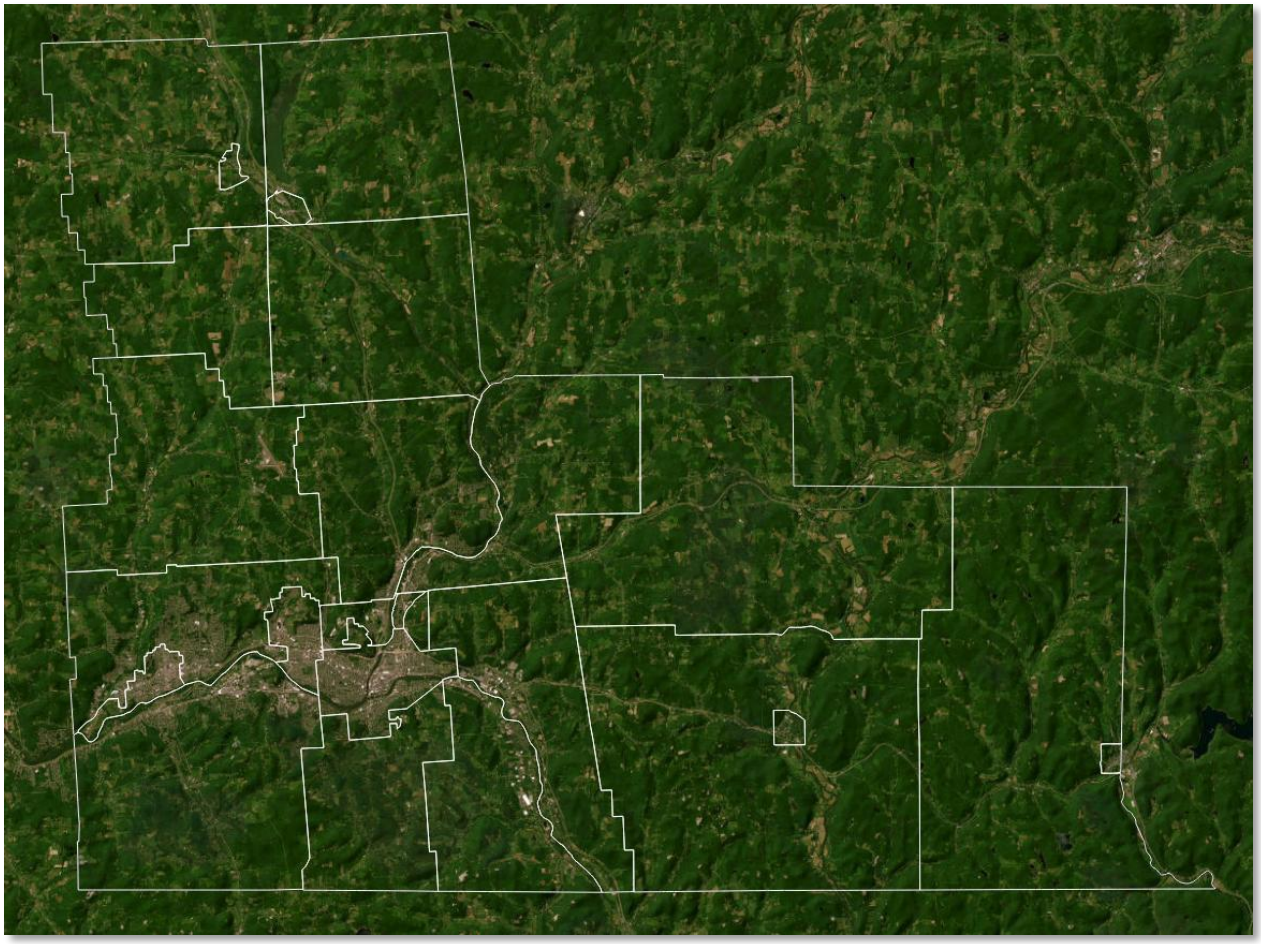
Broome County Countywide

Resiliency Plan Socio-Economic Analysis



Prepared For: Broome County

Prepared By: 4ward Planning Inc.

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STUDY OVERVIEW

Study Purpose

Located in south-central New York State in the eastern Southern Tier region, Broome County contains 24 municipalities including one city, 16 towns, and seven villages. The county also contains 57 census tracts, with some spanning multiple municipalities and some municipalities having multiple census tracts. The county faces several environmental hazards such as flooding, severe winter storms, and extreme temperatures, which are expected to increase in frequency and severity over time due to climate change.

Working in collaboration with Barton & Loguidice, D.P.C. (B&L), 4ward Planning provided socio-economic analysis services to Broome County in support of the development of a countywide resiliency plan. This analysis will help the County identify which populations, neighborhoods, or infrastructure are most vulnerable to climate-related hazards, such as flooding and severe storms. These insights are essential for developing a countywide resiliency plan that prioritizes equitable adaptation strategies, strengthens local capacity, and enhances the ability of communities to withstand and recover from future shocks and stressors.

The plan incorporates recent and ongoing planning efforts (such as the 2024 Broome County Hazard Mitigation Plan Update and the Broome County Sustainable Operations Plan and Energy Action Plan), considerations for disadvantaged communities and socially vulnerable populations, actions and strategies for high-risk areas, resiliency projects at the municipal and county level, and engagement approaches that are inclusive and will have the most significant impact countywide.

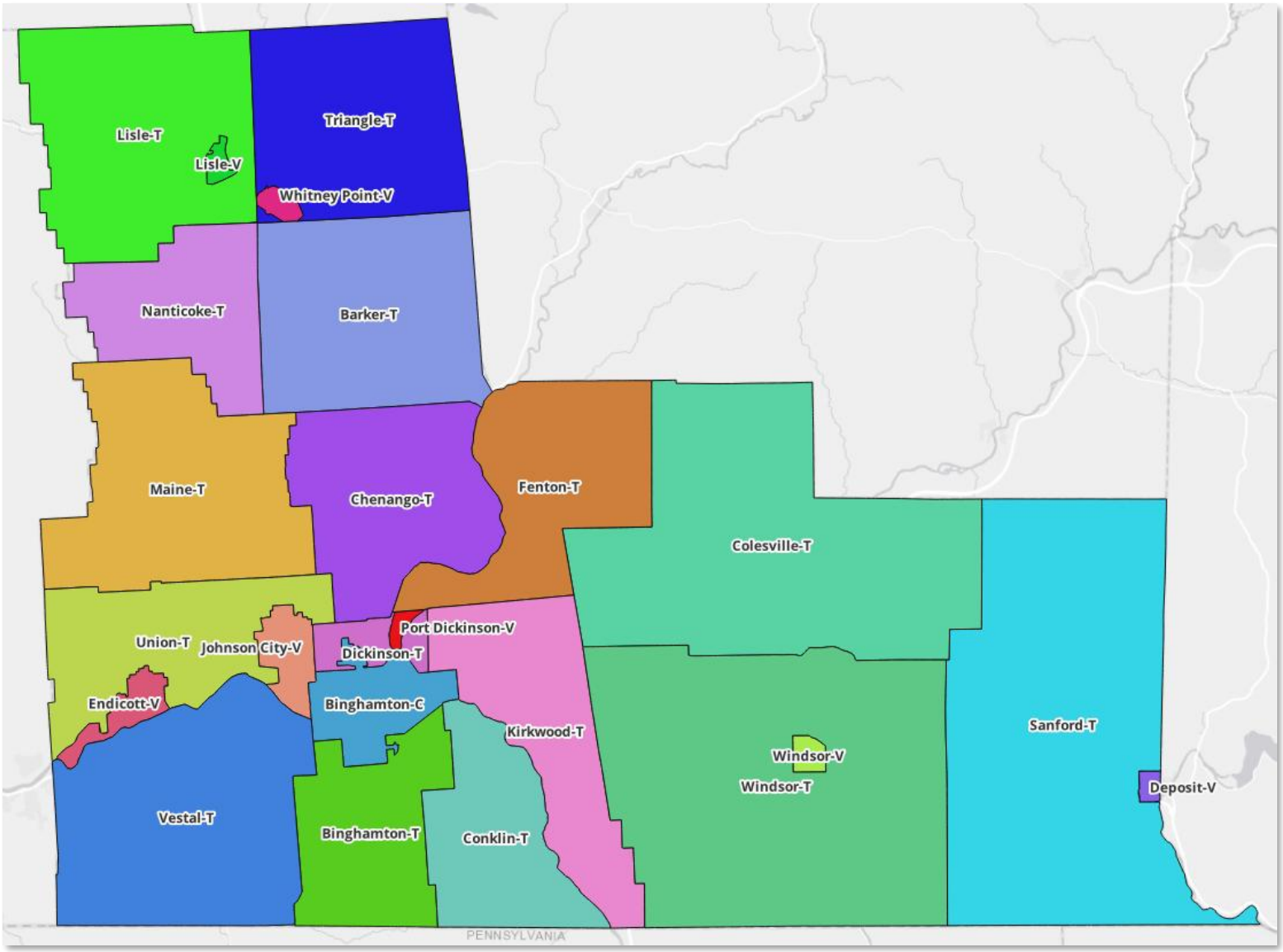
Study Process

This report presents the findings from Task 4 of the study process, which first provides an overview of the region, as well as a comparison of key socio-economic metrics for each municipality, identifying potential vulnerable populations and environmental justice considerations. Next, the report identifies economic drivers and stressors for the county and region. Existing zoning for each municipality was used to pinpoint potential business clusters and tourism offerings that would be most vulnerable to changing environmental hazards. Each portion of the analysis provides insight into implications for future resiliency planning in the county and its municipalities.

The following outlines the study process. This report outlines key socio-economic findings from Task 4 and 5.

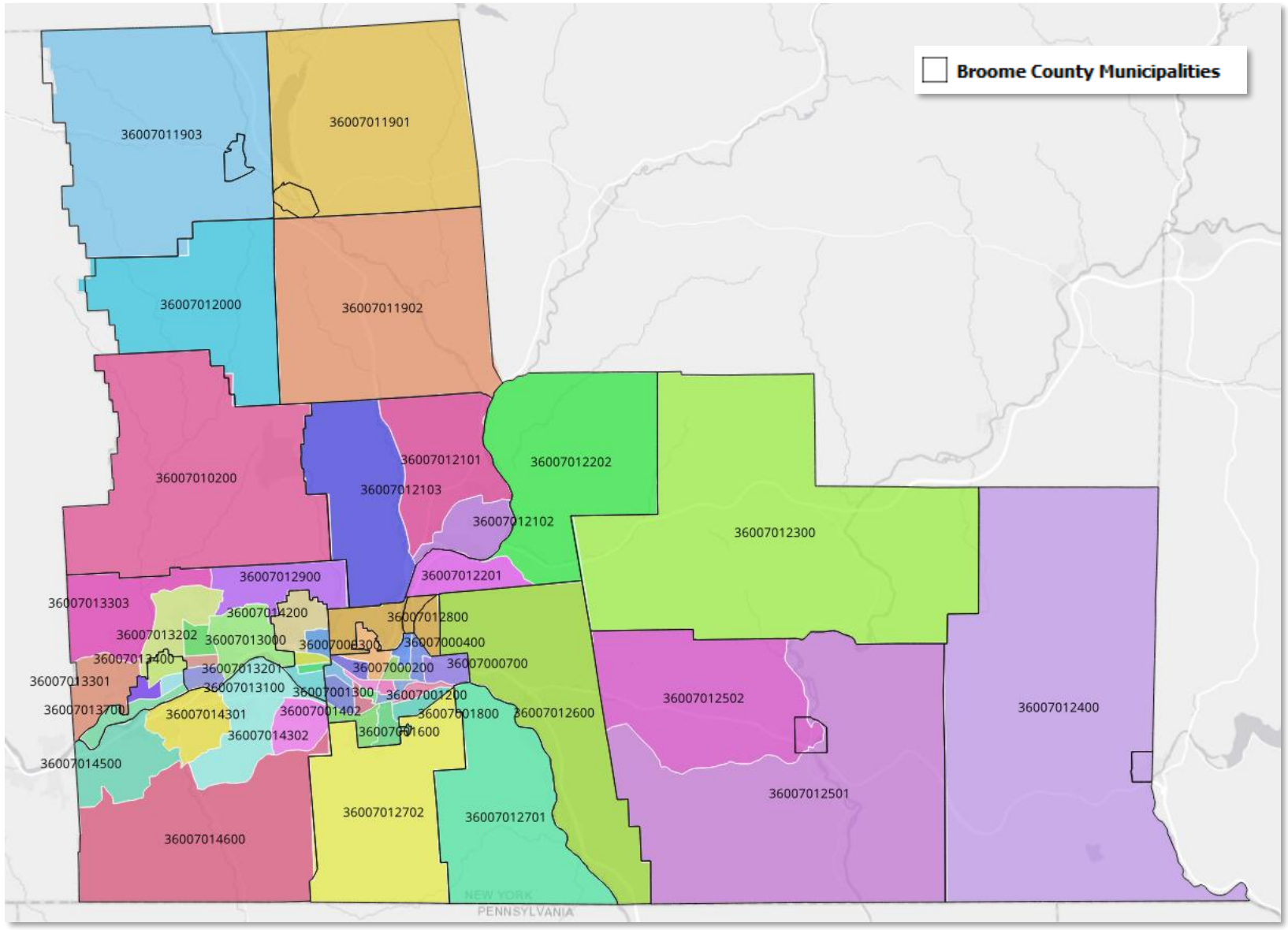
- Task 1: Initial Project Coordination/ Kickoff
- Task 2: Prepare a Community Outreach and Engagement Plan
- Task 3: Prepare a Shared Vision Statement
- **Task 4: County Profile/Inventory of County Assets**
- **Task 5: Asset Inventory and Risk Assessment**
- Task 6: Strategies, Recommendations, and Opportunities
- Task 7: Identification of Projects and Implementation Actions
- Task 8: Developed Draft Resiliency Plan
- Task 9: Final Public Engagement
- Task 10: Final Countywide Resiliency Plan
- Task 11: Final Project Summary Report and Measurable Results

Figure 1 Broome County Municipalities



Source: Broome County GIS & Mapping Services

Figure 2 Broome County Census Tracts

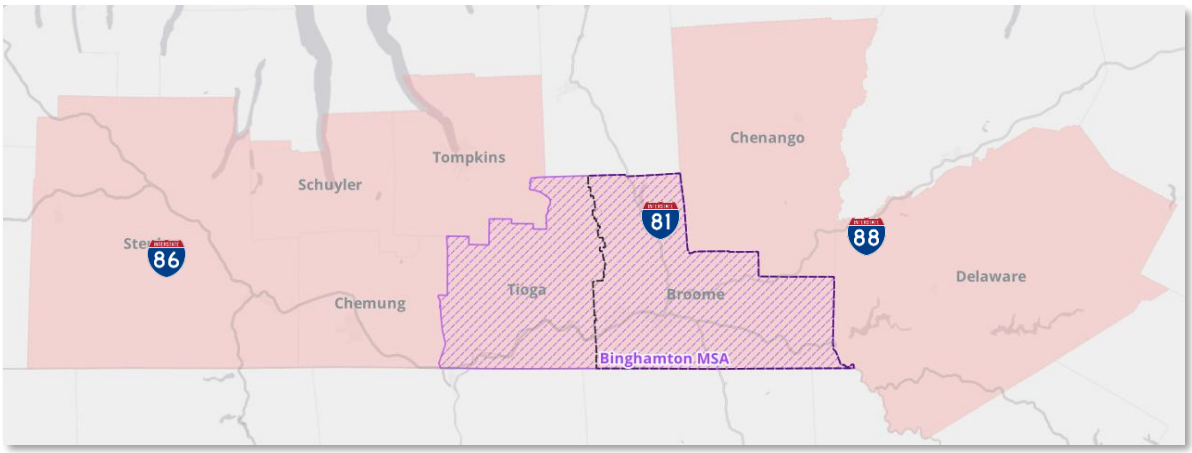


Source: U.S. Census

Regional Context

Broome County is located in the eastern portion of the Binghamton Metropolitan Statistical Area (MSA), which includes both Broome and Tioga Counties. The county is also located in the eight-county Southern Tier region (includes Broome, Chenango, Cortland, Delaware, Otsego, Schoharie, Tioga, and Tompkins Counties), which stretches along the state of New York's southern border with Pennsylvania. The county acts as a geographic and logistical anchor, with the city of Binghamton serving as the region's largest urban center, positioned at the crossroads of major interstates like I-81, I-86, and I-88, making it a central hub within the Southern Tier Regional Economic Development Council (REDC) region. Broome County's investments in climate resilience and infrastructure strengthen the Southern Tier region's overall stability, making it more attractive for sustainable economic growth and private investment. These efforts align with the Southern Tier REDC's goals by supporting clean energy, workforce readiness, and equitable community development across the region.

Figure 3 Southern Tier Economic Region



Source: Esri

Recent and Ongoing Planning Efforts

Upper Susquehanna River Basin Comprehensive Flood Damage Reduction Feasibility Study

Broome County is located within the Upper Susquehanna River Basin, a flood-prone area that covers much of south-central New York State and includes parts of 14 counties, with the city of Binghamton being the largest population center in the basin. The 2020 U.S. Army Corps of Engineers (USACE) Upper *Susquehanna River Basin Comprehensive Flood Damage Reduction Feasibility Study* (January 2020) identified significant flood risks in areas such as Binghamton, Endicott, Johnson City, and Vestal, highlighting the need for both structural and non-structural flood risk management measures. According to the Plan, in 2011, flooding from Tropical Storm Lee overwhelmed many of the flood risk management (FRM) areas in the watershed including Binghamton, Endicott, Johnson City, and Vestal, Kirkwood and Conklin, resulting in over $500 million in property damage in Broome County alone. The study's emphasis on localized solutions aligns with the 2016 Broome County Resiliency Report which documents local projects and actions taken since the 2006 and 2011 floods to build resilience against future flood events through targeted, community-specific actions.

Broome County Sustainable Operations Plan

According to the *Broome County Sustainable Operations Plan* (December 2024), historically, the County has experienced floods, severe winter storms, and extreme temperatures. As greenhouse gases continue to warm the planet, the following changes are anticipated:

1. **Flooding**: Broome County has extensive flood control systems, but flooding remains the county's top hazard. The risk of flash flooding and riverine flooding is expected to increase due to more frequent and intense precipitation events.
2. **Severe Winter Weather**: The region is likely to experience more severe winter storms, blizzards, and ice storms. However, in the long term, warming trends may lead to reduced snowfall and more rain- on-snow events that increase the risk of floods.
3. **Extreme Temperatures**: Prolonged heatwaves are expected to become more frequent, particularly in urban areas. This could exacerbate public health risks and strain the county's energy infrastructure. Conversely, the number of days in which freeze-thaw cycles occur and the number of days spent entirely below freezing are expected to drastically decrease by the end of the 21st century, easing the burden on roadway maintenance and repairs due to winter weather.
4. **Drought and Wildfires**: While not currently significant risks, increased summer temperatures could exacerbate drought conditions, which in turn increase the potential for wildfires. Air quality is more likely to be impacted by regional wildfires as well, similar to the air quality impacts experienced from wildfires in Quebec in the summer of 2023.

Hazard Mitigation Plan (2024)

Broome County, in collaboration with local and community partners, completed an update of the 2019 Hazard Mitigation Plan in December of 2024. The goal of the 2024 Broome County Hazard Mitigation Plan (HMP) is to reduce loss of life and property, lessening the impact of disasters. Developed in collaboration with 24 participating municipalities, this plan not only fulfills federal requirements under the Disaster Mitigation Act of 2000 but also ensures eligibility for FEMA funding, thereby supporting proactive disaster preparedness and long-term resilience efforts. The plan identifies hazards of concern and mitigation actions such as projects, plans, or activities identified to help in reducing or eliminating current and future vulnerabilities from hazards. Mitigation actions typically fall into four categories: 1) Local Planning and Regulations, 2) Structure and Infrastructure Projects, 3) Natural Systems Protection, and 4) Education and Awareness Programs. The table below summarizes the plan's identified hazards of concern within Broome County, such as flooding and severe storms.

Figure 4 Example Hazards of Concern and Indicators

Hazards of Concern	Example Concerns or Indicators in Broome County
Dam & Levee Failure	• 37 dams (23 dams deemed high hazards) and 13 levee systems
Drought	• 80 percent of water for public use comes from groundwater sources • 38,075 acres of cropland at risk to drought
Disease Outbreak	• Population exposed to Lyme disease, coronavirus, influenza, West Nile virus
Earthquake	• Population within soil class "D" and "E" hazard areas • Structures in the 500-year and 2,500-year earthquake zones
Flooding	• Population within one- and 0.2-percent flood hazard zones
Invasive Species	• Tier 4 terrestrial species and aquatic species
Severe Storms	• Structures exposed to within 100-year and 500-year hurricanes
Extreme Temperature	• Days below three degrees Fahrenheit and days over 90 degrees Fahrenheit
Wildfire	• Population within wildland–urban interface or intermix hazard exposure areas
Severe Winter Storms	• Population experiencing cold weather-related injuries (e.g., traffic accidents on icy roads, hypothermia from prolonged exposure to cold)

Source: Broome County Department of Planning, Broome County Hazard Mitigation Plan Update 2024

Potential Economic Impacts

The following presents some example economic impacts from changing environmental hazards.

Figure 5 Example Economic Impacts from Changing Environmental Hazards

People and Jobs	Residents and employees may leave an area due to climate change when repeated hazards like flooding, heat, or rising insurance costs make living conditions unsafe, unhealthy, or economically unsustainable. Flooding is one of several contributing factors including economic decline, job loss, and aging demographics - exacerbated by existing out-migration and housing challenges in the county. From 2010 to 2024, the county's population decreased by 4,430 residents and 9,220 jobs.
Businesses	More frequent and intense precipitation events put local businesses at risk, with the potential to result in business closures or job losses. According to the 2024 Hazard Mitigation Plan for Broome County, a 100-year flood event could result in $341.2 million in inventory loss, $285 million in relocation loss, $744.3 million in wage loss, $241.3 million in rental loss, $323.7 million in income loss, and $8.1 billion in building replacement costs.
Supply Chain Disruptions	Disruptions to local supply chains from damaged infrastructure, delayed transportation, and reduced access to resources, which can stall business operations, raise costs, and weaken the economy. According to the 2024 Hazard Mitigation Plan for Broome County, the Transportation lifeline has most facilities (166) in the 100-Year floodplain. Major roadways that may be impacted by the one-percent annual chance flood event include I-88, I-81, I-86, NY-17, NY-17C, NY-12A, NY-7, NY-7A, NY-363, NY-3639, NY-434, and US-11.
Tourism and Hospitality	The number of outside visitors could decline as public health concerns, flooding, severe winter storms, and extreme temperatures become more frequent and reduce tourism spending. For example, visitor spending in the county declined by 60 percent from 2019 to 2020, primarily due to the COVID-19 pandemic, which led to travel restrictions and business closures.
Colleges and Universities	Changing environmental hazards can disrupt campus operations, damage infrastructure, and lead to significant financial losses from emergency repairs, enrollment declines, and interrupted research activities. After the September 2011 flooding from Tropical Storm Lee, Binghamton University's Downtown Center was shut down for nearly a year - requiring costly repairs.
Real Estate	Property damage can depress property values, increase insurance and maintenance costs, and deter investment in the local real estate market. According to the 2024 Hazard Mitigation Plan for Broome County, the estimated replacement cost of all buildings located in the 100-Year Floodplain would be $8.1 billion, with $2.8 billion of this cost occurring in the city of Binghamton.
Municipal Tax Revenue	As properties become increasingly at risk of and impacted by flooding, their market and assessed values could decline, reducing tax revenues from affected parcels and potentially straining municipal fiscal health. According to the 2024 Hazard Mitigation Plan for Broome County, 5.1 percent of parcels in Broome County are located within the 100-year floodplain, with this share increasing to 5.6 percent including the 500-year floodplain.
Government	Changing environmental hazards can strain government budgets through increased spending on disaster response, infrastructure repair, and public health services, while also reducing revenue from disrupted economic activity and property devaluation. Since the mid-2000s, Broome County has facilitated over 504 municipal buyouts, resulting in the permanent removal of 173.7 acres of flood-prone properties from the hazard area.
Insurance Costs	As flood premiums rise and flood maps are updated, more properties are likely to be included within the 100-Year floodplain, making more homeowners subject to new insurance requirements or higher premiums. The median risk-based cost of insurance in Broome County is $1,724 per year, compared to the current median premium of $785, a difference of $939. Many policyholders in the county may face significant premium increases over time as FEMA's Risk Rating 2.0 phases in full-risk pricing.

KEY TAKEAWAYS

The following section summarizes the key strengths/opportunities and challenges/weaknesses, as well as potential resiliency implications for the Broome County Resiliency Plan. Takeaways are presented for land-use and commuting patterns, and economic drivers.

Flooding and Insurance Costs

Strengths & Opportunities	Challenges & Weaknesses	Resiliency Implications
MUNICIPAL BUYOUTS & ECONOMIC LOSS		
• Since the mid-2000s, the County has facilitated over 504 municipal buyouts, resulting in the removal of 173.7 acres of flood-prone properties from the hazard area and reducing long-term flood exposure. These buyouts have been largely concentrated in the Towns of Union and Conklin (70 percent of all the acreage). •	• Approximately 5.1 percent of parcels in the County are located within the 100-year floodplain. • The estimated replacement cost of all buildings located in the 100-year floodplain is estimated at $8.1 billion, with the City of Binghamton particularly vulnerable to high flood-related damages. • Buyouts result in decreased tax revenues, higher land maintenance costs, and potential disinvestment if not managed carefully.	• **The County has reduced long-term flood exposure in high-risk areas concentrated in Union and Conklin, but with 5.1% of parcels and $8.1 billion in building value still at risk, particularly in Binghamton.** 
FLOOD ZONES & INSURANCE COSTS		
• FEMA's updated Risk Rating 2.0 pricing, which more accurately accounts for each property's true flood risk using modern data and modeling.	• The difference between the median risk-based cost of insurance and the current median premium for a single - family home in the County is $939. Many policyholders face significant premium increases over time as FEMA's Risk Rating 2.0 phases in full-risk pricing.	• **FEMA's Risk Rating 2.0 uses modern, property-specific data to more accurately price flood insurance, resulting in a $939 gap between current and risk-based premiums in the County, with many policyholders facing significant increases as full-risk pricing is phased in.** 

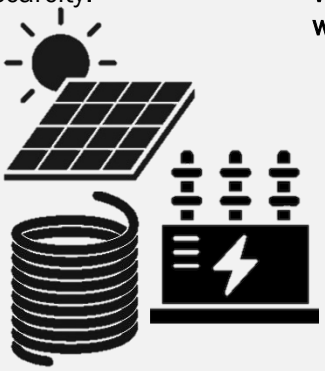
Zoning and Job Clusters

Strengths & Opportunities	Challenges & Weaknesses	Resiliency Implications
ZONING		
• Twenty of the 24 municipalities in Broome County have some form of zoning to guide where and how development occurs, helping to reduce exposure to changing environmental hazards. 	• Four communities (the Town and Village of Lisle, Nanticoke, and Triangle) in the county have neither zoning regulations nor the ability to regulate land uses within their borders. • Among the municipalities with zoning, there are over 122 different zoning districts.	• **The lack and overabundance of zoning districts has the potential to create fragmented land-use patterns, inconsistent regulations, and barriers to adaptive, countywide responses to change or crisis.**
JOB CLUSTERS		
• Currently, job clusters are largely located in the southwest portion of the county along Interstates 81 and 86. • Primary job clusters are concentrated in the county's urban area near Interstates 81 and 86, encompassing the city of Binghamton and neighboring villages and towns such as Johnson City, Vestal, and Endicott.	• Many clusters are located within significant flooding watersheds. • Broome County is a net importer of labor, meaning that more people commute into the county than leave the county for employment. With many primary job workers commuting long distances, these workers are likely dependent on critical arterial roadways to get to work.	• **The concentration of job centers in flood-prone watersheds and reliance on major arterial highways for commuting underscores the need for resilient transportation infrastructure and land-use strategies that ensure access to key employment hubs.** 

Economic Drivers and Stressors

Strengths & Opportunities	Challenges & Weaknesses	Resiliency Implications
EDUCATIONAL SERVICES		
• Combined, the *Elementary and Secondary Schools* and *Colleges, Universities, and Professional Schools* subsectors provide approximately 11,200 jobs in the county.	• Reliance on education employment makes the local economy vulnerable to fluctuations in enrollment, state funding, and institutional restructuring.	• **Heavy reliance on education employment highlights the need to strengthen schools and universities as both economic anchors and resilience hubs capable of supporting community response and adaptation efforts.**
• Schools and universities like Binghamton University can serve as community resilience hubs, offering shelter, communication centers, and education on climate preparedness.	• Educational facilities may have aging infrastructure vulnerable to flooding, heat, storm damage, and limited funding for large-scale retrofits.	
TOURISM & HOSPITALITY		
• Visitor spending is a significant economic driver of the county's economy. In 2024, Broome County captured $407 million in direct tourism spending, equivalent to nearly four times that spent in neighboring counties.	• The largest share of tourism spending in Broome County was associated with food and beverage ($167 million or 41 percent of total spending).	• **The heavy reliance on visitor spending highlights the need to bolster tourism sector resilience through sustainable practices and infrastructure that can withstand climate and economic disruptions.**
• Tourism can promote environmental stewardship and fund community resilience through sustainable infrastructure, eco-tourism, and heritage preservation initiatives.	• Reliance on outside visitor spending makes county hospitality businesses and restaurants vulnerable to external shocks like pandemics, economic downturns, or extreme weather that disrupts travel.	

Strengths & Opportunities	Challenges & Weaknesses	Resiliency Implications
FOOD SERVICES		
• Combined, approximately 7,360 jobs in the county are in the *Restaurants and Other Eating Places* or the *Grocery and Convenience Retailers* subsectors. • Restaurants and food retailers can support community resilience by providing food access during emergencies and adapting quickly through mobile service, delivery, or outdoor dining models.	• With an average annual wage ranging between $24,000 and $30,000 per year, a significant portion of the county's workforce employed in these two subsectors may be financially vulnerable and less able to absorb shocks like business closures during climate disasters or pandemics. • Small, independently owned businesses may lack the resources to recover from prolonged closures, supply disruptions, or infrastructure damage.	• **The concentration of low-wage food service jobs underscores the need for targeted support to sustain essential food access and economic stability during and after climate-related disruptions.** 
HEALTH CARE & SOCIAL SERVICES		
• Approximately 7,510 jobs in the county are in the following three subsectors: *General Medical and Surgical Hospitals; Nursing Care Facilities;* and *Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities.* • Critical health care facilities may have access to emergency preparedness funding, regulatory oversight, and institutional partnerships that support investments in resiliency upgrades.	• Employment in these three subsectors has contracted in recent years, which may be due to pandemic-exacerbated staffing challenges and reduced nursing home admissions. • Workforce shortages and limited capital budgets make it difficult to maintain operations during extreme weather events.	• **The health care and social services sector is a critical resilience asset, but recent job losses threaten its ability to operate effectively during climate emergencies, underscoring the need for targeted investments in workforce stability and infrastructure resilience.** 

Strengths & Opportunities	Challenges & Weaknesses	Resiliency Implications
GOVERNMENT		
• Approximately 3,750 jobs in the county are in the *Executive, Legislative, and Other General Government Support* subsector. 	• Employment in this subsector contracted by 1,170 jobs from the first quarter of 2019 to the first quarter of 2025, which may be partially due to pandemic-induced revenue or staffing shortfalls.	• **The recent contraction in government employment may have reduced local capacity to plan for, respond to, and recover from environmental and economic disruptions.**
ELECTRONIC COMPONENT MANUFACTURING		
• The *Semiconductor and Other Electronic Component Manufacturing* subsector offers 1,330 relatively high-wage job opportunities in the county, ($107,000 per year). In the county, this sector is largely comprised of firms dedicated to electronic component manufacturing. • These firms are foundational to electrification and clean energy, offering strategic opportunities to lead in climate-resilient technologies like smart grids, solar panels, and efficient power systems.	• These firms rely on precision processes, stable power, clean water, and complex global supply chains - making them highly vulnerable to climate-related disruptions like extreme weather and resource scarcity. 	• **Local electronic component manufacturing firms may require climate-resilient infrastructure and technologies investments that reduce vulnerability to extreme weather events.**

Environmental Justice and Climate Burden Considerations

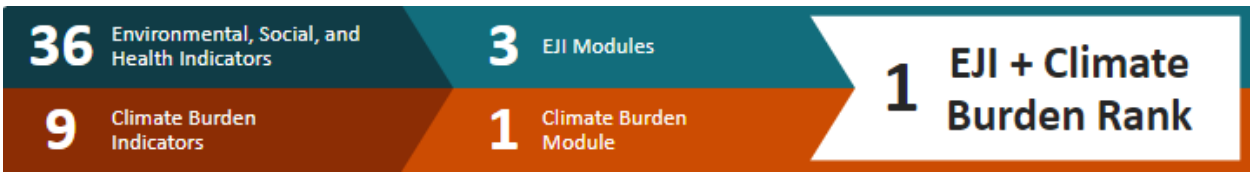
Overview

A resiliency plan should consider environmental justice issues because vulnerable and historically marginalized communities often face disproportionate exposure to environmental hazards and have fewer resources to recover from disasters, making it essential to ensure that adaptation strategies are equitable, inclusive, and effectively reduce systemic risks for all county residents.

To measure environmental justice and climate burden in the county, Broome County census tracts were ranked based on the Centers for Disease Control and Prevention's (CDC) Environmental Justice Index (EJI) (includes the *Social Vulnerability*, *Environmental Burden*, and *Health Vulnerability* modules) and the *Climate Burden* (CB) module.

As illustrated below, the EJI ranks census tract based on 36 environmental, social, and health factors and groups them into three overarching modules: *Social Vulnerability*, *Environmental Burden*, and *Health* Vulnerability. The EJI delivers a single rank for each community to identify and map areas most at risk for the health impacts of environmental burden. The Climate Burden (CB) Module includes nine indicators related to heat, wildfire, and extreme events. The CB Module is intended to capture cumulative climate-related environmental burdens that impact the health and well-being of U.S. communities. These two modules can be combined to result in the EJI and Climate Burden rank. These indicators are presented along with data sources in the Appendix.

Figure 6 EJI and Climate Burden Rank



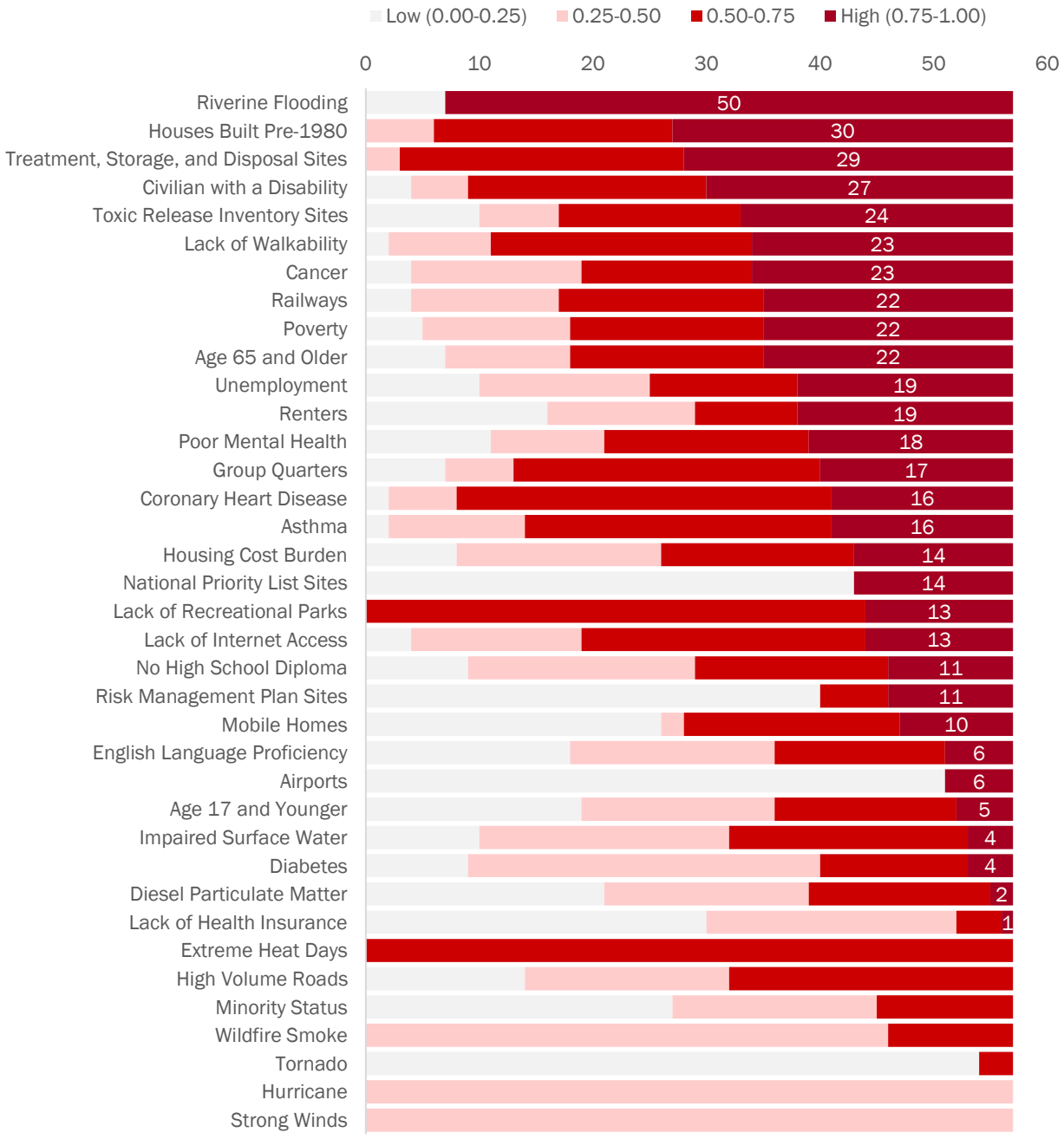
Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

- **Social Vulnerability Module:** Measures community sensitivity to social stressors such as poverty, education, unemployment, housing burden, and access to health insurance that can affect a population's ability to prepare for, respond to, and recover from environmental and public health hazards.
- **Environmental Burden Module:** Assesses exposure to environmental stressors including air pollution, toxic releases, high volume roadways, and wastewater pollution, which increase health and environmental risks.
- **Health Vulnerability Module:** Evaluates underlying health conditions and outcomes (such as asthma, cancer, coronary heart disease, diabetes, and poor mental health) that make populations more susceptible to environmental and climate-related hazards.
- **Climate Burden (CB) Module:** Examines exposure to climate-related risks such as extreme heat, wildfire, flooding, hurricanes, tornadoes, and drought, indicating where communities face heightened climate stress and reduced resilience.

EJI and Climate Burden Ranking by Indicator

Across Broome County's 57 census tracts, riverine flooding is by far the most widespread high-risk factor, followed by concentrations of older housing, hazardous facilities, and socioeconomic and health vulnerabilities, illustrating that climate exposure and social stressors frequently overlap.

Figure 7 Number of Census Tracts by Indicator and Risk Ranking

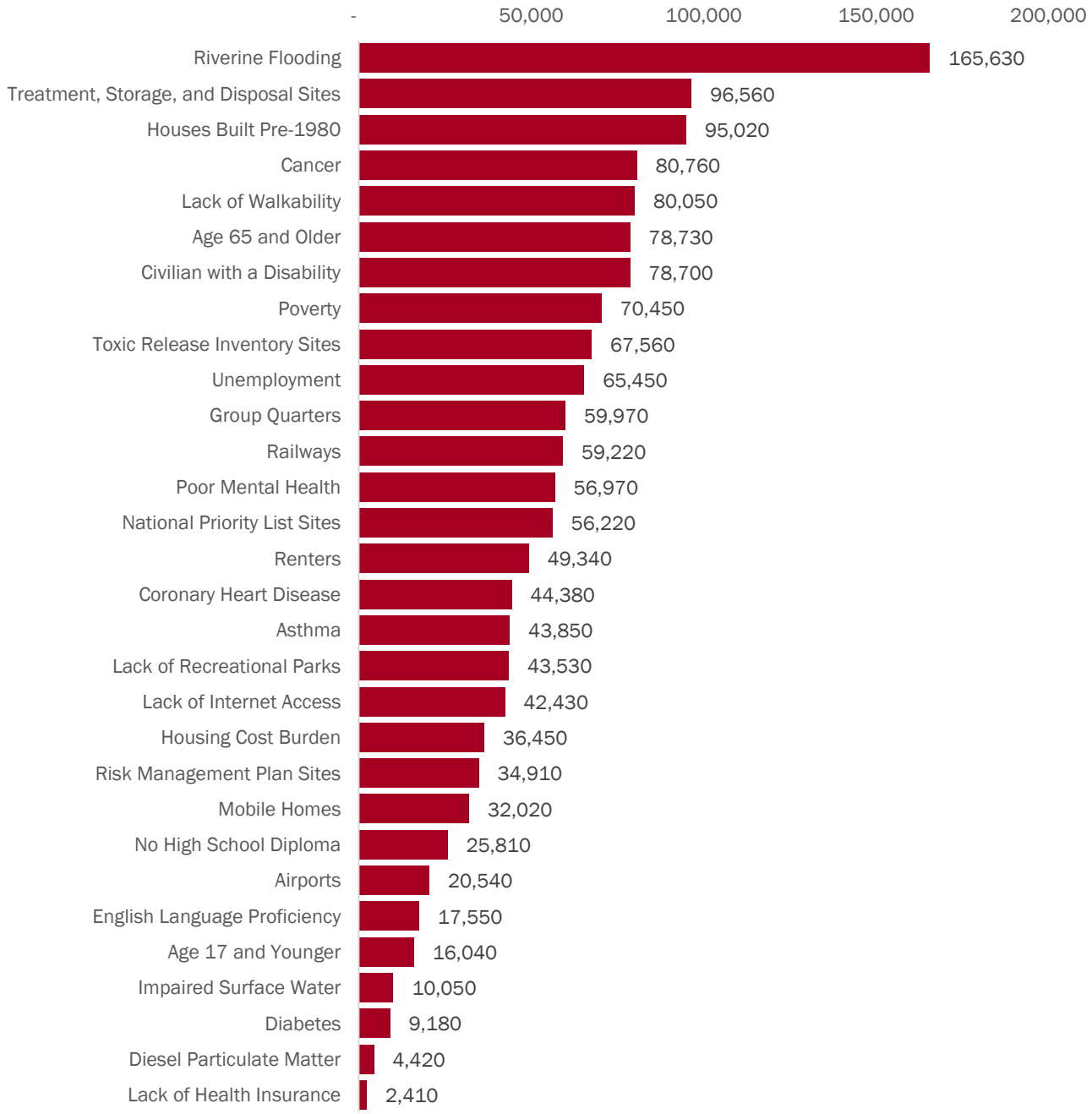


Note: Ozone Particulate Matter 2.5 (PM2.5) Air Toxics Cancer Risk Coal Mines Lead Mines Wildfire Proximity Coastal Flooding Drought have a rank of zero and are omitted from the table.

Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index 95,022

In 2025, the largest populations living in highly burdened census tracts in Broome County are exposed to riverine flooding and legacy environmental conditions—such as hazardous waste sites and older housing—while substantial numbers also face cancer, lack of walkability, aging, disability, and poverty challenges, underscoring the scale and breadth of overlapping resilience needs.

Figure 8 Number of People in Highly Burdened Census Tracts by Indicator, 2025



**Health vulnerability measures are marked with asterisks as they are calculated differently than other indicators. While most indicators can have a range of values, the health vulnerability indicators only represent whether or not a given census tract experiences a high estimated prevalence of disease.*

Source: Esri, 2025; CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Top Seven Vulnerabilities and Burden Indicators by Population Impacted

The following presents the top seven vulnerabilities and burdens by number of census tract according to the *Social Vulnerability*, *Environmental Burden*, *Health Vulnerability* and *Climate Burden* indicators. These indicators are presented below and mapped on the following pages.

165,630 people live in "highly burdened" census tracts (50) according to the **Riverine Flooding** climate burden indicator, with with people in these census tracts having high risk to flooding when nearby streams and rivers exceed their capacity.

96,560 people live in "highly burdened" census tracts (29) aaccording to the **Treatment, Storage, and Disposal (TSD) Sites** environmental burden indicator and may be living near hazardous waste sites associated with increased hospitalizations for stroke, diabetes, and coronary heart disease.

95,020 people live in "highly burdened" census tracts (30) according to the **Houses Built Pre-1980** environmental burden indicator, with people in these census tracts potentially having higher exposure to lead paint.

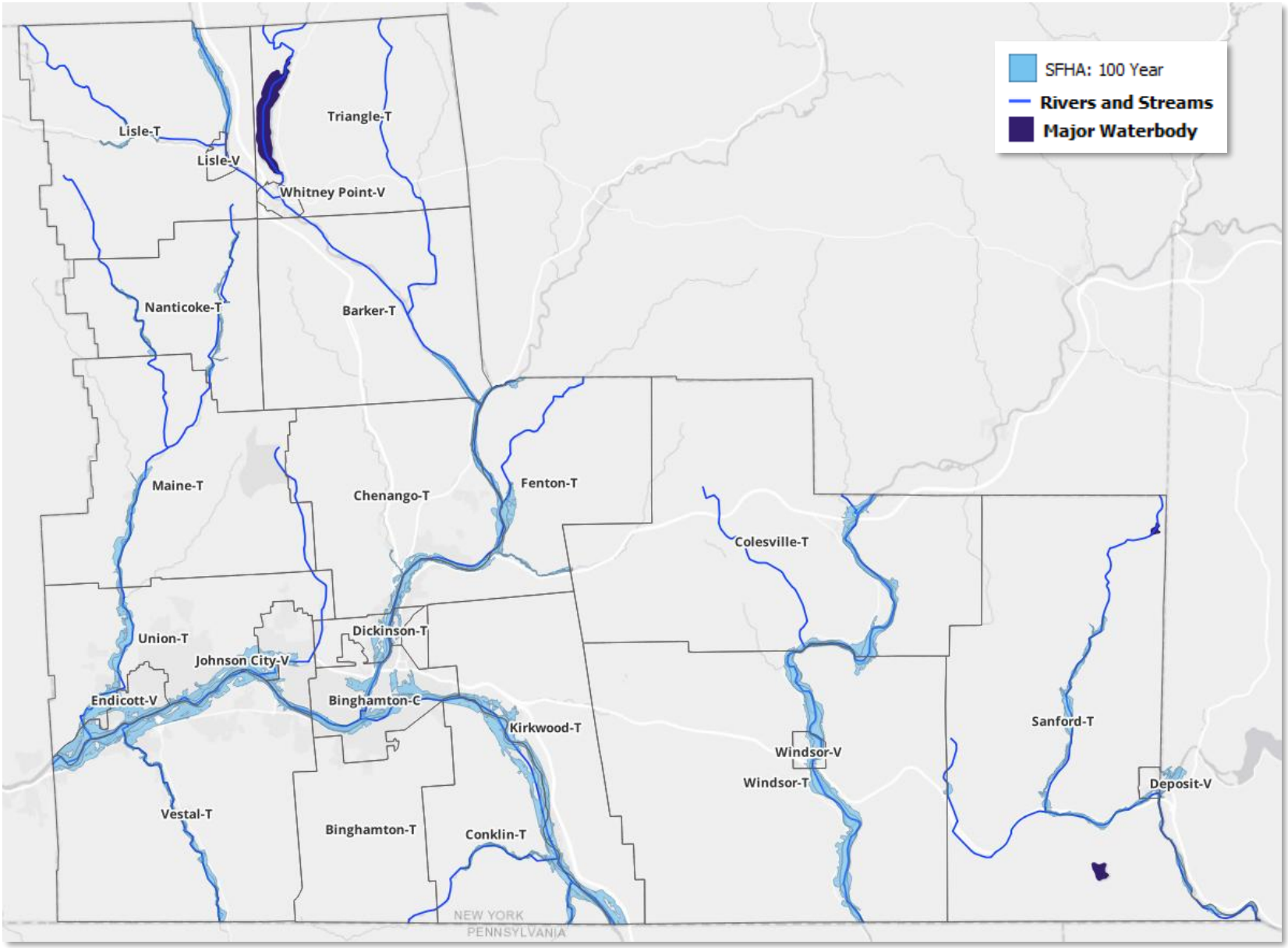
80,760 people live in "highly burdened" census tracts (23) according to the **Cancer** health vulnerability indicator, with people in these census tracts having a high estimated prevalence of cancer.

80,050 people live in "highly burdened" census tracts (23) according to the **Lack of Walkability** environmental burden indicator, with people in these census tracts not having access to the most accessible methods of physical activity.

78,730 people live in "highly burdened" census tracts (22) according to the **Age 65 and Older** social vulnerability indicator, with older people with in these census tracts potentially being more socially isolated than younger populations, which can prevent them from advocating for themselves and their environmental health.

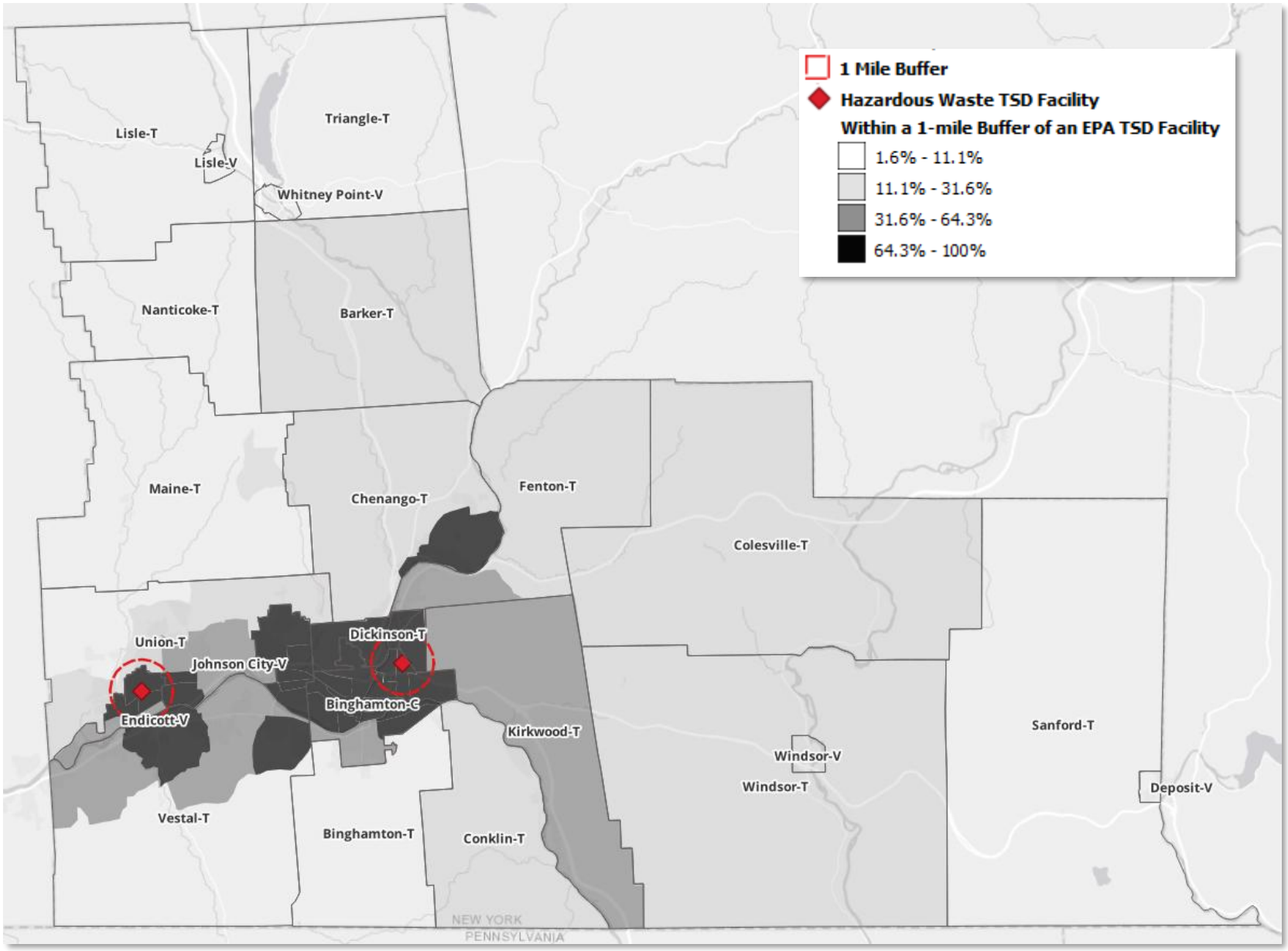
78,700 people live in "highly burdened" census tracts (27) according to the **Civilian with a Disability** social vulnerability indicator, with people with disabilities in these census tracts potentially having a harder time preventing, preparing for, and recovering from changing environmental hazards.

Figure 9 Riverine Flooding in Broome County



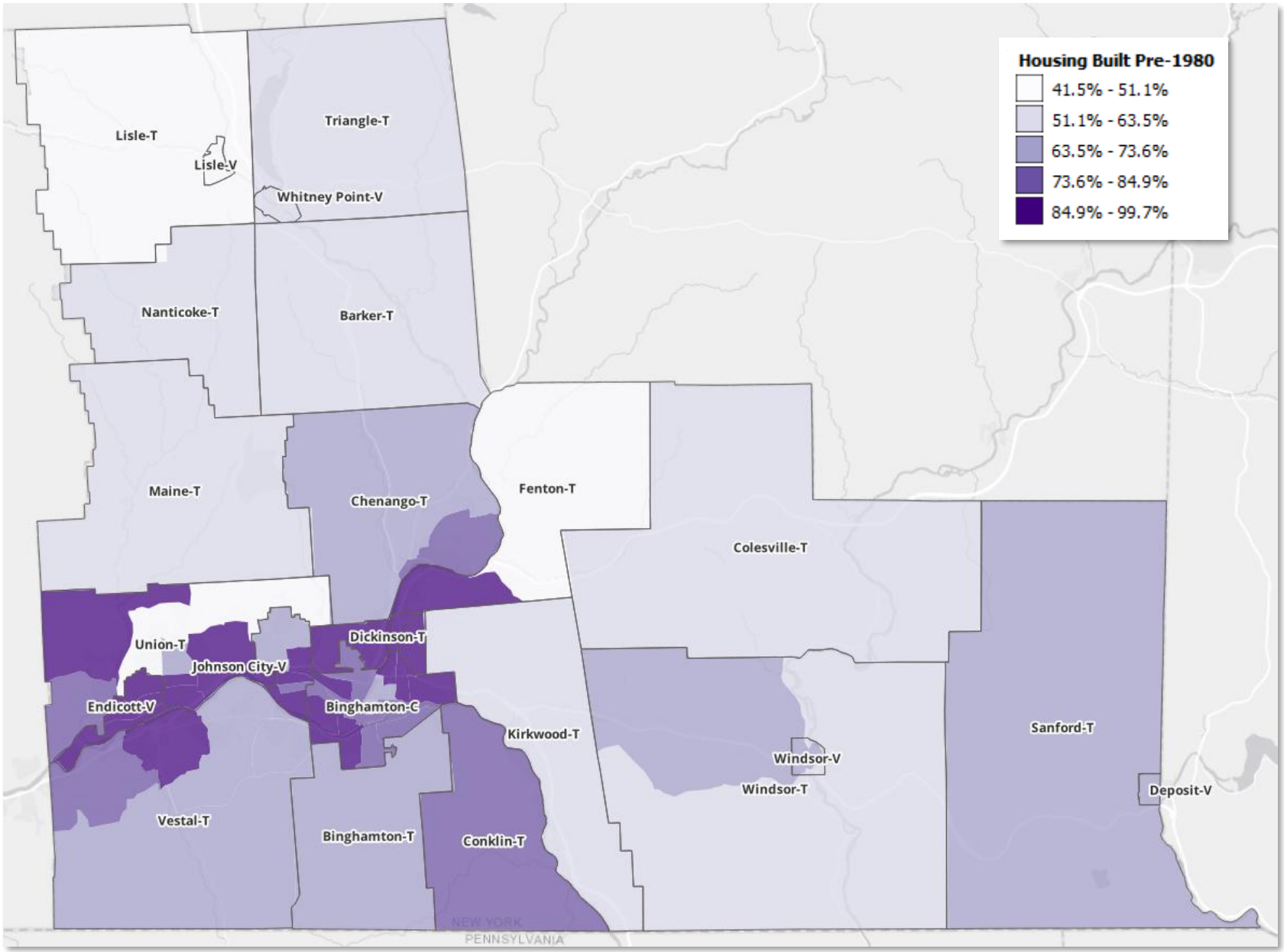
Source: 2024 Environmental Justice Index; Federal Emergency Management Agency (FEMA), 2010; ArcGIS Hub

Figure 10 Proportion of Census Tract within 1-Mile Buffer of TSD Facility



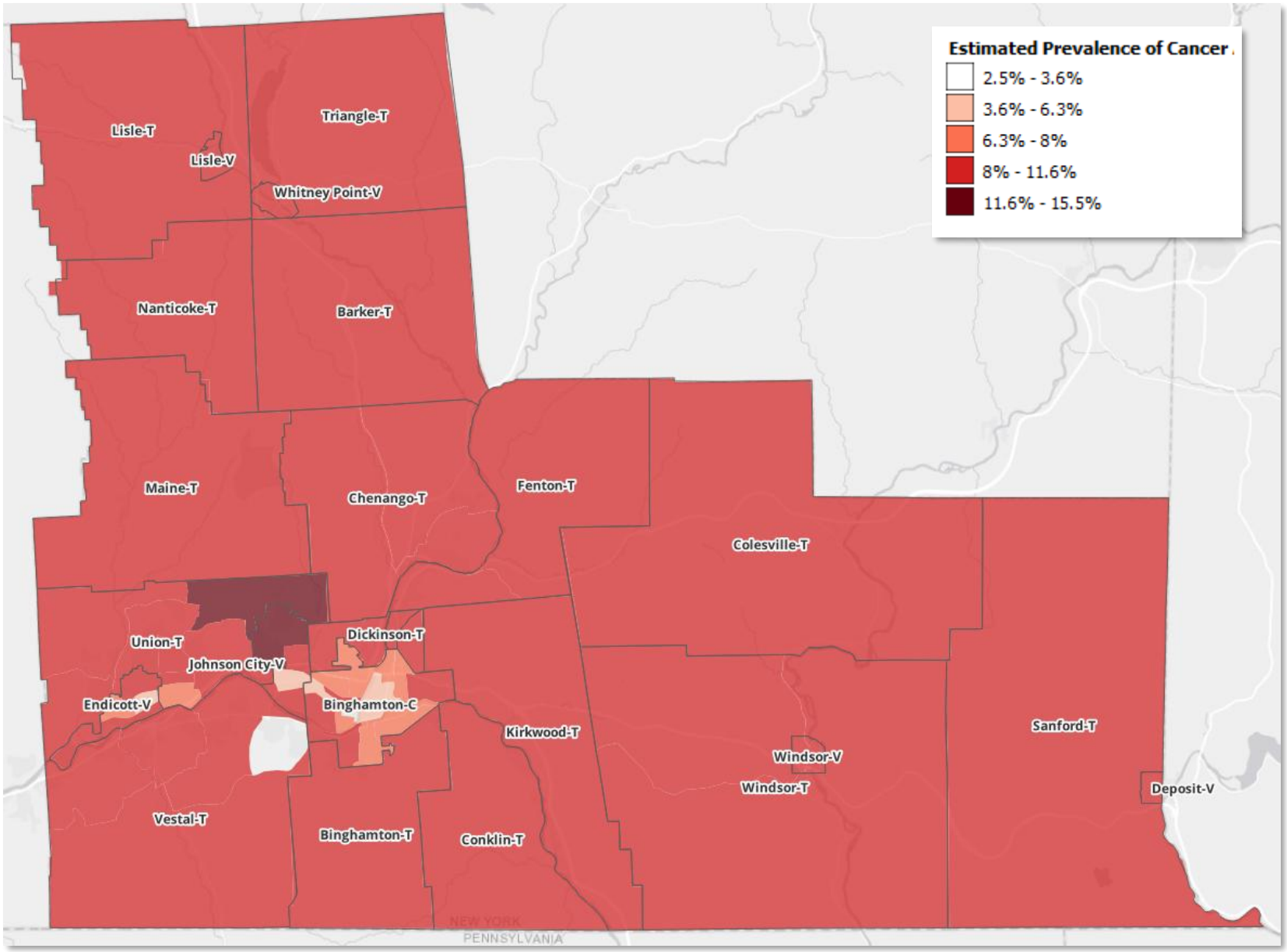
Source: 2024 Environmental Justice Index; U.S. EPA Facility Registry Service

Figure 11 Share Housing Built Pre-1980 by Census Tract



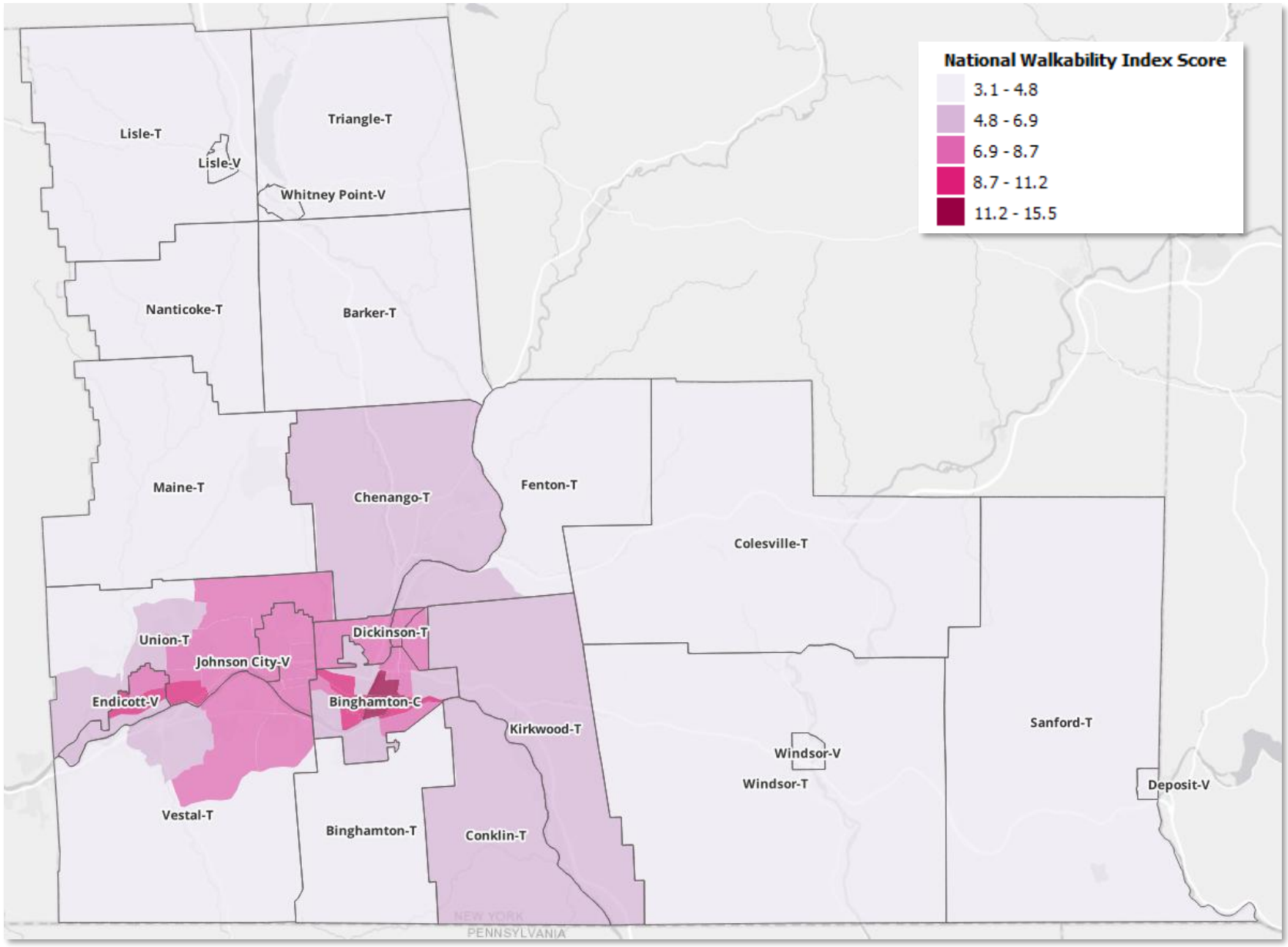
Source: 2024 Environmental Justice Index; U.S. Census Bureau American Community Survey

Figure 12 High Estimated Prevalence of Cancer by Census Tract



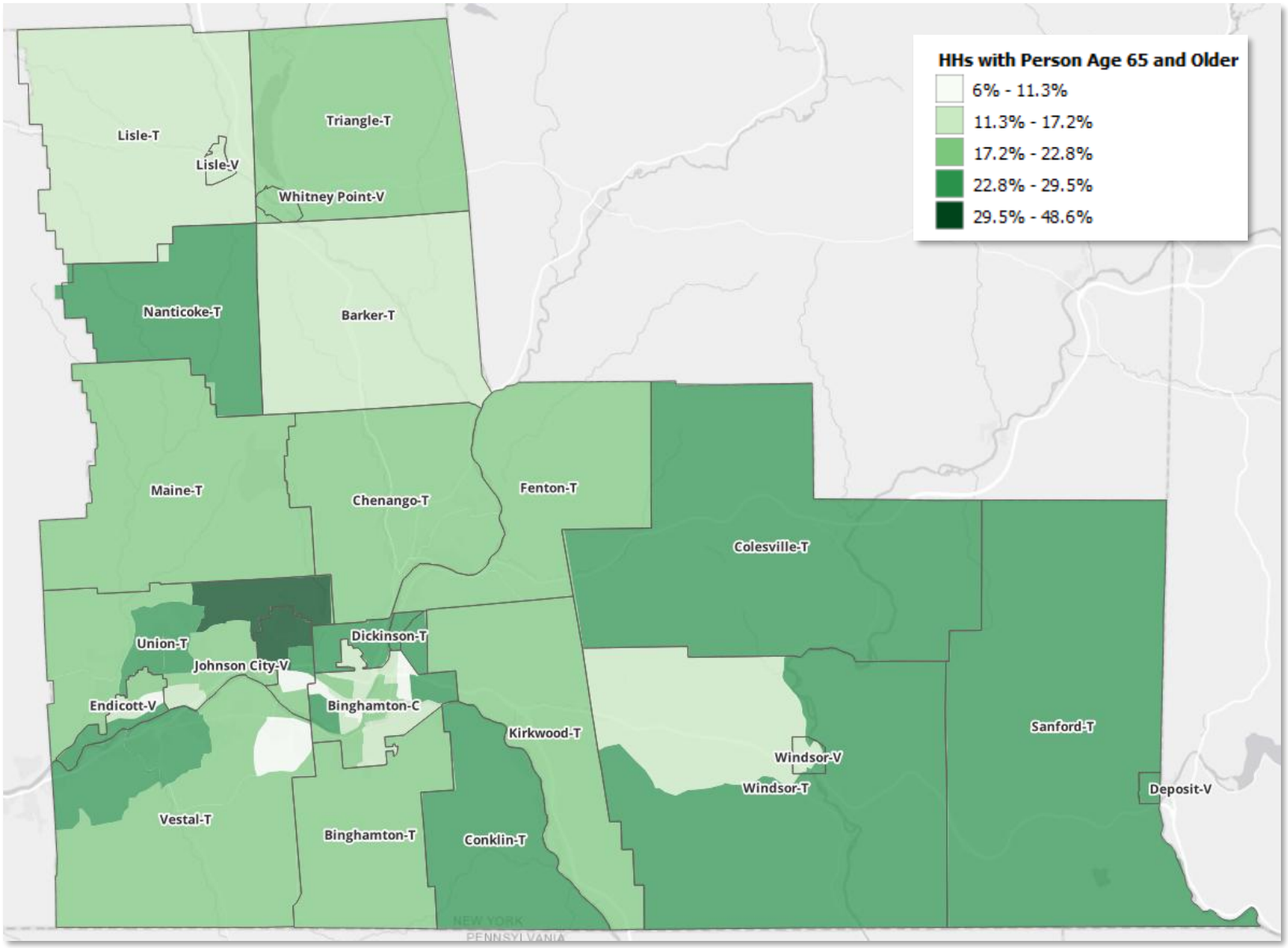
Source: 2024 Environmental Justice Index; U.S. Census Bureau American Community Survey

Figure 13 National Walkability Index Score by Census Tract



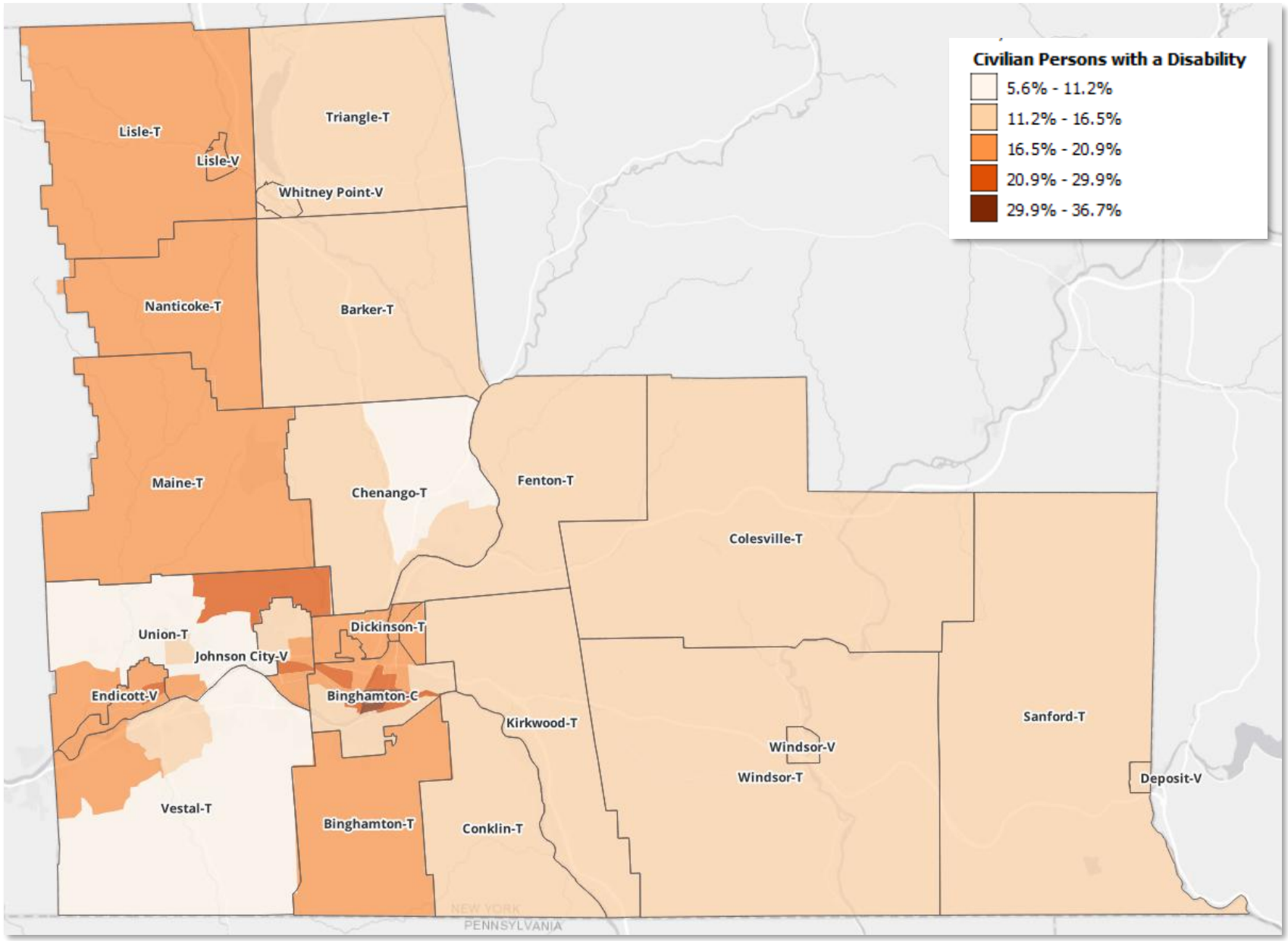
Source: 2024 Environmental Justice Index; U.S. Census Bureau American Community Survey

Figure 14 Share of Households with Person Age 65 and Older by Census Tract



Source: 2024 Environmental Justice Index; U.S. Census Bureau American Community Survey

Figure 15 Civilian Noninstitutionalized Persons with a Disability by Census Tract



Source: 2024 Environmental Justice Index; U.S. Census Bureau American Community Survey

Socio-Economic Overview

The following section examines the county's regional context and compares key socio-economic metrics across municipalities. This analysis will help identify potential disparities in vulnerability, resource capacity, and adaptive needs - enabling more targeted and equitable resiliency planning in the county.

Municipal Profiles

Current Metrics

According to Esri, a private firm that compiles socio-economic census data for various geographies, the Southern Tier region contains approximately 229,650 primary jobs,[11] 268,270 households, 317,850 housing units, and 624,790 residents. According to Esri, Broome County contains approximately 195,920 residents, 93,860 housing units, 82,070 households, and 76,690 primary jobs. With Broome County representing approximately 31 percent of all residents and households, 30 percent of all housing units, and 33 percent of all primary jobs in the Southern Tier Region, Broome County's resilience is pivotal to the region's overall capacity to withstand and recover from climate and economic disruptions.

As presented in the table on the following page, the town of Union and the city of Binghamton are the two largest municipalities by population in Broome County, combined representing approximately 52 percent of the county's total population and 57 percent of the county's total households and housing units. Located at the confluence of the Chenango and Susquehanna Rivers, the city of Binghamton is the county's biggest job center, with 31 percent of the county's total primary jobs located in the city. The county has a median household income of $65,655, with the median household income highest in the town of Binghamton ($100,733), and lowest in the city of Binghamton ($46,321). The median age in the county is 41 years, with the youngest median age in the town of Vestal (27 years) and highest in the town of Sanford (49 years). The share of renter-occupied households in the county is 38 percent, with the lowest share in the town of Binghamton (10 percent) and highest in the village of Endicott (62 percent).

[1] *According to the U.S. Census Bureau, a primary job is the highest paying job for an individual worker (should they have more than one job) and represents the size of a geography's workforce.*

The following table compares key socio-economic metrics across Broome County municipalities sorted by total population. Top values for each municipal metric are highlighted in green with the lowest values highlighted in red.

Figure 16 Current Socio-Economic Metrics by Municipality, 2025

Geography	Total Population	Total Households	Total Housing Units	Median HH Income	Median Age	Renter Occupied Households
Union-T	54,825	24,869	28,205	$64,406	44	43%
Binghamton-C	47,304	21,715	25,495	$46,321	37	61%
Vestal-T	30,119	8,906	9,702	$81,183	27	26%
Johnson-City-V	15,106	6,718	7,874	$55,511	43	51%
Endicott-V	13,225	6,144	7,261	$50,339	41	62%
Chenango-T	10,684	4,503	4,853	$93,644	45	16%
Fenton-T	6,252	2,771	3,094	$75,758	48	16%
Windsor-T	5,697	2,313	2,950	$77,447	45	16%
Kirkwood-T	5,279	2,311	2,560	$57,636	44	29%
Dickinson-T	5,035	1,971	2,199	$66,802	42	32%
Maine-T	5,019	2,047	2,234	$76,303	44	14%
Conklin-T	4,853	2,097	2,275	$73,063	46	17%
Colesville-T	4,767	1,910	2,258	$72,915	45	18%
Binghamton-T	4,464	1,880	2,018	$100,733	48	10%
Lisle-T	2,792	1,100	1,230	$71,539	40	16%
Triangle-T	2,704	1,134	1,314	$70,693	43	26%
Barker-T	2,444	1,018	1,140	$76,846	46	13%
Sanford-T	2,163	933	1,651	$74,216	49	20%
Port Dickinson-V	1,688	803	865	$62,459	42	38%
Nanticoke-T	1,518	593	677	$78,498	41	25%
Deposit-V	1,367	648	810	$62,532	48	31%
Whitney Point-V	930	392	429	$58,631	41	30%
Windsor-V	879	360	407	$77,500	41	34%
Lisle-V	342	122	148	$69,516	41	14%
Broome County	195,919	82,071	93,855	$65,655	41	38%
Southern Tier Region	624,789	268,274	317,845	$66,266	41	35%
New York State	19,998,175	7,815,341	8,671,626	$85,744	40	49%

Note: Green indicates the highest value in column, red indicates the lowest value in column.
Source: Esri, U.S. Census Bureau, 2025; Center for Economic Studies, LEHD, 2023.

Historic Trends and Projections

From 2010 to 2025, Broome County experienced modest but persistent population decline (-0.16 percent annually) and essentially flat household growth (-0.01 percent), while total housing units continued to increase (0.24 percent). These trends mirror patterns across the Southern Tier but contrast sharply with the State of New York overall growth in population, households, and housing. The mismatch between declining population and rising housing supply in the 2010–2025 period suggests structural shifts such as smaller household sizes, aging in place, and incremental residential development occurring without corresponding growth in demand. Looking ahead, projections for 2025–2030 indicate accelerating population loss (-0.51 percent annually), stagnant household growth (0.00 percent), and a decline in housing units (-0.19 percent, signaling a transition from slow growth to potential contraction in the local housing market.

These trends imply that Broome County's resilience strategy must prioritize stabilization and adaptation rather than growth-based planning assumptions. Emphasis should be placed on reinvestment in existing neighborhoods, housing rehabilitation, and managing vacancy and underutilized properties, while right-sizing infrastructure and public services to match changing demand. Economic resilience efforts should focus on retaining and attracting working-age residents through workforce development, diversification of employment sectors, and quality-of-life improvements. Overall, the resilience plan should acknowledge long-term demographic decline as a structural condition and frame resilience around fiscal sustainability, community health, and adaptive reuse rather than expansion.

Figure 17 Annualized Percent Change for Socio-Economic Trends, 2010-2025

	Total Population	Total Households	Total Housing Units
Broome County	-0.16%	-0.01%	0.24%
Southern Tier Region	-0.34%	0.08%	0.23%
New York State	0.21%	0.45%	0.46%

Source: Esri, U.S. Census Bureau, 2025

Figure 18 Projected Annualized Percent Change for Socio-Economic Trends, 2025-2030

	Total Population	Total Households	Total Housing Units
Broome County	-0.51%	0.00%	-0.19%
Southern Tier Region	-0.42%	0.05%	-0.04%
New York State	-0.09%	0.25%	0.19%

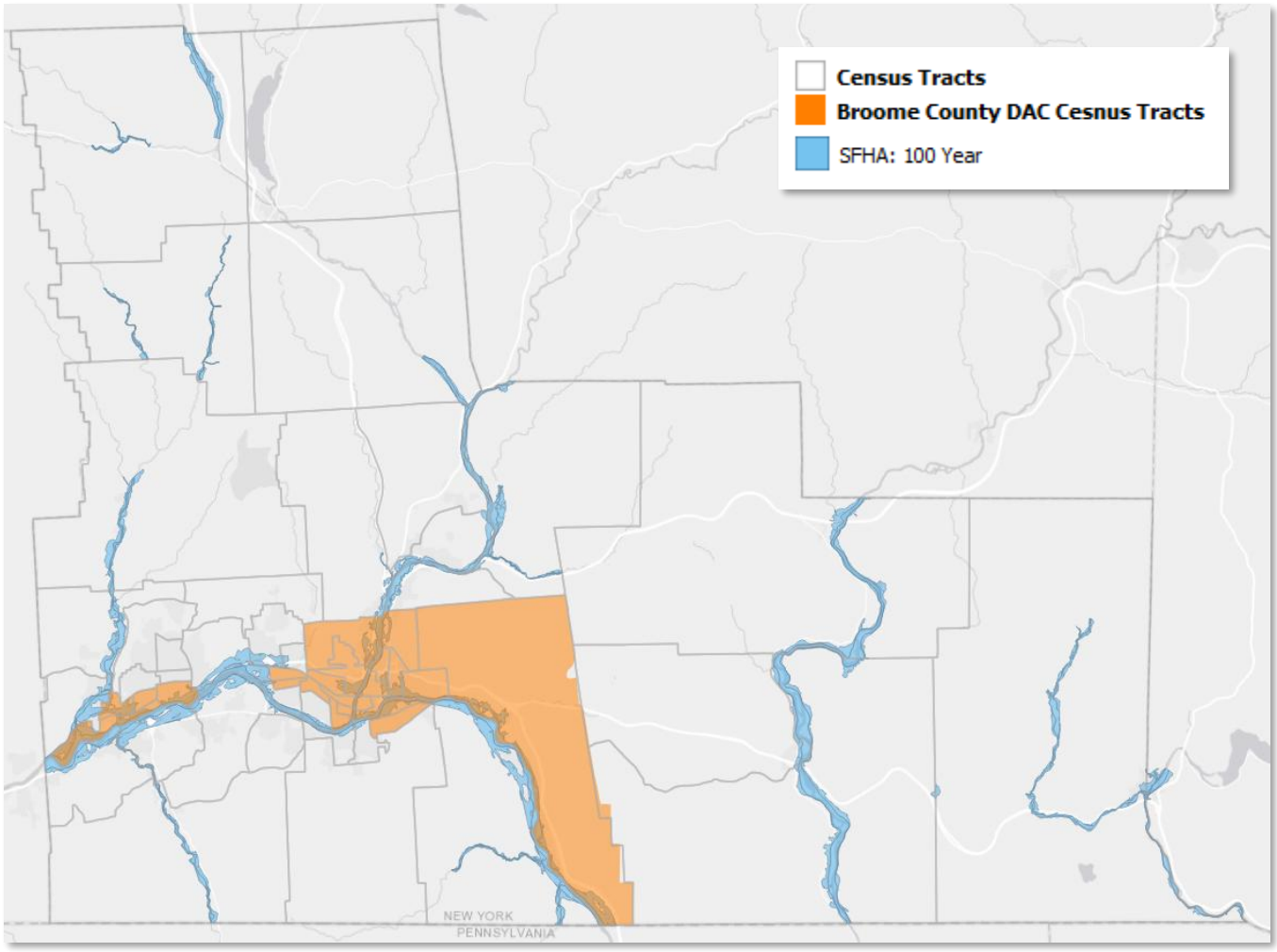
Source: Esri, U.S. Census Bureau, 2025

Disadvantaged Communities

The Climate Leadership and Community Protection Act (CLCPA) of 2019 mandates that New York State prioritizes equity and environmental justice in climate action and requires that at least 35 percent of clean energy and climate investment benefits be directed to Disadvantaged Communities (DACs). The identification of DACs - based on environmental burdens, climate risks, health vulnerabilities, and socioeconomic factors - forms a cornerstone of equitable resiliency planning.

According to the New York State Climate Justice Working Group, several areas in the city of Binghamton, the village of Johnson City, and parts of the village of Endicott are designated as DACs. The entire town of Dickinson, the village of Port Dickinson and town of Kirkwood are also designated as DACs. Many of these areas are located in flood zones and were severely affected by historic flood events, including those in 2006 and 2011 (Tropical Storm Lee), and continue to face risks from aging infrastructure and inadequate stormwater systems. In Broome County, this requirement has significant implications for how resources are allocated, infrastructure is improved, and communities are engaged in the transition to a more sustainable and climate-resilient future.

Figure 19 Broome County Disadvantaged Communities

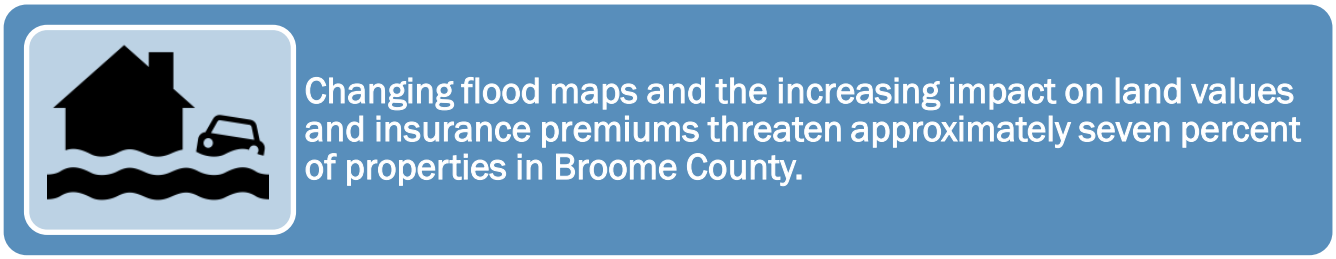


Source: New York State Energy Research and Development Authority (NYSERDA), Final Disadvantaged Communities (DAC) 2023; Federal Emergency Management Agency (FEMA), 2010

Land-Use Patterns

Broome County faces increasing economic risks from changing environmental hazards, particularly flooding, which can have significant impacts on building structures, insurance costs, and local government finances. Regional land-use patterns influence how well the county can adapt to and recover from environmental, economic, and social disruptions. Compact, connected, and hazard-aware development supports stronger infrastructure, protects natural systems, and ensures equitable access to essential resources.

FLOOD ZONES AND IMPACT COSTS



Flood Zones

Figure 20 presents the acres of land located within the 100- and 500-Year floodplains in Broome County, as depicted on the most current FEMA preliminary Digital Flood Insurance Rate Map (DFIRM), according to the 2024 Hazard Mitigation Plan for Broome County. Flood hazard zones occur throughout the county. The largest areas are along the Susquehanna River. Approximately 5.1 percent of parcels in Broome County are located within the 100-year floodplain, with this share increasing to 5.6 percent when including the 500-year floodplain. Several municipalities in Broome County, particularly Endicott Village, Windsor Village, Whitney Point Village, Port Dickinson Village, and Binghamton City, have a high percentage of their total land areas within 100- and 500-year flood zones, indicating elevated community-wide flood exposure and highlighting the need for prioritized flood mitigation and resiliency planning in these municipalities.

Figure 20 Total Land Area in the 100- and 500-Year Flood Zones

Municipality	Total Acres	100-Year Flood Hazard Area		500-Year Flood Hazard Area	
		Acres	Percent of Total	Acres	Percent of Total
Barker-T	26,496	1,079	4.1%	1,084	4.10%
Binghamton-C	7,071	1,340	**19.0%**	1,729	**24.5%**
Binghamton-T	16,026	38	0.2%	40	02%
Chenango-T	21,824	1,175	5.4%	1,325	6.1%
Colesville-T	50,402	1,431	2.8%	1,502	3.0%
Conklin-T	15,736	1,791	11.4%	2,107	13.4%
Deposit-V	423	72	17.0%	88	20.8%
Dickinson-T	2,751	302	11.0%	358	13.0%
Endicott-V	2,172	882	**40.6%**	1,019	**46.9%**
Fenton-T	21,016	1,225	5.8%	1,337	6.4%
Johnson City-V	2,966	364	12.3%	437	14.7%
Kirkwood-T	19,809	1,233	6.2%	1,365	6.9%
Lisle-T	29,234	1,181	4.0%	1,212	4.1%
Lisle-V	544	93	17.1%	93	17.1%
Maine-T	28,801	1,064	3.7%	1,065	3.7%
Nanticoke-T	15,432	458	3.0%	539	3.5%
Port Dickinson-V	404	115	**28.5%**	152	**37.6%**

Municipality	Total Acres	100-Year Flood Hazard Area		500-Year Flood Hazard Area	
		Acres	Percent of Total	Acres	Percent of Total
Sanford-T	57,382	1,230	2.1%	1,293	23%
Triangle-T	23,468	1,019	4.3%	1,019	43%
Union-T	17,961	1,847	10.3%	2,027	11.3%
Vestal-T	33,450	2,202	6.6%	2,590	7.7%
Whitney Point-V	731	259	**35.4%**	259	**35.4%**
Windsor-T	58,137	2,279	3.9%	2,371	4.1%
Windsor-V	727	277	**38.1%**	286	**39.3%**
Broome County	452,963	22,956	5.1%	25,297	5.6%

Note: Excludes areas designated as water. Values are rounded to the nearest whole value
Sources: Broome County 2023; USGS; FEMA 2010, 2024 Hazard Mitigation Plan for Broome County

Building-Related Economic Loss

Flood hazard exposure includes buildings located within FEMA-mapped flood zones or downstream areas subject to flood inundation. Potential damages are based on modeled losses to these exposed structures, measured by the structural and content replacement cost value. According to the 2024 Hazard Mitigation Plan for Broome County, approximately 7,591 buildings are exposed to the 100-year floodplain, representing 8.5 percent of the County's total building inventory replacement value. The city of Binghamton is particularly vulnerable, with 2,658 buildings located in the 100-year floodplain. As flood patterns shift, some areas currently in the 500-year floodplain could be reclassified into higher-risk zones in future FEMA map updates. There are an estimated 11,574 buildings in the 500-year floodplain, with the city of Binghamton also having the greatest number of buildings located in the 500-year floodplain (4,124 buildings).According to the 2024 Hazard Mitigation Plan for Broome County, a 100-year flood event could result in a building-related economic losses due to $341.2 million in inventory loss, $285 million in relocation loss, $744.3 million in wage loss, $241.3 million in rental loss, and $323.7 million in income loss. According to 2022 RS Means construction cost data, the estimated replacement cost of all buildings located in the 100-year floodplain would be $8.1 billion, with $2.8 billion of this cost occurring in the city of Binghamton. Within the 500-year floodplain, total estimated replacement cost of all buildings would be $12.8 billion. The estimated replacement cost of buildings located in these floodplains quantifies the potential financial exposure to flood damage, helping prioritize areas for mitigation, investment, and risk reduction.

Figure 21 Building-Related Economic Loss Estimates from the 1-Percent Annual Chance Flood Event

Flood Hazard	Total Business Interruption Loss				
	Inventory Loss	Relocation Loss	Wage Loss	Rental Loss	Income Loss
One-Percent Annual Chance Flood Event	$341,200,000	$284,950,000	$744,300,000	$241,310,000	$323,690,000

Source: Hazus v6.0, 2024 Hazard Mitigation Plan for Broome County

Figure 22 Estimated Replacement Cost of Buildings Located in the 100-Year Floodplain

	Number of Buildings in Flood Zone		Total Replacement Cost of Buildings	
	100-Year Flood Zone	500-Year Flood Zone	100-Year Flood Zone	500-Year Flood Zone
Binghamton-C	2,658	4,124	$2,833,039,765	$5,383,727,693
Endicott-V	1,133	1,665	$1,649,080,712	$1,923,832,873
Union-T	1,009	1,391	$1,094,205,032	$1,337,127,424
Vestal-T	836	1,220	$673,698,194	$1,438,073,551
Johnson City-V	297	602	$542,513,669	$663,186,816
Conklin-T	500	720	$425,468,682	$522,767,266
Kirkwood-T	152	246	$227,269,082	$355,287,377
Whitney Point-V	119	119	$192,727,992	$192,727,992
Chenango-T	150	330	$121,034,900	$416,458,571

	Number of Buildings in Flood Zone		Total Replacement Cost of Buildings	
	100-Year Flood Zone	500-Year Flood Zone	100-Year Flood Zone	500-Year Flood Zone
Deposit-V	96	167	$96,345,888	$151,022,050
Colesville-T	108	138	$41,704,622	$52,365,969
Fenton-T	66	114	$36,202,651	$81,141,272
Windsor-T	103	119	$32,128,019	$37,086,255
Port Dickinson-V	82	217	$26,817,664	$71,385,176
Lisle-V	37	37	$18,634,757	$18,634,757
Maine-T	93	93	$18,510,772	$18,510,772
Lisle-T	26	30	$18,347,683	$22,231,866
Dickinson-T	9	54	$15,108,257	$82,910,954
Barker-T	51	58	$14,265,439	$22,381,184
Nanticoke-T	28	63	$10,243,197	$24,491,165
Windsor-V	15	24	$6,893,286	$10,633,547
Sanford-T	20	40	$5,210,909	$9,734,911
Binghamton-T	1	1	$1,294,635	$1,294,635
Triangle-T	2	2	$730,453	$730,453
Broome County	**7,591**	**11,574**	**$8,101,476,260**	**$12,837,744,529**

Source: Broome County GIS & Mapping Services; RS Means 2022; FEMA 2010, 2024 Hazard Mitigation Plan for Broome County

Insurance Costs

This table compares the risk-based cost of flood insurance versus the current cost of insurance for single-family homes in Broome County, New York State, and the United States as of August 31, 2023. In Broome County, there are 1,477 flood insurance policies in force, all of which are 100 percent exposed to inland flooding. The median risk-based cost of insurance in Broome County is $1,724 per year, compared to the current median premium of $785, a difference of $939 (compared to $504 in the nation). The difference exists because the current premiums in Broome County are based on older, subsidized rates, while the higher risk-based cost of $1,724 reflects FEMA's updated Risk Rating 2.0 pricing, which more accurately accounts for each property's true flood risk using modern data and modeling. This suggests many policyholders in the county may face significant premium increases over time as FEMA's Risk Rating 2.0 phases in full-risk pricing.

Figure 23 Risk-Based Cost Of Insurance Versus Current Cost of Insurance: Single-Family Homes, Levee And Non-Levee, In-Force on Aug 31, 2023

Geography	Policies in Force (PIF)	Median Risk-based Cost of Insurance [1]	Median Current Cost of Insurance [2]	Percentage of Policies with Exposure To:				
				Inland Flood	Storm Surge	Tsunami	Great Lakes	Coastal Erosion
Broome County	1,477	$1,724	$785	100.0%	-	-	-	-
New York State	118,453	$1,834	$943	100.0%	68.4%	-	0.8%	22.4%
United States	3,149,679	$1,290	$786	100.0%	60.7%	1.1%	0.2%	7.9%

[1] *Risk-Based Cost of Insurance is what policyholders would pay if they were paying their full actuarial rate as evaluated under the rates implemented Oct. 1, 2021. This rate is based on the expected costs of losses and programmatic expenses, without subsidies. Many policyholders pay less than their full rate. These full-rate estimates will be updated periodically as risks change.*

[2] *Current Cost of Insurance: This is what policyholders are paying today. When a policyholder's capped current premium is below their risk-based premium, their premium will increase towards the full rate. This increase is called a "glide path." By law, rates cannot increase by more than 18 percent per year for most policyholders. Under the legacy approach, all NFIP policyholders were subject to premium increases every year. Under NFIP's pricing approach, annual increases will eventually stop once the full-risk rate is realized.*

Source: FEMA

Municipal Buyouts

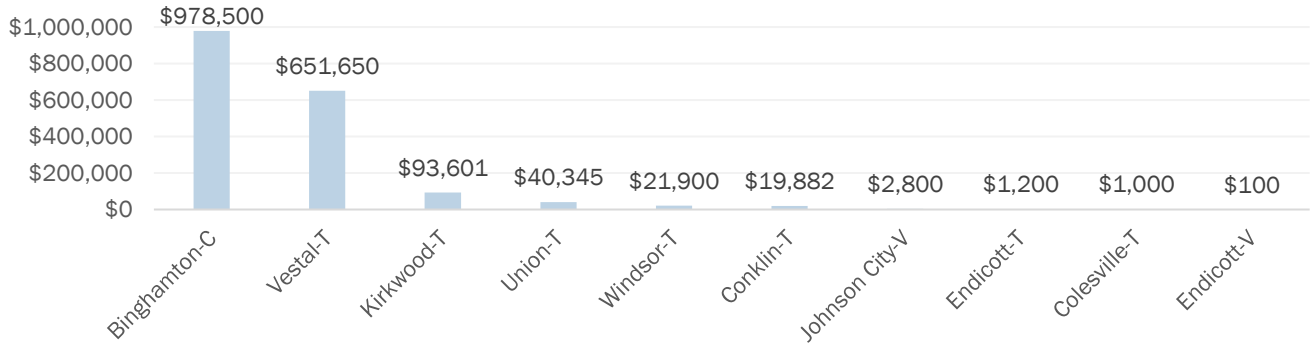
In response to repeated severe flooding in Broome County, notably in 2006 and 2011, the County and its municipalities, in partnership with FEMA and New York State, implemented a series of municipal buyout programs to reduce future flood risk and protect public safety. The municipal buyouts were primarily funded through a combination of federal, state, and local sources, with the majority of funding provided by FEMA under the Hazard Mitigation Grant Program (HMGP). Since the mid-2000s, Broome County has facilitated over 504 municipal buyouts, resulting in the permanent removal of 173.7 acres of flood-prone properties from the hazard area. These buyouts have been largely concentrated in the Towns of Union and Conklin (70 percent of all acreage), and largest representing vacant land (92 percent of all acreage). Some of this vacant land may have previously been developed before a flood event. Municipal buyouts in Broome County reduce long-term flood risk and financial exposure but can lead to decreased tax revenues, higher local land maintenance costs, and potential disinvestment in surrounding areas if not carefully managed through coordinated land reuse and revitalization strategies. Transforming buyout parcels into community assets such as parks, greenways, flood storage areas, or recreational spaces can help enhance neighborhood appeal, support environmental goals, and attract reinvestment while maintaining flood resilience.

Figure 24 Municipal Buyouts by Acreage

Municipality	Vacant	Public Services	Wild/Forest	Residential	Commercial	Multi-Residential	Total	Share
Union-T	57.9	0.3	3.2	1.1	-	-	62.4	35.9%
Conklin-T	58.8	-	-	-	-	-	58.8	33.9%
Kirkwood-T	21.2	-	-	-	-	-	21.2	12.2%
Vestal-T	18.1	2.9	-	-	-	-	21.0	12.1%
Binghamton-C	1.1	4.7	-	1.0	0.2	0.2	7.2	4.1%
Johnson City-V	1.5	-	-	-	-	-	1.5	0.8%
Windsor-T	1.0	-	-	0.2	-	-	1.2	0.7%
Colesville-T	0.3	-	-	-	-	-	0.3	0.1%
Endicott-T	-	-	-	0.2	-	-	0.2	0.1%
Endicott-V	0.1	-	-	-	-	-	0.1	0.1%
Total	159.9	7.9	3.2	2.5	0.2	0.2	173.7	100.0%
Share	92.0%	4.5%	1.8%	1.4%	0.1%	0.1%	100.0%	

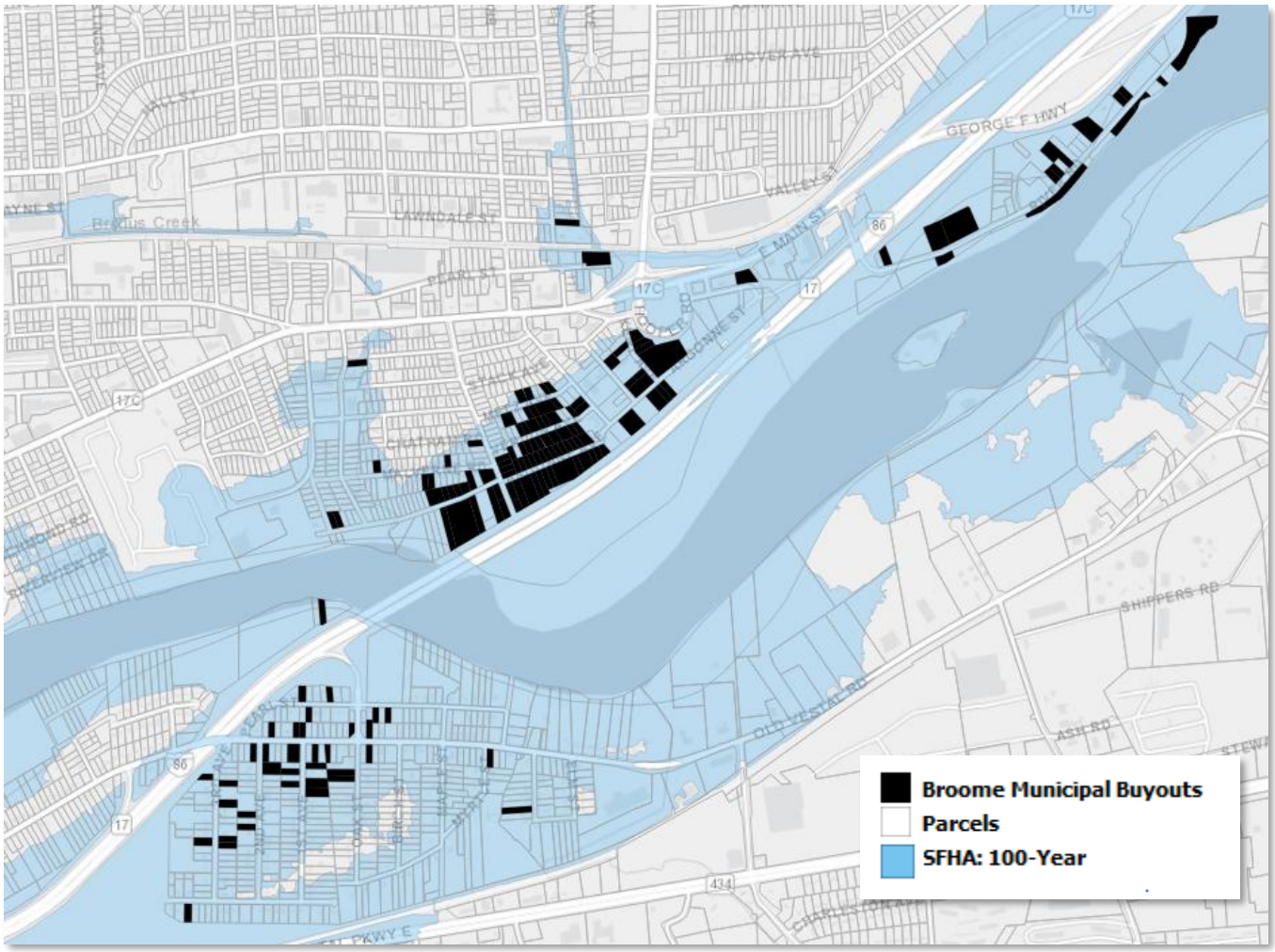
Source: Broome County

Figure 25 Municipal Buyouts by Total Property Value



Source: Broome County

Figure 26 Example of Municipal Buyouts, Town of Union



Source: Broome County; FEMA 2010.

ZONING

The lack and overabundance of zoning districts has the potential to create fragmented land-use patterns, inconsistent regulations, and barriers to adaptive, countywide responses to change or crisis.

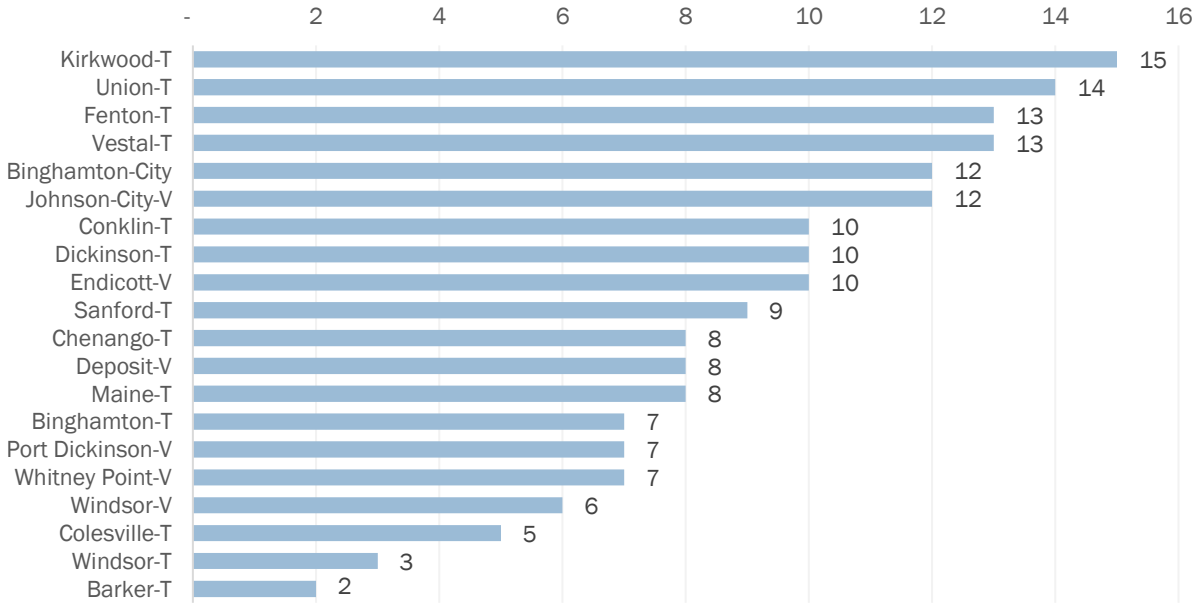
Zoning Districts

Zoning can be a powerful tool in resiliency planning by directing development away from high-risk areas (like floodplains or wildfire-prone zones), encouraging climate-resilient building forms and land uses, preserving natural buffers such as wetlands, and promoting mixed-use, walkable neighborhoods that reduce dependence on vulnerable infrastructure.

In Broome County, 20 of the 24 municipalities have some form of zoning. Four communities (the town and village of Lisle, Nanticoke, and Triangle) in the county have not enacted land use or zoning laws. Among the municipalities with zoning, there are over 122 different zoning districts. The town of Kirkwood alone has 15 different zoning districts. The county's overabundance of zoning districts, which complicates coordinated, countywide adaptation to climate risk, has the potential to create fragmented land-use patterns, inconsistent regulations, and barriers to adaptive, countywide responses to change or crisis.

Nearly two-thirds of the county is zoned agricultural or rural residential, which typically encourages low-density development to promote/preserve rural character and provides opportunities for agricultural uses. Residential zoning, which includes multi-family and mobile home parks, and land with no zoning restrictions are the next largest categories, each accounting for 15 percent of the county's acreage. Business and industrial zoning districts each count for just two percent of total acreage in the county. Recreation and open space comprise one percent (63 percent of this located in the town of Sanford).

Figure 27 Number of Zoning Districts by Municipality

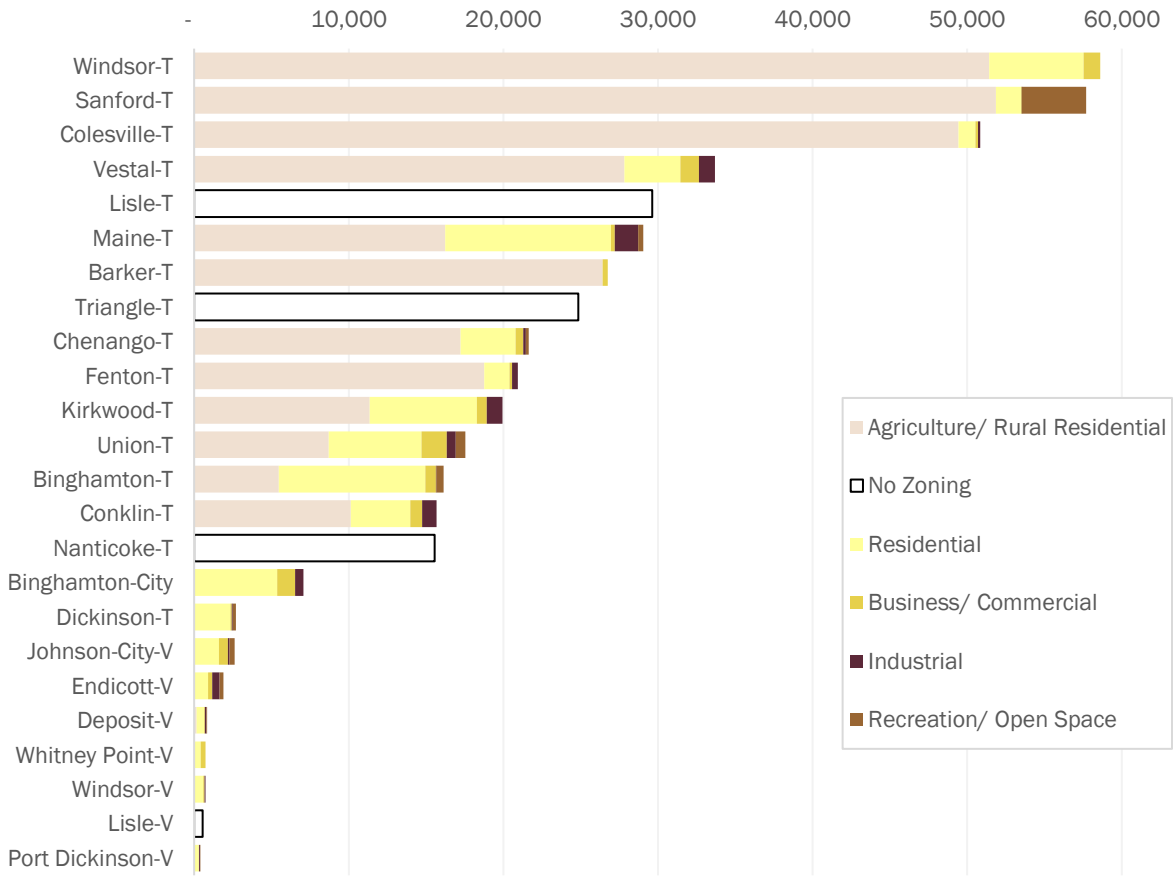


Source: Broome County GIS & Mapping Services

Figure 28 General Zoning District by Acreage

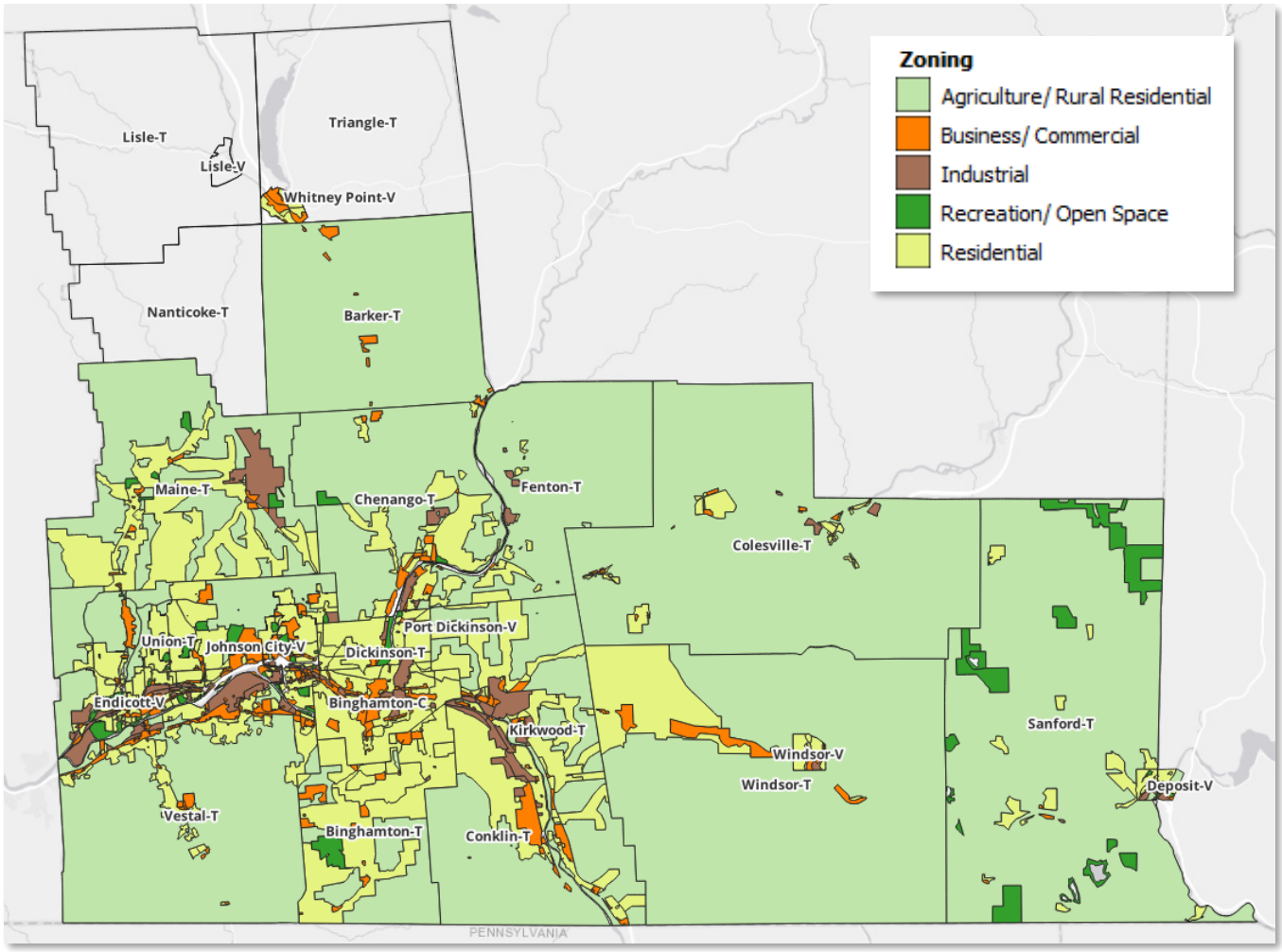
Source: Broome County GIS & Mapping Services

Figure 29 General Zoning District by Municipality and Acreage



Source: Broome County GIS & Mapping Services

Figure 30 General Zoning District by Municipality



Source: Broome County GIS & Mapping Services

Economic Drivers and Stressors

Understanding economic drivers and stressors in a county can provide insight into how well a local economy can withstand and adapt to change, disruption, or shocks. For example, if a small business closes or supply chains fails due to flooding or an extreme weather event, this can trigger economic shockwaves, displace workers, and undermine recovery. Understanding which industry subsectors are present in the region and county is critical for measuring potential risk due to changing environmental hazards: economic impact assessments (e.g., "What happens if this factory floods?"), land-use and transportation modeling ("Where do workers live vs. where they work?"), and climate hazard mapping (e.g., overlaying job centers with floodplain maps).

ECONOMIC HUBS

The concentration of job centers in flood-prone watersheds and reliance on major arterial highways for commuting underscores the need for resilient transportation infrastructure and land-use strategies that ensure access to key employment hubs.

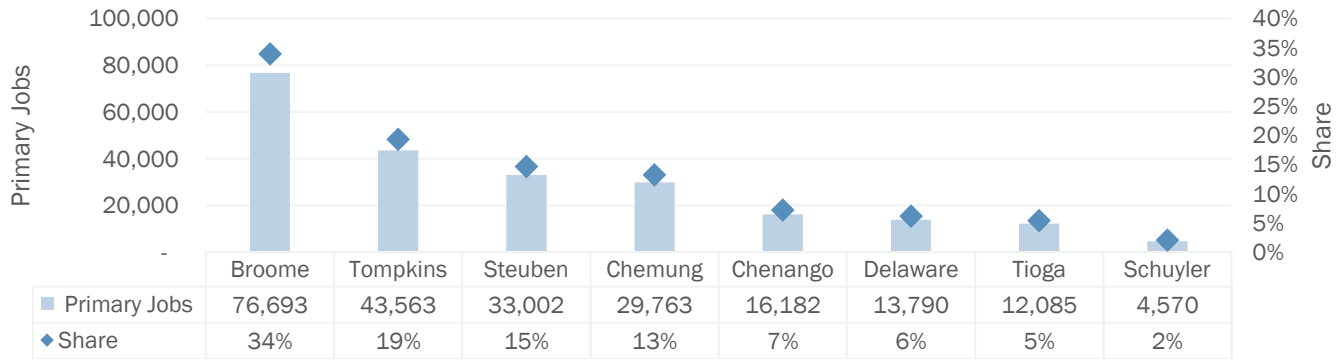
Job Clusters

Identifying clusters of jobs and commercial and industrial land is important because it helps prioritize critical economic hubs for infrastructure investment, hazard mitigation, and recovery planning—ensuring that essential jobs, supply chains, and services remain functional during and after disruptions.

According to primary job data provided by the U.S. Census Bureau, Broome County has the largest cluster of primary jobs in the Southern Tier Economic Region. In 2023 (the latest year available), the county had 74,990 primary jobs (31 percent located in the city of Binghamton), representing 33 percent of primary jobs in the eight-county Southern Tier region.

Broome County's job clusters are largely located in the southwest portion of the county along Interstates 81 and 86, where much of the county's business/commercial- and industrial-zoned land is located. These primary job clusters are also largely concentrated in the city of Binghamton (30.7 percent of all primary jobs) and neighboring villages and towns such as Johnson City, Vestal, and Endicott.

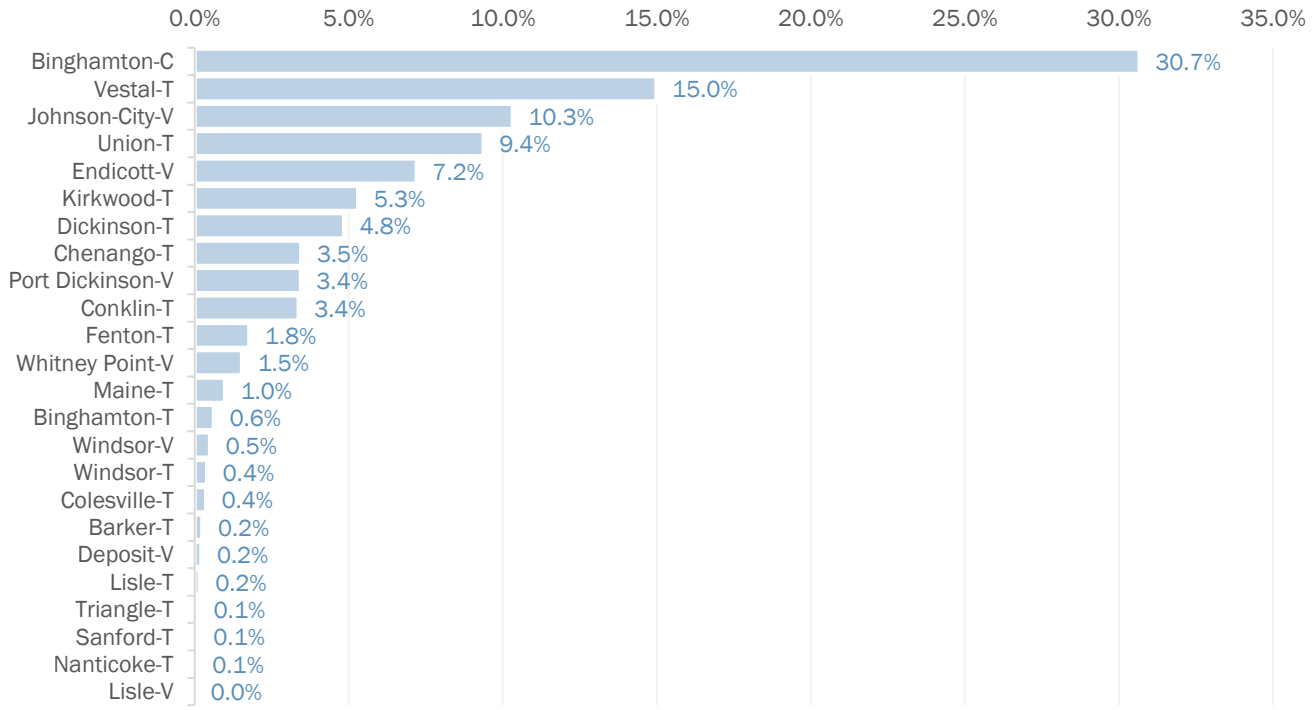
Figure 31 Southern Tier Region Primary Jobs by County, 2023



	Broome	Tompkins	Steuben	Chemung	Chenango	Delaware	Tioga	Schuyler
Primary Jobs	76,693	43,563	33,002	29,763	16,182	13,790	12,085	4,570
Share	34%	19%	15%	13%	7%	6%	5%	2%

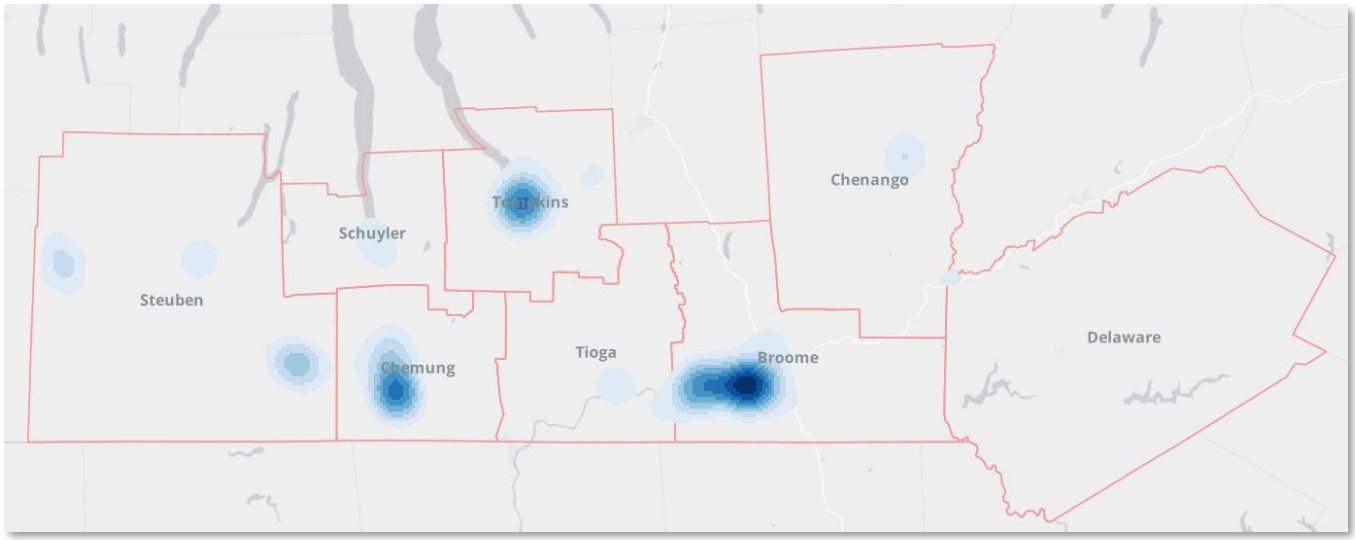
Source: U.S. Census Bureau Center for Economic Studies, LEHD, 2023

Figure 32 Broome County Primary Job Share by Municipality, 2023



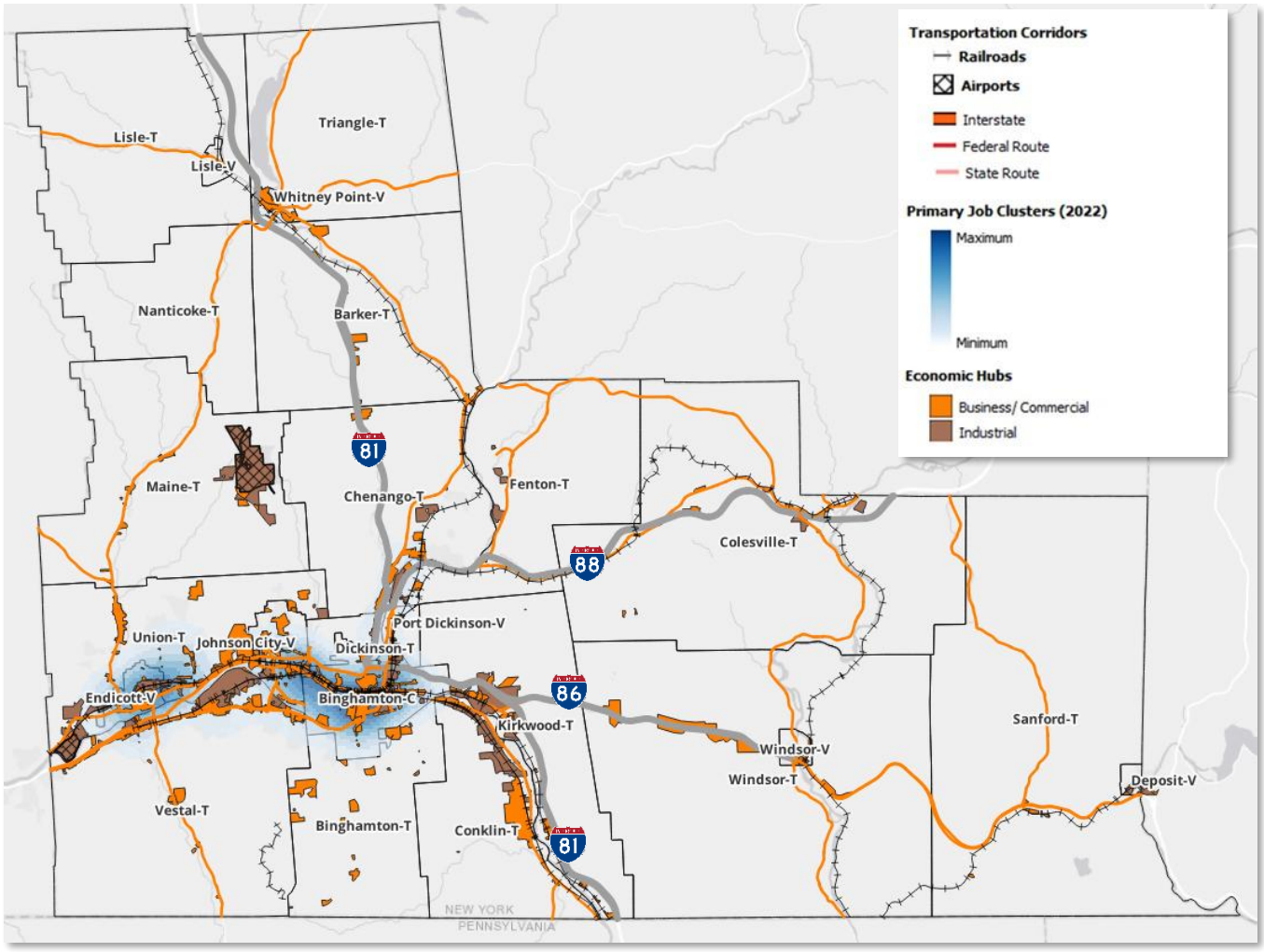
Source: U.S. Census Bureau Center for Economic Studies, LEHD, 2022

Figure 33 Southern Tier Region Primary Job Clusters, 2023



Source: U.S. Census Bureau, Center for Economic Studies, LEHD

Figure 34 Business/Commercial and Industrial Zoning District



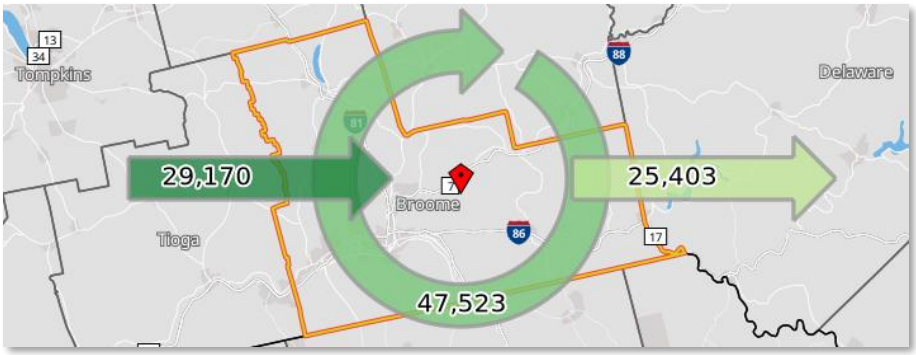
Source: Broome County GIS & Mapping Services; U.S. Census Bureau, Center for Economic Studies, LEHD; New York State Department of Environmental Conservation

Commuting Patterns

Identifying worker commuting patterns helps reveal dependence on critical transportation infrastructure, highlights vulnerabilities to extreme weather and disaster-related disruptions, and informs priorities for resilient transportation, land-use, and emergency response strategies that support economic continuity and worker safety. As shown in Figure 28, Broome County is a net importer of labor, with more workers commuting into the county (29,170) than leaving it for employment (25,403), while approximately 47,530 primary job workers both live and work locally. Among the top places of residence for these workers, the city of Binghamton is home to 13.8 percent, and another 13.3 percent live in the village of Johnson City, the town of Union, or the village of Endicott - indicating a concentration of the workforce in a few core communities.

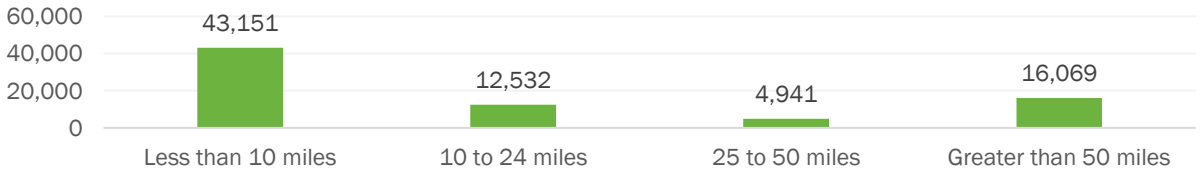
While over half of county primary job workers commute less than 10 miles (56 percent), a substantial share travel long distances, with more than 27 percent commuting over 25 miles, and 21 percent commuting more than 50 miles. Because the county depends on both in-commuting workers and a geographically concentrated residential workforce, disruptions to key transportation routes or population centers could have outsized impacts on employment and economic continuity, making roadway resilience, emergency access, and neighborhood-level resilience critical priorities for the county's resilience strategy.

Figure 35 Inflow/Outflow: Primary Job Workers, 2023



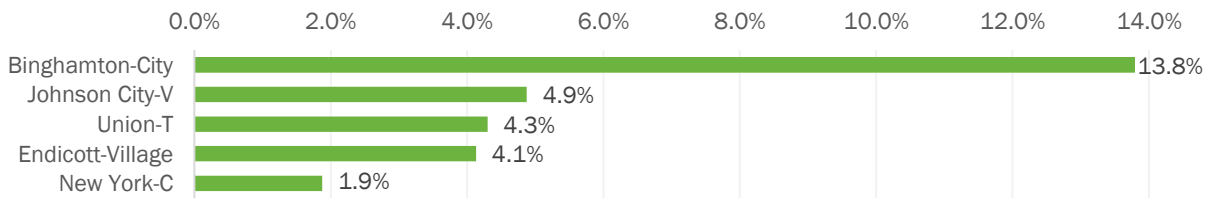
Source: U.S. Census Bureau, Center for Economic Studies, LEHD

Figure 36 Inflow/Outflow: Primary Job Workers, 2023



Source: U.S. Census Bureau, Center for Economic Studies, LEHD

Figure 37 Top 5 Places of Residence for Broome County Primary Workers, 2023

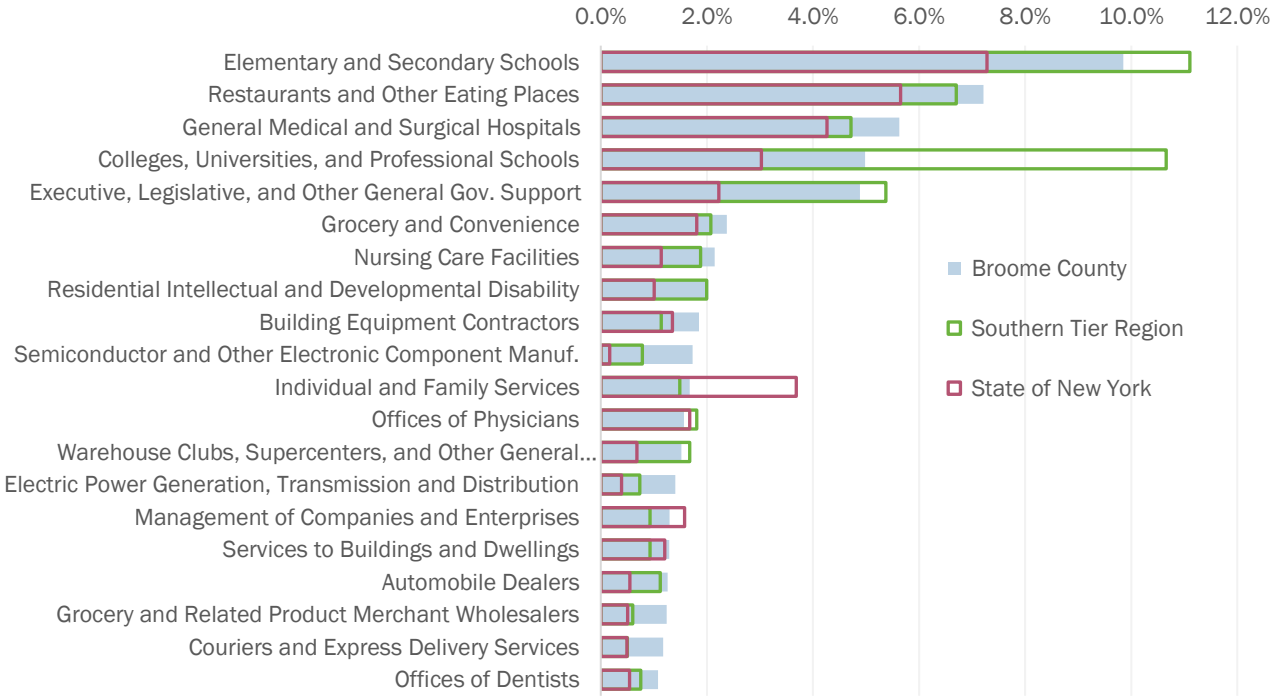


Source: U.S. Census Bureau, Center for Economic Studies, LEHD

Employment by Subsector

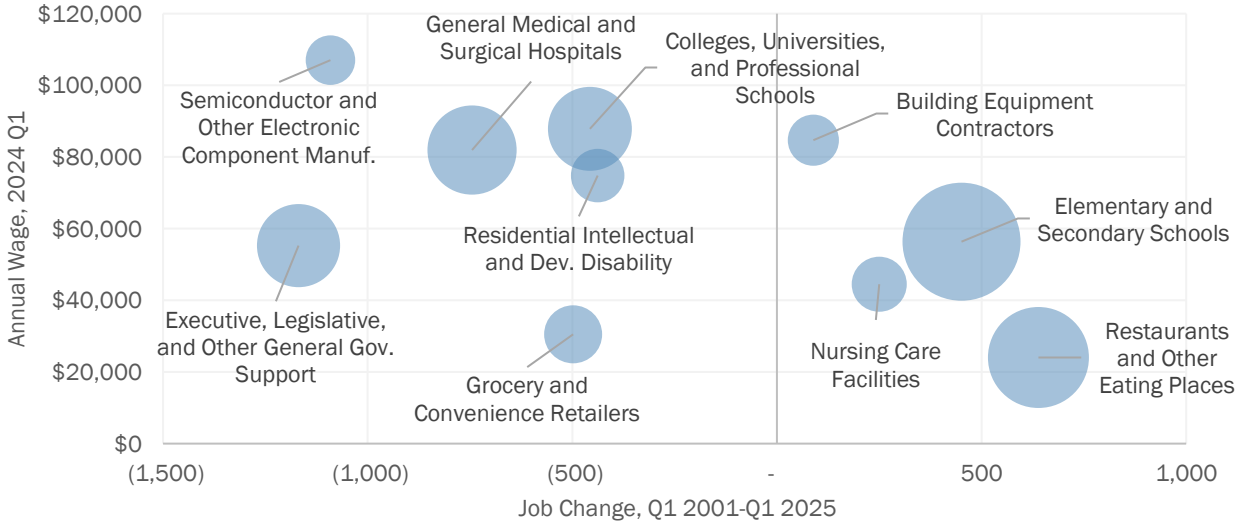
According to first-quarter 2025 employment data for Broome County, the top 20 North American Industry Classification System (NAICS) four-digit industry subsectors in the county reveal a moderately diverse economy, with no one subsector representing more than 10 percent of total employment in the county.

Figure 38 Top 20 Subsectors by Employment Share, Q1 2025



Source: U.S. Census Bureau, Center for Economic Studies, LEHD, as of first-quarter 2025

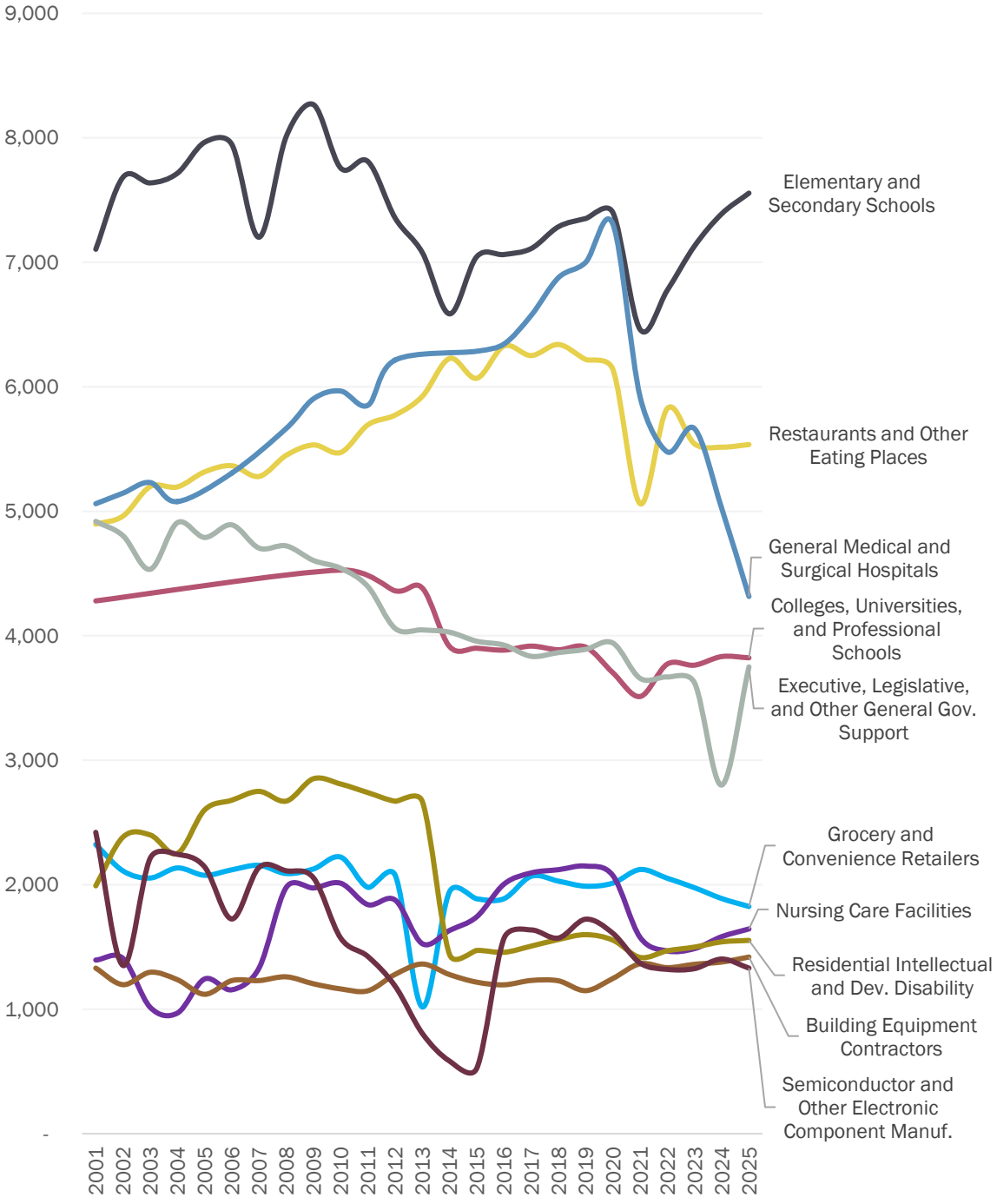
Figure 39 Top 10 Subsectors with Employment Gains, Q1 2001- Q1 2025



Note: Bubble size represents Q1 2025 employment.

Source: U.S. Census Bureau, Center for Economic Studies, LEHD, as of second-quarter 2024

Figure 40 Top 10 Subsectors by Existing Employment in Broome County



Source: U.S. Census Bureau, Center for Economic Studies, LEHD, first-quarter 2025

Employment Location Quotients

Employment location quotients (LQs) reveal which industries are concentrated locally compared to the state - helping identify unique strengths, overdependencies, or gaps in the local economy. Industry subsectors having employment LQs greater than one indicate that the county has a relatively high concentration of employment within these subsectors. The following table shows the top 20 subsectors by total employment and average earnings for Broome County, along with employment location quotients (LQs) compared to the state of New York. All but three of the top 20 subsectors in the county have employment LQs greater than one, suggesting that the county has a regional specialization and economic reliance in these subsectors.

Figure 41 Top 20 Subsectors by Employment in Broome County

NAICS 4-Digit Subsectors	Employment (Q1 2025)	Employment LQs (Q1 2025)	Recent Employment Change (Q1 2019 - Q1 2025)	Annual Earnings (Q1 2025)
Elementary and Secondary Schools	7,556	**1.34**	204	$52,308
Restaurants and Other Eating Places	5,536	**1.27**	-684	$25,716
General Medical and Surgical Hospitals	4,316	**1.31**	-2,684	$70,968
Colleges, Universities, and Professional Schools	3,823	**1.63**	-86	$97,116
Executive, Legislative, and Other General Gov. Support	3,750	**2.18**	-141	$65,796
Grocery and Convenience Retailers	1,825	**1.30**	-163	$31,248
Nursing Care Facilities (Skilled Nursing Facilities)	1,645	**1.87**	-505	$43,896
Residential Intellectual and Developmental Disability	1,553	**1.99**	-46	$82,476
Semiconductor and Other Electronic Component Manuf.	1,330	**10.36**	-393	$89,724
Building Equipment Contractors	1,419	**1.36**	270	$90,084
Offices of Physicians	1,205	0.93	-213	$137,064
Individual and Family Services	1,284	0.45	83	$41,256
Warehouse Clubs, Supercenters, and Other General Merch.	1,166	**2.22**	-110	$39,192
Management of Companies and Enterprises	994	0.81	-144	$82,272
Electric Power Generation, Transmission and Distribution	1,076	**3.57**	201	$138,732
Services to Buildings and Dwellings	991	**1.06**	179	$62,652
Automobile Dealers	969	**2.28**	67	$76,536
Grocery and Related Product Merchant Wholesalers	951	**2.42**	-582	$55,368
Special Food Services	645	**1.24**	-448	$37,164
Couriers and Express Delivery Services	902	**2.37**	643	$46,656

Subsectors highlighted in bold have LQs greater than one.

Source: U.S. Census Bureau, Center for Economic Studies, LEHD

ECONOMIC DRIVERS

The following section analyzes some of the top industry sectors in the county based on the top subsectors by employment, helping to reveal key economic drivers, dependencies, and vulnerabilities.

Educational Services

Heavy reliance on education employment highlights the need to strengthen schools and universities as both economic anchors and resilience hubs capable of supporting community response and adaptation efforts.

The *Elementary and Secondary Schools* and *Colleges, Universities, and Professional Schools* subsectors are two of the top four subsectors by employment in the county, both with employment LQs higher than one. Public universities and colleges such as Binghamton University and Broome Community College are both part of the State University of New York (SUNY) system. These two institutions provide degrees to meet regional employment needs in engineering and health care. For example, over 21 percent of fall 2023 SUNY Broome Community College students were enrolled in health sciences, while 9.1 percent were in STEM fields, reflecting focused training in areas vital for regional workforce needs.[2]

Binghamton University is a major economic driver of the county's economy, contributing significantly through employment, research activity, and partnerships that support innovation and regional development. University's enrollment has grown steadily from about 14,700 students in the fall of 2009 to roughly 18,650 students in fall of 2025. Not surprisingly, Binghamton University students play a vital role in Broome County's tourism economy, contributing significantly through their spending on housing, dining, and entertainment, as well as by attracting visiting family and friends. According to a 2023 to 2024 Economic Impact report, Binghamton University contributes roughly $1.49 billion to the regional economy and supports over 10,500 jobs, with students and visitors alone spending nearly $306 million in 2023 to 2024.[3]

During the COVID-19 pandemic, when students left campus, many local businesses experienced substantial revenue declines - highlighting the economic vulnerability tied to student presence. These figures underscore that student presence is a vital economic driver, and dips during breaks or school closures meaningfully affect local commerce.

Figure 42 Broome County by Total Private and Public Sector Employment by Subsector

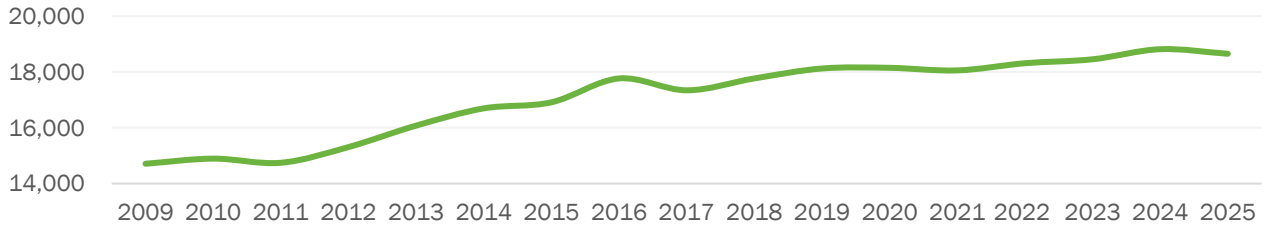
NAICS 4-Digit Industries	Employment (Q1 2025)	Employment LQs (Q1 2025)	Recent Employment Change (Q1 2019 - Q1 2025)	Annual Earnings (Q1 2025)
Elementary and Secondary Schools	7,556	**1.34**	156	$52,308
Colleges, Universities, and Prof. Schools	3,823	**1.63**	120	$97,116

Source: U.S. Census Bureau, Center for Economic Studies, LEHD

[2] SUNY Broome Community College Fast Facts Fall 2023

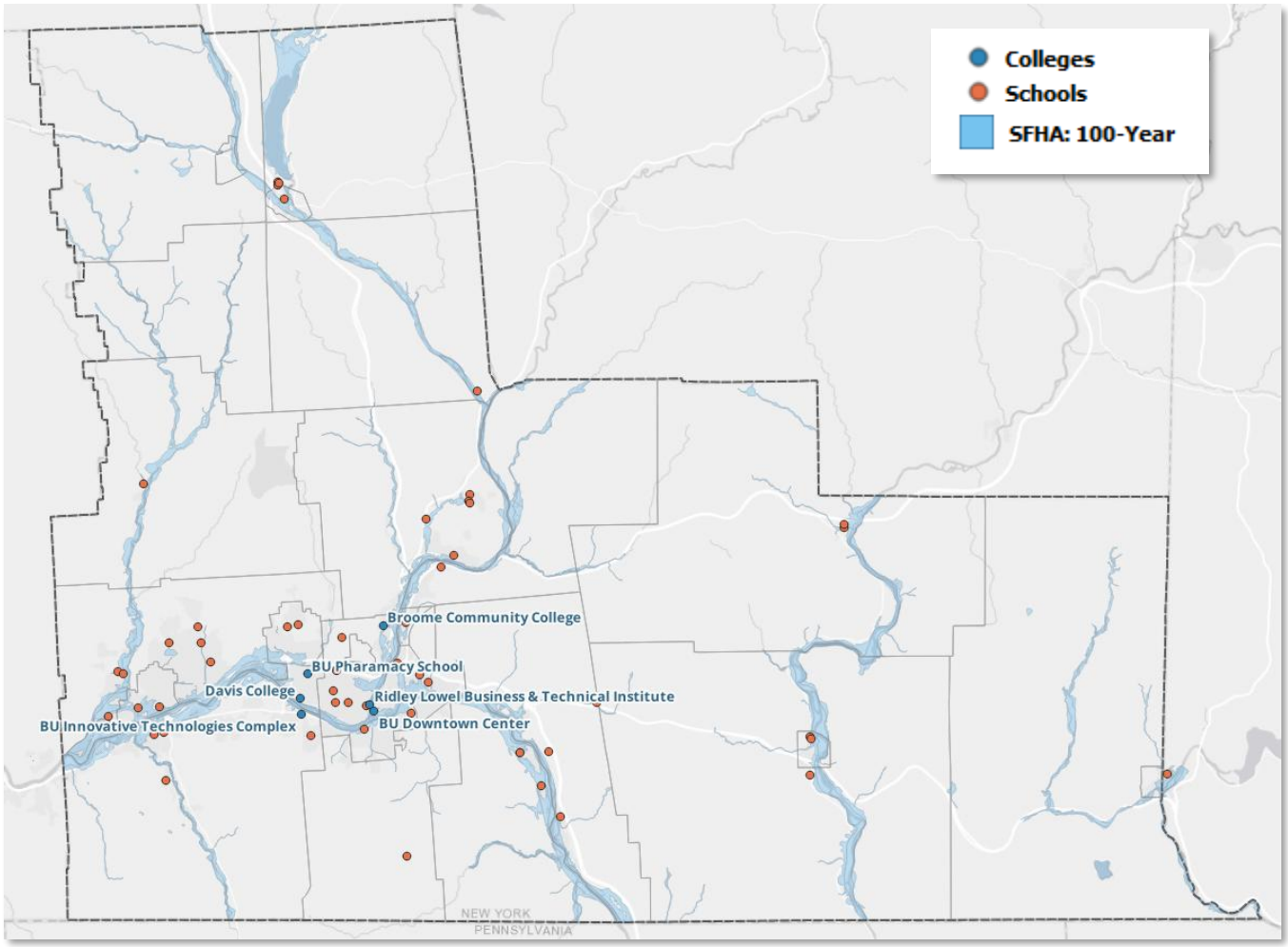
[3] The Economic Impact of Binghamton University (FY2022-23), https://www.binghamton.edu/offices/oir/data-analysis/

Figure 43 Binghamton University Fall Student Enrollment Trends



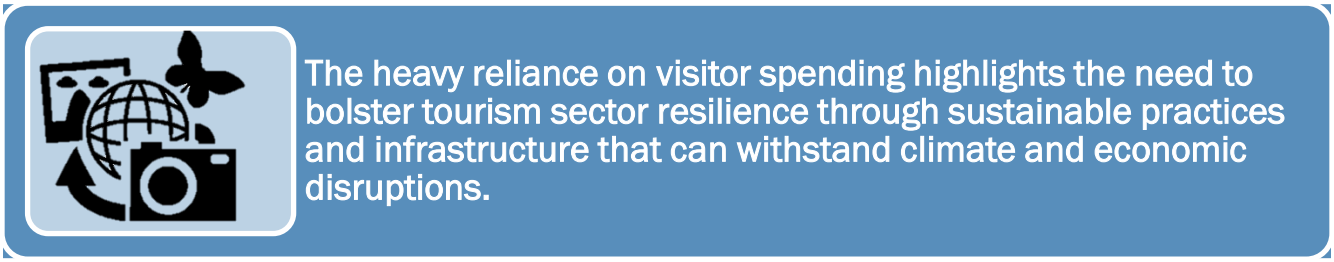
Source: Binghamton University State University of New York, Office of Institutional Research

Figure 44 Schools, Colleges, and Existing Flood Hazards



Note: Flood zones represent areas with one- and 0.2-percent annual chance flood area: Includes preliminary" flood hazard GIS data as effective data is not yet available. Schools presented are elementary, middle, and high schools.
Source: Esri, Broome County GIS & Mapping Services, Federal Emergency Management Agency (FEMA), 2010

Tourism

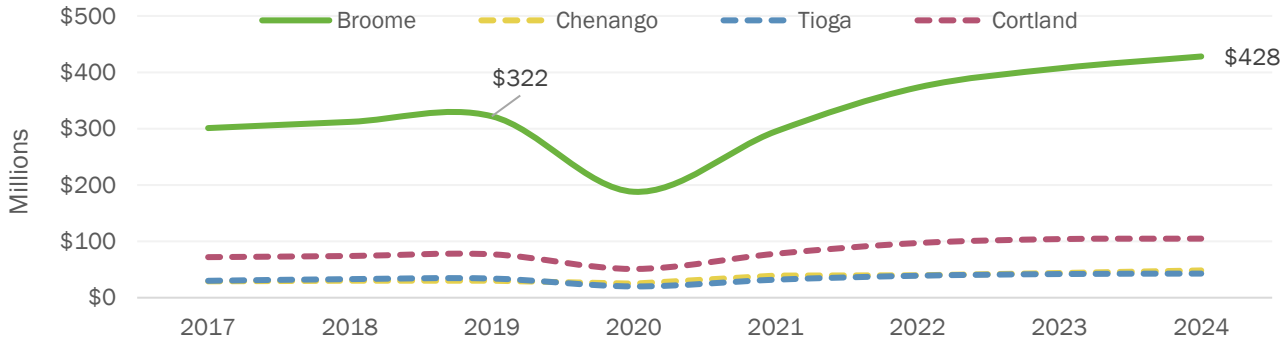


Broome County's tourism destinations offer a blend of history, nature, sports, and culinary attractions, appealing to families, outdoor enthusiasts, and cultural travelers. County rivers (Susquehanna, Chenango, Tioughnioga, Otselic, and Delaware) support paddling, walking trails, fishing, passive recreation, and destination tourism. Dozens of local buildings are on the National Register of Historic Places, and these sites add value to the community. Notable outdoor and nature attractions include Otsiningo Park, Aqua Terra Wilderness Area, Binghamton University's Nature Preserve, and Chenango Valley State Park. Sports and entertainment offerings include Mirabito Stadium, Visions Veterans Memorial Arena, and the Ross Park Zoo. Arts, history, and culture offerings include the Broome County Forum, Roberson Museum and Science Center, the Bundy Museum of History and Art, the Phelps Mansion Museum, and the Endicott's Cider Mill Playhouse. Food and beverage experiences include Binghamton and Endicott Restaurant Week, Binghamton's Wine & Tapas Tour, farmers markets, and craft breweries, as well as local diners and diverse ethnic cuisine. Notable festivals and events include the annual Spiedie Fest and Balloon Rally, Dick's Sporting Goods Open, the LUMA Projection Arts Festival, and the Broome County Fair.

Compared to other adjacent counties, visitor spending is a more significant driver of Broome County's economy, making it more vulnerable to external shocks like pandemics, economic downturns, or extreme weather that disrupt travel. According to data provided by Tourism Economics, in 2024, Broome County captured $428 million in direct tourism spending, equivalent to nearly four times that spent in neighboring counties. Not surprisingly, given that *Restaurants and Other Eating Places* is the second top subsector by employment in the county, the largest share of tourism spending in Broome County was associated with food and beverage ($167 million or 41 percent of total spending). Spending on *Lodging* ($141 million or 35 percent of total spending) was the second largest category. While visitor spending declined in 2020 primarily due to the COVID-19 pandemic - which led to widespread travel restrictions, business closures, and public health concerns - visitor spending remains higher than pre-pandemic levels.

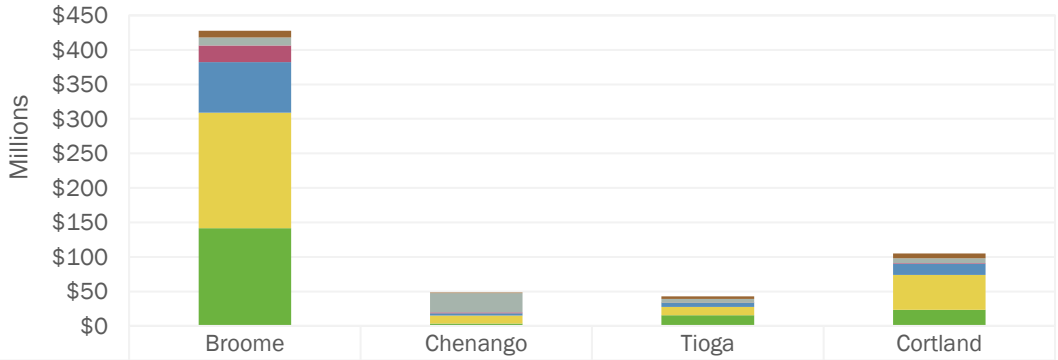
A total of 176 tourism-supportive establishments (restaurants, bars, clubs, recreation and entertainment businesses, historic landmarks and places, and lodging accommodations) are located within the 100-year floodplain, with the highest concentrations in the city of Binghamton, the town of Vestal, and the village of Endicott, exposing significant flood risk to the county's tourism economy. Since visitor spending substantially drive Broome County's tourism economy, particularly on food and beverage establishments and lodging spending. The resilience plan should prioritize flood mitigation, emergency preparedness, and recovery strategies for these tourism and heritage assets, while encouraging future tourism investment in lower-risk areas and protecting historic resources critical to community character and economic vitality.

Figure 45 Visitor Spending Trends by County



Source: Tourism Economics, Economic Impact of Visitors in New York, Central NY and Finger Lakes Focus, 2020 and 2024

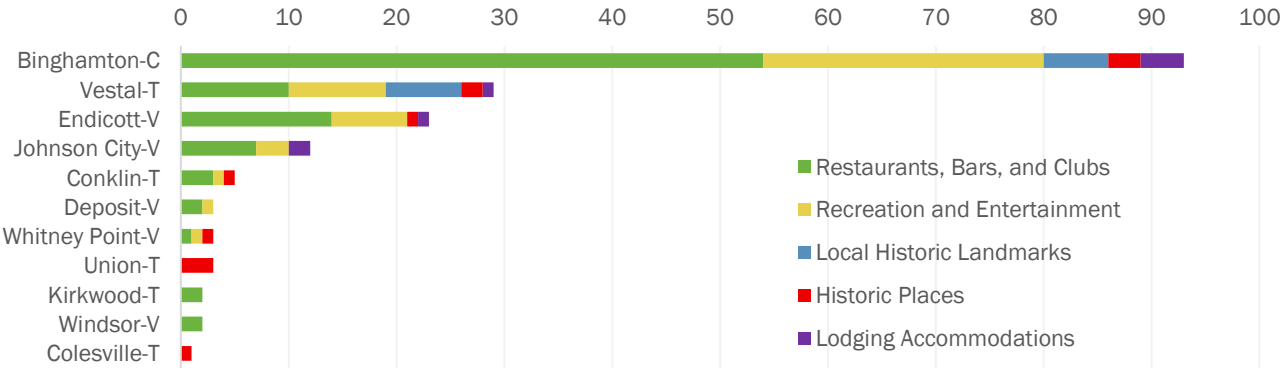
Figure 46 Visitor Spending by County and Category, 2024



	Broome	Chenango	Tioga	Cortland
Recreation	$10,000,000	$1,000,000	$3,700,000	$6,900,000
Second Homes	$11,300,000	$27,800,000	$5,300,000	$7,000,000
Transport	$24,500,000	$1,500,000	$200,000	$1,000,000
Retail & Service Stations	$73,200,000	$3,200,000	$5,800,000	$16,400,000
Food & Beverage	$167,300,000	$11,600,000	$12,200,000	$50,200,000
Lodging	$141,600,000	$3,400,000	$15,500,000	$23,600,000

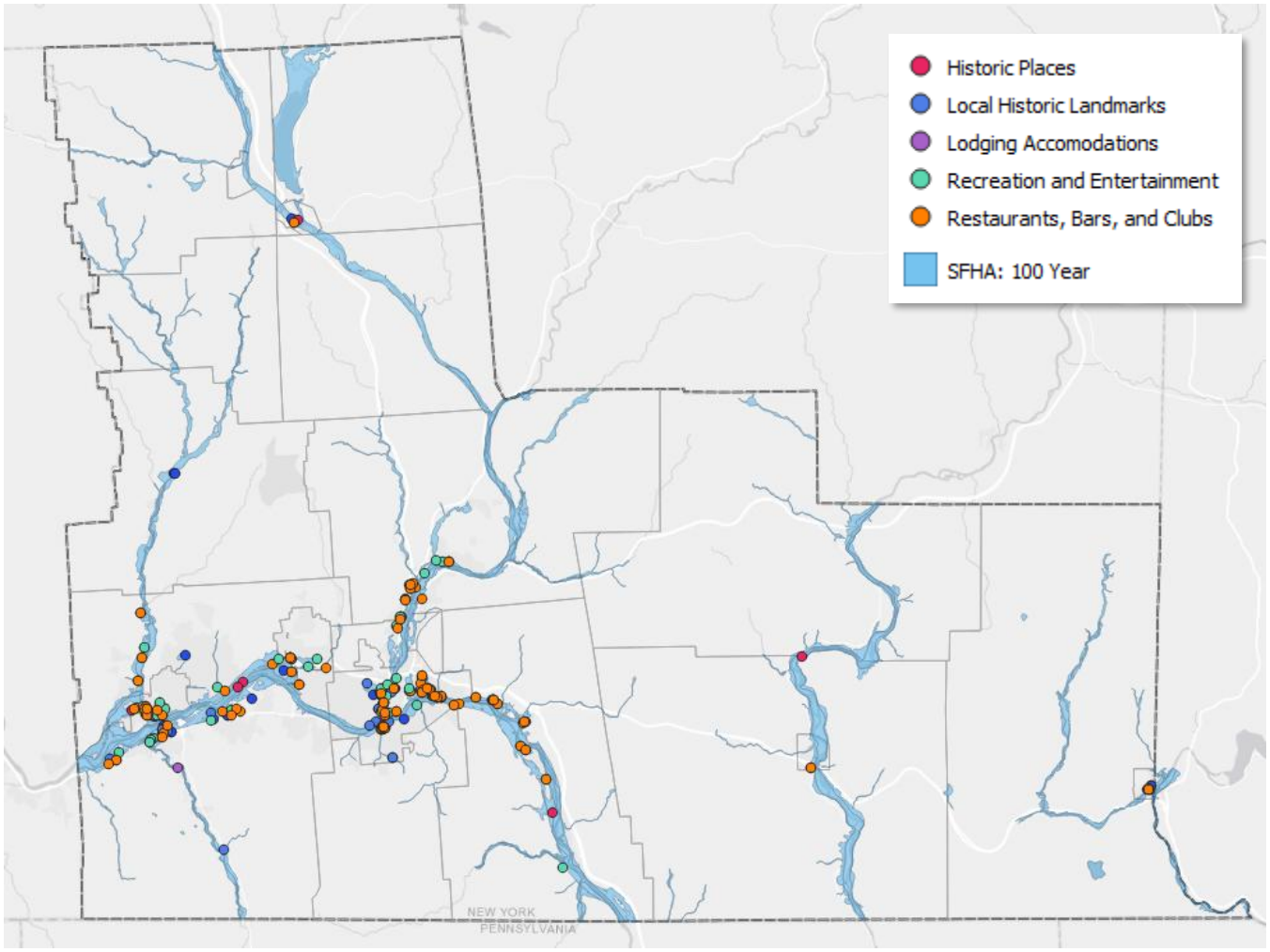
Source: Tourism Economics, Economic Impact of Visitors in New York 2024, Central NY and Finger Lakes Focus, August 2024

Figure 47 Tourism-Supporting Offerings in 100-Year Floodplain by Municipality



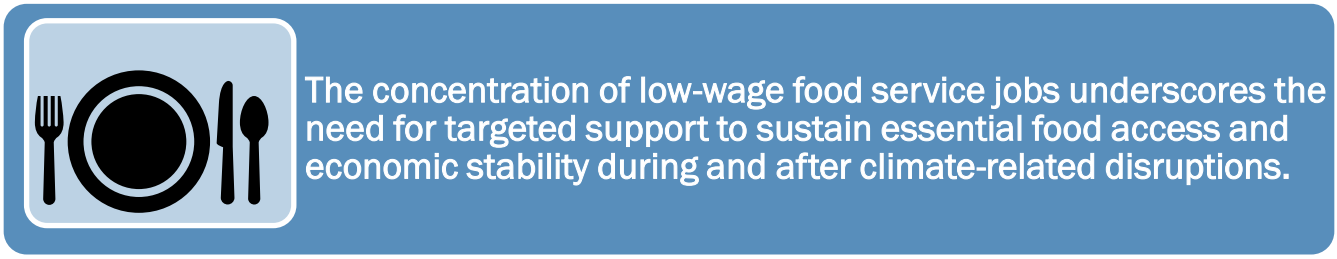
Source: Esri, Broome County GIS & Mapping Services

Figure 48 Tourism-Supporting Offerings in 100-Year Floodplain



Source: Esri, Data Axle, Broome County GIS & Mapping Services

Food Services



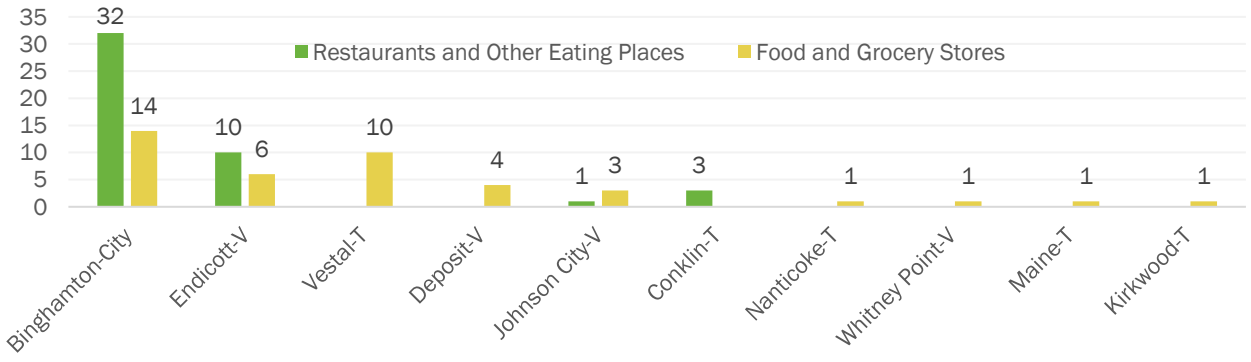
Two of the county's top three subsectors by employment serve essential daily needs - food consumption - whether prepared on-site (restaurants) or at home (groceries and convenience stores) and reflect a local service economy driven by resident and visitor spending. *Restaurants and Other Eating Places* is the top subsector by employment in the county, providing approximately 5,540 relatively low-wage jobs (average annual wage of $25,720 per year). The *Grocery and Convenience Retailers* subsector is the sixth top subsector by employment in the county, also providing approximately 1,830 relatively low-wage jobs (average annual wage of $31,250 per year). These subsectors are sensitive to extreme weather events (power outages, supply chain issues, evacuations), public health emergencies, and require stable infrastructure (roads, electricity, refrigeration), supply chain continuity, and consumer mobility and spending.

Given the relatively low-wage job opportunities in these two subsectors, a significant portion of the county's workforce may be financially vulnerable and less able to absorb shocks like business closures during climate disasters or pandemics. For example, as illustrated in Figure 12 employment in the *Restaurants and Other Eating Places* subsector remains lower than before the COVID-19 pandemic.

Given the strong presence of these two subsectors in the county, resilience strategies should target flood- prone areas where restaurants and grocery and convenience retailers are clustered in the county. As presented in the following chart and map, there are 87 food and grocery establishments located within the 100-year floodplain, largely concentrated in the city of Binghamton and to a lesser degree the village of Endicott and the town of Vestal.

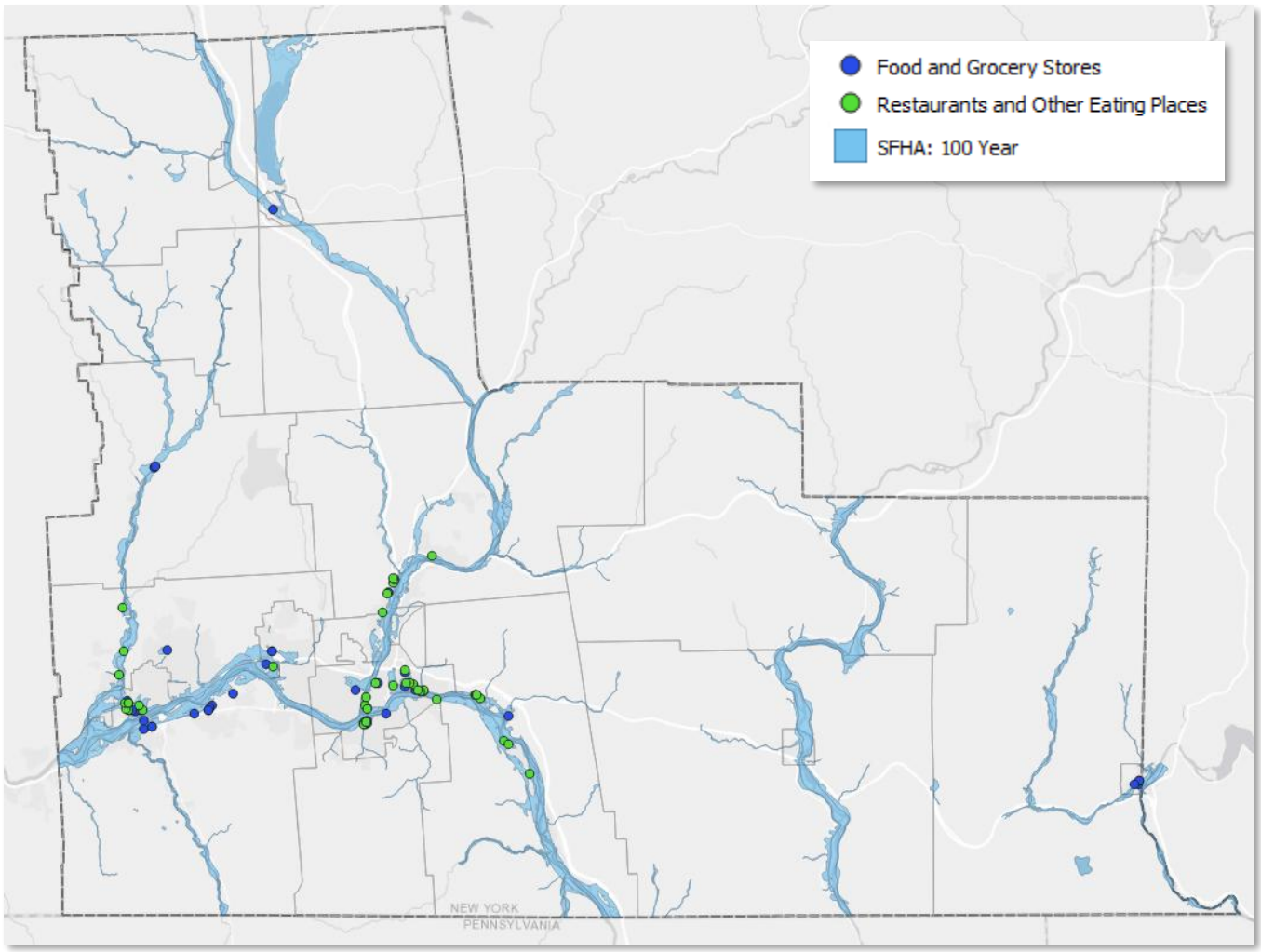
Additional resilience strategies to support the *Grocery and Convenience Retailers* subsector could target backup power and refrigeration for groceries and investments in local food systems to reduce reliance on long-distance supply chains. Additional resilience strategies to support the *Restaurants and Other Eating Places* sector might include encouraging outdoor dining setups with shade structures, misting systems, and cooling stations to protect food workers and residents during heatwaves or pandemics. For example, the City of Binghamton adopted ordinances and streamlined permitting to encourage outdoor dining during the COVID-19 pandemic.

Figure 49 Food Establishments in 100-Year Floodplain by Municipality



Source: Esri

Figure 50 Food Establishments in 100-Year Floodplain



Source: Esri, Data Axle, Federal Emergency Management Agency (FEMA), 2010

Health Care and Social Services

The health care and social services sector is a critical resilience asset, but recent job losses threaten its ability to operate effectively during climate emergencies, underscoring the need for targeted investments in workforce stability and infrastructure resilience.

Three of the county's top four subsectors by employment fall within the broader health care and social services sector, underscoring its importance to community resilience by providing essential services to vulnerable populations, particularly for medical care and long-term health needs.

- Likely due to the presence of three major hospitals in the county (Guthrie Lourdes Hospital, UHS Wilson Hospital, and UHS Binghamton General Hospital), the *General Medical and Surgical Hospitals* subsector is the third top subsector by employment, providing approximately 4,320 relatively mid-wage jobs (average annual wage of $70,970 per year). This subsector has also experienced recent employment losses, shrinking by approximately 2,680 jobs from 2019 to 2025. This recent loss may be partially due to the COVID-19 pandemic, which led to early retirements and burnout among healthcare workers. The resulting staffing gaps may have made it difficult for hospitals to operate at full capacity, affecting employment levels. Looking ahead, based on New York State Department of Labor's Long-Term Industry Employment Projections (2020-2030) for the Southern Tier region, the three-digit Hospital subsector is anticipated to grow by 1.5 percent per year through 2030, suggesting that the larger industry sector is expected to experience positive overall growth in the near-term.
- The *Nursing Care Facilities (Skilled Nursing Facilities)* subsector is the seventh-largest subsector by employment, providing approximately 1,650 relatively low-wage jobs (average annual wage of $43,900). Employment in this subsector contracted by 505 jobs from the first quarter of 2019 to the first quarter of 2025.
- The *Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities* subsector eighth-largest subsector by employment, with approximately 1,550 relatively mid-wage jobs (average annual wage of $ $82,480). Employment in this subsector decreased by 46 jobs from the first quarter of 2019 to the first quarter of 2024.

Resilience strategies should prioritize flood-prone areas where health care facilities are located. For example, Guthrie Lourdes Hospital (formerly Our Lady of Lourdes Hospital), situated within the FEMA 100-year floodplain, sustained severe flood damage in 2006 that required the evacuation of 150 patients and resulted in approximately $20 million in damages. This event prompted a collaborative mitigation effort with FEMA and state and federal agencies to design and construct a comprehensive floodwall and protection system. The infrastructure successfully protected the hospital and allowed it to remain operational during Tropical Storm Lee in 2011, demonstrating the critical role of climate-resilient investments in safeguarding essential community facilities amid increasing extreme precipitation and flood risks.[4]

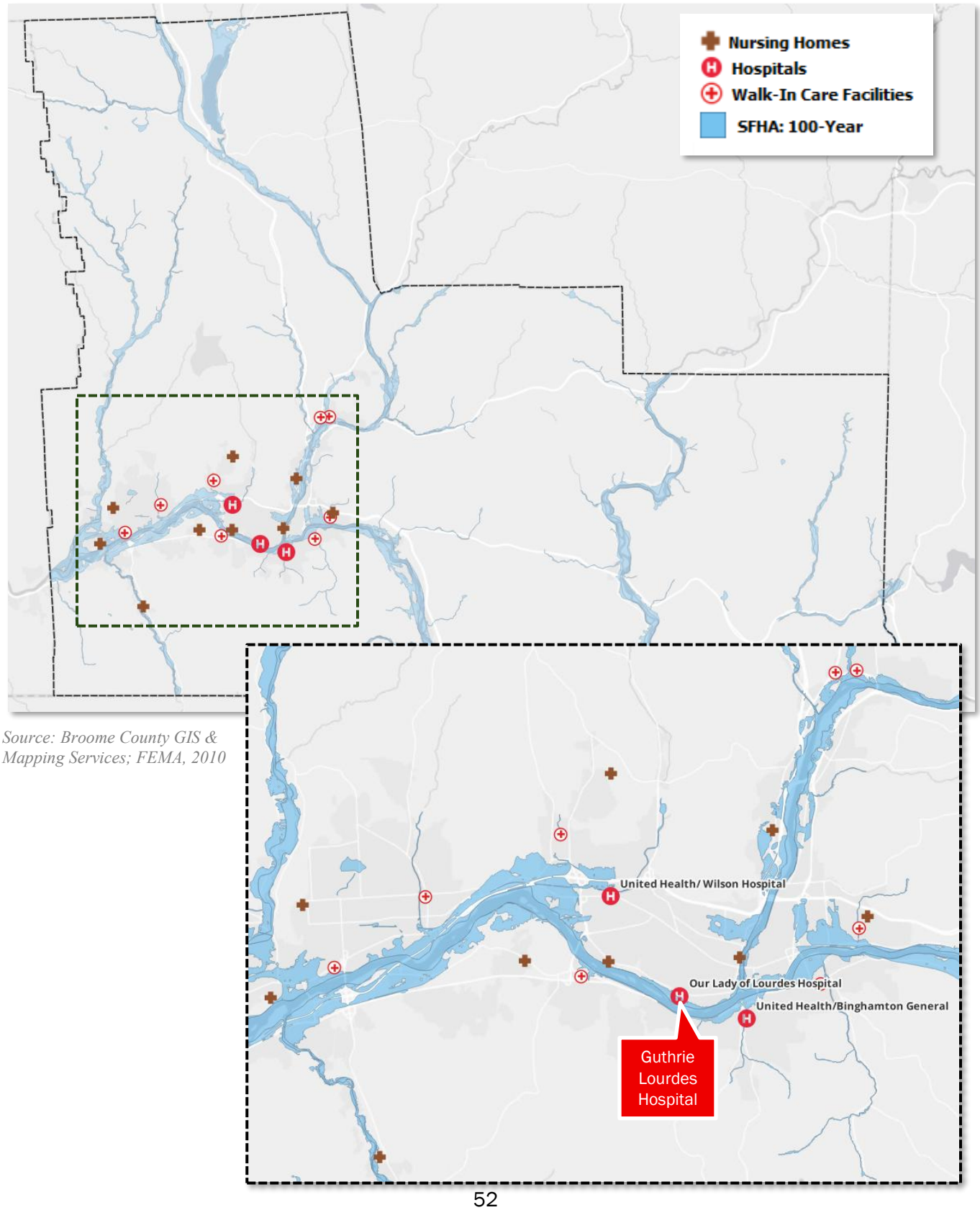
Although the Guthrie Lourdes Hospital is the only identified hospital, nursing homes, and walk-in care facility in the county located within the FEMA 100-year floodplain, health care facilities countywide remain vulnerable to other climate-related stressors, including power and water supply disruptions, extreme heat, and surges in demand during emergency events. Potential resiliency strategies include upgrading backup power and utility systems, retrofitting buildings for heat resilience, and strengthening emergency response plans through enhanced staff training and coordinated communication protocols.

Overall, health care remains a foundational sector with long-term growth potential, especially if workforce recruitment and retention challenges can be addressed through targeted investment and regional partnerships.

A floodwall protected Our Lady of Lourdes Hospital in Binghamton, New York during Tropical Storm Lee in 2011 Photo by FEMA.

[4] https://nysclimateimpacts.org/explore-the-assessment/case-studies/protecting-the-most-vulnerable/

Figure 51 Hospitals, Nursing Homes, and Walk-In Care Facilities

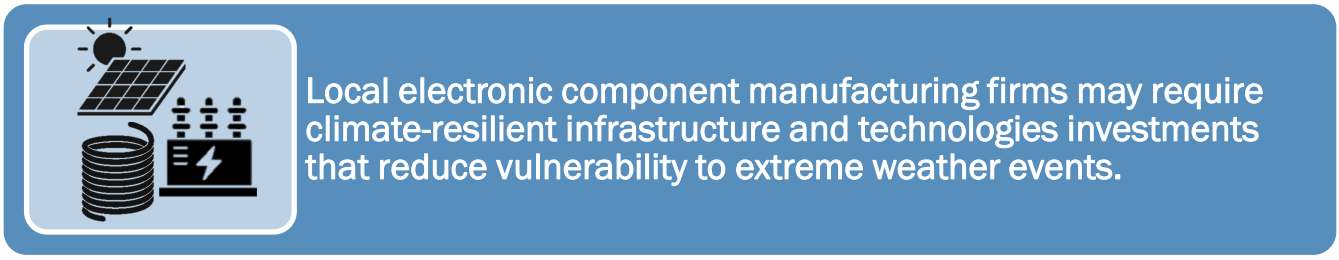


Source: Broome County GIS & Mapping Services; FEMA, 2010

Government

Broome County has a strong concentration of employment in the *Executive, Legislative, and Other General Government Support* subsector due to its role as a regional administrative center, with Binghamton hosting numerous county, state, and federal government offices that provide essential public services and support functions across the Southern Tier region. This subsector offers approximately 2,790 relatively low- to mid-wage job opportunities (average annual wage of $55,030 per year). Employment in this subsector contracted by 1,100 jobs from the fourth quarter of 2019 to the fourth quarter of 2024, which may be partially due to pandemic-induced revenue or staffing shortfalls. A strong concentration of government jobs provides economic stability and critical service continuity during climate disruptions, but also requires resilient infrastructure, adaptive workforce planning, and sustained investment to address vulnerabilities in public facilities and emergency response capacity.

Electronic Component Manufacturing



The ninth top sector by total employment, the *Semiconductor and Other Electronic Component Manufacturing* subsector, is largely comprised of firms dedicated to electronic component manufacturing (e.g., coils, transformers, circuits, magnetic and electronic components, solar panels). Notably, this subsector has an employment LQ of 10.36 with the share of jobs in the county, more than 10 times the share of jobs in the state. This subsector offers approximately 1,330 relatively high-wage job opportunities (average annual wage of $107,030 per year).

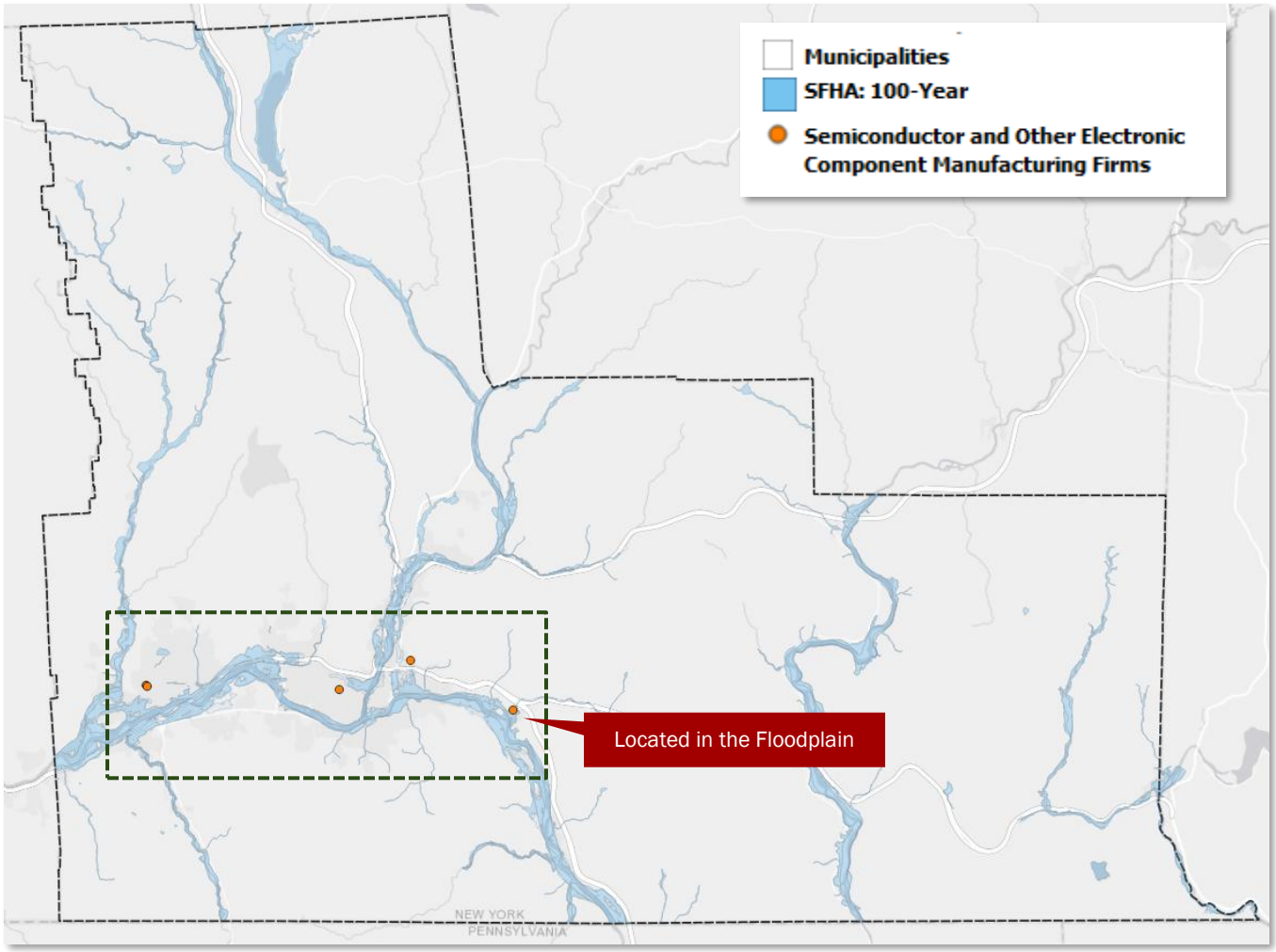
Broome County's high concentration of electronic component manufacturing jobs stems from its historical legacy as the birthplace of IBM and a longtime hub for electronics innovation, which established a skilled workforce and infrastructure that continue to support advanced manufacturing today. Further, Binghamton offers robust incubator spaces tailored for electronic component manufacturing startups through the Koffman Southern Tier Incubator and Binghamton University's Center for Advanced Microelectronics Manufacturing (CAMM).

BAE is planning a $65 million expansion on the Huron Campus in Endicott to accommodate a new battery production line, lab space, and new office space. According to Empire State Development, the aerospace technology firm has committed to adding 134 new jobs while occupying an additional 150,000 square feet of existing space on the Huron Campus. The batteries will be developed for electric and hybrid electric airplanes.

Even though only one of these four semiconductor and other electronic component manufacturing firms (an electronic coil and transformers manufacturing firm) is located within the 100-year floodplain, these firms are sensitive to potential climate events because production relies on precision machinery, controlled temperature and humidity, and continuous power supply. Flooding, severe storms, or extreme heat can damage equipment, interrupt operations, and degrade product quality, while power outages and supply chain disruptions can halt manufacturing.

To ensure production continuity and long-term viability, existing and new electronic component manufacturing firms will need to invest in climate-resilient infrastructure, diversify supply chains, and integrate sustainable manufacturing practices, while local governments play a coordinating role in enabling these investments. Broome County and its municipalities can partner with state agencies (such as New York State Energy Research and Development Authority (NYSERDA) and Empire State Development) to offer targeted incentives, technical assistance, and infrastructure upgrades - supporting private firms in flood mitigation, energy efficiency, and facility hardening efforts that reduce risk and strengthen regional economic resilience.

Figure 52 Semiconductor and Other Electronic Component Manufacturing Firms



Source: Esri, Data Axle; Federal Emergency Management Agency (FEMA), 2010

Environmental Justice Considerations

Environmental justice (EJ) means the just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people:

1. Are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and
2. Have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.

Environmental Justice and Climate Burden

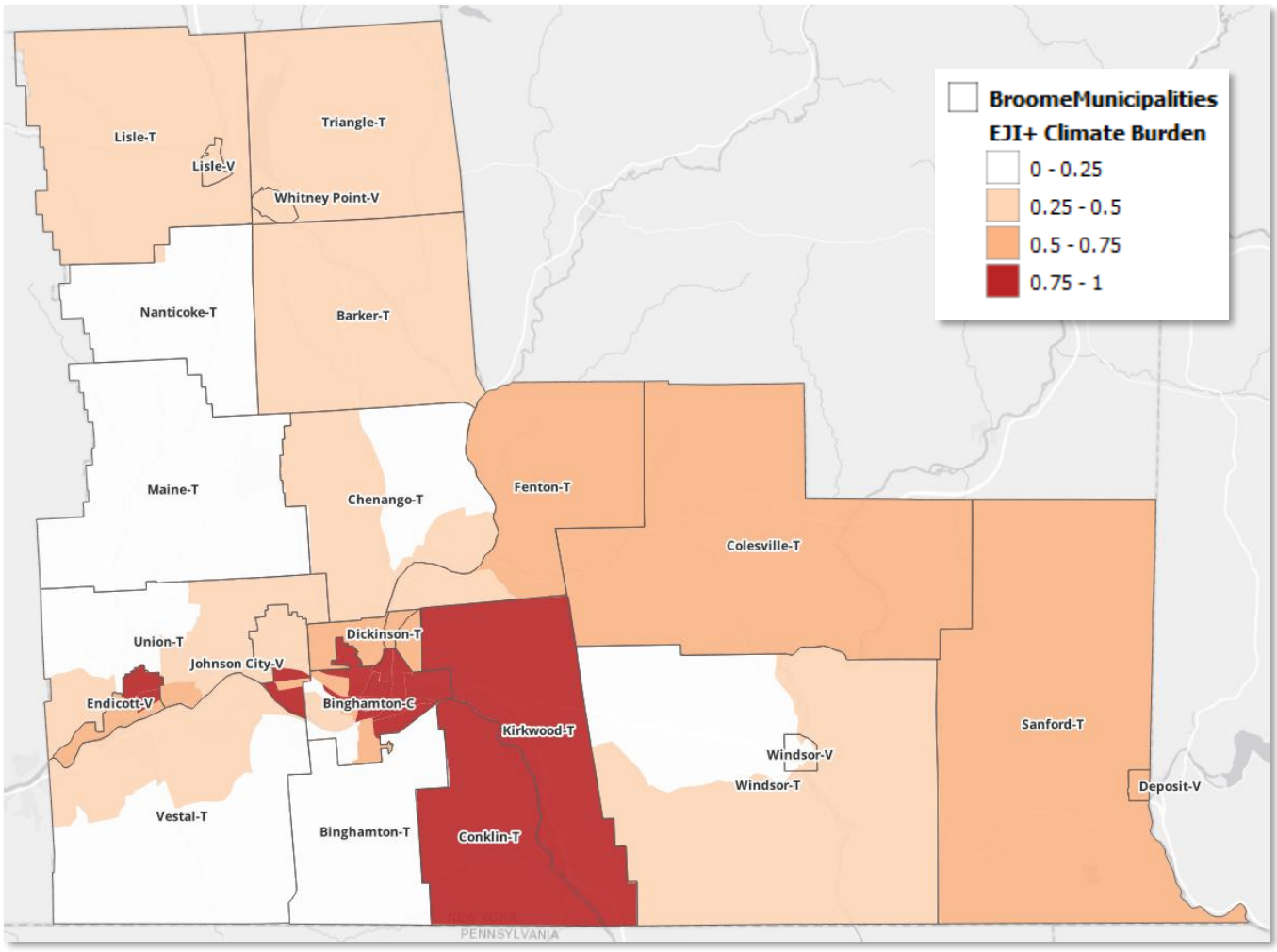
To measure environmental justice in the nation, the Centers for Disease Control and Prevention's (CDC) Agency for Toxic Substances and Disease Registry's (ATSDR) developed the Environmental Justice Index (EJI), which was used to measure the cumulative impacts of environmental burden for Broome County - because the tool combines social vulnerability, environmental burdens, and health impacts into a single score for each community, helping to identify areas most at risk from environmental hazards. This comprehensive view allows Broome County to prioritize investments, target emergency response, and design equitable resilience strategies that address the needs of populations facing the greatest cumulative burdens.

EJI and Climate Burden

EJI and Climate Burden rankings compare each census tract to all tracts nationwide. For example, a score of 0.75 indicates that the tract experiences greater cumulative environmental and climate impacts than 75 percent of U.S. census tracts. In Broome County, 16 of the county's 57 census tracts meet or exceed EJI the Climate Burden ranking threshold and are considered highly burdened, warranting focused attention in resilience and environmental justice planning.

Comparison across tracts shows that the highest overall EJI and Climate Burden occurs where social vulnerability, environmental burdens, health challenges, and climate exposure overlap, rather than where a single risk factor is elevated. In several cases, strong social and health vulnerabilities amplify moderate climate exposure, driving higher overall risk, while lower-ranked tracts tend to experience climate exposure with fewer compounding stressors. With a countywide average score of 0.53, these findings underscore the need to prioritize integrated, place-based resilience strategies in neighborhoods where multiple risks converge, addressing equity, environmental conditions, public health, and climate adaptation together.

Figure 53 Average EJI and Climate Burden Rank by Census Tract



Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

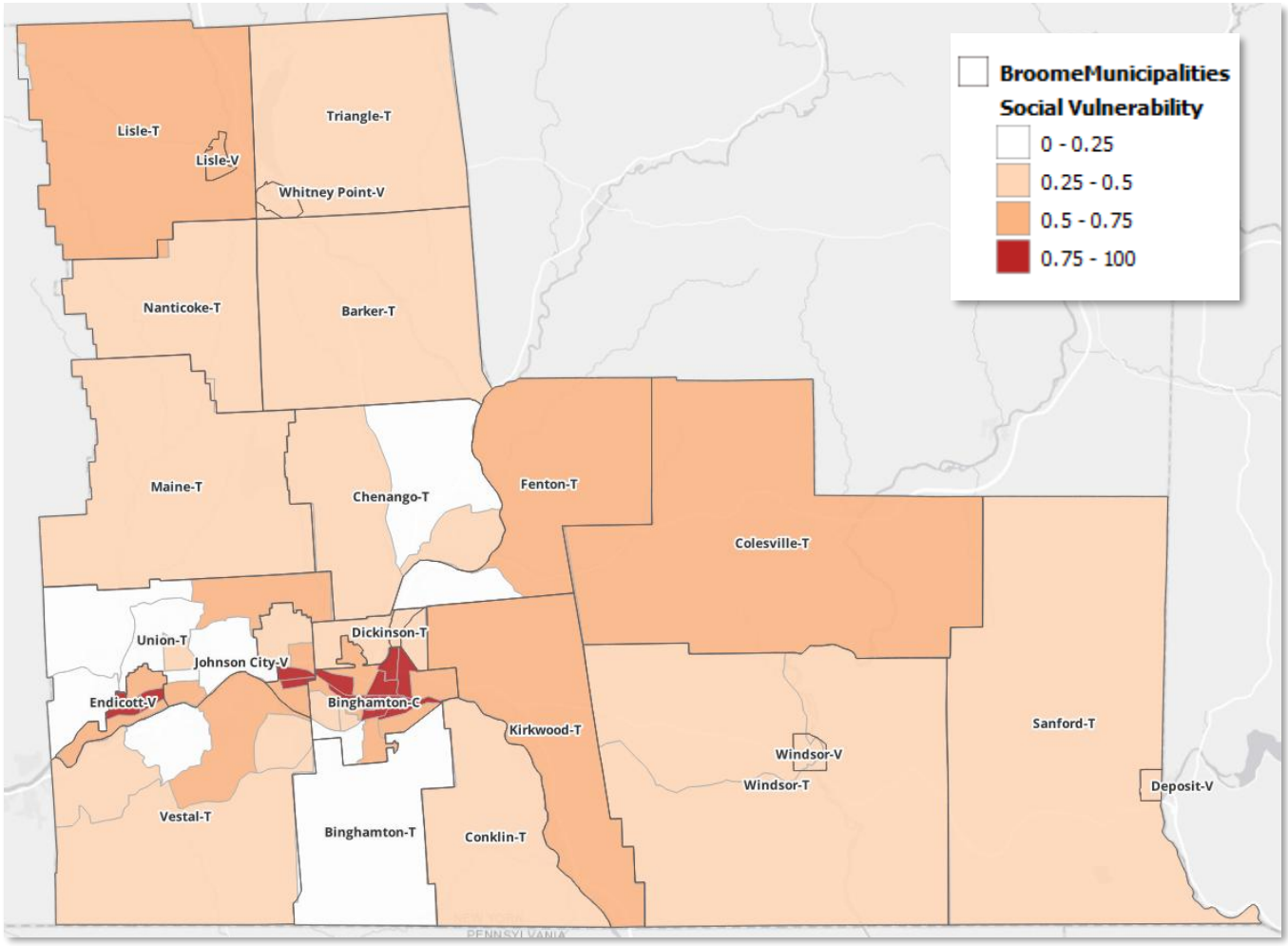
Average Ranking by Indicator

The following section presents average rankings among each EJI and Climate Burden module. Detailed tables by indicator and census tract are provided in more detail in the Appendix.

Social Vulnerability

Social vulnerability in Broome County is most concentrated in a limited number of census tracts within the urban core—particularly in and around the cities of Binghamton and Johnson—where multiple indicators such as poverty, renter concentration, disability, unemployment, housing cost burden, and limited access to services overlap. These highly vulnerable tracts, often located in older, river-adjacent neighborhoods, face reduced capacity to prepare for and recover from climate-related hazards. In contrast, suburban and rural tracts generally exhibit lower to moderate vulnerability, though some face isolated risks tied to aging populations and service access. This pattern highlights the need for targeted, tract-level resilience and equity strategies in the most vulnerable neighborhoods, complemented by broader countywide approaches.

Figure 54 Average Social Vulnerability Rank by Census Tract

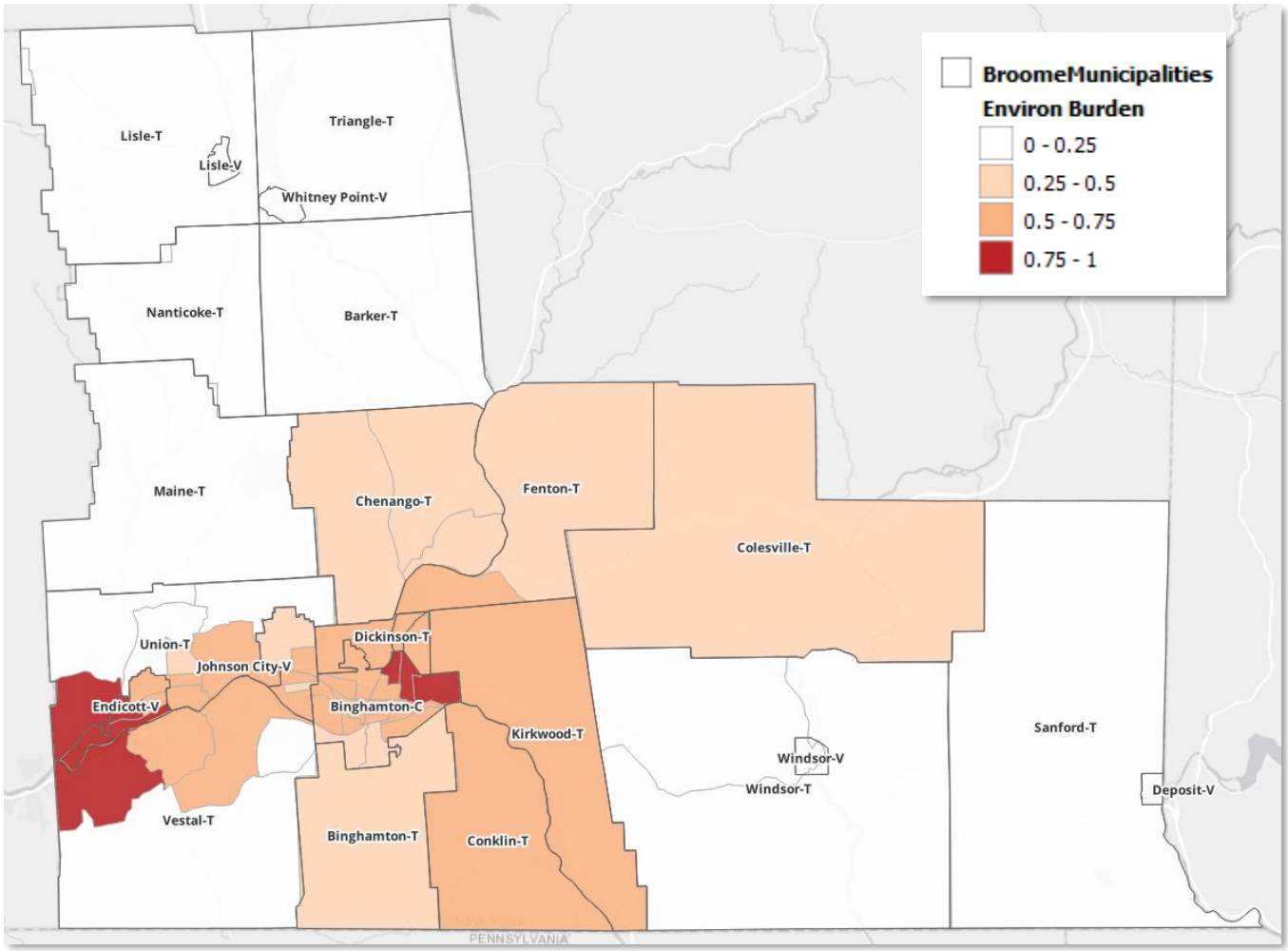


Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Environmental Burden

The map of average environmental burden by census tract shows that the highest environmental burdens in Broome County are concentrated in the urban core, particularly in and around the cities of Binghamton and Johnson, and the village of Endicott, where multiple census tracts fall under the “highly burden” category. These areas reflect the legacy of older housing, historic industrial activity, dense transportation infrastructure, and limited access to green space, which together contribute to elevated exposure to pollution and environmental hazards. Surrounding suburban and rural areas generally exhibit lower to moderate environmental burden, with fewer overlapping risk factors. This spatial pattern highlights the importance of prioritizing remediation, infrastructure investment, and environmental mitigation strategies in the most burdened urban neighborhoods, while continuing to address baseline environmental conditions across the broader county.

Figure 55 Average Environmental Burden Rank by Census Tract

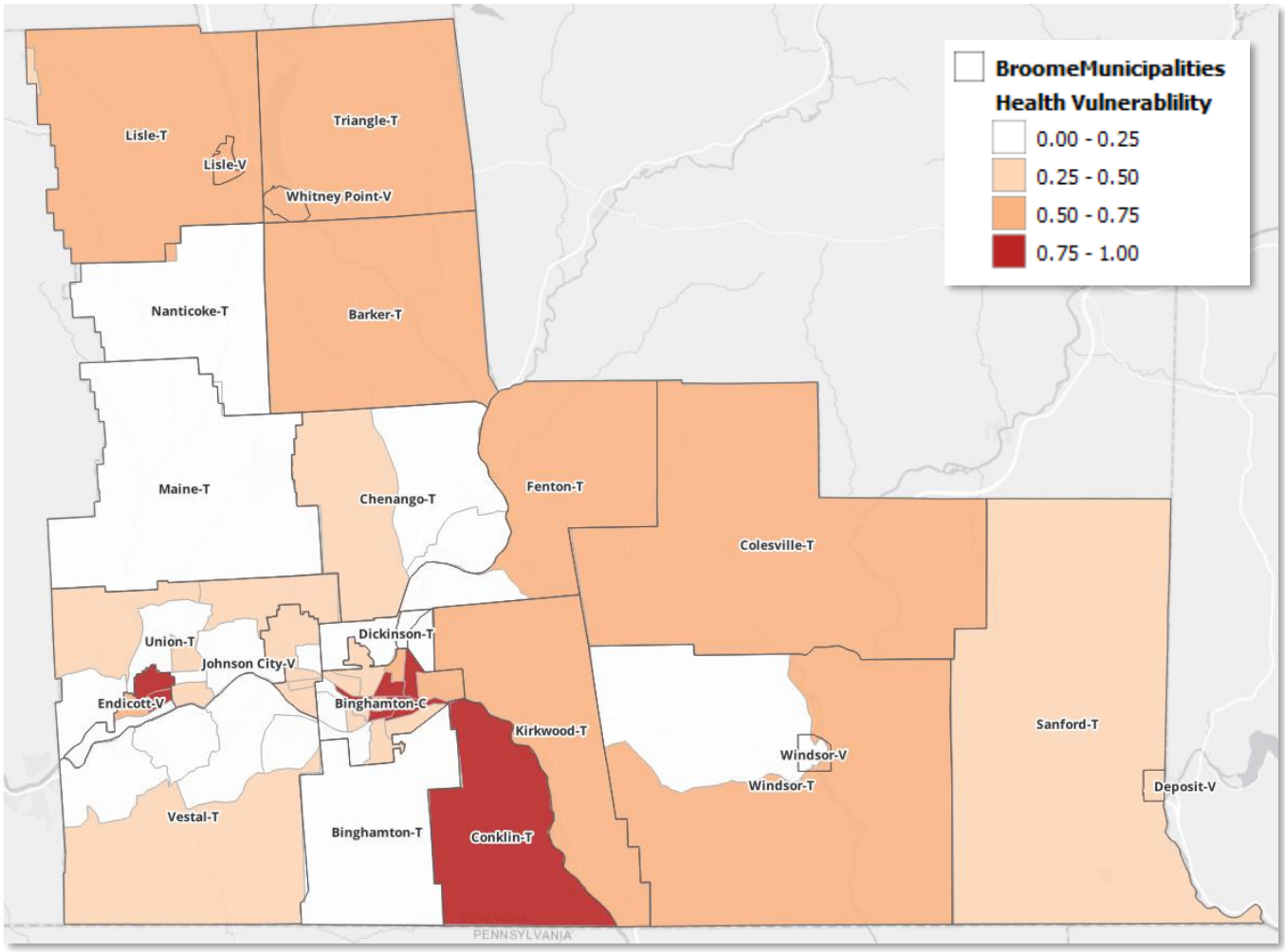


Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Health Vulnerability

Health vulnerability in Broome County is highest in the urban core—particularly in Binghamton, Johnson City, Endicott, and parts of Conklin—where census tracts exhibit elevated rates of asthma, heart disease, diabetes, poor mental health, and, in some cases, cancer. These older, urbanized areas face overlapping health stressors that heighten sensitivity to climate-related hazards such as extreme heat, flooding, and poor air quality. Suburban and rural tracts generally show moderate vulnerability, often linked to aging populations and healthcare access limitations, while lower-ranked tracts have fewer overlapping risks but may still face isolated challenges. Overall, the pattern highlights the need to integrate public health into resilience planning through targeted, neighborhood-level interventions in the highest-burden areas, alongside countywide strategies to improve health access, chronic disease prevention, and emergency preparedness.

Figure 56 Average Health Vulnerability Rank by Census Tract

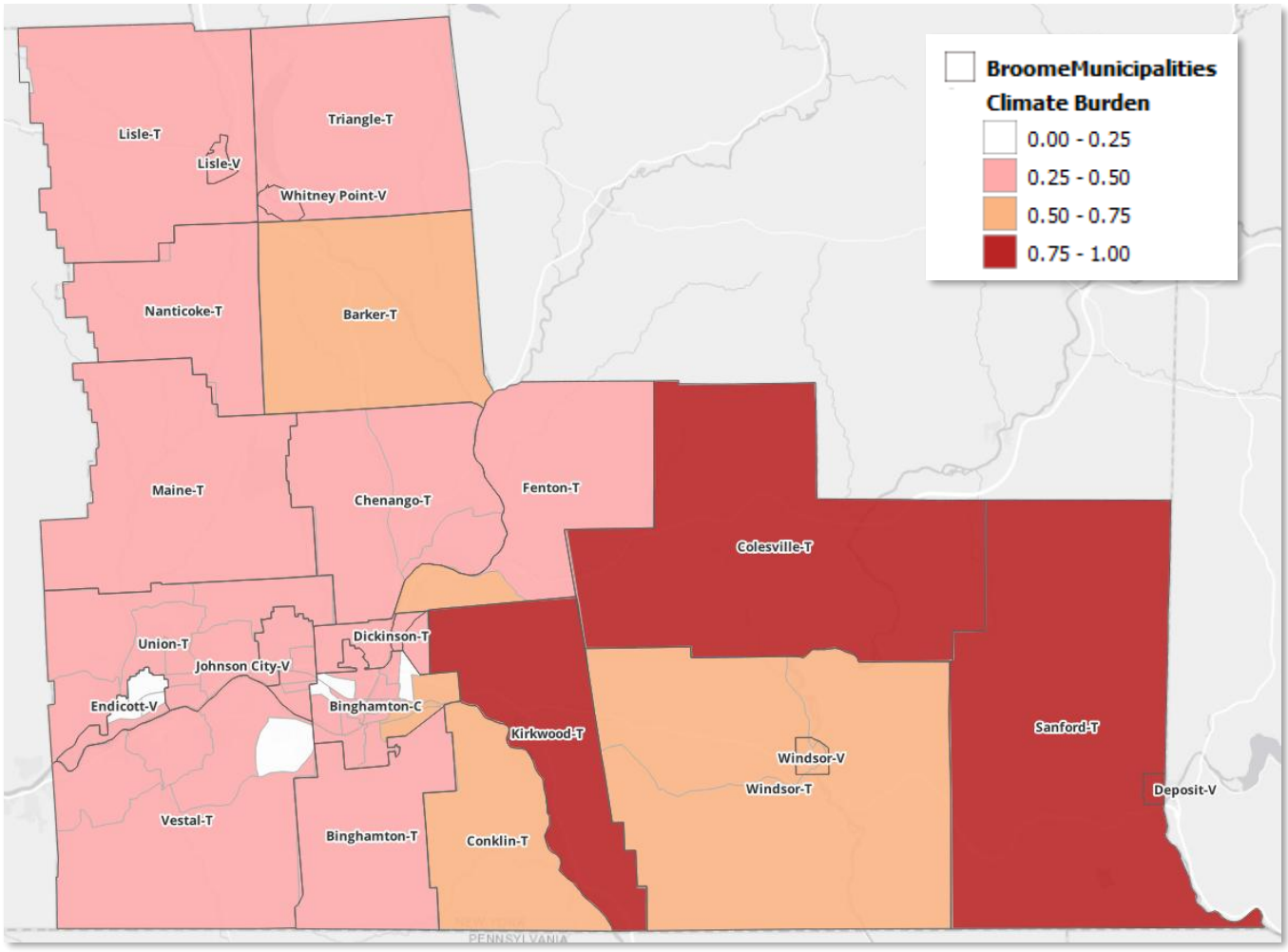


Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Climate Burden

The average climate burden map shows that Broome County's highest climate risks are concentrated in the eastern and southeastern areas—particularly Deposit, Colesville, Sanford, and Kirkwood—where census tracts experience overlapping exposure to riverine flooding, extreme heat, and severe weather. Riverine flooding and extreme heat drive climate risk countywide, resulting in generally moderate burden across the urban core, including the cities of Binghamton and Johnson, and Endicott, with less variation between tracts. Differences at the high end of the rankings reflect where multiple hazards overlap along river corridors and low-lying areas rather than isolated risks. With a countywide average climate burden score of 0.46, these patterns highlight the need for countywide flood and heat preparedness, paired with targeted, place-based interventions in the highest-burden tracts to address compounding climate hazards.

Figure 57 Average Climate Burden Rank by Census Tract



Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Appendix: EJ and Climate Burden Indicators and Sources

	Modules	Domains	Indicators	Data Sources
Environmental Justice Rank	Social Vulnerability	Racial/Ethnic Minority Status	• Minority Status	U.S. Census Bureau American Community Survey
		Socioeconomic Status	• Poverty • No High School Diploma • Unemployment • Renters • Housing Cost Burden • Lack of Health Insurance • Lack of Internet Access	
		Household Characteristics	• Age 65 and Older • Age 17 and Younger • Civilian with Disability • English Language Proficiency	
		Housing Type	• Group Quarters • Mobile Homes	
	Environmental Burden	Air Pollution	• Ozone • Particulate Matter 2.5 (PM2.5)	U.S. EPA Air Quality System
			• Diesel Particulate Matter • Air Toxics Cancer Risk	U.S. EPA AirToxScreen
		Potentially Hazardous and Toxic Sites	• National Priority List Sites • Toxic Release Inventory Sites • Treatment, Storage, and Disposal Sites • Risk Management Plan Sites	U.S. EPA Facility Registry Service
			• Coal Mines • Lead Mines	U.S. Mine Safety and Health Admin. Mine Data Retrieval System
		Built Environment	• Lack of Recreational Parks	U.S. Geospatial Survey PAD-US 4.0
			• Houses Built Pre-1980	U.S. Census Bureau American Community Survey
			• Lack of Walkability	U.S. EPA National Walkability Index
		Transportation Infrastructure	• High Volume Roads	U.S. Department of Transportation National Highway System
			• Railways	U.S. Department of Transportation National Transportation Atlas Database
			• Airports	Open StreetMap and the U.S. Department of Transportation National Transportation Atlas Database
		Water Pollution	• Impaired Surface Water	U.S. EPA Watershed Index Online
	Health Vulnerability	Pre-Existing Chronic Disease Burden	• Asthma • Cancer • Coronary Heart Disease • Diabetes • Poor Mental Health	U.S. CDC PLACES Estimates
Climate Burden Rank	Climate Burden	Heat	• Extreme Heat Days	U.S. CDC National Environmental Public Health Tracking
		Wildfire	• Wildfire Smoke	U.S. NOAA Hazard Mapping System
			• Wildfire Proximity	Monitoring Trends in Burn Severity
		Extreme Events	• Coastal Flooding • Drought • Riverine Flooding • Hurricane • Strong Winds	U.S. FEMA National Risk Index
			• Tornados	U.S. CDC National Environmental Public Health Tracking

Figure 58 Detailed Average EJI and Climate Burden Rank by Census Tract

Census Tract	Social Vulnerability	Environmental Burden	Climate Burden	Health Vulnerability	EJI and Climate Burden
36007001300	0.93	0.56	0.50	1.00	0.96
36007001100	0.98	0.70	0.50	0.80	0.96
36007000500	0.96	0.71	0.50	0.80	0.96
36007012600	0.70	0.72	0.87	0.60	0.95
36007000900	0.80	0.74	0.53	0.80	0.94
36007000400	0.81	0.82	0.50	0.60	0.91
36007000700	0.72	0.80	0.54	0.60	0.89
36007000600	0.91	0.82	0.06	0.80	0.87
36007001200	0.76	0.60	0.50	0.60	0.82
36007013500	0.96	0.55	0.04	0.80	0.78
36007013900	0.94	0.52	0.50	0.40	0.78
36007001800	0.73	0.68	0.53	0.40	0.77
36007012701	0.33	0.67	0.54	0.80	0.77
36007000300	0.74	0.67	0.50	0.40	0.76
36007014100	0.73	0.68	0.50	0.40	0.76
36007013400	0.74	0.51	0.04	1.00	0.75
36007013700	0.68	0.96	0.44	0.20	0.75
36007013600	0.79	0.80	0.04	0.60	0.73
36007012300	0.51	0.33	0.76	0.60	0.71
36007013100	0.60	0.75	0.45	0.40	0.71
36007001401	0.74	0.54	0.50	0.40	0.70
36007014000	0.79	0.49	0.50	0.40	0.70
36007012202	0.63	0.32	0.50	0.60	0.63
36007001700	0.70	0.37	0.48	0.40	0.58
36007000200	0.86	0.58	0.06	0.40	0.55
36007012800	0.46	0.69	0.50	0.20	0.52
36007012400	0.36	0.19	0.86	0.40	0.50
36007001402	0.38	0.52	0.50	0.40	0.49
36007014301	0.56	0.54	0.49	0.20	0.49
36007013800	0.54	0.54	0.50	0.20	0.48
36007014500	0.32	0.82	0.43	0.20	0.48
36007012501	0.44	0.12	0.59	0.60	0.47
36007011902	0.47	0.15	0.51	0.60	0.46
36007012103	0.45	0.38	0.48	0.40	0.45
36007011903	0.51	0.11	0.48	0.60	0.44
36007012201	0.21	0.73	0.54	0.20	0.42
36007014200	0.41	0.34	0.49	0.40	0.40
36007012900	0.62	0.13	0.49	0.40	0.40
36007011901	0.41	0.08	0.45	0.60	0.35
36007014400	0.23	0.62	0.46	0.20	0.34
36007013000	0.16	0.66	0.49	0.20	0.33
36007013202	0.30	0.32	0.46	0.40	0.32
36007001500	0.26	0.52	0.50	0.20	0.32
36007012102	0.39	0.40	0.49	0.20	0.31
36007013301	0.20	0.82	0.44	0.00	0.31
36007013201	0.15	0.58	0.46	0.20	0.27
36007000100	0.56	0.53	0.06	0.20	0.25
36007014600	0.35	0.09	0.46	0.40	0.22
36007013303	0.23	0.15	0.47	0.40	0.20
36007001600	0.15	0.37	0.49	0.20	0.18
36007012702	0.21	0.29	0.50	0.20	0.18
36007012000	0.40	0.15	0.45	0.20	0.18
36007012502	0.28	0.13	0.56	0.20	0.17

Census Tract	Social Vulnerability	Environmental Burden	Climate Burden	Health Vulnerability	EJI and Climate Burden
36007010200	0.34	0.14	0.50	0.20	0.17
36007012101	0.16	0.26	0.50	0.20	0.14
36007013304	0.20	0.16	0.46	0.20	0.11
36007014302	0.47	0.18	0.06	0.20	0.07
County	**0.53**	**0.48**	**0.46**	**0.42**	**0.53**

Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Figure 59 Average Social Vulnerability Rank by Census Tract

Census Tract	Civilian with a Disability	Age 65 and Older	Group Quarters	Un-employment	Lack of Internet Access	Housing Cost Burden	Renters	No High School Diploma	Age 17 and Younger	Mobile Homes	Poverty	English Language	Minority Status	Lack of Health Insurance	Average
36007001100	1.00	0.73	0.93	0.70	0.98	0.94	0.98	0.96	0.49	0.00	0.96	0.67	0.70	0.46	0.98
36007013500	0.91	0.06	0.94	0.98	0.52	0.99	0.93	0.91	0.72	0.51	0.99	0.44	0.51	0.72	0.96
36007000500	0.92	0.71	0.88	0.75	0.67	0.94	0.91	0.84	0.32	0.46	0.99	0.73	0.70	0.30	0.96
36007013900	0.91	0.12	0.90	1.00	0.33	0.97	0.92	0.88	0.67	0.49	0.97	0.88	0.65	0.11	0.94
36007001300	0.77	0.46	0.97	0.98	0.75	0.98	0.98	0.73	0.19	0.00	1.00	0.75	0.66	0.54	0.93
36007000600	0.84	0.23	0.85	0.99	0.60	0.50	0.90	0.96	0.88	0.00	0.95	0.80	0.74	0.28	0.91
36007000200	0.97	0.74	0.78	0.96	0.90	0.74	0.71	0.81	0.19	0.00	0.71	0.58	0.55	0.46	0.86
36007000400	0.78	0.32	0.64	0.43	0.71	0.69	0.84	0.79	0.38	0.51	0.86	0.77	0.52	0.46	0.81
36007000900	0.98	0.32	0.50	0.99	0.59	0.86	0.85	0.80	0.61	0.00	0.91	0.61	0.42	0.16	0.80
36007014000	0.86	0.16	0.00	0.87	0.89	0.93	0.92	0.84	0.67	0.00	0.91	0.65	0.55	0.29	0.79
36007013600	0.86	0.45	0.69	0.78	0.70	0.80	0.81	0.58	0.72	0.00	0.75	0.54	0.45	0.43	0.79
36007001200	1.00	0.47	0.55	0.99	0.99	0.94	0.98	0.88	0.00	0.00	0.99	0.00	0.34	0.21	0.76
36007001401	0.92	0.20	0.66	0.27	0.69	0.96	0.96	0.54	0.02	0.00	0.98	0.60	0.66	0.78	0.74
36007013400	0.86	0.65	0.90	0.19	0.65	0.75	0.84	0.71	0.47	0.00	0.84	0.49	0.34	0.49	0.74
36007000300	0.77	0.36	0.67	0.88	0.72	0.65	0.89	0.60	0.30	0.00	0.76	0.77	0.49	0.31	0.74
36007001800	0.72	0.37	0.50	0.77	0.68	0.38	0.79	0.58	0.34	0.56	0.81	0.74	0.56	0.34	0.73
36007014100	0.77	0.71	0.93	0.31	0.47	0.82	0.46	0.60	0.14	0.57	0.78	0.76	0.32	0.48	0.73
36007000700	0.55	0.84	0.95	0.93	0.43	0.63	0.53	0.79	0.22	0.52	0.83	0.35	0.22	0.29	0.72
36007012600	0.59	0.70	0.55	0.49	0.61	0.68	0.41	0.48	0.58	0.74	0.54	0.70	0.29	0.61	0.70
36007001700	0.62	0.47	0.55	0.85	0.64	0.86	0.70	0.70	0.71	0.00	0.89	0.00	0.43	0.51	0.70
36007013700	0.85	0.85	0.88	0.73	0.90	0.74	0.79	0.41	0.21	0.00	0.76	0.29	0.15	0.28	0.68
36007012202	0.57	0.72	0.50	0.71	0.57	0.51	0.40	0.67	0.93	0.96	0.75	0.00	0.10	0.14	0.63
36007012900	0.97	0.99	0.89	0.49	0.92	0.62	0.77	0.14	0.07	0.56	0.14	0.63	0.08	0.17	0.62
36007013100	0.88	0.47	0.64	0.65	0.85	0.92	0.74	0.63	0.10	0.53	0.67	0.00	0.15	0.13	0.60
36007014301	0.24	0.73	0.89	0.26	0.20	0.69	0.61	0.55	0.23	0.65	0.59	0.76	0.50	0.22	0.56
36007000100	0.79	0.23	0.69	0.73	0.76	0.80	0.85	0.24	0.10	0.00	0.90	0.38	0.56	0.10	0.56
36007013800	0.88	0.87	0.62	0.66	0.79	0.37	0.47	0.21	0.44	0.00	0.65	0.29	0.31	0.45	0.54
36007012300	0.62	0.82	0.50	0.49	0.53	0.37	0.25	0.63	0.82	0.89	0.56	0.00	0.03	0.35	0.51
36007011903	0.74	0.43	0.00	0.87	0.60	0.46	0.35	0.69	0.85	0.97	0.72	0.00	0.00	0.16	0.51
36007011902	0.59	0.54	0.44	0.68	0.72	0.42	0.11	0.41	0.76	0.89	0.73	0.00	0.16	0.20	0.47
36007014302	0.06	0.05	0.99	0.95	0.80	0.56	0.73	0.50	0.02	0.00	0.85	0.59	0.40	0.10	0.47
36007012800	0.81	0.83	0.96	0.18	0.58	0.58	0.51	0.61	0.15	0.00	0.50	0.48	0.20	0.17	0.46
36007012103	0.70	0.70	0.50	0.05	0.58	0.31	0.46	0.61	0.42	0.81	0.60	0.42	0.06	0.29	0.45
36007012501	0.60	0.91	0.66	0.85	0.60	0.51	0.13	0.43	0.30	0.70	0.27	0.00	0.01	0.48	0.44
36007011901	0.55	0.60	0.00	0.96	0.64	0.35	0.48	0.43	0.35	0.88	0.72	0.00	0.04	0.30	0.41
36007014200	0.66	0.97	0.87	0.51	0.38	0.57	0.73	0.25	0.12	0.00	0.41	0.35	0.33	0.09	0.41
36007012000	0.75	0.89	0.00	0.41	0.44	0.62	0.34	0.33	0.45	0.94	0.54	0.00	0.06	0.42	0.40
36007012102	0.57	0.80	0.50	0.90	0.39	0.55	0.08	0.16	0.63	0.63	0.22	0.40	0.08	0.22	0.39
36007001402	0.70	0.28	0.67	0.74	0.48	0.73	0.82	0.15	0.05	0.00	0.94	0.00	0.44	0.06	0.38
36007012400	0.67	0.92	0.00	0.46	0.83	0.21	0.12	0.29	0.30	0.85	0.57	0.32	0.05	0.38	0.36

Census Tract	Civilian with a Disability	Age 65 and Older	Group Quarters	Un-employment	Lack of Internet Access	Housing Cost Burden	Renters	No High School Diploma	Age 17 and Younger	Mobile Homes	Poverty	English Language	Minority Status	Lack of Health Insurance	Average
36007014600	0.38	0.69	0.70	0.64	0.56	0.33	0.08	0.32	0.42	0.60	0.26	0.58	0.24	0.08	0.35
36007010200	0.79	0.78	0.50	0.44	0.17	0.43	0.12	0.41	0.51	0.80	0.55	0.23	0.01	0.08	0.34
36007012701	0.66	0.82	0.00	0.76	0.30	0.44	0.35	0.66	0.16	0.72	0.43	0.00	0.22	0.25	0.33
36007014500	0.87	0.93	0.62	0.40	0.41	0.31	0.23	0.30	0.19	0.69	0.35	0.25	0.08	0.13	0.32
36007013202	0.69	0.85	0.55	0.08	0.61	0.35	0.45	0.32	0.56	0.00	0.48	0.35	0.27	0.02	0.30
36007012502	0.58	0.55	0.50	0.60	0.55	0.22	0.25	0.43	0.55	0.66	0.41	0.00	0.15	0.03	0.28
36007001500	0.69	0.84	0.73	0.44	0.50	0.18	0.33	0.44	0.14	0.00	0.20	0.38	0.29	0.15	0.26
36007014400	0.58	0.83	0.62	0.50	0.17	0.43	0.21	0.08	0.57	0.00	0.56	0.32	0.26	0.02	0.23
36007013303	0.30	0.75	0.37	0.10	0.18	0.07	0.15	0.43	0.58	0.61	0.39	0.75	0.18	0.29	0.23
36007012201	0.55	0.74	0.77	0.00	0.78	0.03	0.17	0.33	0.58	0.70	0.15	0.00	0.10	0.07	0.21
36007012702	0.77	0.72	0.37	0.60	0.30	0.33	0.12	0.25	0.30	0.54	0.40	0.00	0.06	0.20	0.21
36007013301	0.79	0.68	0.44	0.03	0.37	0.46	0.56	0.32	0.42	0.00	0.43	0.00	0.10	0.32	0.20
36007013304	0.18	0.88	0.67	0.10	0.41	0.41	0.23	0.18	0.36	0.51	0.23	0.40	0.13	0.21	0.20
36007012101	0.15	0.78	0.37	0.23	0.43	0.17	0.15	0.52	0.38	0.77	0.34	0.00	0.13	0.17	0.16
36007013000	0.32	0.75	0.55	0.28	0.26	0.12	0.17	0.10	0.69	0.00	0.28	0.57	0.29	0.19	0.16
36007001600	0.49	0.79	0.00	0.30	0.78	0.22	0.28	0.10	0.21	0.00	0.56	0.32	0.26	0.23	0.15
36007013201	0.40	0.73	0.37	0.18	0.43	0.44	0.19	0.30	0.53	0.00	0.46	0.35	0.14	0.02	0.15
County	**0.68**	**0.63**	**0.59**	**0.58**	**0.58**	**0.56**	**0.53**	**0.50**	**0.40**	**0.37**	**35.95**	**0.37**	**0.29**	**0.27**	**0.53**

Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Figure 60 Detailed Average Environmental Burden Rank by Census Tract

Census Tract	Houses Built Pre-1980	TSD Sites	Lack of Walkability	Lack of Recreational Parks	Railways	Toxic Release Inventory Sites	Impaired Surface Water	High Volume Roads	Diesel Particulate Matter	Risk Management Plan Site	National Priority List Sites	Airports	Air Toxics Cancer Risk	Average
36007013700	0.91	0.71	0.73	0.55	0.81	0.73	0.58	0.61	0.29	0.92	0.99	0.97	0.04	0.96
36007014500	0.76	0.68	0.91	0.68	0.50	0.42	0.39	0.39	0.09	0.79	0.96	0.94	0.04	0.82
36007000400	0.96	0.84	0.60	0.55	0.81	0.86	0.53	0.61	0.78	0.97	0.00	0.00	0.04	0.82
36007000600	1.00	0.84	0.54	0.55	0.81	0.86	0.54	0.61	0.78	0.98	0.00	0.00	0.04	0.82
36007013301	0.74	0.64	0.76	0.65	0.68	0.73	0.19	0.18	0.13	0.87	0.97	0.95	0.04	0.82
36007013600	0.89	0.84	0.46	0.55	0.81	0.86	0.58	0.45	0.30	0.69	0.95	0.00	0.04	0.80
36007000700	0.96	0.84	0.72	0.55	0.81	0.79	0.55	0.61	0.56	0.97	0.00	0.00	0.04	0.80
36007013100	0.92	0.84	0.40	0.55	0.81	0.86	0.76	0.61	0.37	0.00	0.95	0.00	0.04	0.75
36007000900	0.79	0.84	0.45	0.55	0.81	0.86	0.55	0.61	0.66	0.93	0.00	0.00	0.04	0.74
36007012201	0.97	0.72	0.80	0.66	0.81	0.61	0.53	0.56	0.37	0.00	0.95	0.00	0.04	0.73
36007012600	0.57	0.69	0.83	0.78	0.59	0.55	0.46	0.41	0.35	0.76	0.94	0.00	0.04	0.72
36007000500	0.67	0.84	0.28	0.55	0.81	0.86	0.53	0.61	0.74	0.96	0.00	0.00	0.04	0.71
36007001100	0.84	0.84	0.24	0.55	0.81	0.86	0.54	0.61	0.66	0.88	0.00	0.00	0.04	0.70
36007012800	0.95	0.78	0.58	0.55	0.68	0.73	0.48	0.51	0.71	0.77	0.00	0.00	0.04	0.69
36007001800	0.83	0.78	0.56	0.55	0.71	0.86	0.55	0.52	0.63	0.74	0.00	0.00	0.04	0.68
36007014100	0.91	0.84	0.52	0.55	0.75	0.86	0.27	0.61	0.44	0.00	0.93	0.00	0.04	0.68
36007000300	0.74	0.83	0.67	0.55	0.67	0.75	0.49	0.55	0.67	0.74	0.00	0.00	0.04	0.67
36007012701	0.79	0.61	0.79	0.79	0.59	0.60	0.40	0.23	0.16	0.73	0.96	0.00	0.04	0.67
36007013000	0.90	0.73	0.55	0.60	0.68	0.67	0.74	0.43	0.33	0.00	0.97	0.00	0.04	0.66
36007014400	0.96	0.81	0.74	0.55	0.48	0.66	0.62	0.47	0.18	0.00	0.94	0.00	0.04	0.62
36007001200	0.64	0.84	0.07	0.55	0.81	0.86	0.53	0.61	0.66	0.74	0.00	0.00	0.04	0.60
36007013201	0.98	0.84	0.61	0.55	0.81	0.86	0.76	0.47	0.33	0.00	0.00	0.00	0.04	0.58
36007000200	0.97	0.84	0.40	0.55	0.81	0.86	0.48	0.61	0.66	0.00	0.00	0.00	0.04	0.58

Census Tract	Houses Built Pre-1980	TSD Sites	Lack of Walkability	Lack of Recreational Parks	Railways	Toxic Release Inventory Sites	Impaired Surface Water	High Volume Roads	Diesel Particulate Matter	Risk Management Plan Site	National Priority List Sites	Airports	Air Toxics Cancer Risk	Average
36007001300	0.83	0.84	0.46	0.55	0.81	0.86	0.52	0.61	0.62	0.00	0.00	0.00	0.04	0.56
36007013500	0.91	0.84	0.36	0.55	0.81	0.86	0.76	0.57	0.42	0.00	0.00	0.00	0.04	0.55
36007013800	0.97	0.84	0.53	0.55	0.81	0.86	0.27	0.61	0.58	0.00	0.00	0.00	0.04	0.54
36007014301	0.67	0.73	0.54	0.61	0.57	0.63	0.56	0.38	0.35	0.00	0.98	0.00	0.04	0.54
36007001401	0.74	0.84	0.49	0.55	0.81	0.86	0.53	0.61	0.58	0.00	0.00	0.00	0.04	0.54
36007000100	0.83	0.84	0.51	0.55	0.81	0.86	0.35	0.61	0.59	0.00	0.00	0.00	0.04	0.53
36007001500	0.98	0.84	0.73	0.55	0.70	0.79	0.28	0.61	0.46	0.00	0.00	0.00	0.04	0.52
36007001402	0.95	0.84	0.49	0.55	0.75	0.77	0.41	0.61	0.58	0.00	0.00	0.00	0.04	0.52
36007013900	0.89	0.84	0.52	0.55	0.81	0.86	0.27	0.61	0.54	0.00	0.00	0.00	0.04	0.52
36007013400	0.96	0.84	0.63	0.55	0.81	0.86	0.74	0.16	0.32	0.00	0.00	0.00	0.04	0.51
36007014000	0.81	0.84	0.51	0.55	0.81	0.86	0.27	0.61	0.52	0.00	0.00	0.00	0.04	0.49
36007012102	0.77	0.83	0.79	0.63	0.75	0.33	0.53	0.47	0.28	0.00	0.00	0.00	0.04	0.40
36007012103	0.69	0.62	0.78	0.75	0.37	0.45	0.23	0.33	0.19	0.00	0.00	0.89	0.04	0.38
36007001700	0.73	0.67	0.77	0.55	0.43	0.68	0.55	0.47	0.41	0.00	0.00	0.00	0.04	0.37
36007001600	0.88	0.73	0.77	0.55	0.37	0.59	0.32	0.60	0.41	0.00	0.00	0.00	0.04	0.37
36007014200	0.65	0.83	0.60	0.55	0.60	0.69	0.38	0.40	0.42	0.00	0.00	0.00	0.04	0.34
36007012300	0.51	0.59	0.98	0.83	0.52	0.00	0.30	0.28	0.10	0.00	0.94	0.00	0.04	0.33
36007013202	0.70	0.70	0.60	0.55	0.61	0.69	0.76	0.17	0.25	0.00	0.00	0.00	0.04	0.32
36007012202	0.40	0.62	0.98	0.83	0.56	0.00	0.25	0.27	0.13	0.00	0.95	0.00	0.04	0.32
36007012702	0.67	0.48	0.95	0.74	0.36	0.40	0.38	0.13	0.13	0.66	0.00	0.00	0.04	0.29
36007012101	0.64	0.65	0.84	0.75	0.62	0.00	0.48	0.48	0.26	0.00	0.00	0.00	0.04	0.26
36007012400	0.66	0.56	0.96	0.77	0.49	0.35	0.21	0.24	0.06	0.00	0.00	0.00	0.04	0.19
36007014302	0.65	0.77	0.62	0.55	0.00	0.66	0.27	0.41	0.33	0.00	0.00	0.00	0.04	0.18
36007013304	0.45	0.59	0.73	0.58	0.44	0.52	0.63	0.00	0.19	0.00	0.00	0.00	0.04	0.16
36007011902	0.47	0.58	0.94	0.96	0.57	0.00	0.18	0.31	0.11	0.00	0.00	0.00	0.04	0.15
36007012000	0.50	0.48	0.95	0.81	0.33	0.00	0.00	0.11	0.07	0.00	0.00	0.82	0.04	0.15
36007013303	0.93	0.50	0.89	0.79	0.33	0.32	0.18	0.00	0.12	0.00	0.00	0.00	0.04	0.15
36007010200	0.59	0.54	0.94	0.78	0.00	0.00	0.21	0.00	0.07	0.00	0.00	0.92	0.04	0.14
36007012502	0.68	0.62	0.89	0.92	0.00	0.00	0.33	0.37	0.19	0.00	0.00	0.00	0.04	0.13
36007012900	0.35	0.62	0.65	0.63	0.33	0.55	0.52	0.10	0.21	0.00	0.00	0.00	0.04	0.13
36007012501	0.53	0.59	0.89	0.81	0.39	0.00	0.28	0.23	0.19	0.00	0.00	0.00	0.04	0.12
36007011903	0.42	0.55	0.94	0.86	0.50	0.00	0.13	0.34	0.07	0.00	0.00	0.00	0.04	0.11
36007014600	0.70	0.53	0.95	0.73	0.00	0.29	0.23	0.10	0.07	0.00	0.00	0.00	0.04	0.09
36007011901	0.49	0.56	0.89	0.76	0.40	0.00	0.22	0.18	0.07	0.00	0.00	0.00	0.04	0.08
County	**0.76**	**0.73**	**0.67**	**0.64**	**0.60**	**0.58**	**0.43**	**0.42**	**0.36**	**0.25**	**0.23**	**0.10**	**0.04**	**0.48**

Note: Ozone, Particulate Matter, Air Toxics, Coal Mines and Lead Mines have a rank of zero and are omitted from the table.
Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Figure 61 Average Health Vulnerability Rank by Census Tract

Census Tract	Asthma	Cancer	Coronary Heart Disease	Poor Mental	Diabetes	Average
36007013400	0.84	0.73	0.91	0.77	0.69	1.00
36007001300	0.91	0.78	0.99	0.95	0.90	1.00
36007001100	0.94	0.25	0.77	0.97	0.69	0.80
36007012701	0.84	0.76	0.83	0.72	0.54	0.80
36007013500	0.98	0.22	0.81	0.99	0.83	0.80
36007000600	0.95	0.37	0.82	0.95	0.77	0.80
36007000900	0.89	0.49	0.82	0.86	0.68	0.80

Census Tract	Asthma	Cancer	Coronary Heart Disease	Poor Mental	Diabetes	Average
36007000500	0.96	0.28	0.74	0.96	0.75	0.80
36007001200	0.93	0.23	0.80	0.99	0.59	0.60
36007012501	0.68	0.79	0.73	0.53	0.42	0.60
36007013600	0.84	0.49	0.69	0.84	0.50	0.60
36007000700	0.68	0.93	0.93	0.52	0.64	0.60
36007012600	0.68	0.73	0.73	0.58	0.39	0.60
36007011902	0.70	0.75	0.77	0.62	0.51	0.60
36007000400	0.83	0.46	0.74	0.80	0.57	0.60
36007012202	0.73	0.85	0.92	0.59	0.64	0.60
36007012300	0.70	0.75	0.73	0.59	0.45	0.60
36007011901	0.68	0.68	0.73	0.61	0.44	0.60
36007011903	0.75	0.62	0.76	0.70	0.47	0.60
36007014200	0.36	0.98	0.95	0.17	0.58	0.40
36007012103	0.65	0.73	0.74	0.57	0.42	0.40
36007000300	0.68	0.36	0.31	0.68	0.21	0.40
36007001402	0.75	0.40	0.64	0.87	0.39	0.40
36007014000	0.83	0.27	0.52	0.89	0.50	0.40
36007001700	0.75	0.49	0.57	0.72	0.36	0.40
36007013303	0.36	0.88	0.67	0.19	0.26	0.40
36007001800	0.79	0.40	0.42	0.78	0.33	0.40
36007014600	0.33	0.88	0.67	0.19	0.31	0.40
36007000200	0.75	0.40	0.62	0.78	0.56	0.40
36007013900	0.94	0.29	0.61	0.96	0.60	0.40
36007012900	0.28	0.99	0.97	0.07	0.51	0.40
36007014100	0.60	0.81	0.67	0.43	0.37	0.40
36007013100	0.79	0.48	0.61	0.78	0.44	0.40
36007001401	0.87	0.03	0.13	0.99	0.08	0.40
36007013202	0.41	0.93	0.83	0.20	0.46	0.40
36007012400	0.54	0.87	0.76	0.42	0.45	0.40
36007014301	0.20	0.78	0.65	0.19	0.45	0.20
36007012101	0.65	0.78	0.65	0.57	0.37	0.20
36007001500	0.36	0.70	0.35	0.20	0.13	0.20
36007012201	0.44	0.87	0.55	0.25	0.22	0.20
36007012702	0.47	0.84	0.65	0.29	0.31	0.20
36007013201	0.57	0.78	0.61	0.39	0.27	0.20
36007014400	0.44	0.78	0.55	0.34	0.27	0.20
36007001600	0.44	0.88	0.65	0.24	0.33	0.20
36007013800	0.68	0.63	0.59	0.63	0.35	0.20
36007010200	0.60	0.71	0.65	0.50	0.35	0.20
36007012102	0.38	0.81	0.55	0.23	0.23	0.20
36007013304	0.54	0.82	0.57	0.37	0.27	0.20
36007012800	0.70	0.66	0.64	0.62	0.29	0.20
36007000100	0.65	0.27	0.35	0.72	0.29	0.20
36007014302	0.60	0.01	0.01	0.96	0.01	0.20
36007012000	0.60	0.70	0.55	0.54	0.26	0.20
36007014500	0.38	0.88	0.59	0.24	0.23	0.20
36007012502	0.57	0.73	0.65	0.45	0.36	0.20
36007013000	0.23	0.84	0.40	0.07	0.14	0.20
36007013700	0.62	0.68	0.65	0.56	0.36	0.20
36007013301	0.54	0.66	0.44	0.39	0.20	0.00
County	**0.65**	**0.63**	**37.25**	**33.00**	**24.00**	**0.42**

Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index

Figure 62 Average Climate Burden Rank by Census Tract

Census Tract	Riverine Flooding	Extreme Heat Days	Wildfire Smoke	Hurricane	Strong Winds	Tornado	Average
36007012600	0.78	0.69	0.50	0.48	0.41	0.71	0.87
36007012400	0.78	0.69	0.54	0.37	0.43	0.71	0.86
36007012300	0.78	0.68	0.56	0.36	0.41	0.52	0.76
36007012501	0.78	0.71	0.53	0.48	0.41	0.00	0.59
36007012502	0.78	0.69	0.50	0.48	0.41	0.00	0.56
36007000700	0.78	0.69	0.45	0.48	0.41	0.00	0.54
36007012701	0.78	0.68	0.47	0.48	0.41	0.00	0.54
36007012201	0.78	0.68	0.49	0.46	0.41	0.00	0.54
36007001800	0.78	0.68	0.45	0.48	0.41	0.00	0.53
36007000900	0.78	0.68	0.45	0.48	0.41	0.00	0.53
36007011902	0.78	0.69	0.54	0.33	0.41	0.00	0.51
36007012101	0.78	0.69	0.53	0.33	0.41	0.00	0.50
36007012202	0.78	0.69	0.53	0.33	0.41	0.00	0.50
36007000300	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007013900	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007012800	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007001100	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007001500	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007014100	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007001300	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007001402	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007013800	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007001200	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007014000	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007001401	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007000400	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007000500	0.78	0.62	0.45	0.48	0.41	0.00	0.50
36007012702	0.78	0.60	0.47	0.48	0.41	0.00	0.50
36007010200	0.78	0.59	0.55	0.41	0.41	0.00	0.50
36007014200	0.78	0.62	0.43	0.48	0.41	0.00	0.49
36007012900	0.78	0.62	0.43	0.48	0.41	0.00	0.49
36007013000	0.78	0.62	0.43	0.48	0.41	0.00	0.49
36007012102	0.78	0.68	0.50	0.36	0.41	0.00	0.49
36007014301	0.78	0.60	0.45	0.48	0.41	0.00	0.49
36007001600	0.78	0.60	0.45	0.48	0.41	0.00	0.49
36007012103	0.78	0.62	0.53	0.37	0.41	0.00	0.48
36007001700	0.78	0.59	0.45	0.48	0.41	0.00	0.48
36007011903	0.78	0.61	0.54	0.36	0.41	0.00	0.48
36007013303	0.78	0.57	0.45	0.48	0.41	0.00	0.47
36007013201	0.78	0.57	0.43	0.48	0.41	0.00	0.46
36007014600	0.78	0.57	0.43	0.48	0.41	0.00	0.46
36007014400	0.78	0.57	0.43	0.48	0.41	0.00	0.46
36007013304	0.78	0.57	0.43	0.48	0.41	0.00	0.46
36007013202	0.78	0.57	0.43	0.48	0.41	0.00	0.46
36007013100	0.78	0.55	0.43	0.48	0.41	0.00	0.45
36007012000	0.78	0.59	0.55	0.33	0.41	0.00	0.45
36007011901	0.78	0.62	0.51	0.33	0.41	0.00	0.45
36007013700	0.78	0.53	0.45	0.48	0.41	0.00	0.44
36007013301	0.78	0.53	0.45	0.48	0.41	0.00	0.44
36007014500	0.78	0.53	0.43	0.48	0.41	0.00	0.43
36007000100	0.00	0.62	0.45	0.48	0.41	0.00	0.06
36007000200	0.00	0.62	0.45	0.48	0.41	0.00	0.06
36007000600	0.00	0.62	0.45	0.48	0.41	0.00	0.06

Census Tract	Riverine Flooding	Extreme Heat Days	Wildfire Smoke	Hurricane	Strong Winds	Tornado	Average
36007014302	0.00	0.60	0.45	0.48	0.41	0.00	0.06
36007013400	0.00	0.54	0.43	0.48	0.41	0.00	0.04
36007013600	0.00	0.53	0.43	0.48	0.41	0.00	0.04
36007013500	0.00	0.53	0.43	0.48	0.41	0.00	0.04
County	**0.69**	**0.62**	**0.47**	**0.46**	**0.41**	**0.03**	**0.46**

Note: Wildfire Proximity, Coastal Flooding, and Drought have a rank of zero and are omitted from the table
Source: CDC, Agency for Toxic Substances Disease Registry, 2024 Environmental Justice Index