPC) to update the 2020 County Hazard Mitigation Plan. The Plan Update is a multi-jurisdictional plan that covers the County and its 13 municipalities.

It must be noted that future funding for projects will be contingent upon having each jurisdiction in NCC individually adopt the Plan after the County adopts its Plan. Jurisdictions that do not adopt the Plan will not be eligible for pre- and post-disaster mitigation funds.

The Hazard Mitigation Plan Update comprises 8 chapters. Chapter 1 provides an introduction to the plan update process and organization. Chapter 2 provides an overview of the geographic, socio-economic, and demographic characteristics. Chapter 3 discusses the planning process; Chapter 4 comprises the Risk Assessment, including hazard identification and profiles, historic profile of hazard types and associated losses, and a vulnerability assessment, which analyzes the potential for future damages due to the hazards identified. Chapter 5 contains a capability assessment, including a review of existing plans and ordinances from the counties and municipalities. Chapter 6 discusses the mitigation strategy, including updated mitigation goals and objectives, mitigation actions, and the method for prioritization and implementation of mitigation actions. Chapter 7 outlines how NCC and its municipalities will implement the Plan once it is adopted and ways to monitor progress and ensure continued public involvement. Chapter 8 addresses the adoption of the Plan Update by the County and municipalities.

## 1.4 Authority and References

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Authority for this Plan originates from the following federal sources:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C., Section 322, as amended;
- Code of Federal Regulations (CFR), Title 44, Parts 201 and 206; and
- Disaster Mitigation Act of 2000, Public Law 106-390, as amended.

Authority for this Plan originates from the following Delaware sources:

- State of Delaware All-Hazard Mitigation Plan, revised August 2023.

The following Federal Emergency Management Agency (FEMA) guides and reference documents were used to prepare this document:

- FEMA. Local Mitigation Planning Tool and Guide. March 2012.
- FEMA. Local Mitigation Planning Handbook. March 2013.
- Local Mitigation Planning Policy Guide, April 2023

## 2.0 CHAPTER 2 - COMMUNITY PROFILE

### 2.1 History

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New Castle County was first settled in March 1638 with the establishment of Fort Christina by Swedish colonists along the banks of the Christina River, near present-day Wilmington. Control of the territory shifted several times in the seventeenth century—first to the Dutch in 1655 and then to the English in 1664—introducing English common law and proprietary governance under the Penn family. These early patterns of settlement concentrated activity along navigable rivers and estuaries, a factor that continues to influence the county’s exposure to flooding today.<sup>1</sup>

During the eighteenth century, the county’s location on the Delaware River spurred growth in shipbuilding, gristmills, and agricultural trade. According to the Delaware Public Archives, towns such as New Castle and Odessa prospered as regional trade centers. The completion of the Chesapeake and Delaware Canal in 1829 provided a vital connection between the Chesapeake Bay and the Delaware River, further encouraging development along the waterway.<sup>2</sup>

As maritime trade gave way to rail transport in the nineteenth century, Wilmington emerged as an industrial hub. The arrival of railroads accelerated the growth of iron foundries, textile mills, and manufacturing facilities. Census records from this period document rapid population growth as workers migrated into the county, creating dense residential neighborhoods that remain important but vulnerable communities today.<sup>3</sup>

In the twentieth century, New Castle County’s economy diversified. The DuPont Company’s chemical works on the Brandywine Creek became a global center for materials research. At the same time, the University of Delaware and a growing financial services sector supported urban development and employment growth. Post-World War II suburban expansion converted farmland into planned residential communities such as Newark, Elsmere, and Claymont, reflecting the broader trend toward automobile-dependent development. This outward growth also increased the amount of housing and infrastructure located within areas susceptible to flooding and severe storms.

Throughout its history, the county has confronted natural hazards including tidal flooding, severe storms, and winter ice events. Historic storms such as Hurricane Floyd in 1999 and Superstorm Sandy in 2012 caused significant flooding, transportation disruptions, and property damage across the region. Early adaptation measures—such as raised embankments and rudimentary levees—have since evolved into modern floodplain regulations, stormwater management requirements, and watershed restoration initiatives overseen by the Delaware Department of Natural Resources and Environmental Control (DNREC).

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<sup>1</sup> Delaware Public Archives, “Colonial Delaware Timeline,” item 3, [https://archives.delaware.gov/wp-content/uploads/sites/43/2022/01/Colonial\\_Delaware\\_Timeline.pdf](https://archives.delaware.gov/wp-content/uploads/sites/43/2022/01/Colonial_Delaware_Timeline.pdf).

<sup>2</sup> U.S. Army Corps of Engineers, History of the C&D Canal, chap. 1, [https://www.nap.usace.army.mil/Portals/39/docs/CandD/history\\_CH1.pdf](https://www.nap.usace.army.mil/Portals/39/docs/CandD/history_CH1.pdf).

<sup>3</sup> Delaware Historical Society, Railroad Expansion in Wilmington (pp. 45–47), [https://dehistory.org/assets/railroads\\_wilmington.pdf](https://dehistory.org/assets/railroads_wilmington.pdf).

Today, New Castle County continues to strengthen resilience through dam safety programs, hazard mapping, and community education efforts. These measures aim to reduce vulnerability in low-lying areas, safeguard critical infrastructure, and protect the health and safety of county residents.

## 2.2 Geography

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New Castle County occupies the northern tip of Delaware, encompassing 494 square miles—426 square miles of land and 68 square miles of water—along the Delmarva Peninsula. Its north boundary adjoins Pennsylvania’s Chester and Delaware counties, while Cecil County, Maryland, lies to the west. To the south, the Chesapeake and Delaware Canal separate New Castle from Kent County; the eastern edge follows approximately 40 miles of Delaware Bay shoreline. This strategic position provides direct access to Philadelphia (30 miles), Baltimore (75 miles), New York City (130 miles), and Washington, D.C. (125 miles) via Interstate 95 and U.S. Route 13.<sup>4</sup>

Topography transitions from tidal flats at sea level along the Delaware Bay to 448 feet above mean sea level at Ebright Azimuth on the northern Piedmont plateau. The northern third of the county is characterized by rolling hills and fractured bedrock of the Piedmont Province. In contrast, the southern two-thirds lie within the Coastal Plain, comprised of unconsolidated clays, silts, sands, and gravels. The Fall Line—where harder Piedmont rocks meet softer Coastal sediments—traverses the county just north of Wilmington, shaping historic waterpower sites and today’s variable floodplain extents.<sup>5</sup>

Hydrologic networks drain almost the entire county into the Delaware River Basin, a 13,539 square-mile watershed shared with four states. Major tributaries include Brandywine Creek, White Clay Creek, Red Clay Creek, the Appoquinimink River, and the Christina River, whose combined valleys support critical transport corridors and dense settlements. The Chesapeake and Delaware Canal bisect the county at its midpoint, creating an artificial waterway that links the Delaware River to the Chesapeake Bay. The Hoopes Dam, located near the Claymont landfill, impounds approximately two billion gallons of freshwater for industrial and municipal use.<sup>6,7</sup>

New Castle County’s land-to-water ratio and varied terrain directly affect flood risk. Coastal plain lowlands and stream valleys are subject to tidal, fluvial, and storm-surge inundation, while upland slopes and plateau edges offer relative refuge. This geographic complexity underpins the county’s hazard mitigation strategies and informs land-use decisions across jurisdictions.

Figure 2.1 illustrates Delaware’s statewide elevation gradient as rendered by the Delaware Geological Survey. Gentle shades of pale yellow along the Atlantic coast transition through ochre tones at the Fall Line, culminating in deep reds and browns across the Piedmont uplands. This continuous swath of color delineates physiographic provinces, defines watershed divides, and

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<sup>4</sup>U.S. Census Bureau, “New Castle County, Delaware—Census Bureau Profile” (accessed September 11, 2025), [https://data.census.gov/profile/New\\_Castle\\_County,\\_Delaware?g=0500000US10003](https://data.census.gov/profile/New_Castle_County,_Delaware?g=0500000US10003).

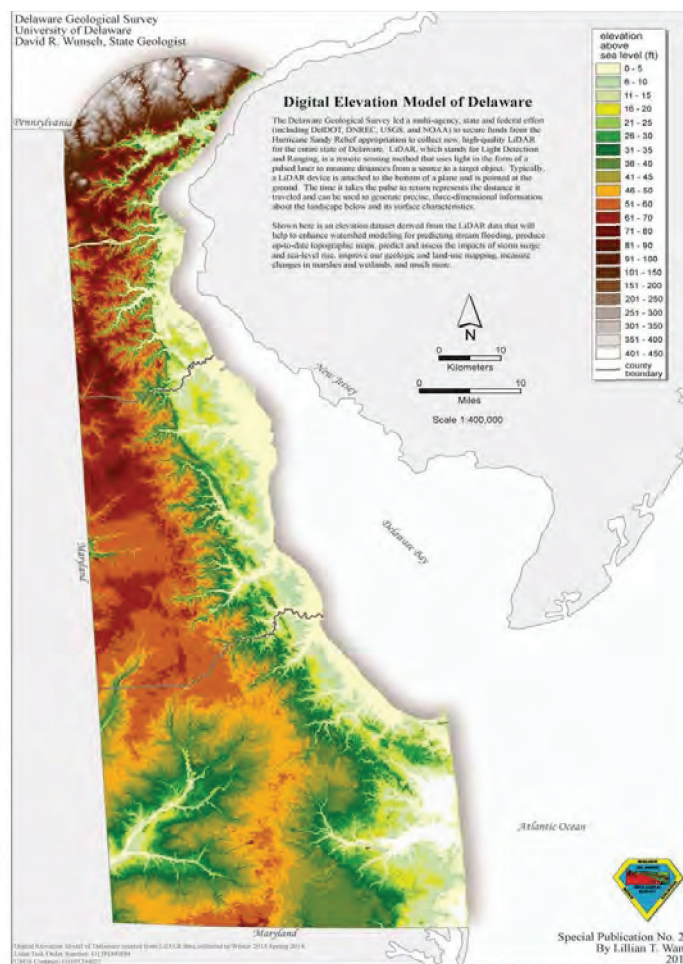
<sup>5</sup>Wilmington Area Planning Council, 2050 Regional Transportation Plan (WILMAPCO, 2023), 23–24, [https://wilmapco.org/Rtp/2050\\_RTP\\_2023\\_update\\_4\\_6\\_2023.pdf](https://wilmapco.org/Rtp/2050_RTP_2023_update_4_6_2023.pdf).

<sup>6</sup>“New Castle County Topographic Map,” en-gb.topographic-map.com, accessed September 11, 2025, <https://en-gb.topographic-map.com/map-nphmt/New-Castle-County/>.

<sup>7</sup>Delaware Department of Natural Resources and Environmental Control, Delaware River Basin Commission, “Delaware River Basin Overview” (DNREC, 2022), 5, <https://dnrec.delaware.gov/climate-plan/>.

indicates primary surface-water flow paths across the state's 2,489 square miles.<sup>8</sup> The map's legend clearly identifies elevation increments in feet, providing essential context for interpreting New Castle County's more detailed terrain.

**Figure 2.1 Elevation Map of Delaware**



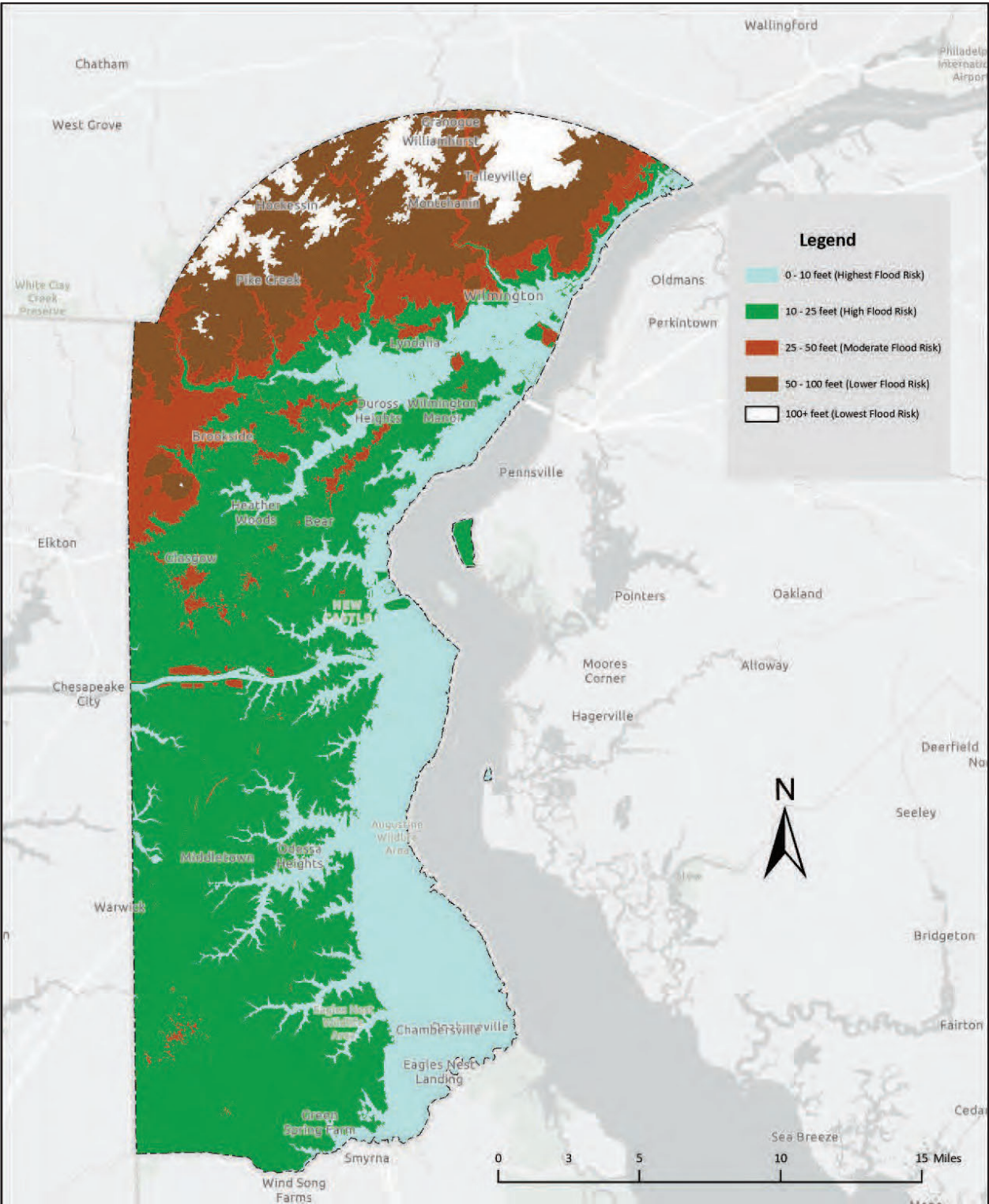
Source: Delaware Geological Survey

Figure 2.2 presents a classified elevation model for New Castle County, dividing the landscape into five FEMA-aligned risk categories: 0–10 ft (Highest Flood Risk, light blue), 10–25 ft (High Flood Risk, green), 25–50 ft (Moderate Flood Risk, burnt orange), 50–100 ft (Lower Flood Risk, dark brown), and above 100 ft (Lowest Flood Risk, white). Low-lying areas concentrated along the Delaware River, Christina River, and Bay shoreline are immediately evident as the light blue and green zones that host key transport corridors and intense urbanization.<sup>9</sup> In contrast, the elevated Piedmont plateau appears in the brown and white bands, signifying natural refuges from inundation.

<sup>8</sup> Delaware Geological Survey, Special Publication No. 28, Digital Elevation Model of Delaware, by Lillian T. Wang (Newark: University of Delaware, 2017), [https://www.dgs.udel.edu/sites/default/files/publications/sp28\\_2017.pdf](https://www.dgs.udel.edu/sites/default/files/publications/sp28_2017.pdf).

<sup>9</sup> New Castle County Department of Land Use, "Refined NCC Elevation Raster" (ArcGIS Online layer, 2025), <https://de-firstmap-delaware.hub.arcgis.com/datasets/delaware::refined-ncc-elevation/explore>.

Figure 2.2 Elevation Map of New Castle County



Sources: Delaware Office of State Planning Coordination, Esri, National Aeronautics and Space Administration, US Geological Survey, US Environmental Protection Agency, US Department of Agriculture, US Fish and Wildlife Services, New Jersey Office of GIS

The spatial distribution of these classes holds direct implications for hazard mitigation planning. First, floodplain management efforts recommend focus on the light blue and green bands to safeguard critical utilities and densely populated communities. Second, land-use policies recommend new residential or commercial development within the Highest and High Flood Risk zones, instead promoting open-space buffers or flood-resilient infrastructure. Third, evacuation routes and emergency access roads are best suited within the Moderate and Lower Flood Risk bands to ensure reliable connectivity during extreme high-water events. Fourth, targeted structural mitigation—such as floodproofing, stormwater detention, and levee reinforcement—should concentrate on the transitional edges between High and Moderate Risk zones, thereby smoothing the risk gradient where urban expansion abuts floodplain fringe areas. Fifth, integrating this elevation framework with demographic and social vulnerability data will enable prioritizing outreach, early-warning systems, and resource allocation in communities where low elevation coincides with high population density for current and future mitigation actions.

## 2.2.1 Climate

New Castle County experiences a temperate, humid climate characterized by four distinct seasons and moderated by proximity to the Atlantic coast and Delaware Bay. According to the most recent 30-year normals (1991–2020) published by the National Oceanic and Atmospheric Administration, the county’s mean annual temperature is 54.3 °F, with mean monthly temperatures ranging from 31.2 °F in January to 77.3 °F in July.<sup>10</sup>

Precipitation totals average 43.2 inches per year, distributed relatively evenly throughout the year. Monthly rainfall peaks in May (4.6 inches) and July (4.4 inches), while February is the driest month (3.1 inches). Seasonal snowfall averages 19.8 inches, with January and February together accounting for over half of the annual total.

Storm patterns combine both convective and frontal systems. Thunderstorms occur most frequently in late spring and summer, sometimes producing localized flooding and hail. Nor’easters and strong coastal storms in winter and early spring can deliver heavy snow, ice accumulations, and powerful coastal surges along the Delaware Bay shoreline. Annual variability in precipitation and temperature underscores the need for adaptive stormwater management and floodplain regulation.

These climatic conditions directly influence hazard profiles: summer convective storms drive intense runoff events in urban watersheds, whereas winter ice and snow can paralyze transportation and impede emergency response. Likewise, prolonged wet spells heighten soil saturation, increasing landslide and debris-flow risk on the county’s upland slopes. Understanding these seasonal dynamics is essential for aligning mitigation measures—such as detention basins, snow-removal planning, and coastal surge barriers—with the county’s meteorological regime.

## 2.2.2 Physical Features

New Castle County’s landscape is defined by the juxtaposition of the Piedmont Plateau and the Atlantic Coastal Plain, separated by the geologic Fall Line that runs just north of Wilmington. The Piedmont region in the county’s northern tier consists of weathered crystalline bedrock—primarily schist, gneiss, and quartzite—forming rolling hills and narrow stream valleys. Soils here are generally

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<sup>10</sup> NOAA National Centers for Environmental Information, “U.S. Climate Normals 1991–2020,” Wilmington Station ID GHCND:USW00013752 (accessed September 12, 2025), <https://www.ncei.noaa.gov/products/us-climate-normals>.

well-drained loams with moderate to steep slopes, lending natural stability yet presenting erosion concerns along cutbanks and road embankments.<sup>11</sup>

South of the Fall Line, unconsolidated sediments of the Coastal Plain dominate. Layered deposits of clay, silt, sand, and gravel extend to the Delaware Bay shoreline, underlain at depth by confining clay layers that influence groundwater flow. These sediments create broad floodplains along major waterways such as the Christina River, Brandywine Creek, and Red Clay Creek. Floodplain soils—classified as Hydrologic Soil Group C and D—exhibit low infiltration rates, increasing surface runoff, and elevating flood peaks during heavy precipitation events.<sup>12</sup>

Karst features are absent in New Castle County; however, shallow groundwater near the Fall Line contributes to natural springs and seeps, notably along perennial streams that served historic mill operations. The county's bedrock aquifers yield high-quality water. Still, they are sensitive to contamination from surface activities. At the same time, the overlying Coastal Plain aquifers provide the primary source for municipal and industrial supply, regulated through the Delaware Department of Natural Resources and Environmental Control's Source Water Assessment Program.<sup>13</sup>

Flood hazard extents, as delineated by FEMA's Flood Insurance Rate Maps, reveal that over 20% of the county's land area lies within the 1-% annual chance floodplain. These floodplains coincide with the low-lying Coastal Plain and river valley margins, underscoring their significance for hazard mitigation. Artificial features—such as the Chesapeake and Delaware Canal and the Hoopes Dam reservoir—alter natural hydrology, necessitating careful integration of levees, detention basins, and stormwater networks into the county's resilience planning.<sup>14</sup>

### 2.2.3 Watersheds

New Castle County's hydrologic framework comprises a network of eight principal watershed units that drain northward into the Delaware River and eastward into Delaware Bay and the Chesapeake Bay, as illustrated in Figure 2.3. The Piedmont watersheds—White Clay Creek, Red Clay Creek, Brandywine Creek, and Shellpot Creek—originate in the rolling uplands north of the Fall Line and converge near Wilmington, supplying both drinking water and industrial process flow. These streams traverse fractured bedrock channels, where steep gradients accelerate runoff and heighten the potential for flash flooding during intense storm events.<sup>15</sup>

South of the Fall Line, the Coastal Plain watersheds—Appoquinimink River, Blackbird Creek, Bohemia Creek, and the Sassafra River drainage—occupy broad floodplains underlain by fine-grained sediments. The Appoquinimink watershed, covering approximately 150 square miles,

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<sup>11</sup> Delaware Geological Survey, GM13 Geologic Map of New Castle County, Delaware (Newark: University of Delaware, 2005), <https://www.dgs.udel.edu/sites/default/files/publications/GIS/data/gm13.pdf>.

<sup>12</sup> U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey of New Castle County, Delaware (Washington, DC: USDA, 2014),

[https://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/delaware/DE011/0/DE011.pdf](https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/delaware/DE011/0/DE011.pdf).

<sup>13</sup> Delaware Department of Natural Resources and Environmental Control, "Source Water Assessment Report: New Castle County," Delaware DNREC Water Supply Section, 2023, <https://dnrec.delaware.gov/water/Pages/SWAP.aspx>.

<sup>14</sup> Federal Emergency Management Agency, Digital Flood Insurance Rate Map Panel 10003C, New Castle County, Delaware (FEMA, 2019), <https://msc.fema.gov/portal>.

<sup>15</sup> U.S. Geological Survey, National Hydrography Dataset, "New Castle County Hydrologic Units" (accessed September 12, 2025), <https://nhd.usgs.gov>.

conveys the bulk of surface runoff from interior farmlands and suburban developments to Delaware Bay, where tidal backwater complicates upstream flood peaks.<sup>16</sup> Bohemia and Sassafras watersheds, shared with Cecil County, Maryland, exhibit similar tidal influences and require coordinated interstate flood mitigation strategies.

The Chesapeake and Delaware Canal bisect the county's central zone, creating artificial watershed divides that alter historic flow patterns. East of the canal, the Drawyers Creek and Dragon Run sub watersheds contribute to the Delaware Bay estuary system; west of the canal, headwaters of the Chester River watershed lie just beyond the county line. Hydraulic control structures at C&D Canal locks modulate both maritime traffic and local groundwater levels, affecting floodplain recharge and saltwater intrusion risks.<sup>17</sup>

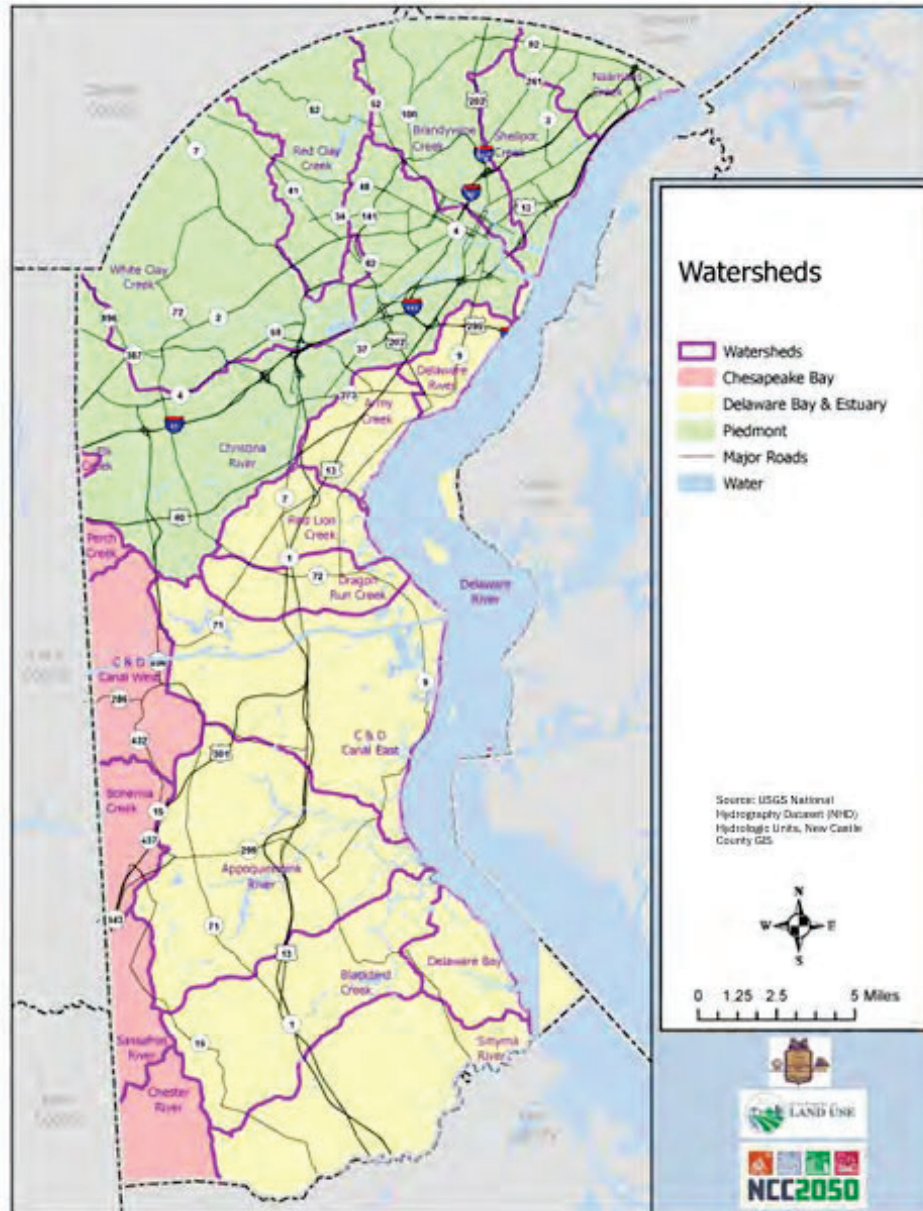
Watershed delineation underpins hazard mitigation planning by identifying nodes of vulnerability and guiding the placement of structural controls. In upland sub catchments, detention basins and riparian buffers can attenuate stormwater peaks, reducing downstream inundation in urbanized corridors. In tidal estuary zones, restoration of marshlands and living shorelines buffers surge impacts and stabilizes eroding banks. Moreover, interjurisdictional coordination—particularly for watersheds shared with Maryland and Pennsylvania—ensures that upstream land-use changes do not exacerbate flood hazards in New Castle County.

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<sup>16</sup> New Castle County Department of Land Use, GIS Division, “Watersheds of New Castle County” (ArcGIS Online layer, 2024), <https://de-firstmap-delaware.hub.arcgis.com/datasets/delaware::ncc-watersheds/explore>.

<sup>17</sup> U.S. Army Corps of Engineers, “Chesapeake & Delaware Canal Hydraulics Report” (Philadelphia District, 2020), [https://www.nap.usace.army.mil/Portals/39/docs/CandD/2020\\_Hydraulics\\_Report.pdf](https://www.nap.usace.army.mil/Portals/39/docs/CandD/2020_Hydraulics_Report.pdf).

Figure 2.3 New Castle County Watersheds



Source: New Castle County 2050 Comprehensive Plan

## 2.2.4 Municipalities/Jurisdictions

New Castle County comprises thirteen incorporated municipalities: four cities, six towns, and three villages. As of July 1, 2024, the City of Wilmington encompasses 10.85 square miles and has a population of 71,365, representing approximately 12.2% of the county's total population.

Table 2.1 shows each of the municipalities/jurisdictions participating in New Castle County's Hazard Mitigation Plan Update.

**Table 2.1 Jurisdictions of NCC**

Cities	
Delaware City	Newark
New Castle	Wilmington
Towns	
Bellefonte	Elsmere
Middletown	Newport
Odessa	Townsend
Villages	
Arden	Ardencroft
Ardentown	

## 2.3 Demographics and Socio-Economic Profile

New Castle County's resident population reached an estimated 571,719 as of July 1, 2024. Growth patterns varied markedly among municipalities. Middletown expanded by 36.1% between 2010 and 2024 to 25,686 residents, while Townsend recorded a 44.1% rise to 2,941. In contrast, Newark's population declined slightly by 0.4% to 30,506, and Wilmington grew by 3.2% to 73,176.

Incorporated places collectively housed 149,644 persons in 2024, a 7% increase over 2010, whereas unincorporated areas grew by 10% to 438,449—now accounting for 76.7% of the county total. Such suburban and rural expansion reflects continued housing development outside historic urban cores.

Household composition trends indicate that 32.5% of households include children under 18, and 25.7% contain at least one member aged 65 or older. The county's median age of 35 years aligns with the national figure, although projections suggest that by 2030, more than 27% of residents will be aged 60 and above. Racial and ethnic diversity has increased steadily: non-Hispanic white residents comprised 56.5% of the population in 2023, down from 63.8% in 2010, while Hispanic or Latino residents grew to 12.5%.

**Table 2.2 Population of NCC Jurisdictions**<sup>18 19</sup>

Cities	2010 Census	2020 Census	2024 Population Estimate	Percentage change 2010-2024
Delaware City	1,780	1,882	1,933	+8.6%
Newark	31,776	30,621	30,506	-2.7%
New Castle	5,117	5,552	5,715	+11.7%
Wilmington	70,941	70,889	73,176	+3.2%
Towns	2010 Census	2020 Census	2024 Population Estimate	Percentage change 2010-2024
Bellefonte	1,193	1,226	1,249	+4.7%
Elsmere	5,975	6,233	6,234	+4.3%

<sup>18</sup> <https://www2.census.gov/library/publications/decennial/2010/cph-2/cph-2-9.pdf>

<sup>19</sup> U.S. Census Bureau. (2025). *Annual Estimates of the Resident Population for Incorporated Places in Delaware: April 1, 2020 to July 1, 2024* (SUB-IP-EST2024-POP-10).

Middletown	18,871	23,201	25,686	+36.1%
Newport	907	909	909	+0.2%
Odessa	359	365	366	+1.9%
Townsend	2,041	2,718	2,941	+44.1%
Villages	2010 Census	2020 Census	2024 Population Estimate	Percentage change 2010-2024
Arden	427	430	437	+2.3%
Ardencroft	211	228	234	+10.9%
Ardentown	271	254	258	-4.8%
County	2010 Census	2020 Census	2024 Population Estimate	Percentage change 2010-2024
NCC	538,479	570,719	149,644	+9.2%
Total Incorporated Areas	139,869	144,508	149,644	+7.0%
Unincorporated Areas	398,610	426,211	438,449	+10.0%

**Table 2.3 NCC Population Age Breakdown<sup>20</sup>**

Population Group	Percentage of Total Population
Persons under 5 years	5.6%
Persons under 18 years	20.2%
Persons 65 years and over	17.3%
Persons under 65 with a disability	9.1%

**Table 2.4 NCC County Racial Breakdown<sup>21 22</sup>**

Race	Percentage of Total Population
White alone	56.5%
Black or African American alone	25.3%
American Indian and Alaska Native alone	0.2%
Asian alone	5.9%
Native Hawaiian and Other Pacific Islander alone	0.04%
Some Other Race alone	4.7%
Two or More Races	7.4%
Hispanic or Latino (of any race)*	12.5%

\* Note: Race and Hispanic/Latino ethnicity are collected as separate questions in the Census, so the total populations differ slightly between tables due to different universe definitions.

Table 2.5 indicates that New Castle County contained 235,057 housing units in 2023, of which 222,943 (94.9%) were occupied. Among occupied units, owner-occupied dwellings comprised 68.5% (152,742 units), while renter-occupied units represented 31.5% (70,201 units). The high occupancy rate reflects sustained demand for housing across suburban and urban jurisdictions. Owner-occupancy predominates in established residential neighborhoods and newer master-

<sup>20</sup> <https://data.census.gov/table/ACSST5Y2023.S0101?g=050XX00US10003&tid=ACSST5Y2023.S0101>

<sup>21</sup> <https://data.census.gov/table/ACSDT5Y2023.B02001?g=050XX00US10003&tid=ACSDT5Y2023.B02001>

<sup>22</sup> <https://data.census.gov/table?q=B03003&g=050XX00US10003>

planned communities, whereas rental tenure is more common in Wilmington, Newark, and near major employment centers.

**Table 2.5 NCC Housing Statistics**<sup>23</sup>

Subject	Estimate
Total Households	222,943
Total housing units	235,057
Occupied housing units	222,943
Owner occupied	152,742
Renter occupied	70,201

Table 2.6 reveals considerable income diversity among New Castle County households. At the lower end of the spectrum, 4.1% of households earn less than \$10,000 annually, underscoring pockets of economic vulnerability. Approximately 16.2% of households fall within the \$10,000–\$24,999 range, reflecting modest wages among service and entry-level occupations. Middle-income brackets (\$50,000–\$99,999) account for 30.0% of households, indicative of a substantial professional and managerial workforce. The largest single cohort (20.1%) resides in the \$100,000–\$149,999 bracket, while 17.4% of households report incomes of \$150,000 or more, illustrating the presence of high-earning professionals and executives.

These housing and income patterns inform hazard mitigation priorities by identifying communities with limited financial resilience and housing tenure constraints. Rental households may face heightened risk due to constrained resources for property-level mitigation, and lower-income areas often coincide with flood-prone neighborhoods. Targeted outreach, grant assistance, and resilient building programs should therefore prioritize these vulnerable segments to enhance overall community resilience.

**Table 2.6 NCC Household Income**<sup>24</sup>

Income Bracket (2023 Dollars)	Occupied Housing Units	Percentage of Occupied Housing Units
Less than \$5,000*	4,066	1.8%
\$5,000 to \$9,999*	5,083	2.3%
\$10,000 to \$14,999	8,471	3.8%
\$15,000 to \$19,999	7,794	3.5%
\$20,000 to \$24,999	8,473	3.8%
\$25,000 to \$34,999	20,055	9.0%
\$35,000 to \$49,999	18,514	8.3%
\$50,000 to \$74,999	35,447	15.9%
\$75,000 to \$99,999	31,434	14.1%
\$100,000 to \$149,999	44,811	20.1%
\$150,000 or more	38,792	17.4%

\* Note: The specific dollar brackets are based on the latest available ACS categories, and the household counts are derived by applying proportions from detailed tables in the ACS 2023 5-year estimates. Exact

<sup>23</sup> <https://data.census.gov/table/ACSDP5Y2023.DP04?q=DP04&g=050XX00US10003>

<sup>24</sup> <https://data.census.gov/table/ACSST5Y2023.S1901?g=050XX00US10003&tid=ACSST5Y2023.S1901>

*counts for some income ranges are not directly published publicly, so estimates, such as "~33,000" for less than \$25,000, have been refined based on the detailed percentages.*

New Castle County exhibits a broad spectrum of household incomes, as shown in Table 2.6. At the lower end, 1.8% of households report annual earnings below \$5,000, and an additional 2.3% fall within the \$5,000–\$9,999 bracket. Combined, these lowest two cohorts—totaling 9,149 households—may face acute financial hardship and have limited capacity to invest in property-level mitigation measures.

Modest-income groups (\$10,000–\$24,999) comprise 11.1% of households, reflecting wages typical of entry-level service, retail, and seasonal occupations. The lower-middle segment (\$25,000–\$49,999) accounts for 17.3%, indicating a significant portion of the population earning near or just above the poverty threshold.

The middle-income range (\$50,000–\$99,999) encompasses 30.0% of households, suggesting a sizable professional and technical workforce with moderate resilience to hazard-related expenses. The largest concentration (20.1%) resides in the \$100,000–\$149,999 bracket, while the highest-income cohort (\$150,000 or more) represents 17.4% of households. These upper segments likely possess greater financial capacity for proactive mitigation actions such as floodproofing, elevation, or backup power installations.

Understanding this income distribution is essential for targeting hazard mitigation assistance. Lower-income and renter-occupied households—particularly those in flood-prone zones—should be prioritized for grant programs, technical support, and community outreach to reduce vulnerability and ensure equitable resilience across income strata.

## 2.4 Employment and Industry Profile

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New Castle County's civilian workforce numbered 306,800 in 2023, reflecting a diverse economic base that shapes both daily life and regional resilience. The educational services, health care, and social assistance sector employs the largest share—70,667 workers or 23.0 % of the total—underscoring the county's role as a medical and academic hub. Retail trade follows with 32,593 employees (10.6 %), serving both local consumers and cross-state commuters along major highways.

Manufacturing remains a significant contributor, with 16,925 positions (5.5 %) centered in chemicals, pharmaceuticals, and precision products—industries that depend on reliable power, transportation, and water infrastructure. The professional, scientific, management, administrative, and waste management services sector employs 29,750 residents (9.7 %), reflecting growth in corporate headquarters, research facilities, and environmental services. Financial activities, including banking, insurance, real estate, rental, and leasing—account for 17,246 workers (5.6 %), anchored by regional offices of national institutions.

Construction (13,862 jobs; 4.5 %) and transportation, warehousing, and utilities (12,003 jobs; 3.9 %) highlight the county's ongoing growth in residential development and distribution networks. Public administration employs 21,983 individuals (7.2 %), illustrating the government's substantial role in education, emergency management, and social services. Smaller sectors—information (1.9 %), wholesale trade (2.6 %), arts and recreation (8.6 %), and agriculture and mining (0.4 %)—round out the employment landscape.

**Table 2.7 NCC Employment by Industry Breakdown** <sup>25</sup>

Industry	Number of Employees	Percentage
Civilian employed population, 16 years and older	306,800	100%
Agriculture, forestry, fishing, hunting, and mining	1,138	0.4%
Construction	13,862	4.5%
Manufacturing	16,925	5.5%
Wholesale trade	8,075	2.6%
Retail trade	32,593	10.6%
Transportation, warehousing, and utilities	12,003	3.9%
Information	5,700	1.9%
Finance and insurance, and real estate, rental, and leasing	17,246	5.6%
Professional, scientific, management, and administrative, and waste management services	29,750	9.7%
Educational services, health care, and social assistance	70,667	23.0%
Arts, entertainment, recreation, accommodation and food services	26,512	8.6%
Other services, except public administration	8,606	2.8%
Public administration	21,983	7.2%

Table 2.8 lists New Castle County’s top ten private- and public-sector employers, many of which are critical to post-disaster recovery and continuity of operations. These include:

AstraZeneca; JPMorgan Chase & Co.; Bank of America; M&T Bank (formerly Wilmington Trust); ChristianaCare Health System; State of Delaware; Comcast Corporation; University of Delaware; DuPont; and Wilmington University.

**Table 2.8 Top Major Employers in NCC** <sup>26</sup>

Major Employers	
AstraZeneca	JPMorgan Chase & Co
Bank of America	M&T Bank (formerly, Wilmington Trust)
ChristianaCare Health System	State of Delaware
Comcast Corporation	University of Delaware
DuPont	Wilmington University

## 2.5 Education/Institutional

New Castle County’s public education infrastructure comprises a network of 128 institutions serving students from early childhood through secondary levels. Sixty-seven elementary schools anchor neighborhood learning, offering foundational instruction to children in grades K–5. Thirty middle schools bridge the transition to adolescence, while twenty-three high schools prepare older students for postsecondary pathways or the workforce. In addition, eight dedicated pre-kindergarten and kindergarten centers support early literacy and developmental readiness.

Complementing the traditional system are twenty-one specialized public choice schools. Ten vocational-technical (vo-tech”) institutions deliver career and technical education in fields such as

<sup>25</sup> [https://www.bls.gov/regions/mid-atlantic/news-release/countyeconomyandwages\\_delaware.htm](https://www.bls.gov/regions/mid-atlantic/news-release/countyeconomyandwages_delaware.htm)

<sup>26</sup> Top Major Employers data compiled from Delaware state and county economic development publications and the BLS’ QCEW summaries.

health sciences, engineering, and information technology. Eleven charter schools provide alternative pedagogical models, emphasizing themes ranging from STEM immersion to classical liberal arts. Combined and special-needs schools, though not disaggregated by grade level in the 2023–2024 dataset, further enhance options for Delaware students.

**Table 2.9 NCC Public Schools<sup>27</sup>**

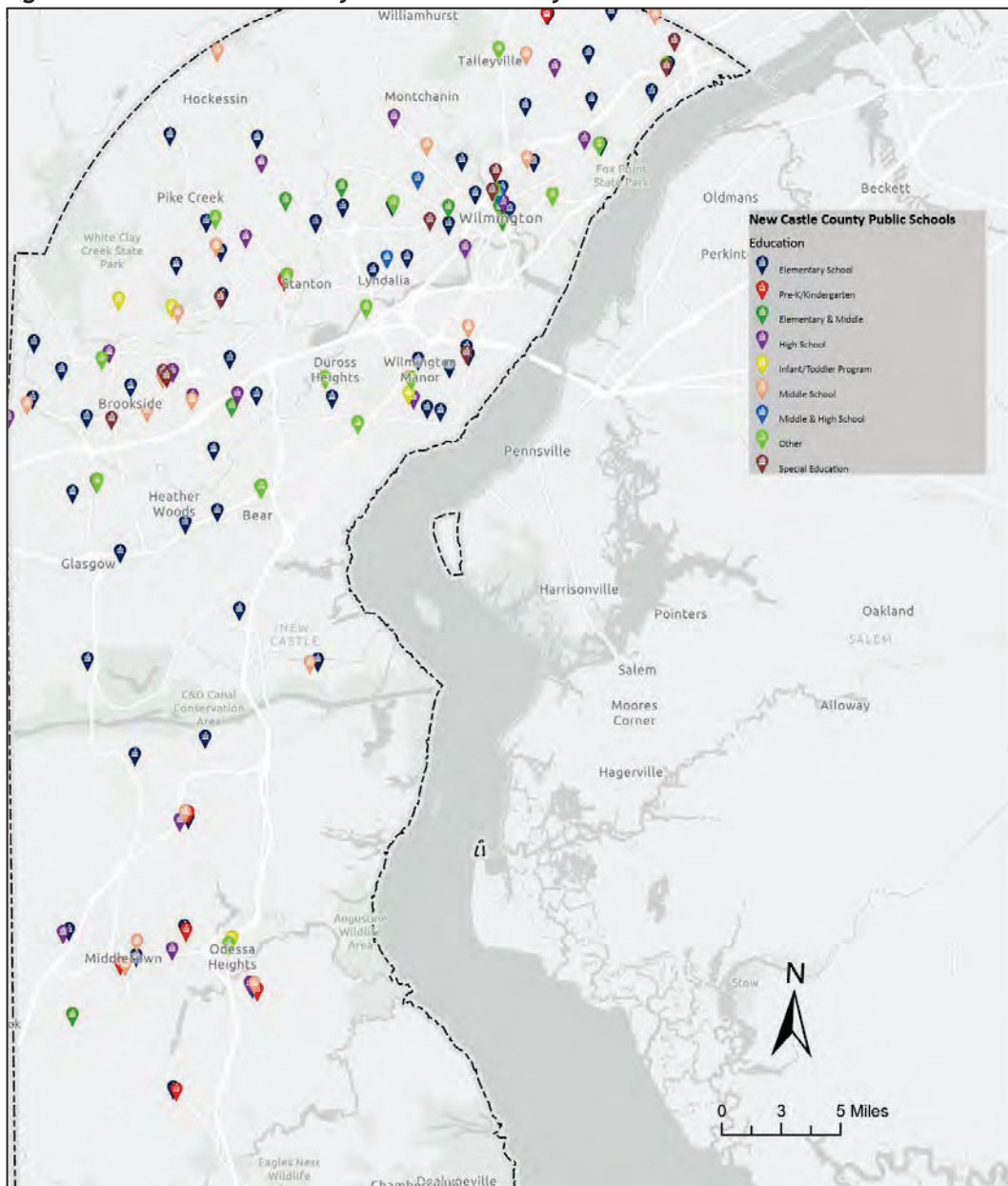
Public Schools*	Number in NCC
Elementary schools	67
Middle schools	30
High schools	23
Pre-kindergarten/kindergarten	8
Public Choice Schools	Number in NCC
Vocational technical (Vo-tech) schools	10
Public charter schools	11

*\*For the 2023-2024 school year, “Special, alternative, and other” Delaware public schools were not separately counted by age group. Additionally, combined schools are counted in each applicable category.*

The geographic distribution of these facilities highlights their crucial role in enhancing hazard resilience. Schools frequently serve as community shelters during emergencies and as staging areas for disaster response. Consequently, as depicted in Figure 2.4, schools concentrated within low-lying flood zones—particularly along the Christina River corridor—require robust mitigation measures, such as elevated electrical systems, floodproofed gymnasiums, and redundant power supplies. In upland areas, school campuses can integrate stormwater retention features and serve as neighborhood hubs for community education on preparedness.

<sup>27</sup> <https://de-firstmap-delaware.hub.arcgis.com/datasets/delaware::delaware-schools/explore?layer=0&location=39.579544%2C-75.480141%2C9.74&showTable=true>

**Figure 2.4 New Castle County Public Schools by Education Level**



Source: Delaware FirstMap Program, US Census Bureau

New Castle County is home to a robust higher education sector comprising public, private, and specialized institutions. The University of Delaware maintains two main campuses: the historic Newark site, serving approximately 24,000 undergraduates and 5,000 graduate students, and the Wilmington campus, which focuses on professional and continuing studies. Delaware Technical Community College operates its largest center in Wilmington, enrolling over 15,000 students in workforce training, technical certificates, and associate-degree programs.

Within the private sector, Wilmington University offers comprehensive undergraduate and graduate curricula at its New Castle and Brandywine/Wilmington locations, supporting roughly 20,000

learners with flexible evening and online options. Goldey–Beacom College, situated in Pike Creek, specializes in business and finance programs for about 1,500 students. The Widener University Delaware Law School, located in Wilmington, educates future legal professionals through its Juris Doctor and LL.M. offerings.

Additional niche institutions expand the county’s educational portfolio. Strayer University–Delaware delivers career-oriented bachelor’s and master’s degrees in business and information technology. The Relay Graduate School of Education offers teachers and administrators advanced pedagogical training and leadership certification, attracting candidates from across the state.

**Table 2.10 Public and Private Universities in NCC**

Public Universities	Private Universities
University of Delaware, Newark	Wilmington University, New Castle
University of Delaware, Wilmington	Wilmington University, Brandywine/Wilmington
Delaware Technical Community College, Wilmington (Orlando J. George Jr. Campus)	Goldey-Beacon College
Delaware Technical Community College, Newark (Stanton Campus)	Widener University Delaware Law School
	Strayer University – Delaware
	Relay Graduate School of Education

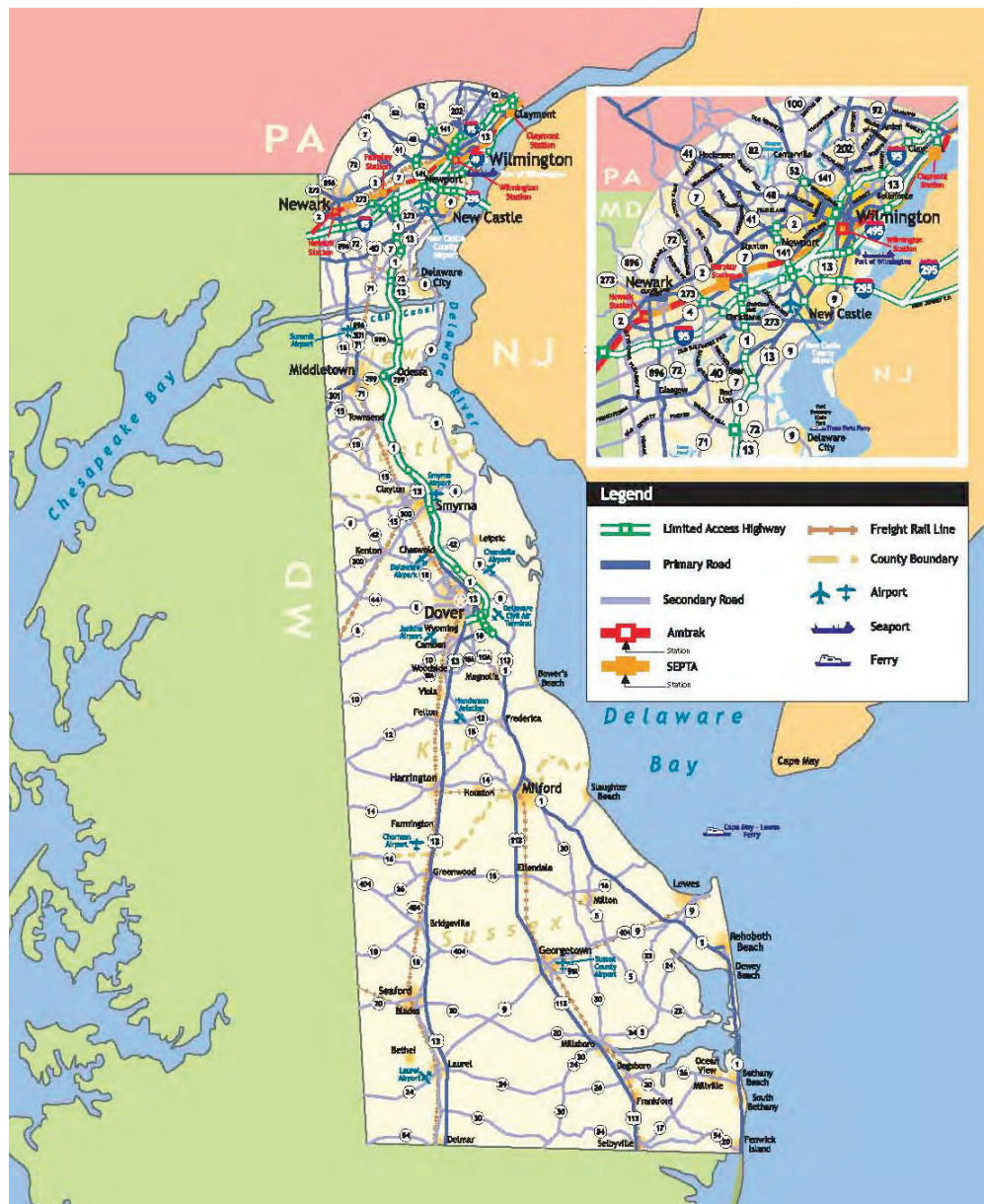
## 2.6 Transportation

Figure 2.5 depicts New Castle County’s multimodal transportation network, which underpins both economic vitality and emergency response capabilities. Limited-access highways, notably Interstate 95 and Interstate 295, traverse the county in a north–south direction, facilitating regional commuter flows between Philadelphia, Baltimore, and Washington, D.C. U.S. Routes 13, 40, and 202 provide primary arterial links to Newark, Wilmington, and the Chesapeake and Delaware Canal corridor. Secondary roads, including high-capacity county routes such as DE 1 and DE 7, distribute traffic into suburban and rural communities.

Freight rail lines operated by CSX and Norfolk Southern parallel the primary highway corridors, enabling bulk movement of chemicals, bulk commodities, and manufactured goods to and from the Port of Wilmington, one of the East Coast’s deepest natural harbors. Amtrak and SEPTA passenger services connect Wilmington and Newark to Philadelphia and New York City, with stations situated centrally within flood-prone river valleys yet elevated above the 1 % annual chance floodplain. The Wilmington Airport (ILG) and Delaware River and Bay Authority’s Cape May–Lewes Ferry terminal further diversify mobility options, offering air and marine access for passengers and critical supplies.

This integrated network has direct implications for hazard mitigation planning. Highways and rail lines situated within low-elevation corridors require redundancy analyses and floodproofing of bridges and culverts to ensure continuity of evacuation routes. Passenger rail stations and airport terminals serve as potential shelter-in-place locations but recommend be assessed for flood risk and retrofitted with flood barriers where necessary. The ferry terminal and port facilities demand surge-resilient wharves and reinforced access roads to maintain maritime lifelines during coastal storm events. Coordination among DelDOT, rail operators, and maritime authorities is essential to preposition equipment, stage response personnel, and implement rapid repairs when infrastructure is impaired.

**Figure 2.5 Map of Delaware Transportation**

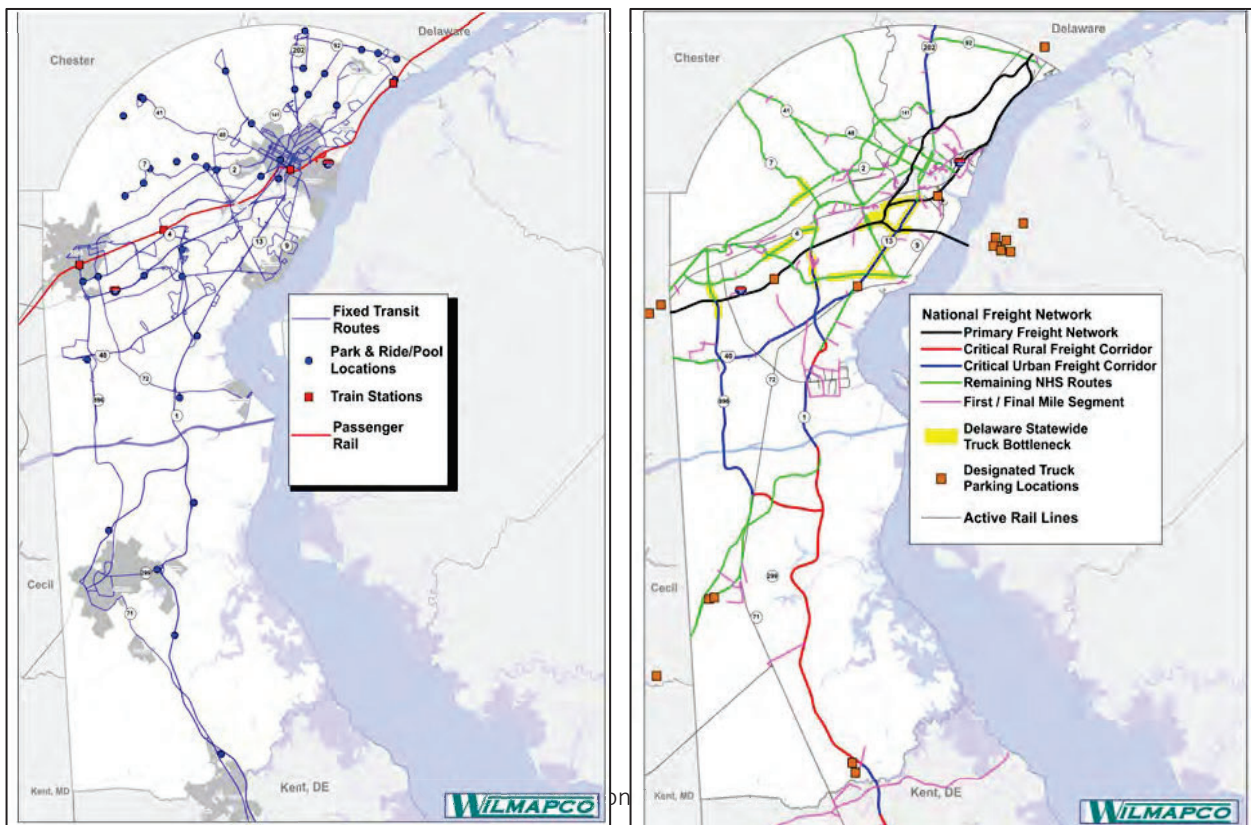


Source: DelDOT 2018 Fact Book

Figure 2.6a illustrates New Castle County's fixed-route transit and regional rail connections. Suburban and urban bus lines (blue) converge on Wilmington and Newark, providing lifeline service to park-and-ride lots (blue circles) and Amtrak/SEPTA stations (red squares). The radial pattern of routes extending into northern and southern municipalities ensures access to critical services, yet many corridors traverse low-lying flood-prone areas along the Christina River and adjacent tributaries. Consequently, flood-resilient design of bus depots and elevated boarding platforms is essential to maintain continuity of service during high-water events. Coordination with rail operators to implement co-located shelters at combined bus-rail transfer points further strengthen evacuation options for transit-dependent populations.

Figure 2.6b depicts the county's role in the National Freight Network, with primary freight corridors (black) following Interstate 95 and key arterial highways. Critical urban (red) and rural (blue) freight routes feed into these backbone lines, while first-/final-mile segments (purple) connect industrial parks and the Port of Wilmington. Designated truck parking sites (orange squares) and identified statewide bottlenecks (yellow) highlight areas where congestion and infrastructure vulnerability intersect. Mitigation strategies should include elevating critical overpasses, reinforcing bridges against scour, and pre-positioning portable barriers at identified flood-vulnerable nodes. Ensuring redundant east-west linkages across the Chesapeake and Delaware Canal will preserve supply-chain resilience during major storm events.

**Figures 2.6 New Castle County Transportation (Right) and Freight Network (Left)**



Source: Wilmington Area Planning Council

## 2.7 Utilities

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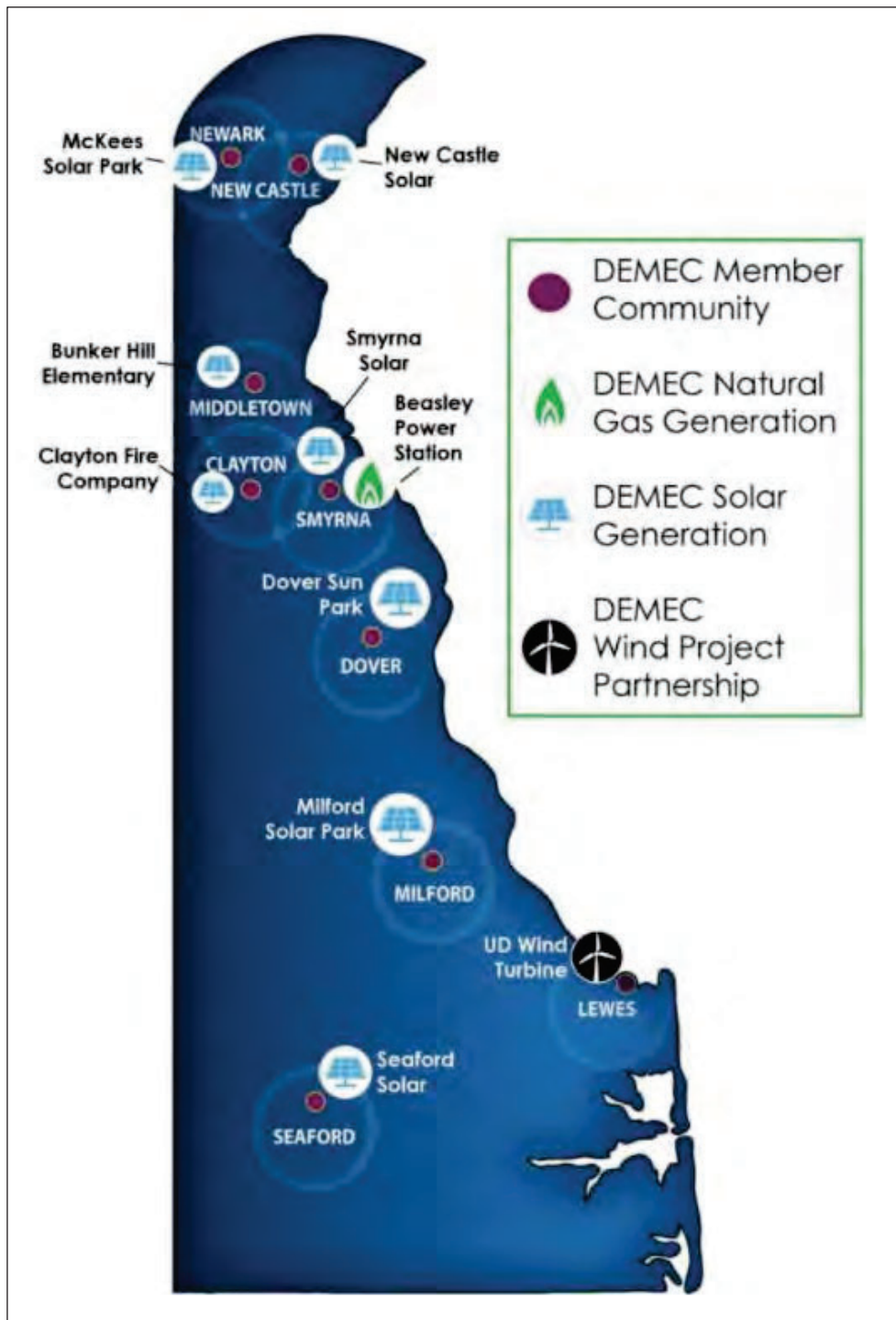
The Water Supply Section of the Delaware Department of Natural Resources and Environmental Control (DNREC) issues well and water allocation permits and licenses water well contractors. The section also oversees statewide drought management, groundwater quality monitoring, and wellhead and source water protection programs. The section works with the Delaware River Basin Commission (DRBC) to manage water withdrawal from the Delaware River.

The Water Supply Coordinating Council, established by the Delaware General Assembly, works to develop and publish water supply plans for NCC. The Well Permits Branch manages and issues well construction and use permits for wells that withdraw 50,000 gallons of water or less daily. The Water Well Licensing Board oversees the licensing of well drilling professionals, developing forms and examinations, reviewing applications, examining candidates, and making recommendations for actions by the DNREC.

While residents of NCC get their water supply from drilling wells, many individual homeowners in small towns and rural areas do not have the protections offered by municipal systems. In addition, there is a threat of water contamination caused by fertilizers, insecticides, or other substances leaching into the ground.

The Delaware Municipal Electric Corporation (DEMEC) is a public utility and a Joint Action Agency that represents nine municipal electric departments in the State, including the electric departments of Dover, Milford, Clayton, and Smyrna. DEMEC invests in a range of electricity generation sources, including natural gas, solar, and wind energy, as illustrated in Figure 2.7.

Figure 2.7 DEMEC Power Generation Stations



Source: Delaware Municipal Electric Corporation

## 2.8 Land Use

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Figure 2.8 reproduces the Future Land Use Map adopted in the New Castle County 2050 Comprehensive Plan, which delineates ten land-use categories to guide development through mid-century. Predominant among these is the Resource Preservation district (shaded dark green), encompassing nearly one-third of the county's area. These lands include protected woodlands, agricultural tracts, and environmentally sensitive corridors, where future development is discouraged to safeguard water quality, wildlife habitat, and open-space continuity.

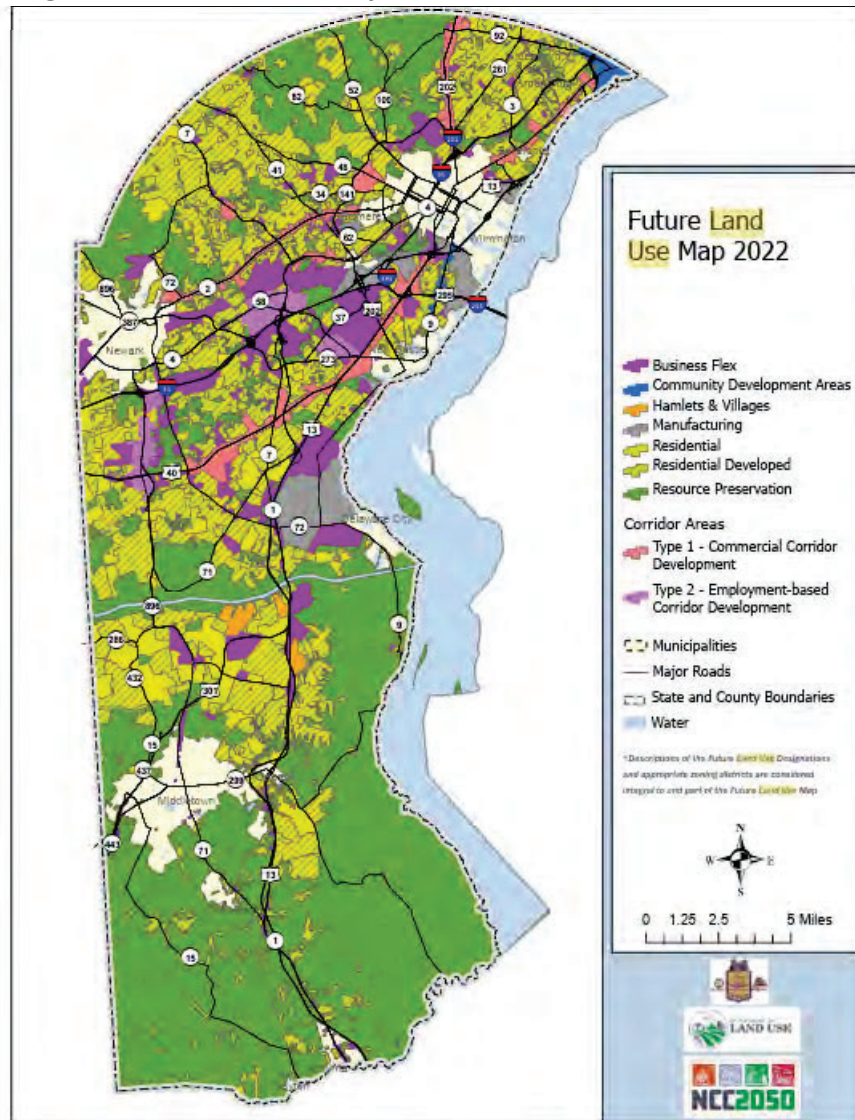
Adjacent to preservation zones lie the Residential (Developed) areas (yellow crosshatch), which account for roughly 25 % of land cover. These districts reflect existing neighborhoods and are targeted for infill housing, streetscape enhancements, and stormwater retrofits to mitigate flooding in aging subdivisions. In contrast, Residential districts (solid yellow) represent undeveloped or underutilized parcels earmarked for carefully planned growth, with infrastructure capacity and hazard considerations—such as proximity to floodplains—shaping allowable densities.

The map identifies Business Flex districts (magenta) along major corridors—primarily DE 1, DE 7, and US 13—where mixed commercial, light industrial, and office uses may co-locate. These flexible zones accommodate evolving economic sectors while buffering adjacent residential neighborhoods. Within these corridors, Type 1 Commercial Corridor Development (red overlay) and Type 2 Employment-Based Corridor Development (purple overlay) refine design standards for retail, service, and manufacturing uses, respectively.

Community Development Areas (blue) encompass historic downtowns—such as New Castle and Odessa—and emerging mixed-use centers. These compact districts promote walkability, placemaking, and multimodal access, with special emphasis on higher-ground locations to reduce flood risk. Hamlets & Villages (tan) preserve small-town character in places like Arden and Ardentown, where land-use regulations reinforce traditional lot patterns and green-space buffers.

Finally, Manufacturing districts (gray) remain concentrated along the Christina and Delaware River valleys, reflecting legacy industrial sites that require ongoing site remediation and stormwater management to prevent contaminant runoff. The Future Land Use Map directs that any redevelopment within these zones incorporate resilient design—such as reinforced building pads and on-site detention—to protect both workers and downstream communities from flood hazards.

**Figure 2.8 New Castle County Future Land Use**



Source: New Castle County 2050 Comprehensive Plan

### 2.8.1 Growth and Development

Since the turn of the twenty-first century, New Castle County has experienced a dispersed pattern of growth, driven by suburban expansion, strategic infill, and targeted redevelopment. Between 2000 and 2020, the county’s population increased by over 15 %, with most new housing constructed in outlying municipalities such as Middletown and Townsend. This outward growth has been facilitated by highway access improvements, particularly along Delaware Route 1 and Interstate 95—and by the availability of affordable land in former agricultural zones.

The NCC 2050 Comprehensive Plan projects continued expansion through 2050, estimating an additional 75,000 residents countywide. To accommodate this growth while mitigating hazard exposure, the plan designates Residential and Residential (Developed) districts in locations with adequate drainage infrastructure and outside the 1-% annual chance floodplain. Simultaneously, the

plan curtails sprawl into Resource Preservation areas, preserving natural buffers that attenuate runoff and maintain groundwater recharge.

Infill development within Community Development Areas, Hamlets, and Villages is prioritized to concentrate population density in already urbanized or formerly platted neighborhoods. Such compact growth reduces impervious surface expansion, lessens stormwater management demands, and leverages existing utilities. Mixed-use redevelopment in nodes like Wilmington's Riverfront and Newark's Main Street enables walkable access to services, decreasing reliance on evacuation-constrained roadways during emergencies.

Commercial and industrial growth is channeled into Business Flex, Manufacturing, and Corridor Areas along major transport arteries. The plan mandates that new development in these zones incorporate on-site stormwater detention, elevated floor slabs where flood risk exists, and setbacks from stream corridors.

Vulnerability to and impacts from all hazards can also be impacted by population change, as seen in Table 2.2 – Population of NCC Jurisdictions, the county has increased in population, twelve (12) of the county's thirteen (13) municipalities have experienced population growth between the 2010 decennial census and the 2024 ACS Population Estimate. These include Delaware City, New Castle, Wilmington, Bellefonte, Elsmere, Middletown, Newport, Odessa, Townsend, Arden, Ardencroft, and Ardentown. With this information, it can be speculated that the twelve (12) municipalities have had an increased vulnerability and impacts from all hazards included in this HMP, since 2010. This increased vulnerability is due to more potential development and that development encroaching on high vulnerability areas for Bradford County, including near the Special Flood Hazard Area and areas in close proximity to hazardous materials locations.

## 2.9 Data Sources and Limitations

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This Community Profile draws on multiple authoritative datasets, each subject to specific constraints:

- **U.S. Census Bureau:** Population, housing, demographic, income, and employment data derive from the 2020 Decennial Census and the 2019–2023 American Community Survey 5-Year Estimates, as well as the 2024 Annual Estimates of the Resident Population for Incorporated Places (SUB-IP-EST2024-POP-10). Small-area survey estimates (ACS) carry margins of error that may affect precision in jurisdictions with low populations and narrow income brackets.
- **Delaware Department of Natural Resources and Environmental Control (DNREC):** Geology, soils, watersheds, and source-water assessments are based on state-sponsored surveys (2005–2023) conducted at varying scales. Soil survey mapping units may not capture recent land-cover changes, and watershed delineations may differ slightly from federal hydrography datasets.
- **Federal agencies:** Elevation and floodplain extents utilize Delaware Geological Survey Special Publication No. 28 (2017) and FEMA Digital Flood Insurance Rate Map panels (2019). Elevation rasters have a vertical accuracy of  $\pm 1$  foot, while FIRMs represent regulatory floodplains that may omit unmapped local drainage features or future conditions under climate change.

- **Bureau of Labor Statistics and state economic reports:** Employment by industry and major-employer data combine QCEW summaries and mid-Atlantic regional releases (2023). Quarterly wage data exclude self-employed and informal sectors, potentially underestimating total employment in small business and gig-economy activities.
- **New Castle County GIS and Comprehensive Plan:** Municipal boundaries, land-use designations, transportation networks, schools, and higher-education campus locations are derived from county GIS layers (2022–2025). These layers reflect the county’s planning vision but may lag behind recent annexations, roadway realignments, or institutional expansions.
- **Wilmington Area Planning Council (WILMAPCO):** Transit routes, freight corridors, and bottleneck analyses are drawn from the 2023 2050 Regional Transportation Plan and associated GIS datasets. Park-and-ride locations and multimodal facilities may have changed in response to post-pandemic travel patterns.

Limitations include potential temporal mismatches exist among sources.<sup>28</sup> Infrastructure layers may not capture post-2022 projects. Floodplain maps reflect existing regulatory standards and may not incorporate planned levee upgrades or future sea-level rise.

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<sup>28</sup> For example, 2020 Census vs. 2023 ACS vs. 2025 GIS updates.

## 3.0 CHAPTER 3 – PLANNING PROCESS

### 3.1 Update Process and Participation Summary

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The NCC Hazard Mitigation Plan Update process comprised four main phases: 1) organizing the work group and process; 2) assessing natural hazards, vulnerability, and mitigation capabilities; 3) developing a mitigation plan; and 4) implementing the plan.

**Phase 1 – Organize Work Group and Process** - The first phase involved educating the County, municipalities, and stakeholders on the planning update process via: 1) Steering Committee; 2) Municipality Questionnaires; and 3) a Public Meeting. Each of these avenues for stakeholder involvement served a specific purpose and involved a different tier of participation to ensure involvement from local, county, and state levels. Each of these will be discussed in detail in the next section of this chapter.

**Phase 2 – Assess Hazards, Risks, Vulnerability, and Mitigation Capability** - In this step, information on recent past hazard events that affected NCC and its municipalities was gathered, and specific hazard areas were identified. The hazard identification included summaries on past occurrences and the probability of future events. Relevant GIS layers and other data were used to conduct the risk assessment. The vulnerability analysis identified specific areas, including critical facilities that were vulnerable to hazards, and included estimates of potential losses. Past and future development trends were also analyzed as part of this step. The Plan provides a general description of land uses and development trends in the County and identifies high-hazard areas that are not suitable for future development.

The Capability Assessment was conducted to document the roles of various departments/agencies in the County and municipalities, which would develop and implement mitigation actions. The purpose of this assessment was to identify areas for coordination and/or improvement, and to provide a platform to integrate plans and other documents, so that recommendations and strategies are not in contradiction with one another. The Assessment also involved a review of select plans and ordinances from the County, and identified sections in these documents that addressed, or had the potential to address, hazard mitigation issues.

**Phase 3 – Develop a Mitigation Plan** - Based on data from the hazard, vulnerability, and capability assessments, mitigation goals and objectives were developed that were aimed at protecting the County and municipalities from long-term vulnerability to the identified hazards. A comprehensive range of specific mitigation actions and projects to reduce the effects of each hazard, with emphasis on new and existing buildings and infrastructure, was developed in this step. While some mitigation actions were ‘broader’ in nature and covered the entire County, others were specific to each municipality.

**Phase 4 – Implement the Plan** - In the final phase, an action plan describing how the mitigation strategies and activities identified would be prioritized, implemented, funded, and administered by the County and its municipalities was developed. Cost estimates and possible funding sources to implement recommended projects were identified. In this phase, the methods to monitor, evaluate, and update the mitigation plan within a five-year cycle were discussed, along with recommendations on how to incorporate community participation into the plan maintenance process.

The planning process was developed around the requirements laid out in the Federal Emergency Management Agency (FEMA) Local Hazard Mitigation Crosswalk.

## 3.2 The Planning Team

The 2025 NCC Hazard Mitigation Plan update was led by the NCC Department of Public Safety and the Hazard Mitigation Planning Steering Committee. The NCC Steering Committee provided guidance and leadership for the overall project. The steering committee assisted VPC with dissemination of information and administrative tasks. Table 3.1 – Steering Committee outlines the individuals who comprised this team. Those with an asterisk (\*) next to their name participated in the planning process and provided input either via meeting attendance, completion of worksheets/questionnaires, and/or working phone calls.

**Table 3.1 Plan Update Steering Committee Members and Invitees**

Agency/Affiliation/Municipality	Representative	Position
New Castle County	Christopher Hodgden*	Coordinator of Emergency Management
New Castle County	Michael Edwards*	Emergency Management Planer
New Castle County	Trevor Matthews	Emergency Management Planner
New Castle County	Marcus Henry	County Executive
New Castle County	Mona Parikh	Chief Administrative Officer
New Castle County	Elmer Setting	Director of Public Safety
New Castle County	Jane Rattenni	Policy Director
New Castle County	Carrie Casey	Community Service GM
New Castle County	Cleon Cauley*	Public Works GM
New Castle County	Jason Zern	Public Works Manager
New Castle County	Rob Roff*	Public Works Manager
New Castle County	Michael Harris*	Stormwater & Env Program Manager
New Castle County	James Leonard	Chief of Police
New Castle County	Ben Feldmann	Police Major
New Castle County	Don Holden	Chief of Emergency Communications
New Castle County	Chris Williams	Emergency Communications Asst Chief
New Castle County	Mark Logemann*	Chief of EMS
New Castle County	Chris Johnson*	EMS Asst Chief
New Castle County	Andy Bero*	Community Services Admin
New Castle County	John Gysling*	Civil Engineer III
New Castle County	Stephen (Doug) Hokuf*	Chief of Site Management
DEMA	Phil Cane*	Recovery Planner IV
DEMA	Jen Walls*	Manager of Planning
DEMA	Brian Pollock	Principal Planner
DNREC	Michael Powell	Environmental Scientist IV
DNREC	Greg Williams	Solid and Hazardous Waste Management

Agency/Affiliation/Municipality	Representative	Position
DNREC	Janice Shute*	Dam Safety Engineer
DNREC	Katherine Potter*	State NFIP Coordinator
DHSS	Muriel Allaband*	Unknown
	Lori Wall*	Unknown
DelDOT	Dwayne Day	DelDOT Homeland Security Planner
FEMA, DE FIT	William Ethridge*	Community Planner
Christiana Care	Chris Murtha*	Emergency Management Program Manager
Nemours	Michael Jackson*	Emergency Preparedness Coordinator
University of Delaware	Josh Kelly*	Emergency Management Coordinator
	Adam Anderson*	Unknown
Disaster Research Center	James Kendra	Director
New Castle Conservation District	Kevin Donnelly	Coordinator
New Castle Conservation District	Andy Bowman	Manager
Wilmapco	Tigist Zegeye	Executive Director
Chester County, PA	Chris Christensen*	Deputy Director of Emergency Services
Delaware County, PA	Steven Shulz*	Deputy Emergency Management Coordinator
	Larry Bak*	
Kent County, DE	Brandon Olenik	OEM Coordinator
Salem County, NJ	Jeffery Pompper	Deputy Emergency Management Coordinator
Sussex County, DE	Tim Cooper	Deputy Director – EM
Cecil County, MD	Michael Berth*	EM Planner
Arden	Jeffrey Politis	Chair
	Sachin Puranik	Advisory Chair
	Skip Baley	Treasurer
	Simon Hamermesh*	Town Assembly Chair
Ardencroft	Ben Gruswitz	Chair
	Jennifer Abernethy	Secretary
	Don Lipari*	Treasurer
Ardentown	Don Lipari*	Treasurer
	Lisa Wilson Riblett	Trustee
	Melissa Parsonson*	Secretary
Bellefonte	Scott MacKenzie*	Secretary
	Curt Nass	Treasurer

Agency/Affiliation/Municipality	Representative	Position
Delaware City	Paul Johnson*	Mayor
	Britney Loveland	Town Manager
Elsmere	Steve Martin*	Town Manager
	Eric Thompson	Mayor
Middletown	Kenneth L. Branner	Mayor
	Morris Deputy*	Town Manager
New Castle City	Valarie Leary	Mayor
	Antonina Tantillo*	City Manager
Newark	Tom Coleman	City Manager
	Jerry Clifton	Mayor
	Jeff Martindale*	City Manager
Newport	Wendy King*	Town Manager
	Stephanie Banks	Mayor
Odessa	Harvey C. Smith, Jr.	Mayor
	David Wilson*	Fire Chief
Townsend	Julie Goodyear*	Manager
	Scott Lobdell	Mayor
Wilmington	Willie Patrick*	Director of Emergency Management

Each of the neighboring counties were invited to participate in the Steering Committee. Academic Institutions were also provided with an opportunity to participate in the planning process and be a representative on the County Steering Committee.

### 3.3 Meetings and Documentation

#### 3.3.1 Steering Committee Meetings

A kick-off meeting was held between the Consultant team and County DPS officials on July 25, 2024. This meeting officially began the planning process, which covered the tasks involved and the project schedule, as well as suggestions for Steering Committee members. Steering Committee and municipal representatives were requested via email to attend all scheduled meetings. Additionally, information gathering worksheets and questionnaires were also sent to the County and municipality via email.

The first Steering Committee Meeting was held on 13 November 2024 at the New Castle County Gilliam Building Multipurpose Room in New Castle, DE. The following agenda items were covered at this meeting:

- Present data on the hazard identification;
- Solicit input on risks from various hazards;

- Discuss data from the hazard vulnerability and risk assessment;
- Discuss mitigation questionnaire responses; and
- Draft updated Goals and Objectives.

The second Committee meeting was held virtually on 10 February 2025. The Consultant facilitated and covered the following items at this meeting:

- Review updated goals and objectives;
- Examine a range of new mitigation actions that address goals;
- Develop an implementation strategy for each county mitigation action.

The third Committee meeting was held virtually on 6 August 2025. The Consultant facilitated and covered the following items at this meeting:

- Provide an overview of progress to date;
- Review newly developed mitigation actions;
- Prioritize mitigation actions.

Face-to-face meetings were held with a representative from each jurisdiction during the Municipal workshop. Finally, follow-up emails were sent to encourage municipalities to complete their feedback forms. Two municipality meetings were also held during the process, on November 13, 2024, and February 10, 2025. A further breakdown of municipal participation is provided in the section below.

## 3.4 Public and Stakeholder Participation

### 3.4.1 Public Participation

A hazard mitigation-specific public survey was also conducted. The survey asked questions about potential high-risk areas in the County, specific hazards, outreach and education efforts, and ideas to mitigate the impacts of different hazards. The survey was open for eight (8) weeks and received 13 responses. Outreach steps included sharing the online survey via the County website as well as County social media accounts. To reach underserved populations, flyers with QR codes to the online survey were posted in County community center and libraries, as shown in the photo below.



Public meeting invitations were sent via public notice in the newspaper in advance of the meeting. The purpose of the meeting was to provide residents with an opportunity to become educated on the hazard mitigation planning process.

A Public Meeting was held/offered on August 6, 2025. The meeting was advertised in local newspapers. One person attended the public meeting. Language for the meeting advertisement is provided in Appendix B.

The public was provided with an opportunity to:

- Review of the results of the updated HIRA;

- Review updated goals and objectives;
- Review of new mitigation actions and associated implementation strategies; and
- Review draft plan; and
- Provide comments and/or recommended edits.

The public was also provided with an opportunity to comment on the Draft HMP Update. The Plan Update was posted for public review on the County DPS website for one month, from 10/23/2025-11/22/2025, allowing the public an opportunity to comment on the Plan, and/or specific components of the Plan Update. No public comments were received during this stage.

### 3.5 Multi-Jurisdictional Planning

Table 3.2 provides a synopsis of municipal participation through the planning process.

**Table 3.2 Jurisdictional Participation Summary**

City/Town	Communication Established	Attended Municipal Meeting 1	Attended Municipal Meeting 2/3	Working Call	Municipal Capability Survey	NFIP Questionnaire	Local Hazard Areas	Mitigation Actions
Arden	✓	✓	✓					✓
Ardencroft	✓						✓	✓
Ardentown	✓						✓	✓
Bellefonte	✓				✓	✓	✓	✓
Delaware City	✓						✓	✓
Elsmere	✓		✓				✓	✓
Middletown	✓		✓				✓	✓
New Castle	✓	✓			✓	✓	✓	✓
Newark	✓	✓	✓		✓	✓	✓	✓
Newport	✓	✓	✓	✓	✓	✓	✓	✓
Odessa	✓			✓	✓	✓	✓	✓
Townsend	✓						✓	✓
Wilmington	✓	✓	✓	✓			✓	✓

Of the 13 municipalities in NCC, all 13 have met participation thresholds as required by FEMA.

# 4.0 CHAPTER 4 - RISK ASSESSMENT

## 4.1 Update Process Summary

Multiple sources were referenced to obtain a comprehensive identification of all potential hazards affecting the County. These include the NCEI, United States Geological Survey (USGS), DE Department of Natural Resources and Environmental Control (DNREC), and the *Delaware 2023 Hazard Mitigation Plan (2023)*. For all hazards without readily and freely accessible data, information from the *Delaware 2023 Hazard Mitigation Plan (2023)* was referred to and included.

A risk assessment evaluates threats associated with a specific hazard and is defined by probability and frequency of occurrence, magnitude, severity, exposure, and consequences. The New Castle County risk assessment provides in-depth knowledge of the hazards and vulnerabilities that affect New Castle County and its municipalities. This document uses an all-hazards approach when evaluating the hazards that affect the county and the associated risks and impacts each hazard presents.

## 4.2 Hazard Identification

As a first step in identifying hazards, a review of the 2020 HMP was conducted, as well as updating the list of Presidential and Gubernatorial declarations of emergencies issued for New Castle County since the last HMP was developed. This is presented in Table 4.1.

**Table 4.1 Presidential Disaster Declarations in New Castle County**

Presidential Disaster Declarations in New Castle County	
Date	Event Type
03/20/2003	Severe Snowstorm
09/20/2003	Hurricane Isabel
09/23/2003	Tropical Storm Henri
11/15/2004	Hurricane Jeane
09/30/2005	Hurricane Katrina
03/31/2010	Severe Winter Storm
08/28/2011	Hurricane Irene
04/05/2020	COVID-19 Pandemic
10/02/2020	Tropical Storm Isaias
10/24/2021	Remnants of Hurricane Ida

### 4.2.1 Summary of Hazards

Multiple sources were referenced to obtain hazard information and identify potential hazards affecting the County. These include the National Climatic Data Center (NCDC), United States Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), the previous *New Castle County Hazard Mitigation Plan (2020)*, and the *Delaware All-Hazard Mitigation Plan (2023)*.

The Consultants facilitated a meeting to offer Steering Committee representatives the opportunity to review the hazard rankings from the 2020 HMP.

1. Flooding
2. Winter Storms, Nor'easters, and Freezes
3. Hurricanes and Coastal Storms
4. Severe Thunderstorms and Tornadoes
5. Transportation and Infrastructure Incidents
6. Hazardous Materials (HazMat)
7. Dam/Levee Failure
8. Terrorism
9. Erosion
10. Drought/Extreme Heat
11. Energy Pipeline Failures
12. Public Health Incident
13. Wildfire
14. Earthquakes
15. Hail
16. Geomagnetic Storms (Solar Flares)
17. Sinkholes/Debris Pits
18. Landslides
19. Volcano
20. Tsunami

All hazards that were included in the 2020 County HMP are included in this Update, and no additional hazards have been added. As some hazards are most commonly found co-occurring with other hazards, these hazards have been combined or incorporated by reference, such as hail and lightning (thunderstorms and tornado events). Any hazards deemed not possible or not having occurred within the County historically have also been omitted from this update.

Table 4.2 below identifies the critical facilities in New Castle County, their locations, and their corresponding hazard area overlap. Hazard-specific impacted critical facilities are included within the maps/figures included in specific hazard profiles.

### Critical Facilities

**Table 4.2 Critical Facilities List**

Exposure of Critical Facilities to Location-Specific Hazards								
Critical Facility Name	Type	Address	Jurisdiction	100-year Flood	500-year Flood	Wildfire	Landslide	Hazmat
Aetna Hose - Hook and Ladder Company Station 7	Fire Station	7 Thorn Lane	Newark	No	No	No	No	No
Aetna Hose Hook and Ladder Company Fire Station 8	Fire Station	410 Ogletown Road	Newark	No	No	No	No	No
Aetna Hose Hook and Ladder Company Station 9	Fire Station	31 Academy Street	Newark	No	No	No	No	No
Aetna Hose Hook and Ladder Fire Station 10	Fire Station	2501 Old County Road	Newark	No	No	No	No	No
Belvedere Volunteer Fire Company	Fire Station	1000 Liberty Road	Wilmington	No	No	No	No	No
Brandywine Hundred Fire Company Number 1	Fire Station	1006 Brandywine Boulevard	Wilmington	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

<b>Critical Facility Name</b>	<b>Type</b>	<b>Address</b>	<b>Jurisdiction</b>	<b>100-year Flood</b>	<b>500-year Flood</b>	<b>Wildfire</b>	<b>Landslide</b>	<b>Hazmat</b>
Christiana Fire Company Station 12	Fire Station	2 East Main Street	Christiana	No	No	Yes	No	No
Christiana Fire Company Station 3	Fire Station	600 Salem Church Road	Newark	No	Yes	No	No	No
Christiana Fire Company Station 6	Fire Station	1714 Porter Road	Bear	No	No	Yes	No	No
Claymont Fire Company	Fire Station	1610 Naamans Road	Wilmington	No	No	No	No	No
Claymont Fire Company Station 13	Fire Station	3223 Philadelphia Pike	Claymont	No	No	No	No	No
Cranston Heights Fire Company	Fire Station	3306 Kirkwood Highway	Wilmington	No	No	No	No	No
Delaware City Fire Company Station 15	Fire Station	815 5th Street	Delaware City	No	Yes	No	No	No
Elsmere Fire Company Number 1	Fire Station	1107 Kirkwood Highway	Elsmere	No	No	No	No	No
Five Points Fire Company	Fire Station	209 South Maryland Avenue	Wilmington	No	No	No	No	No
Good Will Fire Company	Fire Station	401 South Street	New Castle	No	No	No	No	No
Hockessin Fire Company	Fire Station	1225 Old Lancaster Pike	Hockessin	No	No	No	No	No
Holloway Terrace Volunteer Fire Company	Fire Station	700 West Avenue	New Castle	No	No	No	No	No
Mill Creek Fire Company Ambulance Station 2	Fire Station	4021 Skyline Drive	Wilmington	No	No	No	No	No
Mill Creek Fire Company Station 21	Fire Station	3900 Kirkwood Highway	Wilmington	No	No	No	No	No
Minquadale Fire Company	Fire Station	129 East Hazeldell Avenue	New Castle	No	No	No	No	No
Minquas Fire Company Station 23	Fire Station	21 North James Street	Newport	No	No	No	No	Yes
Odessa Fire Company Station 24	Fire Station	304 Main Street	Odessa	No	No	Yes	No	No
Odessa Fire Company Station 4	Fire Station	1324 Pole Bridge Road	Middletown	No	No	Yes	No	No
Port Penn Volunteer Fire Company	Fire Station	26 West Market Street	Port Penn	No	No	Yes	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

<b>Critical Facility Name</b>	<b>Type</b>	<b>Address</b>	<b>Jurisdiction</b>	<b>100-year Flood</b>	<b>500-year Flood</b>	<b>Wildfire</b>	<b>Landslide</b>	<b>Hazmat</b>
Talleyville Fire Company	Fire Station	3919 Concord Pike	Wilmington	No	No	No	No	No
Townsend Fire Company Station 26	Fire Station	107 Main Street	Townsend	No	No	No	No	No
Volunteer Hose Company of Middletown Station 1	Fire Station	711 Churchtown Road	Middletown	No	No	No	No	No
Volunteer Hose Company of Middletown Station 27	Fire Station	27 West Green Street	Middletown	No	No	No	No	Yes
Wilmington Fire Department Station 1	Fire Station	400 West 2nd Street	Wilmington	No	No	No	No	Yes
Wilmington Fire Department Station 2	Fire Station	400 New Castle Avenue	Wilmington	No	Yes	No	No	No
Wilmington Fire Department Station 3	Fire Station	333 East 30th Street	Wilmington	No	No	No	No	Yes
Wilmington Fire Department Station 4	Fire Station	2200 North Tatnall Street	Wilmington	No	No	No	No	Yes
Wilmington Fire Department Station 5	Fire Station	1814 Gilpin Avenue	Wilmington	No	No	No	No	Yes
Wilmington Fire Department Station 6	Fire Station	224 North Union Street	Wilmington	No	No	No	No	No
Wilmington Manor Volunteer Fire Company - Station 28	Fire Station	301 North Dupont Highway	New Castle	No	No	No	No	No
Wilmington Manor Volunteer Fire Company - Station 32	Fire Station	223 South Dupont Highway	New Castle	No	No	No	No	No
BRANDYWINE CREEK STATE PARK RANGERS OFFICE	Police Station	41 ADAMS DAM ROAD	WILMINGTON	No	No	Yes	No	No
DELAWARE ALCOHOLIC BEVERAGE CONTROL ENFORCEMENT	Police Station	820 NORTH FRENCH STREET, 3RD FLOOR	WILMINGTON	No	No	No	No	Yes
DELAWARE CITY POLICE DEPARTMENT	Police Station	407 CLINTON STREET	DELAWARE CITY	No	No	No	No	No
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL	Police Station	108 SOUTH REEDY POINT ROAD	DELAWARE CITY	Yes	Yes	Yes	No	No

Exposure of Critical Facilities to Location-Specific Hazards

Critical Facility Name	Type	Address	Jurisdiction	100-year Flood	500-year Flood	Wildfire	Landslide	Hazmat
CONTROL - FORT DELAWARE STATE PARK RANGER STATION								
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL - WHITE CLAY CREEK STATE PARK RANGER STATION	Police Station	750 THOMPSON STATION ROAD	NEWARK	No	No	No	Yes	No
DELAWARE RIVER AND BAY AUTHORITY POLICE DEPARTMENT TROOP 1	Police Station	INTERSTATE HIGHWAY 295 AND NEW CASTLE AVENUE	NEW CASTLE	No	No	No	No	No
DELAWARE STATE POLICE TROOP 1 - WILMINGTON	Police Station	603 PHILADELPHIA PIKE	WILMINGTON	No	No	No	No	No
DELAWARE STATE POLICE TROOP 2 - NEWARK	Police Station	100 LAGRANGE AVENUE	NEWARK	No	No	No	No	No
DELAWARE STATE POLICE TROOP 6 - WILMINGTON	Police Station	3301 KIRKWOOD HIGHWAY	WILMINGTON	No	No	No	No	No
DELAWARE STATE POLICE TROOP 9 - ODESSA	Police Station	414 MAIN STREET	ODESSA	No	No	Yes	No	No
ELSMERE POLICE DEPARTMENT	Police Station	11 POPLAR AVENUE	ELSMERE	No	No	No	No	No
JAMES T VAUGHN CORRECTIONAL CENTER	Police Station	1181 PADDOCK ROAD	SMYRNA	No	No	No	No	No
LUMS POND STATE PARK RANGERS OFFICE	Police Station	1068 HOWELL SCHOOL ROAD	BEAR	No	No	No	No	No
MIDDLETOWN POLICE DEPARTMENT	Police Station	19 WEST GREEN STREET	MIDDLETOWN	No	No	No	No	No
NEW CASTLE CITY POLICE DEPARTMENT	Police Station	1 MUNICIPAL BOULEVARD	NEW CASTLE	No	Yes	No	No	No
NEW CASTLE COUNTY POLICE DEPARTMENT	Police Station	87 READS WAY	NEW CASTLE	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

<b>Critical Facility Name</b>	<b>Type</b>	<b>Address</b>	<b>Jurisdiction</b>	<b>100-year Flood</b>	<b>500-year Flood</b>	<b>Wildfire</b>	<b>Landslide</b>	<b>Hazmat</b>
NEWARK POLICE DEPARTMENT	Police Station	220 ELKTON ROAD	NEWARK	No	No	No	No	No
NEWPORT POLICE DEPARTMENT	Police Station	226 NORTH JAMES STREET	NEWPORT	No	No	No	No	No
UNIVERSITY OF DELAWARE DEPARTMENT OF PUBLIC SAFETY	Police Station	413 ACADEMY STREET	NEWARK	No	No	No	No	No
WILMINGTON FIRE MARSHALS OFFICE	Police Station	800 NORTH FRENCH STREET, LOUIS L REDDING BUILDING 3RD FLOOR	WILMINGTON	No	No	No	No	Yes
WILMINGTON POLICE DEPARTMENT	Police Station	300 NORTH WALNUT STREET	WILMINGTON	No	No	No	No	Yes
ACADEMIA ANTONIA ALONSO	Public School	300 NORTH WAKEFIELD DRIVE	NEWARK	No	No	No	No	No
APPOQUINIMINK HIGH SCHOOL	Public School	1080 BUNKER HILL ROAD	MIDDLETOWN	No	No	No	No	No
APPOQUINIMINK PRESCHOOL CENTER	Public School	502 SOUTH BROAD STREET	MIDDLETOWN	No	No	No	No	Yes
BALTZ (AUSTIN D.) ELEMENTARY SCHOOL	Public School	1500 SPRUCE AVENUE	WILMINGTON	No	No	No	No	No
BEDFORD (GUNNING) MIDDLE SCHOOL	Public School	801 COX NECK ROAD	NEW CASTLE	No	No	Yes	No	No
BRADER (HENRY M.) ELEMENTARY SCHOOL	Public School	350 FOUR SEASONS PARKWAY	NEWARK	No	No	No	No	No
BRANDYWINE HIGH SCHOOL	Public School	1400 FOULK ROAD	WILMINGTON	No	No	No	No	No
BRANDYWINE SITE	Public School	3301 GREEN ST	CLAYMONT	No	No	No	No	No
BRANDYWINE SPRINGS SCHOOL	Public School	2916 DUNCAN ROAD	WILMINGTON	No	No	No	No	No
BRENNEN SCHOOL (THE)	Public School	144 BRENNEN DRIVE	NEWARK	No	No	No	No	No
BRICK MILL EARLY CHILDHOOD CENTER	Public School	378 BRICK MILL ROAD	MIDDLETOWN	No	No	No	No	No
BRICK MILL ELEMENTARY SCHOOL	Public School	378 BRICK MILL ROAD	MIDDLETOWN	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

<b>Critical Facility Name</b>	<b>Type</b>	<b>Address</b>	<b>Jurisdiction</b>	<b>100-year Flood</b>	<b>500-year Flood</b>	<b>Wildfire</b>	<b>Landslide</b>	<b>Hazmat</b>
BROOKSIDE ELEMENTARY SCHOOL	Public School	800 MARROWS ROAD	NEWARK	No	No	No	No	No
BUNKER HILL ELEMENTARY SCHOOL	Public School	1070 BUNKER HILL ROAD	MIDDLETOWN	No	No	No	No	No
BUSH (CHARLES W.) PRE-SCHOOL	Public School	2523 BERWYN ROAD	WILMINGTON	No	No	No	No	No
CALLOWAY (CAB) SCHOOL OF THE ARTS	Public School	100 NORTH DUPONT ROAD	WILMINGTON	No	No	No	No	No
CANTWELLS BRIDGE MIDDLE SCHOOL	Public School	550 TONY MARCHIO DRIVE	TOWNSEND	No	No	Yes	No	No
CARRCROFT ELEMENTARY SCHOOL	Public School	503 CREST ROAD	WILMINGTON	No	No	No	No	No
CASTLE HILLS ELEMENTARY SCHOOL	Public School	502 MOORES LANE	NEW CASTLE	No	No	No	No	No
CEDAR LANE EARLY CHILDHOOD CENTER	Public School	1221 CEDAR LANE ROAD	MIDDLETOWN	No	No	No	No	No
CEDAR LANE ELEMENTARY SCHOOL	Public School	1259 CEDAR LANE ROAD	MIDDLETOWN	No	No	No	No	No
CHARTER SCHOOL OF NEW CASTLE	Public School	170 LUKENS DRIVE	NEW CASTLE	No	No	No	No	No
CHARTER SCHOOL OF WILMINGTON	Public School	100 NORTH DUPONT ROAD	WILMINGTON	No	No	No	No	No
CHRISTIANA HIGH SCHOOL	Public School	190 SALEM CHURCH ROAD	NEWARK	No	No	No	No	No
CHRISTINA EARLY EDUCATION CENTER	Public School	620 EAST CHESTNUT HILL RD	NEWARK	No	No	No	No	No
CLAYMONT ELEMENTARY SCHOOL	Public School	3401 GREEN STREET	CLAYMONT	No	No	No	No	No
CONCORD HIGH SCHOOL	Public School	2501 EBRIGHT ROAD	WILMINGTON	No	No	No	No	No
CONRAD SCHOOLS OF SCIENCE	Public School	201 JACKSON AVENUE	WILMINGTON	No	No	No	No	No
CRYSTAL RUN ELEMENTARY SCHOOL	Public School	313 SOUTH FIFTH	ODESSA	No	No	<b>Yes</b>	Yes	No
DELAWARE MILITARY ACADEMY	Public School	112 MIDDLEBORO ROAD	WILMINGTON	No	No	No	No	No

Exposure of Critical Facilities to Location-Specific Hazards

Critical Facility Name	Type	Address	Jurisdiction	100-year Flood	500-year Flood	Wildfire	Landslide	Hazmat
DELAWARE SCHOOL FOR THE DEAF	Public School	630 EAST CHESTNUT HILL ROAD	NEWARK	No	No	No	No	No
DELCASTLE TECHNICAL HIGH SCHOOL	Public School	1417 NEWPORT ROAD	WILMINGTON	No	No	No	No	No
DICKINSON (JOHN) SCHOOL	Public School	1801 MILLTOWN ROAD	WILMINGTON	No	No	No	No	No
DOUGLASS SCHOOL	Public School	1800 PROSPECT ROAD	WILMINGTON	No	No	No	No	No
DOWNES (JOHN R.) ELEMENTARY SCHOOL	Public School	220 CASHO MILL ROAD	NEWARK	No	No	No	No	No
DOWNIE (CARRIE) ELEMENTARY SCHOOL	Public School	1201 DELAWARE STREET	NEW CASTLE	No	No	No	No	No
DUPONT (ALEXIS I.) HIGH SCHOOL	Public School	50 HILLSIDE ROAD	WILMINGTON	No	No	No	No	No
DUPONT (ALEXIS I.) MIDDLE SCHOOL	Public School	3130 KENNETT PIKE	GREENVILLE	No	No	No	No	No
DUPONT (H.B.) MIDDLE SCHOOL	Public School	735 MEETING HOUSE ROAD	HOCKESSIN	No	No	No	No	No
DUPONT (PIERRE S.) MIDDLE SCHOOL	Public School	701 WEST 34TH STREET	WILMINGTON	No	No	No	No	No
EAST SIDE CHARTER SCHOOL	Public School	3000 NORTH CLAYMONT STREET	WILMINGTON	No	No	No	No	Yes
EDISON (THOMAS A.) CHARTER SCHOOL	Public School	2200 NORTH LOCUST STREET	WILMINGTON	No	No	No	No	No
EISENBERG (HARRY O.) ELEMENTARY SCHOOL	Public School	27 LANDERS LANE	NEW CASTLE	No	No	No	No	No
FIRST STATE MONTESSORI ACADEMY	Public School		WILMINGTON	No	No	No	No	Yes
FIRST STATE SCHOOL	Public School	501 WEST 14TH STREET	WILMINGTON	No	No	No	No	No
FOREST OAK ELEMENTARY SCHOOL	Public School	55 SOUTH MEADOWOOD DRIVE	NEWARK	No	No	No	No	No
FORWOOD ELEMENTARY SCHOOL	Public School	1900 WESTMINSTER DRIVE	WILMINGTON	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

<b>Critical Facility Name</b>	<b>Type</b>	<b>Address</b>	<b>Jurisdiction</b>	<b>100-year Flood</b>	<b>500-year Flood</b>	<b>Wildfire</b>	<b>Landslide</b>	<b>Hazmat</b>
FREIRE CHARTER SCHOOL	Public School	201 WEST 14TH STREET	WILMINGTON	No	No	No	No	Yes
GALLAHER (ROBERT S.) ELEMENTARY SCHOOL	Public School	800 NORTH BROWNLEAF ROAD	NEWARK	No	No	No	No	No
GATEWAY CHARTER SCHOOL	Public School	2501 CENTERVILLE ROAD	WILMINGTON	No	No	No	No	No
GAUGER-COBBS MIDDLE SCHOOL	Public School	50 GENDER ROAD	NEWARK	No	No	No	No	No
GLASGOW HIGH SCHOOL	Public School	1901 SOUTH COLLEGE AVENUE	NEWARK	No	No	No	No	No
GREAT OAKS CHARTER SCHOOL	Public School	1200 NORTH FRENCH ST	WILMINGTON	No	No	No	No	Yes
HANBY ELEMENTARY SCHOOL	Public School	2523 BERWYN ROAD	WILMINGTON	No	No	No	No	No
HARLAN (DAVID W. ) ELEMENTARY SCHOOL	Public School	3601 JEFFERSON STREET	WILMINGTON	No	No	No	No	No
HERITAGE ELEMENTARY SCHOOL	Public School	2815 HIGHLANDS LANE	WILMINGTON	No	No	No	No	No
HODGSON (PAUL M.) VOCATIONAL TECHNICAL HIGH SCHOOL	Public School	2575 GLASGOW AVENUE	NEWARK	No	No	No	No	No
HOWARD HIGH SCHOOL OF TECHNOLOGY	Public School	401 EAST 12TH STREET	WILMINGTON	No	No	No	No	Yes
JOHNSON (JOSEPH E. JR) ELEMENTARY SCHOOL	Public School	2100 GILPIN AVENUE	WILMINGTON	No	No	No	No	No
JONES (ALBERT H.) ELEMENTARY SCHOOL	Public School	35 WEST MAIN STREET	NEWARK	No	No	Yes	No	No
KEENE (WILLIAM B.) ELEMENTARY SCHOOL	Public School	200 LAGRANGE AVENUE	NEWARK	No	No	No	No	No
KIRK (GEORGE V.) MIDDLE SCHOOL	Public School	140 BRENNEN DRIVE	NEWARK	No	No	No	No	No
KUUMBA ACADEMY CHARTER SCHOOL	Public School	1200 NORTH FRENCH STREET	WILMINGTON	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

Critical Facility Name	Type	Address	Jurisdiction	100-year Flood	500-year Flood	Wildfire	Landslide	Hazmat
LANCASHIRE ELEMENTARY SCHOOL	Public School	2000 NAAMANS ROAD	WILMINGTON	No	No	No	No	No
LAS AMERICAS ASPIRA ACADEMY	Public School	326 RUTHAR DRIVE	NEWARK	No	No	No	No	Yes
LEACH (JOHN G.) SCHOOL	Public School	10 LANDERS LANE	NEW CASTLE	No	No	No	No	No
LEASURE (MAY B.) ELEMENTARY SCHOOL	Public School	1015 CHURCH ROAD	NEWARK	No	No	No	No	No
LEWIS (WILLIAM C.) DUAL LANGUAGE ELEMENTARY SCHOOL	Public School	920 NORTH VAN BUREN STREET	WILMINGTON	No	No	No	No	No
LINDEN HILL ELEMENTARY SCHOOL	Public School	3415 SKYLINE DRIVE	WILMINGTON	No	No	No	No	No
LOMBARDY ELEMENTARY SCHOOL	Public School	412 FOULK ROAD	WILMINGTON	No	No	No	No	No
LOREWOOD GROVE ELEMENTARY SCHOOL	Public School	820 MAPLETON AVE.	MIDDLETOWN	No	No	Yes	No	No
LOSS (OLIVE B.) ELEMENTARY SCHOOL	Public School	200 BRENNAN BOULEVARD	BEAR	No	No	No	No	No
MACLARY (R. ELISABETH) ELEMENTARY SCHOOL	Public School	300 ST. REGIS DRIVE	NEWARK	No	No	No	No	No
MAPLE LANE ELEMENTARY SCHOOL	Public School	100 MAPLE LANE	CLAYMONT	No	No	No	No	No
MARBROOK ELEMENTARY SCHOOL	Public School	2101 CENTERVILLE ROAD	WILMINGTON	No	No	No	No	No
MARSHALL (THURGOOD) ELEMENTARY SCHOOL	Public School	101 BARRETT RUN ROAD	NEWARK	No	No	No	No	No
MCCULLOUGH (CALVIN R. ) MIDDLE SCHOOL	Public School	20 CHASE AVENUE	NEW CASTLE	No	No	No	No	No
MCKEAN (THOMAS) HIGH SCHOOL	Public School	301 MCKENNAN'S CHURCH ROAD	WILMINGTON	No	No	No	No	No
MCVEY (JOSEPH M.) ELEMENTARY SCHOOL	Public School	908 JANICE DRIVE	NEWARK	No	No	No	No	No
MEADOWOOD PROGRAM	Public School	55A SOUTH MEADOWOOD DRIVE	NEWARK	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

Critical Facility Name	Type	Address	Jurisdiction	100-year Flood	500-year Flood	Wildfire	Landslide	Hazmat
MEREDITH (EVERETT) MIDDLE SCHOOL	Public School	504 SOUTH BROAD STREET	MIDDLETOWN	No	No	No	No	Yes
MIDDLETOWN HIGH SCHOOL	Public School	120 SILVER LAKE ROAD	MIDDLETOWN	No	No	No	No	No
MOT CHARTER SCHOOL	Public School	1156 LEVELS ROAD	MIDDLETOWN	No	No	No	No	No
MOTE (ANNA P.) ELEMENTARY SCHOOL	Public School	2110 EDWARDS AVENUE	WILMINGTON	No	No	No	No	Yes
MOUNT PLEASANT ELEMENTARY SCHOOL	Public School	500 DUNCAN ROAD	WILMINGTON	No	No	No	No	No
MOUNT PLEASANT HIGH SCHOOL	Public School	5201 WASHINGTON STREET EXTENSI	WILMINGTON	No	No	No	No	No
NEW CASTLE ELEMENTARY SCHOOL	Public School	903 DELAWARE STREET	NEW CASTLE	No	No	No	No	No
NEWARK CHARTER SCHOOL	Public School	200 MCINTIRE DRIVE	NEWARK	No	No	No	No	Yes
NEWARK HIGH SCHOOL	Public School	750 EAST DELAWARE AVENUE	NEWARK	No	No	No	No	Yes
NORTH STAR ELEMENTARY SCHOOL	Public School	1340 LITTLE BALTIMORE ROAD	HOCKESSIN	No	No	No	No	No
OBERLE (WILLIAM) ELEMENTARY SCHOOL	Public School	500 SOUTH CALEDONIA WAY	BEAR	No	No	No	No	No
ODESSA HIGH SCHOOL	Public School	570 TONY MARCHIO DRIVE	TOWNSEND	No	No	Yes	No	No
ODYSSEY CHARTER SCHOOL	Public School	4409 LANCASTER PIKE	WILMINGTON	No	No	No	No	No
OLD STATE ELEMENTARY SCHOOL	Public School	580 TONY MARCHIO DRIVE	TOWNSEND	No	No	Yes	No	No
PENN (WILLIAM) HIGH SCHOOL	Public School	713 EAST BASIN ROAD	NEW CASTLE	No	No	No	No	No
PLEASANTVILLE ELEMENTARY SCHOOL	Public School	16 PLEASANT STREET	NEW CASTLE	No	No	No	No	No
PYLE (SARAH) ACADEMY	Public School	501 NORTH LOMBARD STREET	WILMINGTON	No	No	No	No	Yes
READ (GEORGE) MIDDLE SCHOOL	Public School	314 EAST BASIN ROAD	NEW CASTLE	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

<b>Critical Facility Name</b>	<b>Type</b>	<b>Address</b>	<b>Jurisdiction</b>	<b>100-year Flood</b>	<b>500-year Flood</b>	<b>Wildfire</b>	<b>Landslide</b>	<b>Hazmat</b>
RED CLAY EARLY YEARS PROGRAM	Public School	1621 TELEGRAPH ROAD	WILMINGTON	No	No	Yes	No	No
REDDING (LOUIS L.) MIDDLE SCHOOL	Public School	201 NEW STREET	MIDDLETOWN	No	No	No	No	No
RICHARDSON PARK ELEMENTARY SCHOOL	Public School	16 IDELLA AVENUE	WILMINGTON	No	No	No	No	No
RICHARDSON PARK LEARNING CENTER	Public School	99 MIDDLEBORO ROAD	WILMINGTON	No	No	No	No	No
RICHEY ELEMENTARY SCHOOL	Public School	105 EAST HIGHLAND AVENUE	WILMINGTON	No	No	No	No	No
SHORTLIDGE (EVAN G.) ACADEMY	Public School	100 WEST 18TH STREET	WILMINGTON	No	No	No	No	Yes
SHUE-MEDILL MIDDLE SCHOOL	Public School	1500 CAPITOL TRAIL	NEWARK	No	No	No	No	No
SILVER LAKE ELEMENTARY SCHOOL	Public School	200 EAST COCHRAN STREET	MIDDLETOWN	No	No	No	No	No
SKYLINE MIDDLE SCHOOL	Public School	2900 SKYLINE DRIVE	WILMINGTON	No	No	No	No	No
SMITH (JENNIE E.) ELEMENTARY SCHOOL	Public School	142 BRENNEN DRIVE	NEWARK	No	No	No	No	No
SOUTHERN ELEMENTARY SCHOOL	Public School	795 COX NECK ROAD	NEW CASTLE	No	No	No	No	No
SPRING MEADOW EARLY CHILDHOOD CENTER	Public School	611 CAMPUS DRIVE	TOWNSEND	No	No	Yes	No	No
SPRINGER MIDDLE SCHOOL	Public School	2220 SHIPLEY ROAD	WILMINGTON	No	No	No	No	No
ST. GEORGES TECHNICAL HIGH SCHOOL	Public School	555 HYETTS CORNER RD.	MIDDLETOWN	No	No	No	No	No
STANTON MIDDLE SCHOOL	Public School	1800 LIMESTONE ROAD	WILMINGTON	No	No	No	No	No
STUBBS EARLY EDUCATION CENTER	Public School	1100 NORTH PINE STREET	WILMINGTON	No	No	No	No	Yes
SUSSEX MONTESSORI SCHOOL	Public School	24970 DAIRY LANE	SEAFORD	No	No	No	No	No
TALLEY MIDDLE SCHOOL	Public School	1110 CYPRESS ROAD	WILMINGTON	No	No	No	No	No

**Exposure of Critical Facilities to Location-Specific Hazards**

Critical Facility Name	Type	Address	Jurisdiction	100-year Flood	500-year Flood	Wildfire	Landslide	Hazmat
THE BANCROFT SCHOOL	Public School	700 NORTH LOMBARD STREET	WILMINGTON	No	No	No	No	Yes
THE BAYARD SCHOOL	Public School	200 SOUTH DUPONT STREET	WILMINGTON	No	No	No	No	No
THE COLWYCK CENTER	Public School	12 LANDERS LANE	NEW CASTLE	No	No	No	No	No
THE WALLACE WALLIN SCHOOL	Public School	701 EAST BASIN ROAD	NEW CASTLE	No	No	No	No	No
TOWNSEND EARLY CHILDHOOD CENTER	Public School	10 BROOK RAMBLE LANE	TOWNSEND	No	No	No	No	No
TOWNSEND ELEMENTARY SCHOOL	Public School	126 MAIN STREET, 126 MAIN STREET	TOWNSEND	No	No	No	No	No
WARNER ELEMENTARY SCHOOL	Public School	801 WEST 18TH STREET	WILMINGTON	No	No	No	No	No
WATERS (ALFRED G.) MIDDLE SCHOOL	Public School	1235 CEDAR LANE ROAD	MIDDLETOWN	No	No	No	No	No
WEST PARK PLACE ELEMENTARY SCHOOL	Public School	193 WEST PARK PLACE	NEWARK	No	No	No	No	No
WILBUR (KATHLEEN H.) ELEMENTARY	Public School	4050 WRANGLE HILL ROAD	BEAR	No	No	No	No	No
WILLIAM F. COOKE JR. ELEMENTARY	Public School	2025 GRAVES ROAD	HOCKESSIN	No	No	No	No	No
WILMINGTON MANOR ELEMENTARY SCHOOL	Public School	200 EAST ROOSEVELT AVENUE	NEW CASTLE	No	No	No	No	No
WILSON (ETTA J.) ELEMENTARY SCHOOL	Public School	14 FORGE ROAD	NEWARK	No	No	No	No	No
CHRISTIANA CARE HEALTH SERVICES - CHRISTIANA HOSPITAL	Hospital	4755 OGLETOWN-STANTON RD, PO BOX 6001	NEWARK	No	No	No	No	No
CHRISTIANA CARE HEALTH SERVICES - WILMINGTON HOSPITAL	Hospital	501 WEST 14TH ST, PO BOX 1668	WILMINGTON	No	No	No	No	No
CHRISTIANACARE (NEWARK)	Hospital	4755 OGLETOWN-STANTON ROAD, MANAGEMENT	NEWARK	No	No	No	No	No