



Appendix D Inventory and Analysis of the Existing Human Environment

I-84 Danbury PEL Study

Prepared for: The Connecticut Department of Transportation

August 2025


I-84 Danbury Project

Existing Conditions Analysis

Inventory and Analysis of the Existing Human Environment

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Appendix A – Race, Ethnicity, and Income Characteristics by Census Tract in the Human Environment Study Area



1.0 Introduction

The United States Department of Transportation (USDOT) Federal Highway Administration (FHWA) and the Connecticut Department of Transportation (CTDOT) have initiated the environmental review process for the Interstate 84 (I-84) Danbury Project (the "Project") in Fairfield County, Connecticut, in accordance with the National Environmental Policy Act (NEPA), the Connecticut Environmental Policy Act (CEPA), and other regulatory requirements. The Project is being pursued to improve safety, increase capacity, and improve operations and access between exits 3 and 8 in Danbury. This ±6-mile segment of I-84 experiences significant congestion and is CTDOT's highest priority on the I-84 corridor west of Waterbury. The Project is included in *Let's Go CT!*, the Governor's 30-year transportation investment plan. Improving safety and access and reducing congestion on this section of I-84 is expected to have positive effects on commerce in the city, the region, and the state.

The purpose of this Inventory and Analysis of the Existing Human Environment is to provide a summary of existing conditions within the corridor. This information will be used as a benchmark that will assist in the development of the project purpose and need, inform the NEPA and CEPA public outreach process, and assist in the evaluation of alternatives. Additional information will be collected as part of the alternatives analysis process. Topics that are included in this document include land use, zoning, development patterns, socioeconomics, environmental justice, and Title VI.

The human environment analysis was completed at a larger geographic extent than other resources, which reflects the impacts that the highway has on the population of the larger region. While the

Project area only reflects the areas on I-84 between exit 3 and exit 8 and short segments of State Route 7 (SR 7) that are most likely to be directly impacted by construction, the indirect impacts of the Project extend well beyond the areas that are immediately adjacent to the highway. The Human Environment Study Area (HESA) reflects the areas and populations that are most likely to be indirectly impacted by this Project. The HESA includes the full extent of census tracts that are within the city of Danbury, as well as adjacent census tracts in the towns of Bethel, Brookfield, and Newtown (see Figure 1-1). The HESA was used as the geographic extents for the existing land use, socioeconomic, and environmental justice analyses.

2.0 Existing Land Use, Zoning, and Development Patterns

2.1 Data and Methodology

This section includes an analysis of the following information:

- **Existing Land Use** – based on municipal parcel data and verified based on 2016 aerial imagery. Because each municipality classifies land differently, generalized and detailed land

use categories were created in order to ensure that the land use analysis was consistent throughout the HESA. Critical facilities such as government buildings, schools, police stations, and fire stations were also identified.

- **Zoning** – obtained from the City of Danbury, Town of Newtown, Town of Bethel, and Town of Brookfield.
- **Planning Studies** – review of local, regional, and state Plans of Conservation and Development (POCDs) and other land use planning studies. Included in this section is an analysis of the Connecticut Conservation and Development Policies Plan and the state Locational Guide Map (LGM).

Table 2-1 presents land uses within the HESA. About 69 percent of this land area is used for residential purposes. Approximately 5 percent of land is used for commercial or industrial purposes. Open space, cemeteries, and recreational facilities comprise about 6 percent of the land area. The remaining 19 percent is comprised of institutional uses, utilities, transportation facilities, right-of-way, and vacant land.

TABLE 2-1
Generalized Existing Land Use in the Human Environment Study Area

Land Use	Number of Properties	Area	
		Total Area (Acres)	Percent of Total Area
Residential	21,738	55,493.1	69.4%
Commercial	1,284	2,928.1	3.7%
Industrial	333	1,140.2	1.4%
Institutional	195	1,617.1	2.0%
Parks, Recreation, and Open Space	395	5,022.3	6.3%
Other	3,011	13,786.2	17.2%
Grand Total	26,956	79,987.0	100.0%



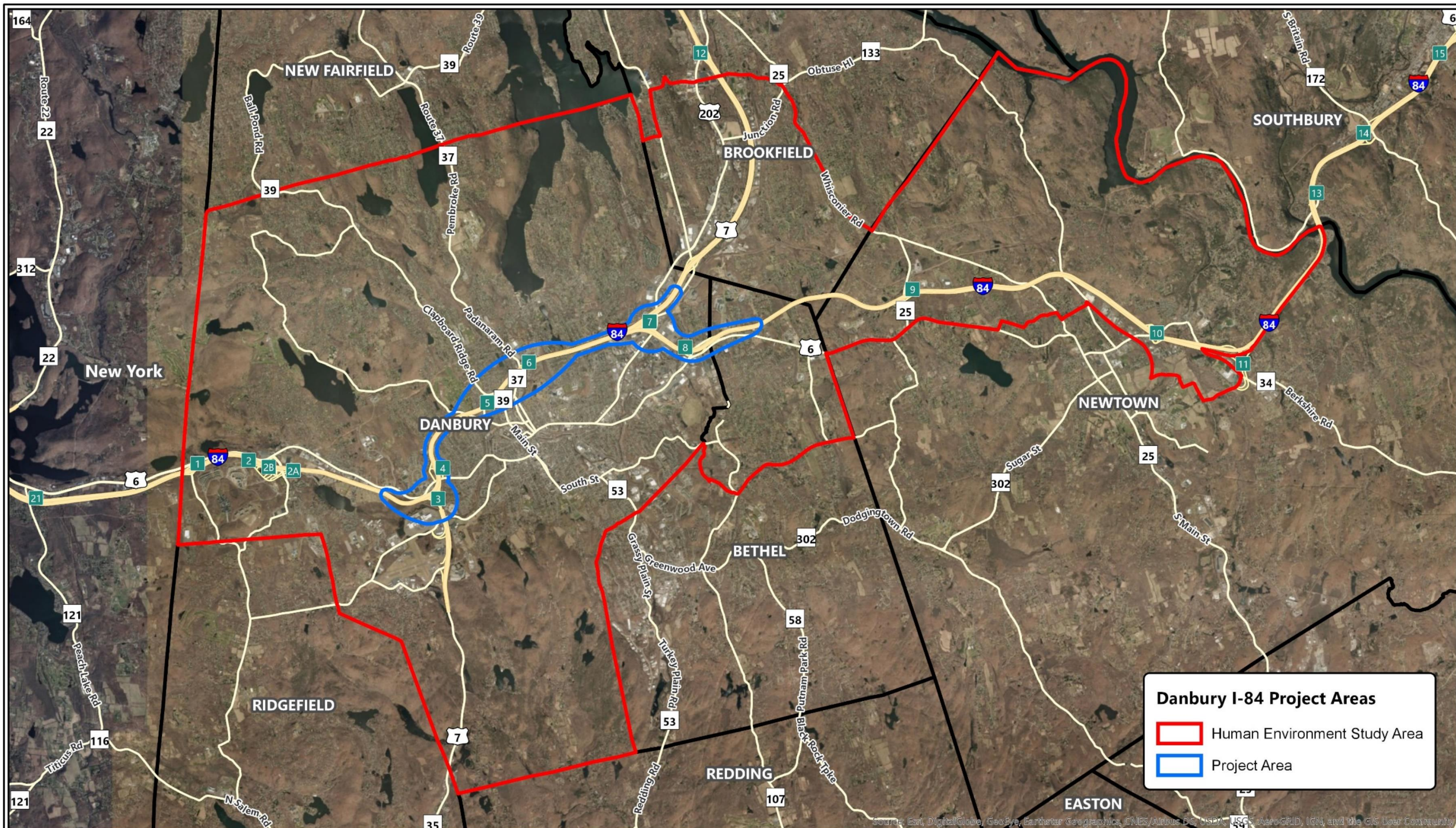


FIGURE 1-1:
Danbury I-84 Project Areas



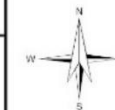

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION




Date: 5/23/2019

Data Sources:

CTE911 Roads: DEMHS
2016 Aerial: CTECO



SCALE IN FEET
0 3,000 6,000

1:76,000

For general planning purposes only. Delineations may not be exact



2.2 Exit 1 to Exit 3: Western Danbury/West Side District

Danbury's West Side District surrounds I-84 between exit 1 and exit 3. The West Side District is primarily suburban in character, with higher density uses located near the highway and less dense development located on the outskirts. The state LGM classifies this portion of the corridor as a "Balanced Priority Funding Area," meaning that both development and conservation considerations should be assessed for a state-sponsored, growth-related project. Figure 2-1 on the following page presents existing land uses between exits 1 and 3.

The City of Danbury's 2013 POCD notes that the West Side District is home to large undeveloped parcels, and the neighborhood has seen significant new development in recent years. This trend is likely to continue over the next 10 years. The POCD identifies the West Side District as the "major growth center in the city" and envisions additional corporate offices, research and development, light industry, and residential uses.

The West Side District is a major retail and employment center that serves the Greater Danbury Region. The Danbury Fair Mall is located to the southwest of the I-84 and Route 7 interchange. The mall is accessed primarily via exit 8 on Route 7. The mall is the second largest in Connecticut and contains over 1.2 million square feet of retail floor area and nearly 200 stores. Other major commercial areas include Mill Plain Road (U.S. 6/202), Backus Road, and Old Ridgebury Road. Commercial corridors are generally located near the highway interchanges.

There are several major employers in the West Side District including the Matrix Corporate Center, Cartus, United Technologies Corporation (UTC), and Boehringer Ingelheim. Major institutional uses include the Danbury Airport and the west-side campus of Western Connecticut State University.

The West Side District contains a mix of housing types. South of the highway is primarily zoned for multifamily residential while north of the highway is primarily zoned for single-family residential uses. Major residential developments near the highway include the Danbury Housing Authority's Mill Ridge Apartments and the Lakeview Mobile Home Park. In recent years, there has been significant multifamily residential development in "The Reserve," a planned residential neighborhood south of the highway between Saw Mill Road and Old Ridgebury Road. At full buildout, The Reserve is estimated to have approximately 2,200 residences as well as 400,000 square feet of nonresidential uses. Several parks, open spaces, and cemeteries abut the highway, including Farrington Woods, Lake Kenosia Park, Kenosia Cemetery, St. Peter's Cemetery, and Resurrection Cemetery.

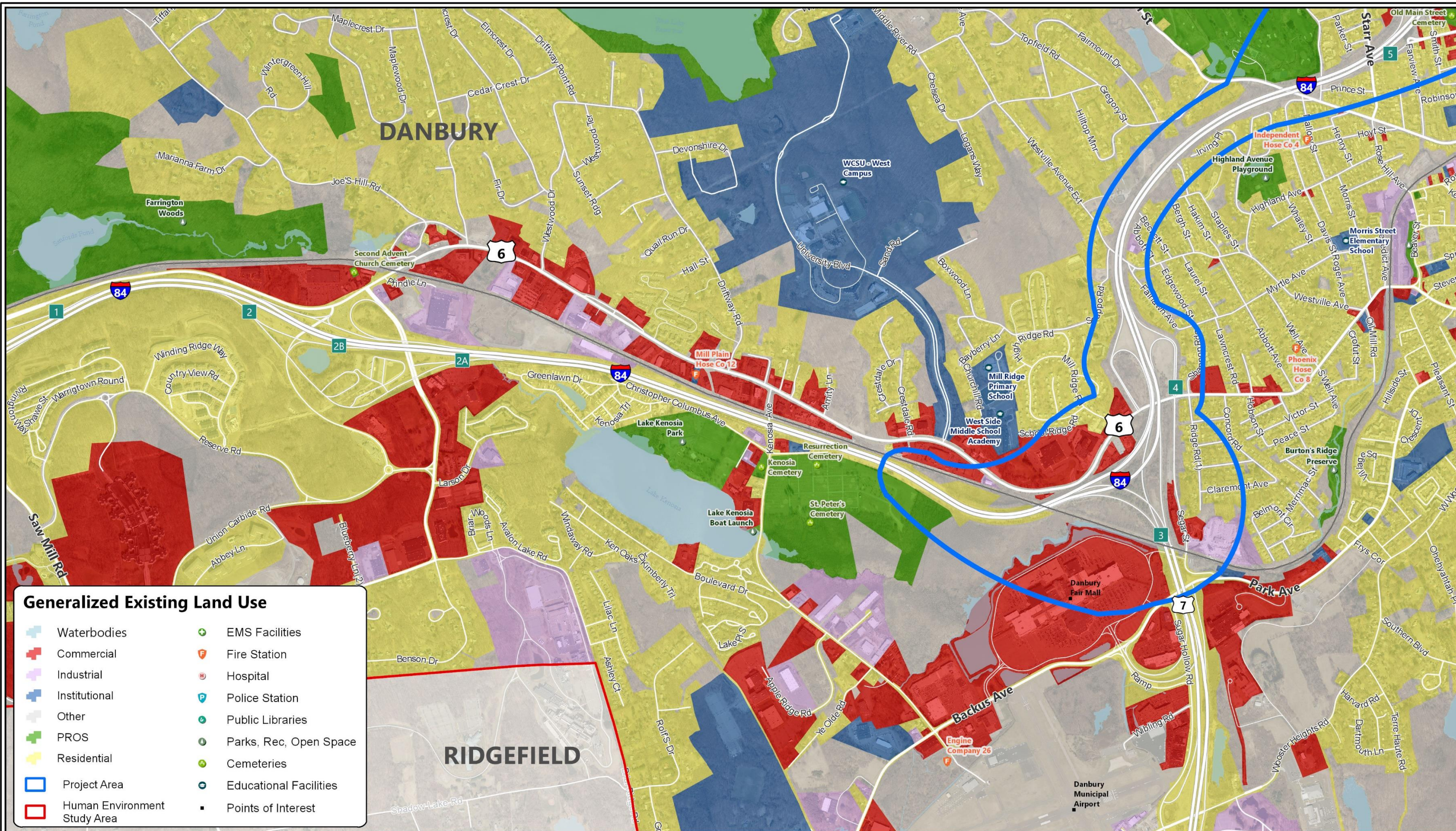


The Danbury Fair Mall is located to the southeast of the I-84 and Route 7 interchange in western Danbury. The Danbury Municipal Airport is in the background.



The Lakeview Mobile Home Park (right) abuts the highway just to the east of exit 2. Mill Plain Road (left background) runs parallel to the highway and is a major retail corridor in the city of Danbury.





2.3 Exit 3 to Exit 7: Central Danbury

The central portion of the corridor is the most densely developed section of the I-84 corridor in Danbury. The state LGM classifies this portion of the corridor as a "Priority Funding Area," which means that it has infrastructure needed to support development. Throughout much of this stretch of I-84, the right-of-way is narrow, and development directly abuts the highway, including many residences. Several recreational areas and cemeteries are located near the highway, including Ridgewood Country Club and the Immanuel Lutheran Cemetery on Tamarack Avenue. Figure 2-2 on the following page presents existing land uses between exits 3 and 7.

Downtown Danbury is located about one-half mile south of I-84 exit 5 and is the historic center of the city. Until the 1950s, Danbury was a small industrial city specializing in hat manufacturing. Downtown Danbury emerged along the railroad lines and Still River, which was harnessed as a source of power for early industries. Dense residential areas developed on the periphery of downtown within walking distance of Main Street and employment at the mills. Unlike many of its peer cities in Connecticut, Danbury's urban core was not bisected by highway construction in the middle of the twentieth century. When I-84 was built in the early 1960s, it was routed on the northern periphery of the city. As a result, the dense, pre-war neighborhoods south of the highway have retained their urban character. Neighborhoods north of the highway are more suburban in character and were primarily built after the highway was built.

Downtown Danbury is the institutional hub of the region. It is home to the midtown campus of Western Connecticut State University (WCSU), Danbury Hospital, the Danbury Police Department, Danbury Fire Headquarters, as well as numerous government buildings, schools, fire stations, religious institutions, and social services providers. Danbury Hospital, the City of Danbury, and WCSU are all among the top 10 largest employers in the city of Danbury. Due to the lack of a street grid on local roadways, lack of complete interchanges, and natural barriers such as the rail line and Still River, it is difficult to access downtown Danbury and major institutions and employers from the highway.

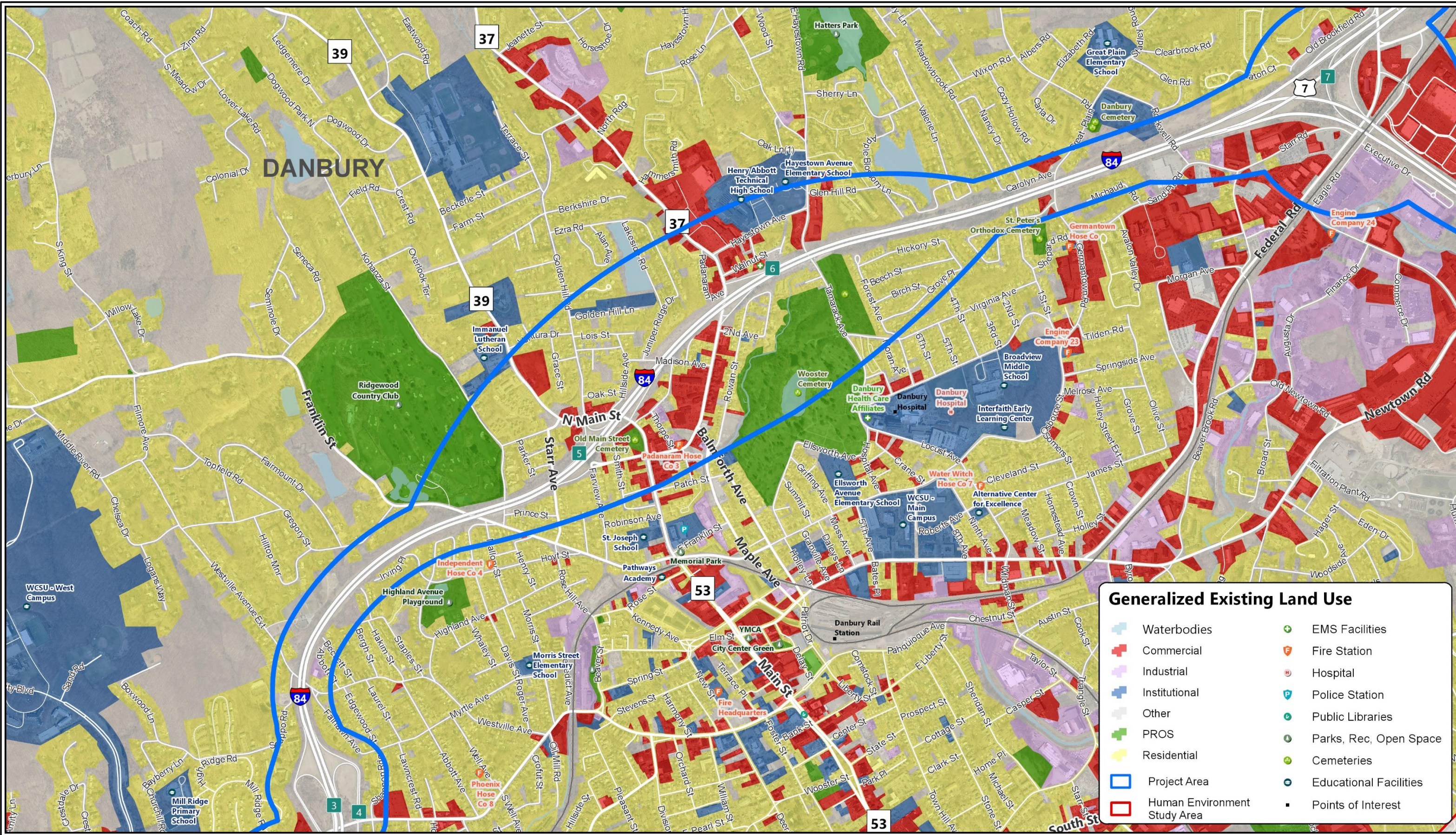
There is an ongoing effort to revitalize downtown Danbury. The city's POCD recommends growing downtown's retail base, developing additional high-density housing, and investing in public realm infrastructure to both improve aesthetics and support development. Downtown Danbury is nearly "built out," meaning that there is little vacant land available that can support new development. However, there are opportunities for redevelopment or intensification of existing uses. In 2019, the City of Danbury released the *Downtown Danbury Transit-Oriented Development Study*, which identified key opportunity sites for future development. The study reports that downtown Danbury has a demand for an estimated 1,200 housing units over the next decade. The study also recommends upgrades of bicycle and pedestrian infrastructure and improvements to intermodal connectivity. Transit-oriented development (TOD) in Danbury has the potential to provide benefits to I-84 operations by concentrating dense, mixed-use development in areas that are well served by bicycle, pedestrian, and public transit infrastructure.



The central portion of the corridor is the most densely developed stretch of I-84 in western Connecticut. This photo shows residences directly abutting the highway in the vicinity of Prince Street.



I-84 near exit 5. Danbury Hospital (background, right side) has poor access to I-84, and eastbound highway traffic must access Danbury Hospital via exit 5.



Generalized Existing Land Use

Waterbodies	EMS Facilities
Commercial	Fire Station
Industrial	Hospital
Institutional	Police Station
Other	Public Libraries
PROS	Parks, Rec, Open Space
Residential	Cemeteries
Project Area	Educational Facilities
Human Environment Study Area	Points of Interest

2.4 Exit 7 to Exit 9: Eastern Danbury, Brookfield, Bethel, and Newtown

At exit 7, Route 7 splits off from I-84 and continues north into Brookfield and New Milford while I-84 heads east into Brookfield, Bethel, and Newtown. The state LGM classifies this portion of the corridor as a mix of "Priority Development Areas" and "Balanced Priority Funding Area" depending on the presence of environmental constraints and the availability of infrastructure. Because of its location near two major highways, the area surrounding the I-84 and Route 7 interchange (exit 7) has emerged as a regional retail and employment center. Figure 2-3 presents existing land uses between exits 7 and 9. Retail development is concentrated on Federal Road, International Drive, and the Berkshire and Nutmeg Square Shopping Centers on Newtown Road. Similarly, many major corporate offices and industrial businesses have located in this area due to its excellent highway access. Danbury Corporate Park (located between Federal Road and Newtown Road) and Berkshire Corporate Park (located in northern Bethel and southern Brookfield east of Route 7) are the two major employment centers in this area and contain a mix of office and light manufacturing uses. Major employers include Pitney Bowes, Duracell, and Praxair.

East of exit 8, Route 6 separates from I-84 and runs parallel to the highway between one-quarter and one-half mile to the south. Proximity to the highway and availability of sewer infrastructure has led to significant development on Route 6 (Stony Hill Road) in Bethel and Newtown in recent years, including a large department store, a grocery store, assisted living facilities, and multifamily housing. Many of the new residential developments on Route 6 are age restricted.

The Bethel and Newtown POCDs both envision additional commercial and residential development in the Route 6 corridor. Several vacant parcels fronting Route 6 in Bethel have active development proposals and could be developed in the near future. Additional development in the corridor is likely to increase traffic on Route 6 as well as on the supporting highway interchanges at exit 8 and exit 9.

East of exit 8, the areas abutting I-84 become more residential and rural in character. With the exception of a small commercial district in Hawleyville near exit 9, most of this area is zoned for single-family residential uses and is likely to retain its low-density character for the foreseeable future. The Newtown POCD notes that extension of sewer service to Hawleyville could permit increased density and additional mixed-use and commercial development.

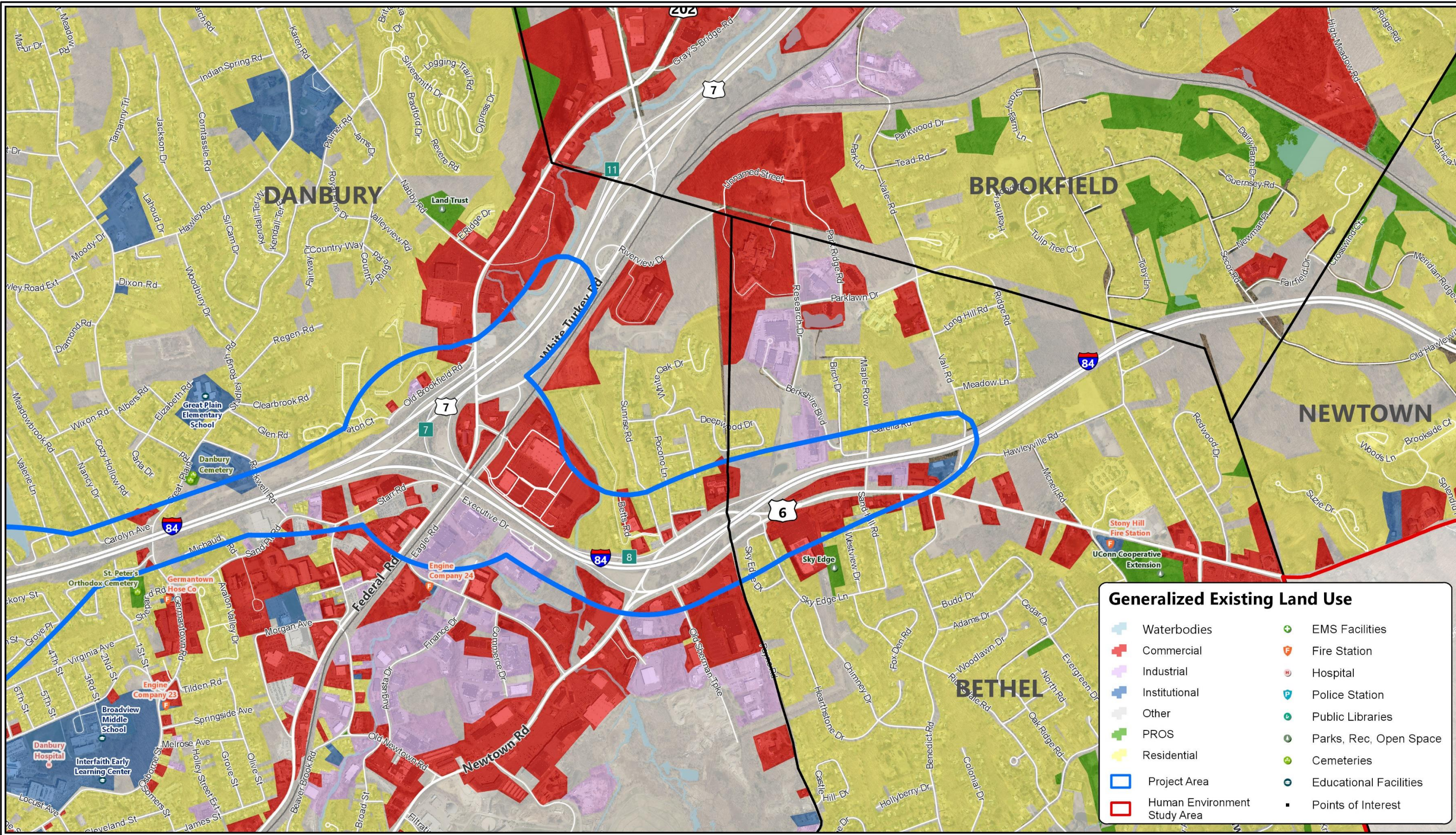


Route 6 in Bethel (right) in the vicinity of exit 8. In recent years, there has been significant retail and residential development in this stretch of the corridor.



I-84 near the Route 7 interchange at exit 7. This area has emerged as a major commercial and employment center. The International Drive Shopping Center is shown on the left while Pitney Bowes and RK Manufacturing Corporation are shown on the right.





Generalized Existing Land Use

- | | |
|------------------------------|------------------------|
| Waterbodies | EMS Facilities |
| Commercial | Fire Station |
| Industrial | Hospital |
| Institutional | Police Station |
| Other | Public Libraries |
| PROS | Parks, Rec, Open Space |
| Residential | Cemeteries |
| Project Area | Educational Facilities |
| Human Environment Study Area | Points of Interest |

3.0 Socioeconomic Analysis

Socioeconomic conditions were analyzed for populations who live within the HESA. This is the same extent used in the environmental justice and Title VI analysis and reflects the areas that are likely to be either directly or indirectly affected by the I-84 Danbury Project. This section also presents data for the Greater Danbury Region, Fairfield County, and the state of Connecticut for comparison. The Greater Danbury Region consists of 10 towns: Bethel, Brookfield, Bridgewater, Danbury, New Fairfield, New Milford, Newtown, Redding, Ridgefield, and Sherman. In addition to providing a comparative data point, many highway users live outside of the HESA, and, therefore, analysis of regional and statewide trends is important to understanding future travel patterns and demand.

3.1 Demographics

3.1.1 Population

According to the 2016 American Community Survey (ACS) 5-year estimates, the HESA is home to 102,362 residents. The highest population density is in downtown Danbury, where population exceeds 10,000 people per square mile. East of exit 8, population decreases to less than 1,000 people per square mile. Figure 3-4 presents population distribution by block group.

Between 2000 and 2016, the population within the HESA grew by 12.6 percent, a significant increase of over 10,000 residents. The population growth rate within the HESA is more than double the growth rate experienced by Connecticut during that time and about 1.5 times the growth rate of Greater Danbury.

The 10 towns that make up the Greater Danbury region have a total population of 229,521 and have also seen significant population growth since 2000. Between 2000 and 2016, the Greater Danbury area grew by over 17,000 residents, or 8.1 percent, which is faster than the Fairfield County and Connecticut growth rates. The municipalities with the fastest population growth are proximate to the highways and employment opportunities in Lower Fairfield County and the New York metropolitan area. The city of Danbury and towns of Redding and Newtown all experienced growth rates in excess of 10 percent between 2000 and 2016. Sherman and Bridgewater – two of the most northerly and rural communities – saw their populations decrease between 2000 and 2016.

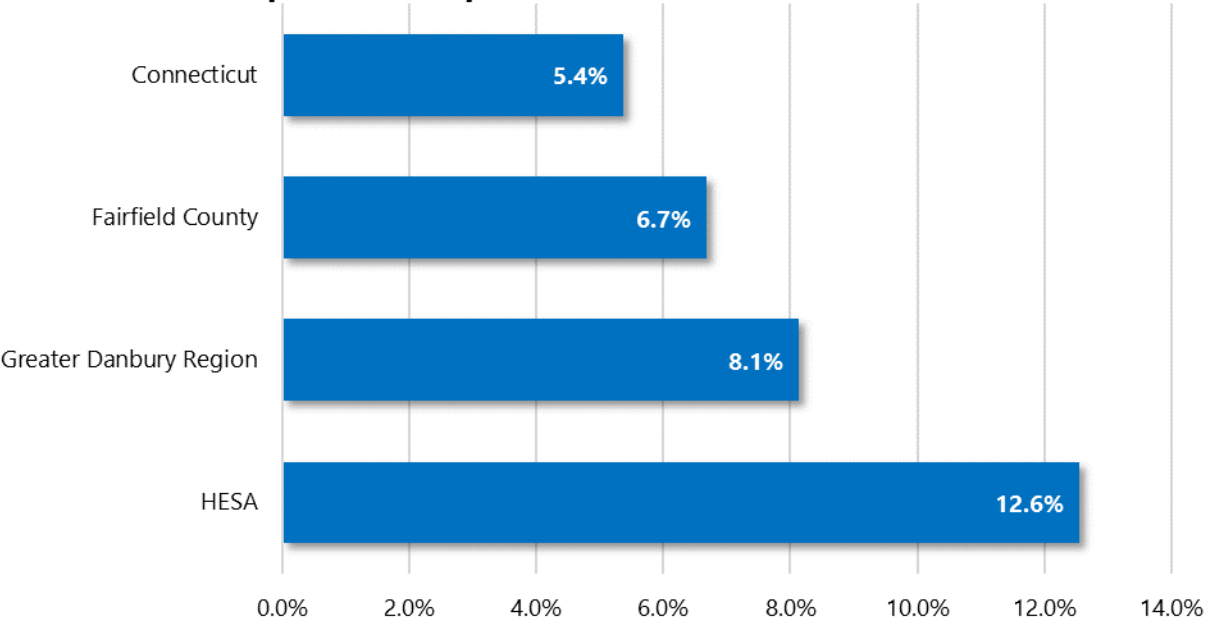
While the state of Connecticut's population has been stagnant since 2010, the Greater Danbury area has added nearly 5,000 residents and grown by 2.2 percent.

TABLE 3-1
Population Trends

Geography	Population			% Change 2000 to 2016	Population Density 2016 (per sq. mi.)
	2000	2010	2016		
HESA	90,940	98,204	102,362	12.6%	1,454
Greater Danbury Region	212,248	224,616	229,521	8.1%	681
Fairfield County	882,567	916,829	941,618	6.7%	1,507
Connecticut	3,405,565	3,574,097	3,588,570	5.4%	645

U.S. Census Bureau: 2000 and 2010 Decennial Census; 2012-2016 American Community Survey, 5-Year Estimates

FIGURE 3-1
Comparison of Population Growth Rates: 2000 to 2016



U.S. Census Bureau: 2000 and 2010 Decennial Census; 2012-2016 American Community Survey, 5-Year Estimates



3.1.2 Age

Age composition within the HESA closely mirrors that of the state. Overall, the HESA has a slightly smaller senior population (13.6 percent) compared to the state (15.5 percent) and county (14.4 percent). It also has a smaller proportion of the population under age 18 (21.5 percent) compared to the state (21.6 percent) and county (23.6 percent).

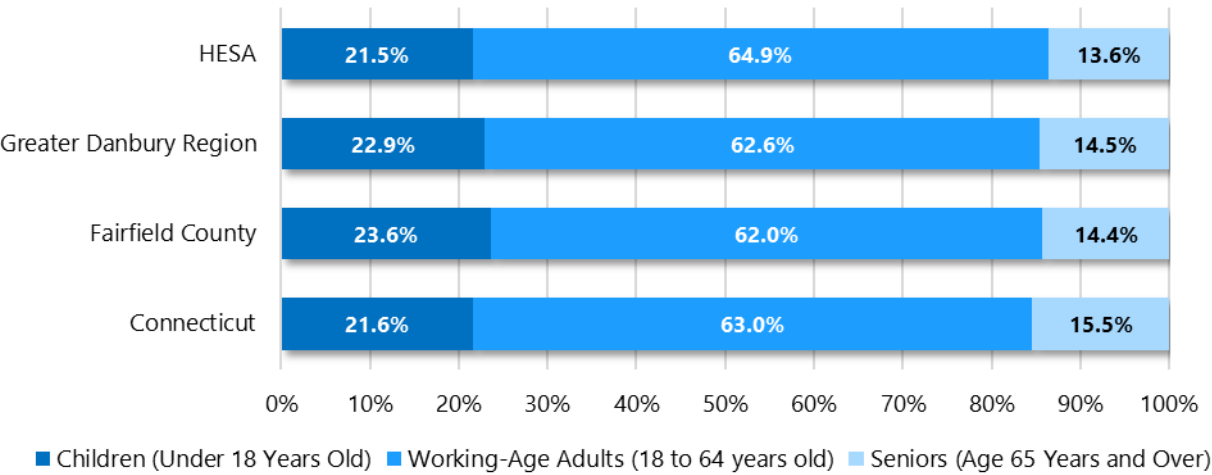
Age composition varies for different communities within the HESA. The city of Danbury has the youngest population with a median age of 37.6 years old. The surrounding suburban communities have an older population, with median ages ranging from 42.7 years in Bethel to 44.8 years in Brookfield. Out of the four municipalities in the HESA, Danbury has the lowest proportion of its population under the age of 18. However, it has a much higher proportion of its population between the ages of 18 and 34, which may be attributed to WCSU.

3.1.3 Education

Overall, the HESA has a lower educational attainment than Greater Danbury, Fairfield County, or Connecticut. About 15 percent of residents age 25 years and over have not graduated high school. This is about 50 percent higher than the state average. The population without a high school diploma is highest in central Danbury and lowest in the suburban sections of Danbury as well as Bethel, Newtown, and Brookfield. Nonetheless, there is still a large segment of the population that is well educated. About one-third of the adult population has at least a bachelor's degree, and another 23 percent have an associate's degree or some higher education training.

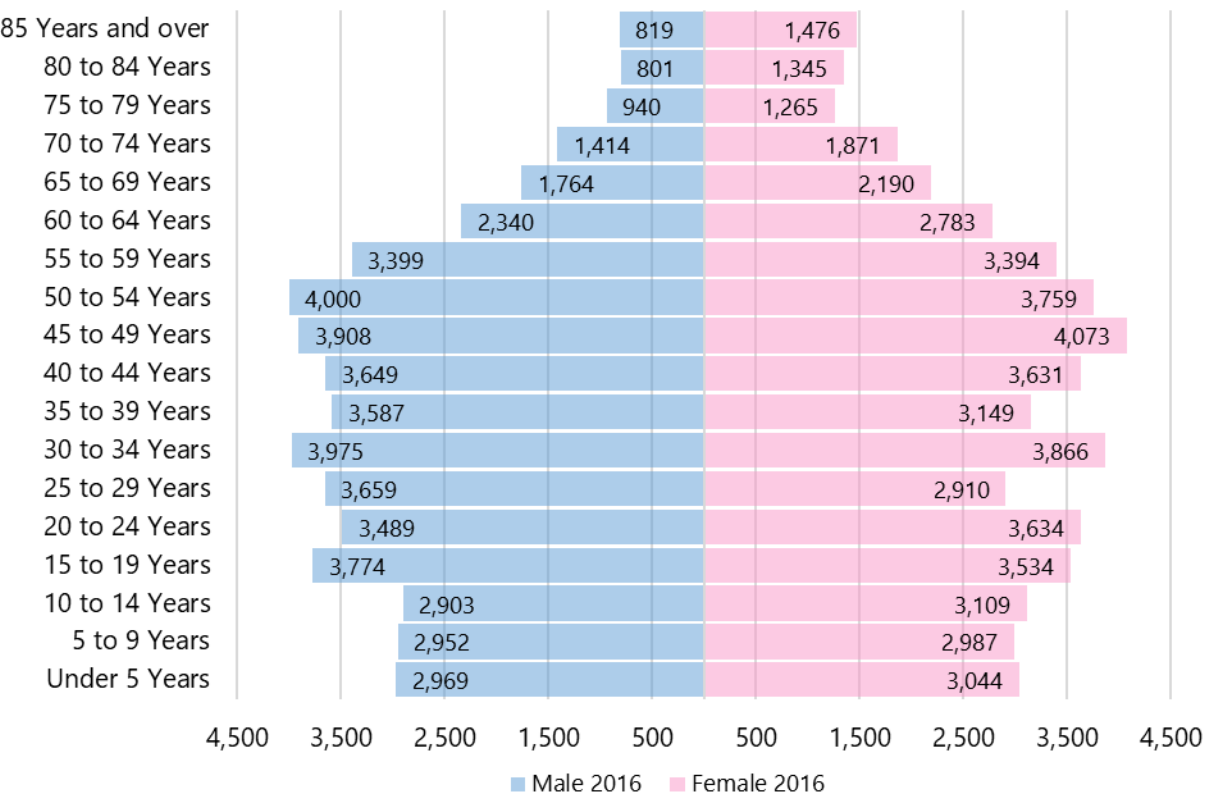
An analysis of language spoken at home and Limited English Proficiency (LEP) populations can be found in Section 4.4.

FIGURE 3-2
Comparison of Age Distribution: 2016



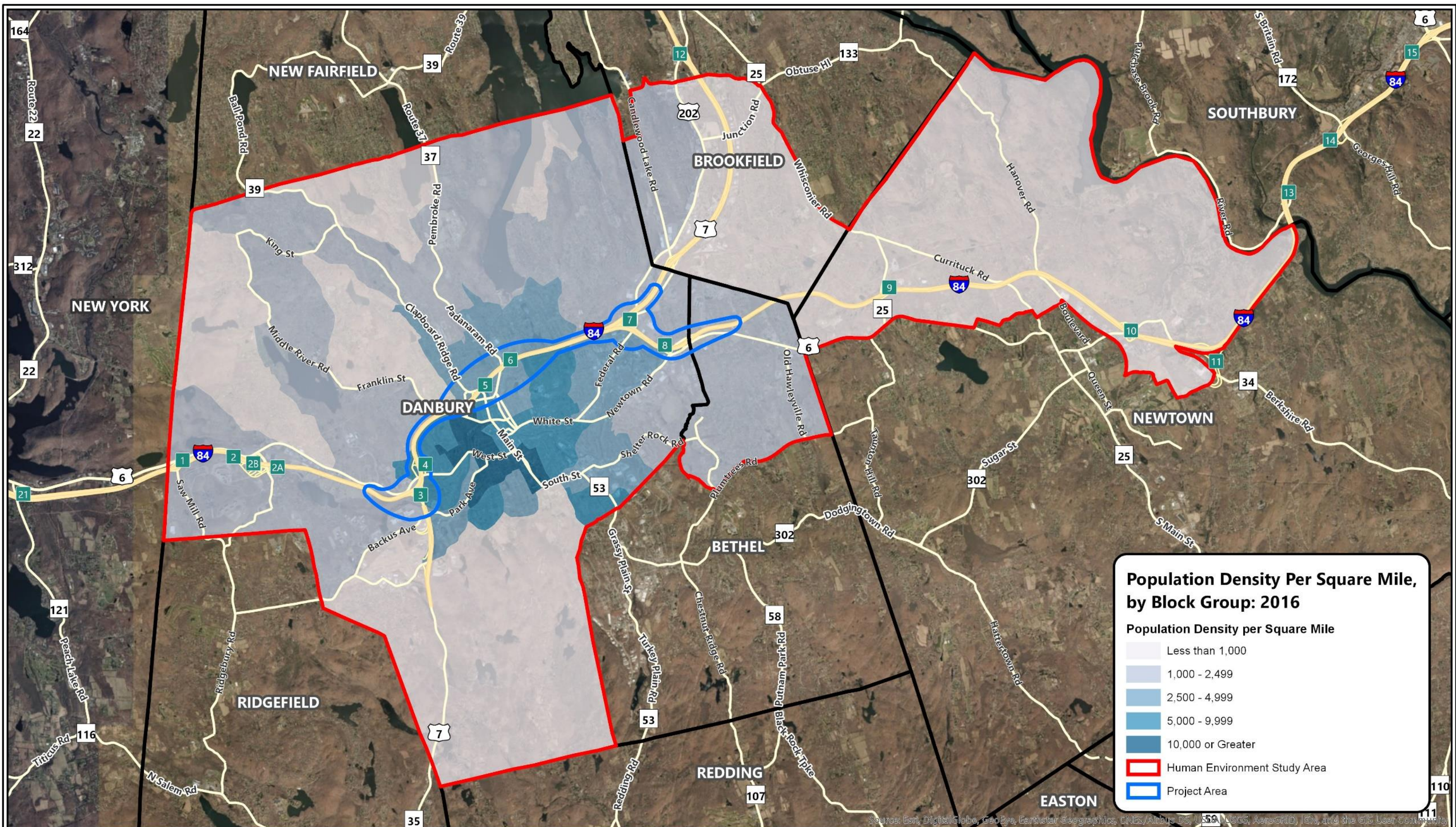
Source: American Community Survey, 5-Year Estimates

FIGURE 3-3
Age Composition in the Human Environment Study Area: 2016



Source: American Community Survey, 5-Year Estimates





3.2 Housing

3.2.1 Housing Stock and Tenure

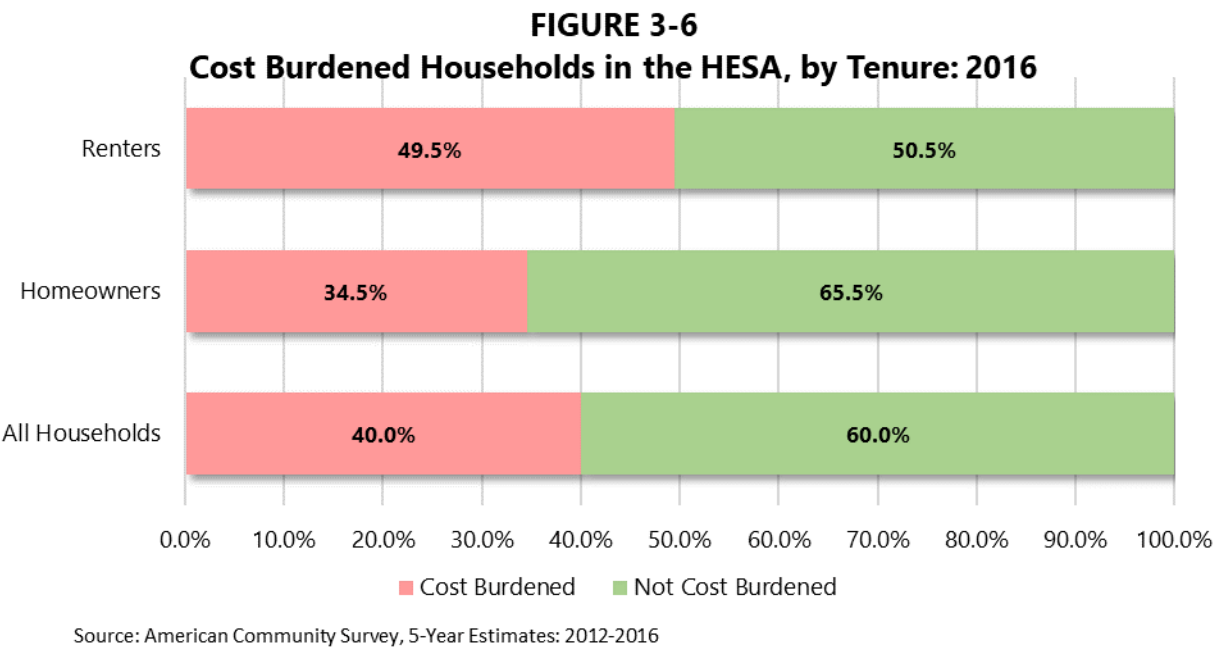
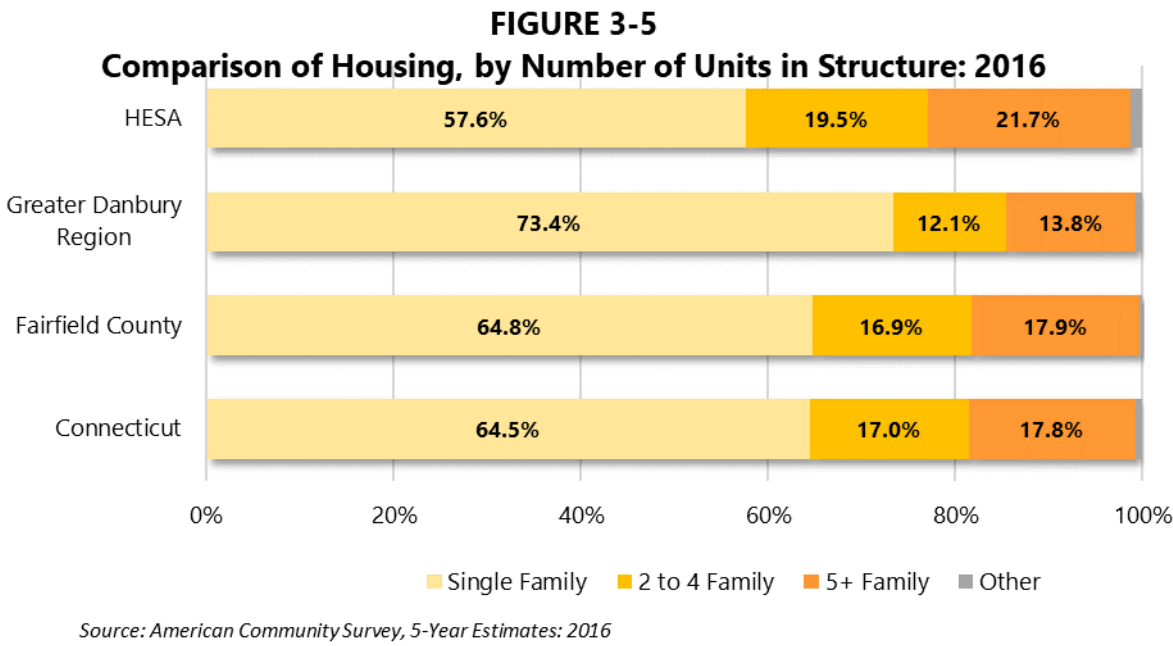
The HESA contains 39,229 total housing units and 35,973 occupied housing units as of 2016. About 9 percent of housing units are vacant, which is slightly below the state average. Figure 3-7 shows multifamily housing as a percentage of total housing units by block group. About 58 percent of housing units in the HESA are single-family units, 41 percent of units are multifamily, and the remaining 1 percent is in the "other" category, which includes boats, recreational vehicles, and mobile homes. The HESA has a much higher percentage of high-density housing (five or more units) compared to the Greater Danbury region as a whole. As noted in the land use analysis, the highest density housing is in central Danbury south of the highway between exit 3 and exit 7. Central Danbury supports several neighborhoods that have in excess of 60 percent multifamily housing. There is also a large concentration of multifamily housing along Route 7 in southern Brookfield. Housing in the Bethel and Newtown portions of the HESA is predominantly comprised of single-family residences.

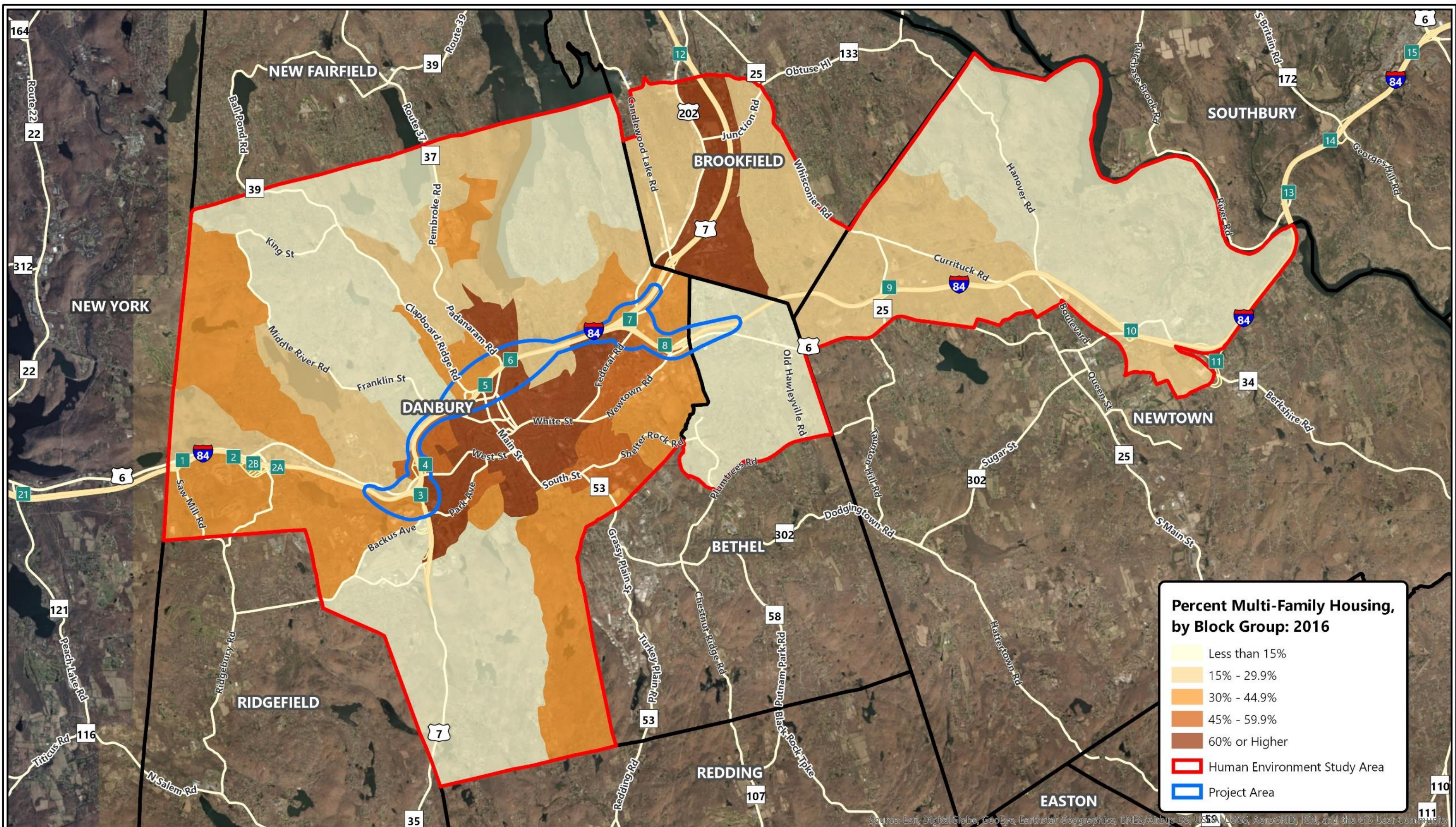
Housing tenure refers to whether a household owns or rents its home. As of 2016, about 63 percent of households in the HESA owned their home. The remaining 37 percent of households rented their homes, which is a higher share than Greater Danbury, Fairfield County, or Connecticut. Rental housing is closely correlated with multifamily housing. The highest concentration of rental housing is found in central Danbury, which also has the highest share of multifamily housing.

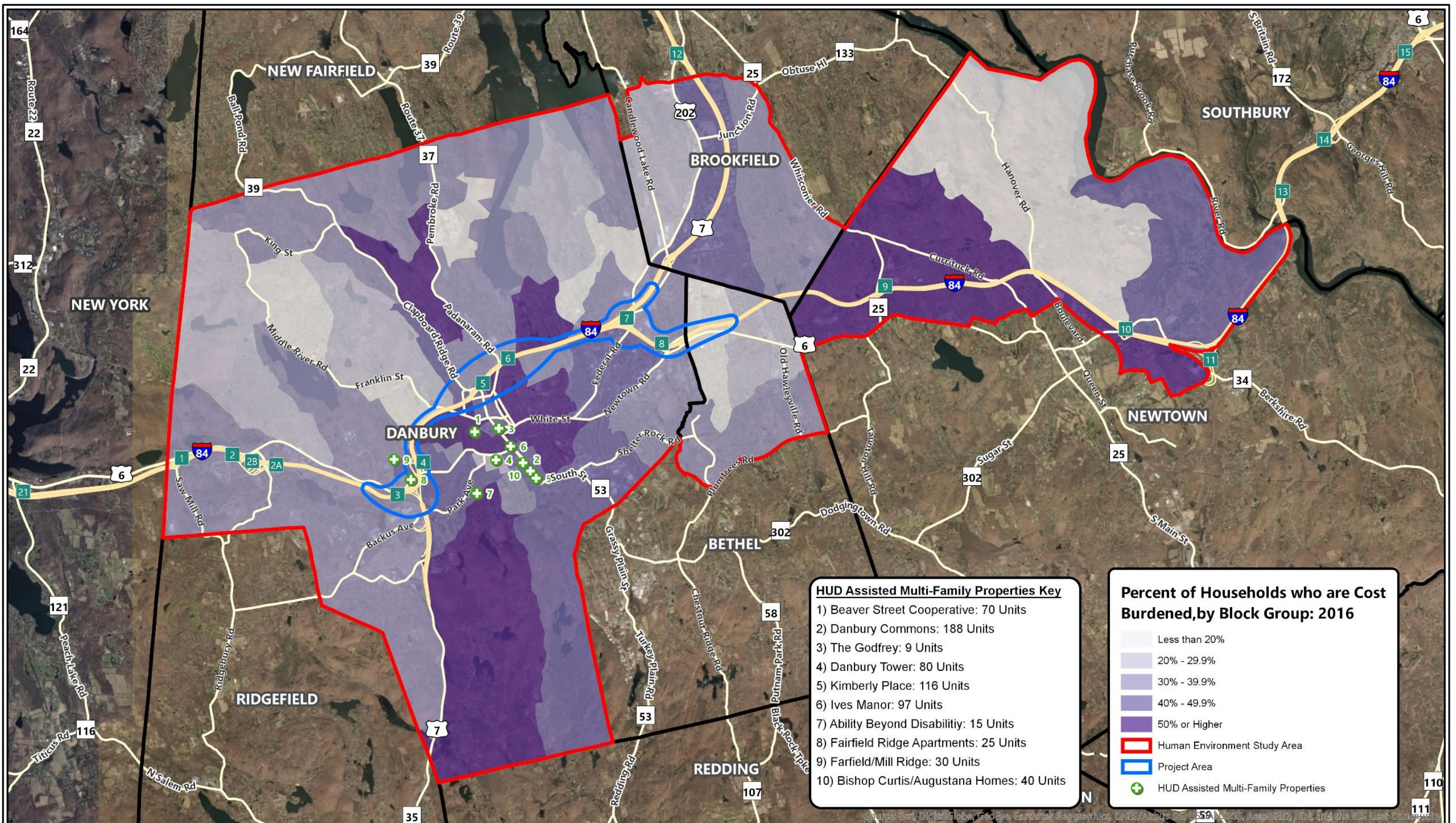
3.2.2 Housing Affordability

The U.S. Department of Housing and Urban Development (HUD) recommends that no more than 30 percent of household income be spent on housing. This includes mortgage, rent, property taxes, Homeowner's Association (HOA) fees, insurance, and utilities. Households that spend more than 30 percent of their income are considered "cost burdened" and may have difficulty affording other necessities such as transportation, food, and medical care. As of 2016, 49.5 percent of renter households and 34.5 percent of homeowners in the HESA are cost burdened. Figure 3-8 presents cost burdened households by block group.

Cost burdens impact all communities in the HESA. While Danbury has the highest number of cost-burdened households, there are also high concentrations along Route 7 in Brookfield and in western Newtown, which is home to several senior housing developments. One way to combat housing affordability is through federally assisted affordable housing units that are restricted for the elderly, disabled, or families. HUD publishes the locations of HUD-assisted multifamily properties. There are 10 HUD-assisted developments within the project area that together provide 670 affordable units to area residents. One development, the Fairfield Ridge/Mill Ridge Apartments, is located adjacent to I-84 in the vicinity of exit 4.







3.3 Economy

3.3.1 Labor Force and Employment

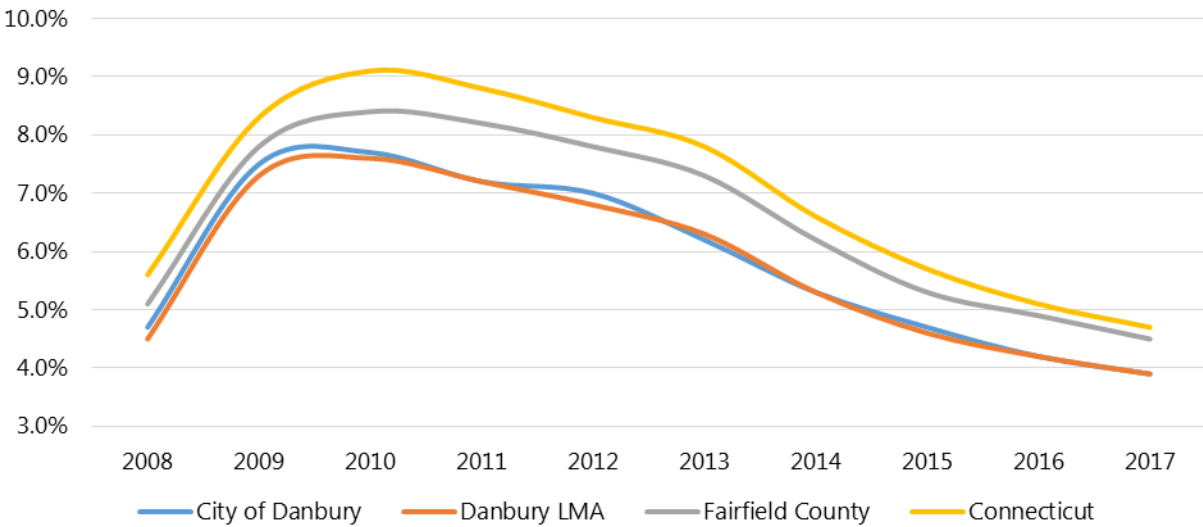
Economic data is provided by the Connecticut Department of Labor (CTDOL) at both the municipal and the Labor Market Area (LMA) levels. Census tract level data is not available. LMAs are economic regions that align with commuting patterns and are comprised of a core city and the surrounding suburban communities. The Danbury LMA is comprised of eight towns: Danbury, Bethel, Brookfield, Bridgewater, Newtown, New Fairfield, New Milford, and Sherman. This section presents data for the city of Danbury and the Danbury LMA, utilizing county and state data for comparative purposes. Unemployment data is provided by CTDOL's Local Area Unemployment Statistics (LAUS) dataset. It should be noted that this dataset reflects a person's place of residence rather than his/her place of work.

The city of Danbury and the Danbury LMA are among the strongest performing economic regions in the state. As of 2017, the Danbury LMA had an unemployment rate of under 4 percent, the lowest of any LMA in the state. Over the last 10 years, the unemployment rates in the city of Danbury and the Danbury LMA have trended between 1 percent and 1.5 percent lower than the state and county unemployment rates.

CTDOL also publishes the Quarterly Census of Employment and Wages (QCEW) dataset, which reflects where people work rather than where they live. As of 2017, the Danbury LMA had 77,481 jobs. In this same time frame, the largest employment sectors in the Danbury LMA were health care (17.3 percent), retail trade (16.7 percent), government (12.2 percent), and manufacturing (10.7 percent). The Danbury LMA has grown by about 200 jobs or 0.3 percent between 2008 and 2017. During that same time period, Fairfield County as a whole added just 500 jobs, and the state of Connecticut has lost 6,700 jobs. The job recovery and low unemployment rate has allowed the Greater Danbury region to grow its population when many other parts of the state are contracting.

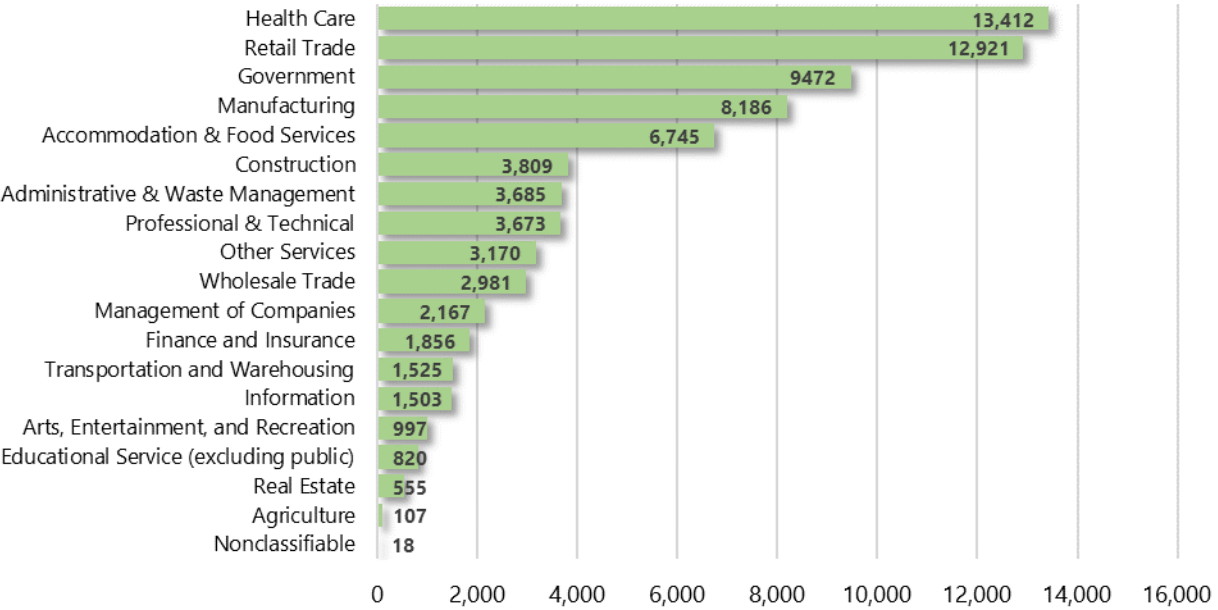
Figure 3-11 shows the number of jobs per square mile in the HESA. Employment density is highest in the areas near the highway interchanges. The highest employment density is found in central Danbury, which is home to major employers such as Danbury Hospital and WCSU. Outside of central Danbury, the highest employment density is in the West Side District (near exit 2), the Berkshire Corporate Park (exit 8), and Federal Road (Route 7 exit 11).

FIGURE 3-9
Comparison of Unemployment Rate: 2008 to 2017



Source: Connecticut Department of Labor, Local Area Unemployment Statistics (LAUS): 2008 to 2017

FIGURE 3-10
Employment in the Danbury Labor Market Area, by Sector: 2017



Source: Connecticut Department of Labor, Quarterly Census of Employment and Wages: 2017



3.3.2 Commuter Trends

Figure 3-14 on the following page depicts commuter trends in the HESA. According to 2015 data published by the U.S. Census Bureau's LEHD (Longitudinal Employer-Household Dynamics) Origin-Destination Employment Statistics (LODES), there are 45,095 employed persons who live within the HESA and 56,640 jobs (workforce) within the HESA. Because the number of jobs exceeds the number of employed persons, the area relies on commuters from the surrounding communities and sees its population grow over the course of the workday. It should be noted that employment data reported by the LODES dataset may differ from those reported by other census datasets or the CTDOL as the LODES dataset omits some data sources in order to protect personal information. Nonetheless, it is the best dataset available for measuring geographic commuter trends.

There are 56,640 people who work within the HESA. Over two-thirds of the workforce live outside of the HESA. Besides the city of Danbury, the workforce primarily commutes from towns in the I-84 corridor east of Danbury (Bethel, Newtown, Southbury, and Waterbury) and the Route 7 corridor north of I-84 (Brookfield, New Fairfield). A smaller proportion of the workforce commutes from the Route 7 corridor south of I-84, the I-95 corridor, and adjacent communities in Putnam County New York.

There are 45,095 employed residents living in the HESA. About 60 percent of those residents commute to jobs elsewhere. Residents are much more likely to commute to New York State and Lower Fairfield County. Popular commuting destinations for residents include the Route 7 corridor south of I-84 (Ridgefield, Wilton, Norwalk), and the I-95 corridor (Greenwich, Stamford). A sizable number of residents also commute to jobs in Westchester County and Manhattan.

The Census Bureau also reports means of journey to work for HESA residents. As of 2016, over 90 percent of residents commuted to work in a car, with 77.3 percent driving alone. While most residents have access to a vehicle for commuting purposes, there are residents who do not have access to a vehicle and must rely on other modes of transportation to get to work. A full analysis of limited mobility households, or those without access to a vehicle, can be found in Section 4.4. Just 3.5 percent of residents take public transportation to work, equally split between bus and rail. The number of rail commuters in the HESA is significantly lower (1.8 percent) than Fairfield County as a whole (7.1 percent). The level of rail service of the Danbury Branch is much more infrequent than the New Haven Line and therefore is a less viable option for many commuters.

FIGURE 3-12
Commuter Trends in the HESA: 2015

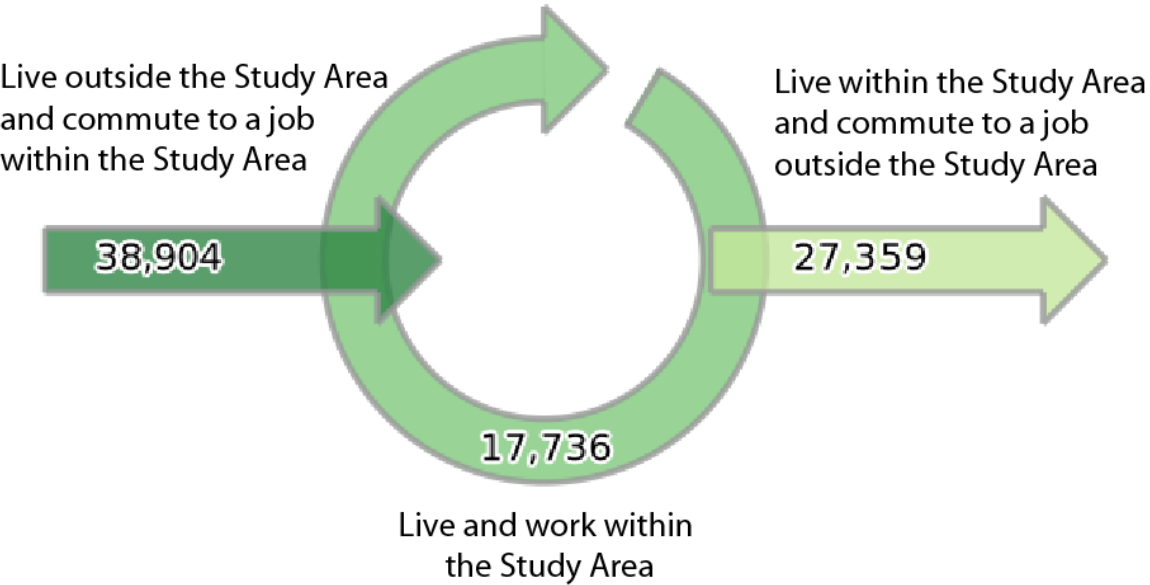
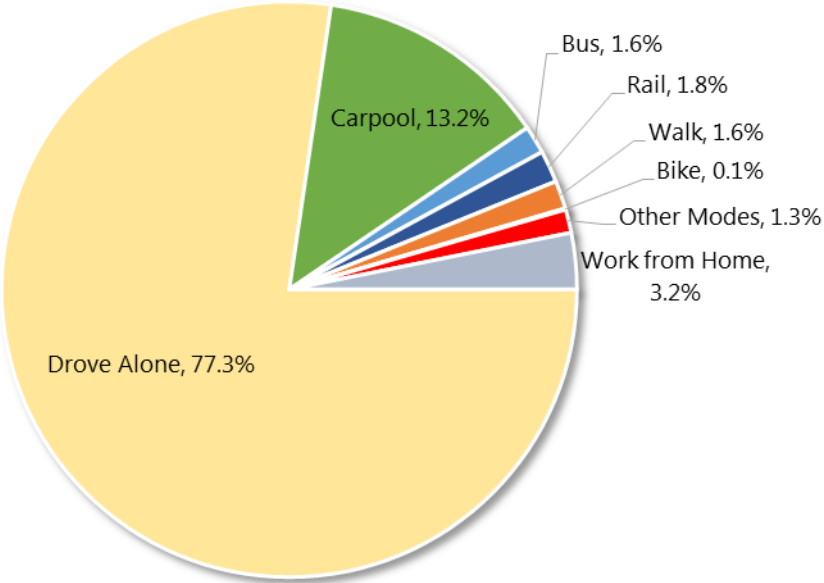


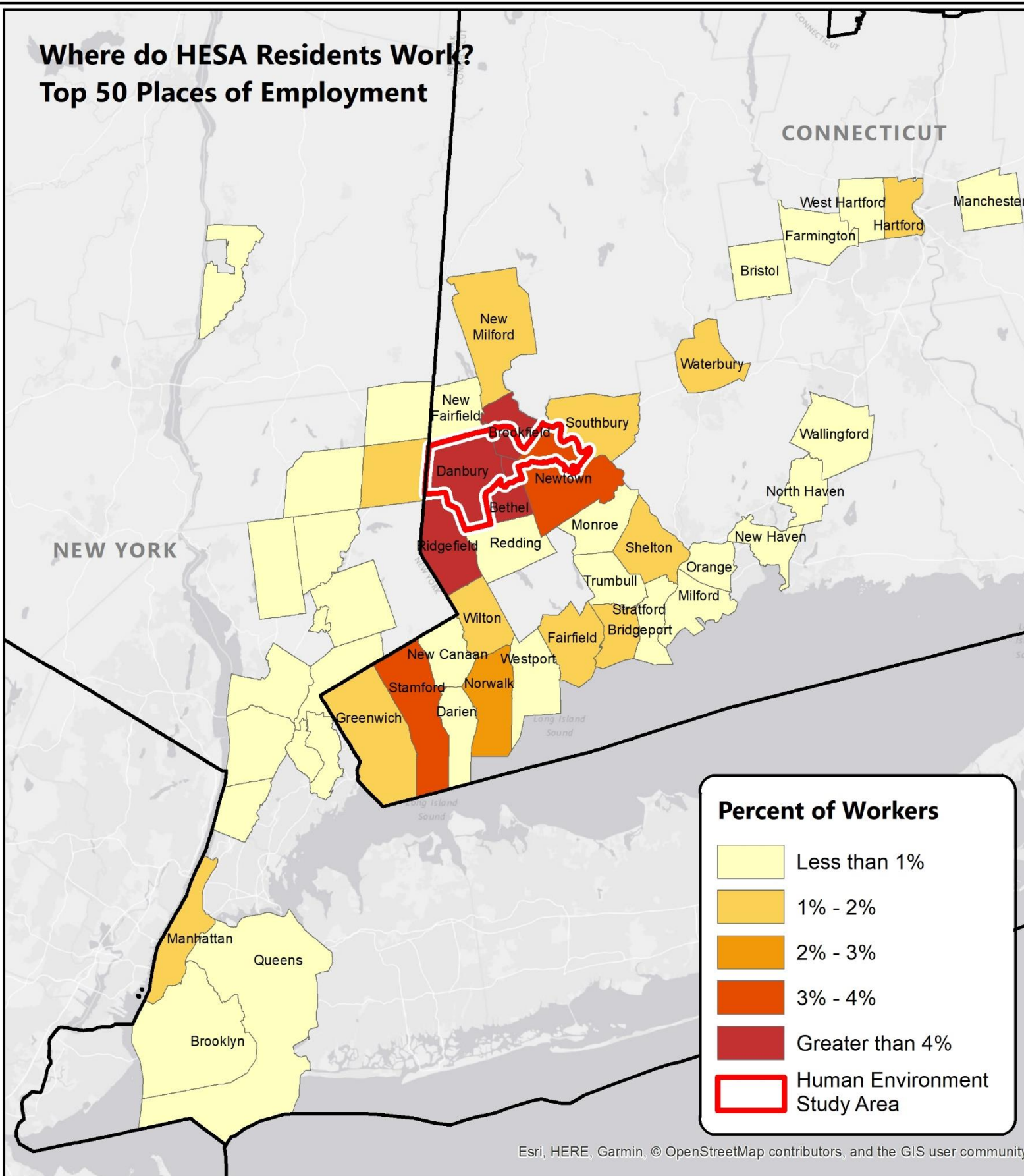
FIGURE 3-13
Travel Mode to Work for Study Area Residents: 2016



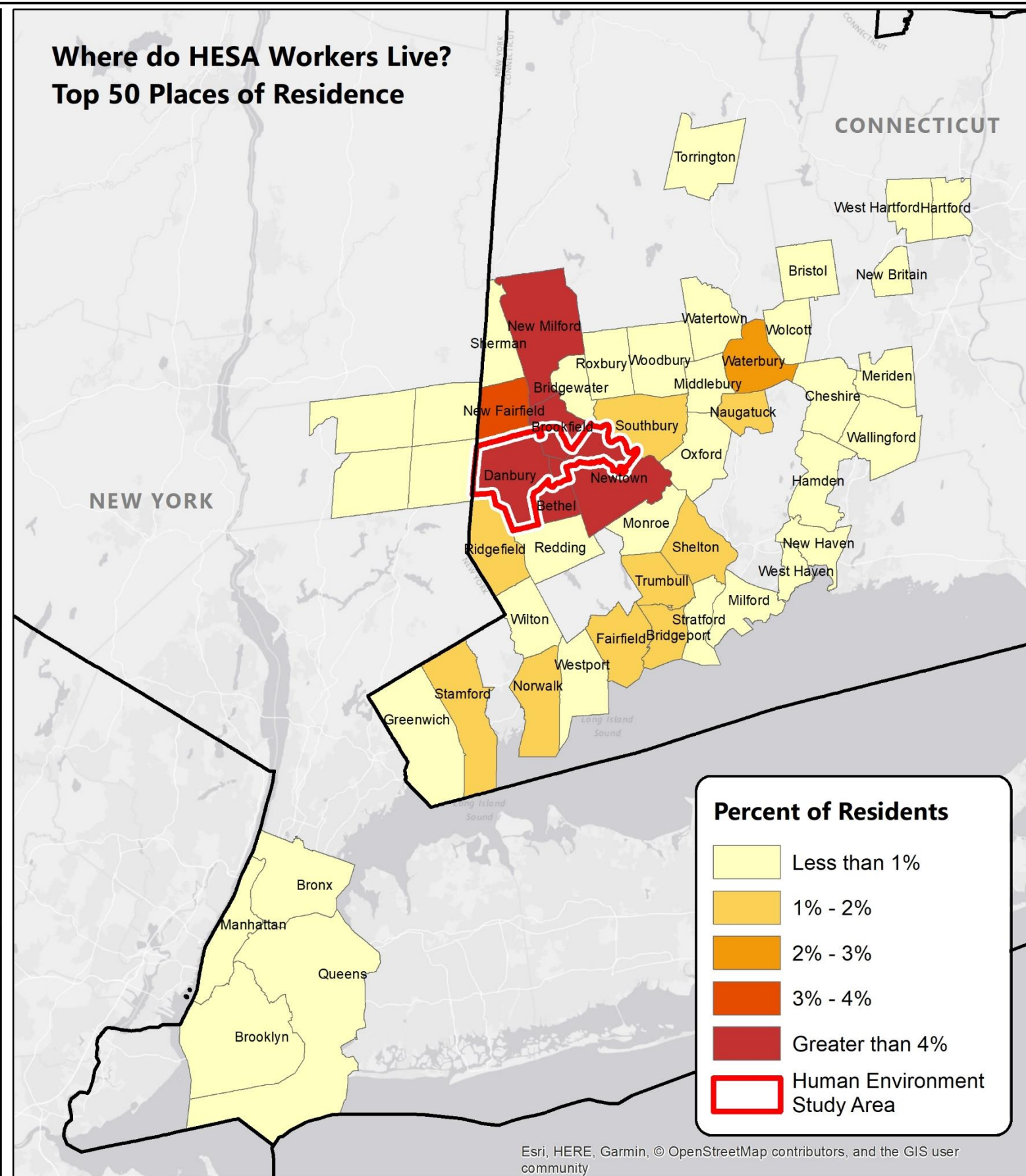
Source: American Community Survey, 5-Year Estimates: 2012-2016



Where do HESA Residents Work? Top 50 Places of Employment



Where do HESA Workers Live? Top 50 Places of Residence



4.0 Title VI and Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations*, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

This assessment also takes into consideration Title VI of the Civil Rights Act of 1964. Title VI protects against discrimination on the basis of race, color, and national origin. Title VI also prohibits discrimination based on age, LEP, and transit dependency. It should be noted that this analysis is not intended to fulfill the NEPA EJ requirements. Rather, it is meant to identify EJ populations who may potentially be impacted by the I-84 Danbury Project and guide public participation in the initial stages of the NEPA process. Additional EJ tasks will be conducted at later stages of the NEPA process, including throughout the alternatives analysis process.

4.1 Study Area, Data, and Thresholds

The EJ analysis was conducted for the entirety of the HESA. The HESA includes the full extent of census tracts that are within or adjacent to the Project area and all census tracts located within the city of Danbury (see Figure 4-1). The city of Danbury was included in its entirety because the city has been identified by the Connecticut Department of Economic and Community Development (DECD) as an EJ community based on census block groups with 30 percent of their population living below 200 percent of the federal poverty level. The boundaries of the HESA also include the areas within the surrounding towns of Bethel, Brookfield, and Newtown that could be indirectly impacted by changes in traffic patterns from the I-84 Danbury Project.

Demographic data were collected from the ACS 2012-2016 5-Year Estimates. The data includes information on minority populations, Hispanic populations, low-income populations, language spoken at home, English language proficiency, and availability of vehicles. The data were collected at the census-tract level and then mapped. Census tracts are geographic areas that are roughly the size of a neighborhood. For comparison purposes, data for Fairfield County and Connecticut were also obtained.

For the purposes of this assessment, minority communities and low-income communities are defined as follows:

Minority Communities: The FHWA's *Guidance on Environmental Justice and NEPA* defines minority populations as those who identify as Black or African American, Hispanic, Asian American, American Indian/Alaskan Native, and Native Hawaiian or Pacific Islander. This assessment also includes persons who identified themselves as being "some other race" or "two or more races" as minority populations. Following the Council on Environmental Quality (CEQ) *Environmental Justice Guidance Under the National Environmental Policy Act*, minority communities are identified where either: (1)

the minority population of the affected area exceeds 50 percent of the total population, or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. For this assessment, the second criterion was used. Thresholds developed by the Housatonic Valley Metropolitan Planning Organization (HVMPO) as a component of its Title VI compliance plan have been included as the appropriate unit of geographic analysis. Census tracts that exceed the HVMPO threshold of 23 percent minority populations were identified as minority communities.

Low-Income Communities: According to the USDOT Order on EJ, June 2012, low-income population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers) who would be similarly affected by a proposed USDOT program, policy, or activity. In accordance with CEQ guidance and United States Environmental Protection Agency's (USEPA) *Promising Practices for EJ Methodologies in NEPA Reviews*, low-income populations in the HESA were identified by using the annual statistical poverty levels from the Census Bureau. However, one of the weaknesses of statistical poverty measures is that they do not reflect cost of living. Given the high cost of living in Fairfield County, state and national poverty thresholds may undercount low-income communities within the HESA. To more accurately account for cost of living, the HVMPO threshold rather than a state or federal poverty threshold was used. Census tracts that exceeded the HVMPO threshold of 6.7 percent of the population below the federal poverty line were identified as low-income communities.

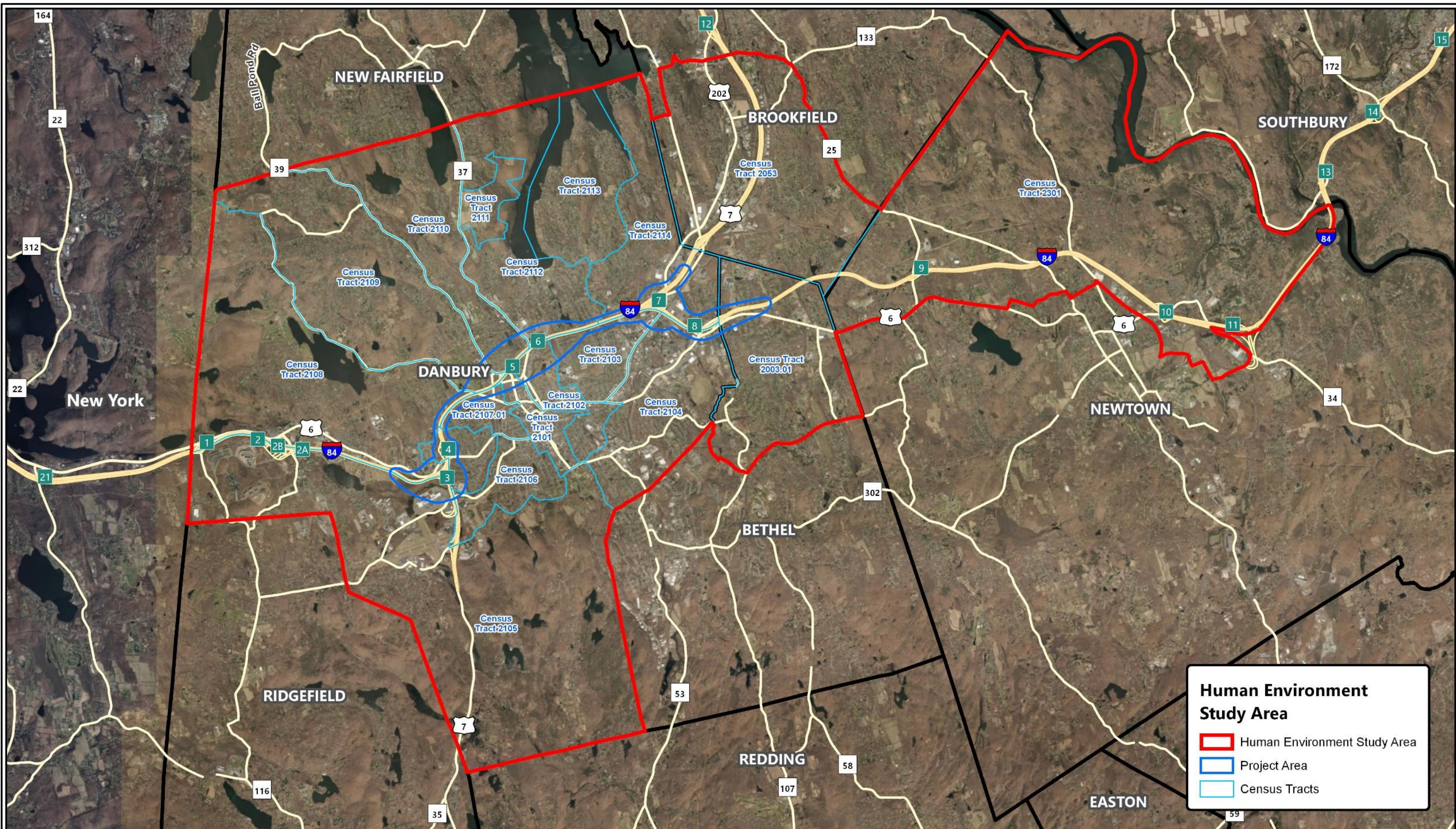
4.2 Environmental Justice

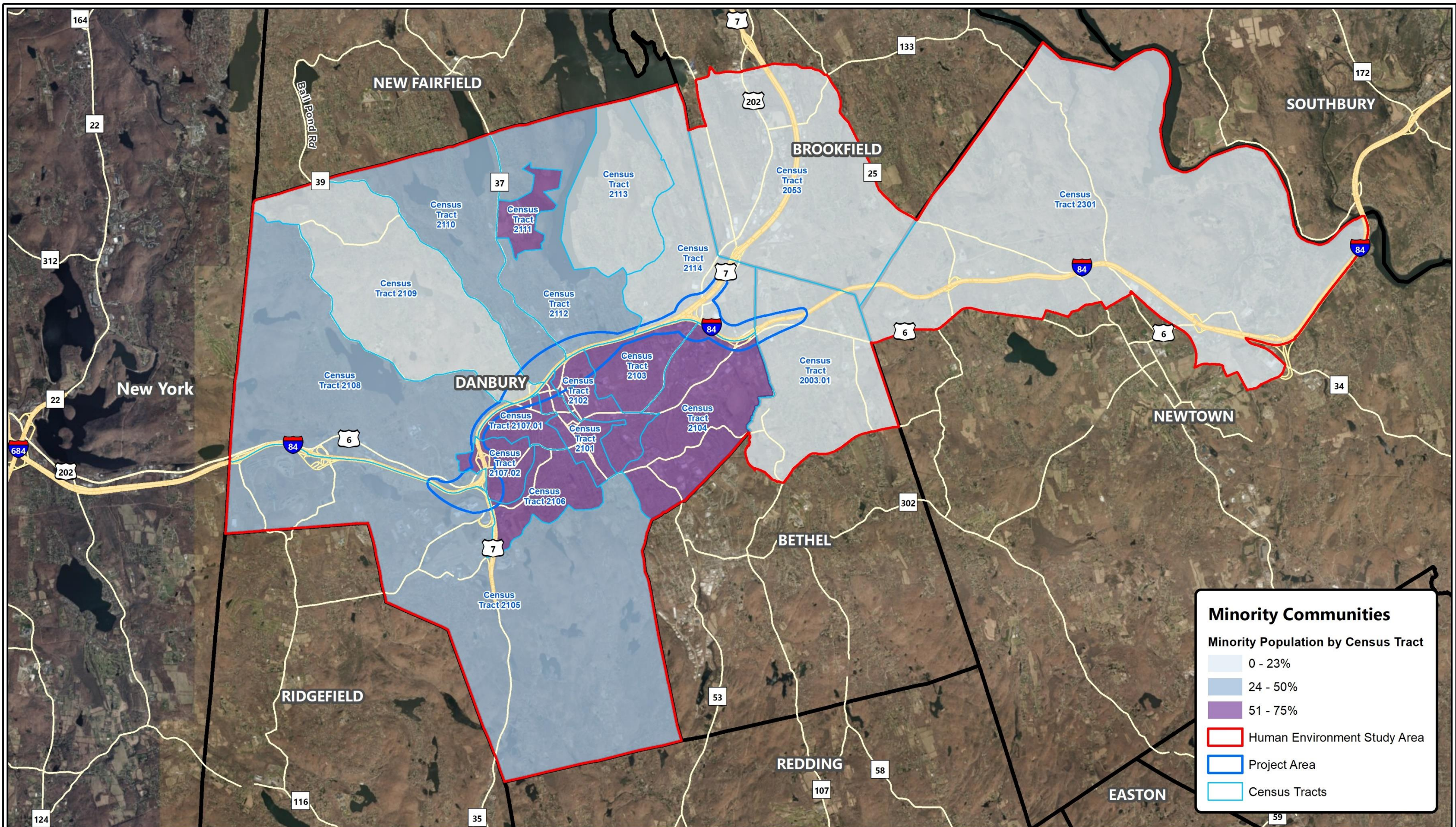
To meet the criteria as an EJ area, a census tract must meet the definition of a minority community or the definition of a low-income community, as defined in Section 4.1. If a census tract meets either of these definitions, it is considered an EJ area. Appendix A includes a breakdown of each census tract's population as it relates to race, ethnicity, and poverty within the HESA.

4.2.1 Minority Communities

The HVMPO threshold of 23 percent minority population was used to identify minority communities as discussed in Section 4.1. As of 2016, there were 102,362 people who lived within the HESA, 40 percent of whom identified as a minority race or ethnicity (see Table 4-1). In 2016, the minority percentages in Fairfield County and Connecticut were approximately 36.5 percent and 31.3 percent, respectively. Figure 4-2 depicts the minority census tracts within the HESA. Of the 18 census tracts in the HESA, 12 had over 23 percent minority populations and are therefore considered minority communities. Census tracts south of I-84 between exit 3 and exit 8 had the highest concentrations of minority populations.







4.2.2 Hispanic or Latino Population

The census considers Hispanic or Latino identity to be an ethnicity but not a separate race, recognizing that many people who are of Hispanic or Latino origin also identify with a racial group. People who identify as Hispanic or Latino may be of any race. In 2016, approximately 25.4 percent of the population within the HESA identified as Hispanic or Latino, making them the largest minority group (see Table 4-1). By comparison, 18.6 percent of the Fairfield County population and 15.0 percent of the Connecticut population identified themselves as Hispanic or Latino in 2016.

4.2.3 Low-Income Communities

The HVMPO threshold of 6.7 percent of the population below the federal poverty level was used to identify low-income communities within the HESA as discussed in Section 4.1. As of 2016, 9.7 percent of the population in the HESA was below the federal poverty line. By comparison, the poverty levels in Fairfield County and Connecticut were approximately 8.8 percent and 10.4 percent, respectively (see Table 4-1). Of the 18 census tracts in the HESA, 10 had over 6.7 percent of the population living below the poverty level and are therefore considered low-income communities. This includes all eight census tracts in Danbury south of I-84 and two census tracts north of I-84 near Candlewood Lake. Figure 4-3 depicts the low-income census tracts in the HESA. Figure 4-4 depicts EJ areas.

Per capita income in the HESA is lower than both the county and state averages. In 2016, the per capita income in the HESA was \$32,834 compared to \$51,719 in Fairfield County and \$39,906 in Connecticut. A map of per capita income is shown on Figure 4-5.

4.2.4 Environmental Justice Communities

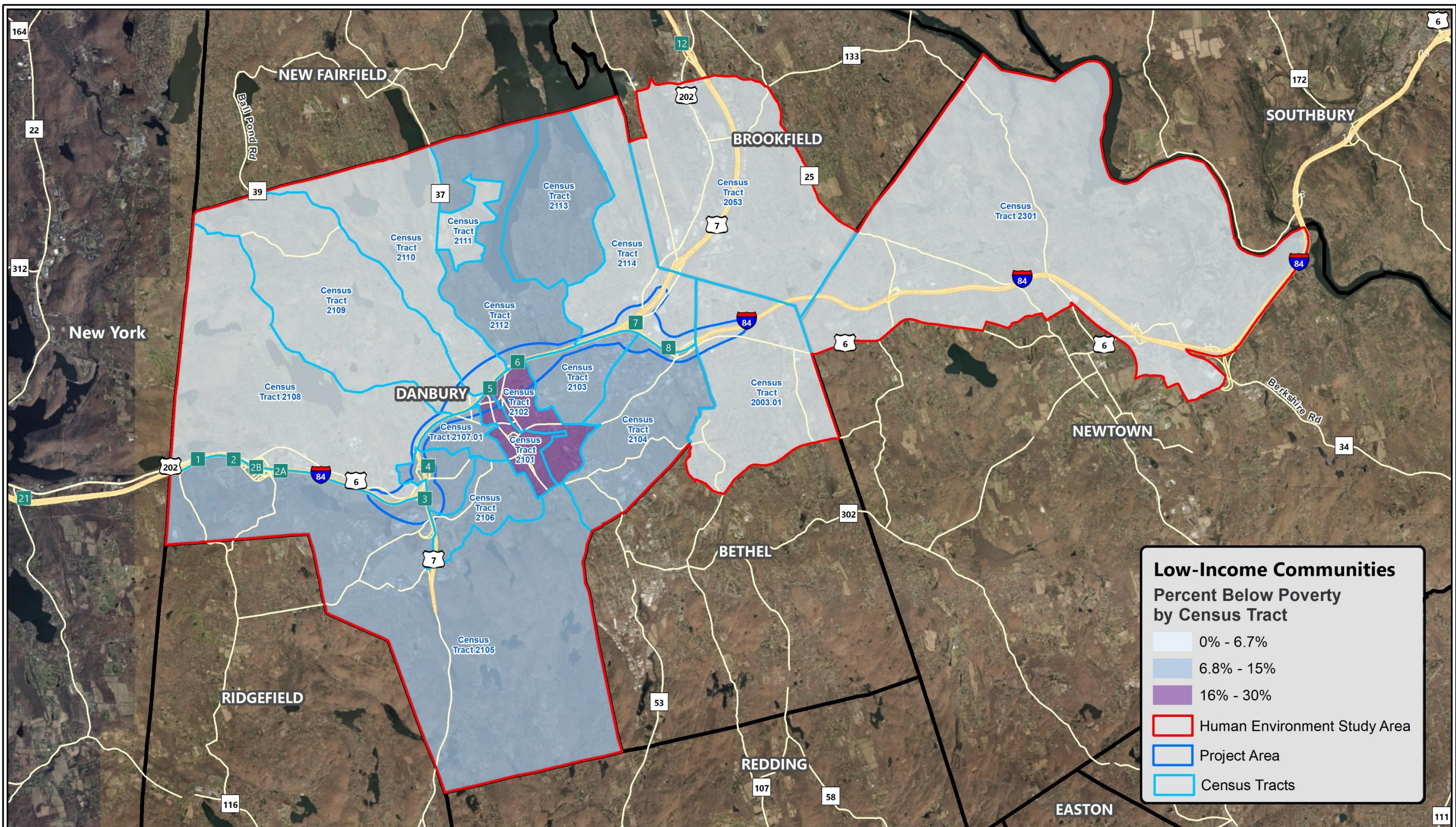
Of the 18 census tracts within the HESA, 13 are considered minority and/or low-income communities and meet the definition of an EJ community (see Figure 4-4 and Table 4-2). Nine census tracts are classified as both minority communities and low-income communities, three census tracts are classified only as minority communities, and one census tract is classified as only a low-income community.

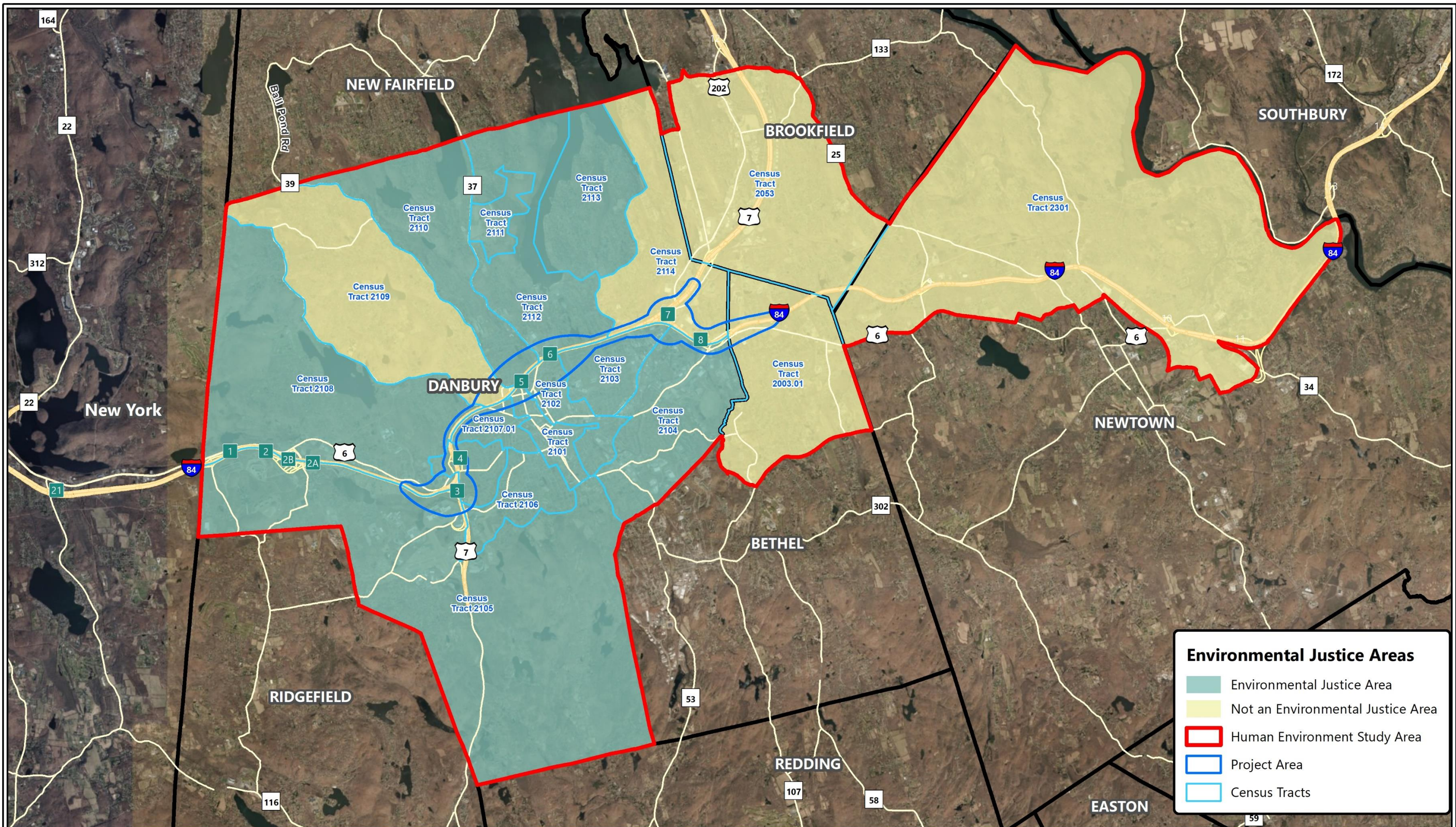
TABLE 4-1
Race, Ethnicity, and Income Characteristics by Percentage for
Populations in the Study Area, Fairfield County, and Connecticut

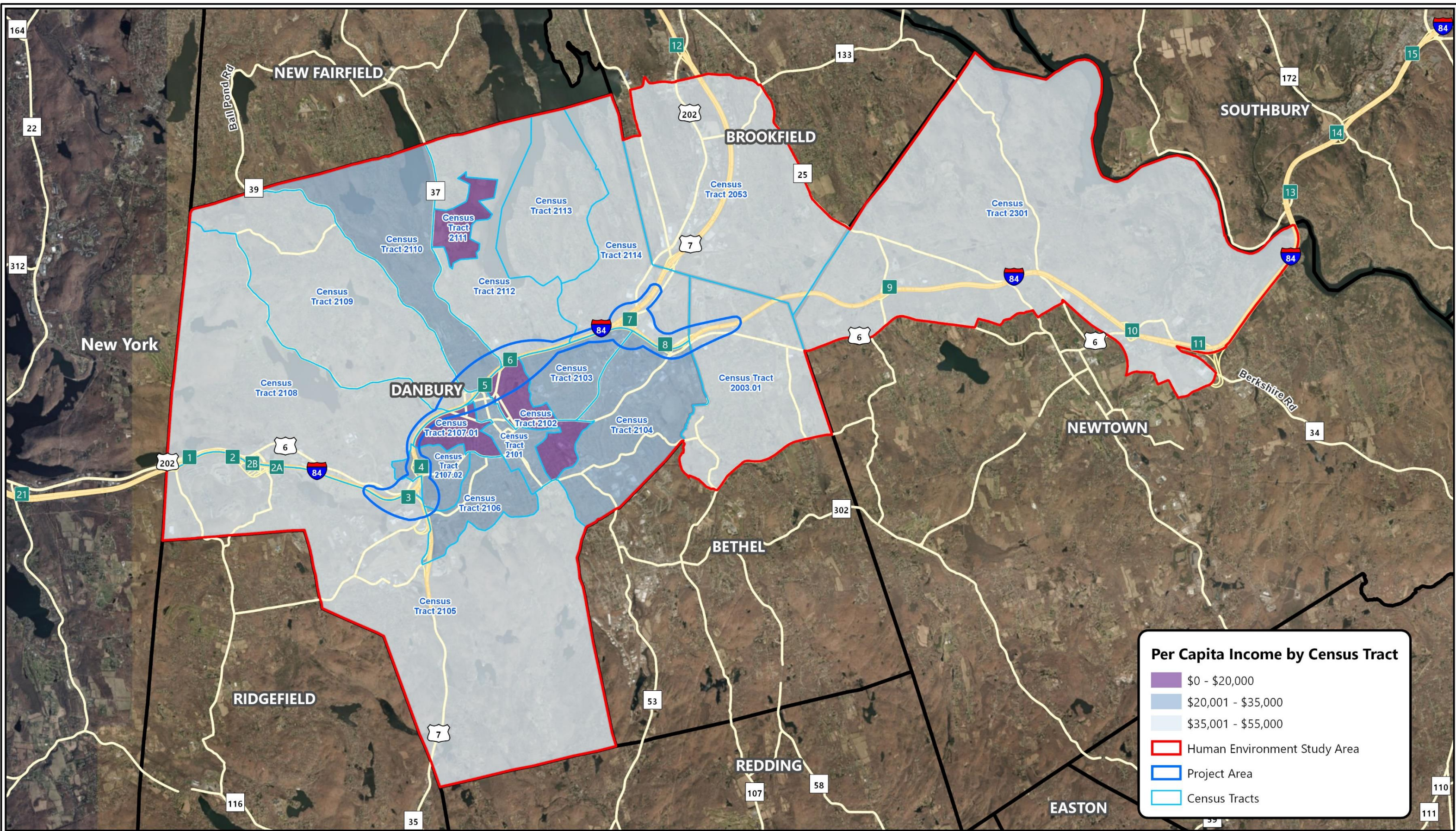
Geographic Area		Human Environment Study Area (HESA)	Fairfield County	Connecticut
Population		102,362	941,618	3,588,570
Not Hispanic or Latino	Race			
	White	60.0%	63.5%	68.7%
	Black	4.9%	10.5%	9.7%
	American Indian	0.2%	0.1%	0.1%
	Asian	5.5%	5.0%	4.2%
	Other	2.3%	0.6%	0.3%
	Two or More Races	1.7%	1.6%	2.0%
Hispanic or Latino ¹	All Races ¹	25.4%	18.6%	15.0%
Total Minority Population		40.0%	36.5%	31.3%
Economic Profile	Median Household Income (\$)	\$77,522	\$86,670	\$71,755
	Per Capita Income (\$)	\$32,834	\$51,719	\$39,906
	Percentage Below Poverty Level	9.7%	8.8%	10.4%

Notes: ¹ An ethnic group can include members of all different racial categories.
Source: U.S. Department of Commerce, Bureau of the Census; American Community Survey 2016 5-year Estimates









4.3 Title VI Compliance

4.3.1 Limited English Proficiency (LEP) Communities

A person with LEP is anyone who is 5 years old or older who speaks English less than "very well." LEP populations are identified using data published by the U.S. Census Bureau's ACS 5-year estimates. Census-tract-level data for Language Spoken at Home, by Ability to Speak English (Table B16001) was last published for the 2011 to 2015 ACS 5-year estimates. Figures 4-6 and 4-7 present LEP communities by census tract for Spanish and Portuguese speakers, respectively.

Neighborhoods with a significant or concentrated LEP population should be identified so that public participation efforts are consistent with signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency," dated August 11, 2000. Guidance from the U.S. Department of Justice (DOJ) recommends criteria used to identify areas of LEP. DOJ's "Safe Harbor" provision requires that written translations of vital documents be provided if 5 percent or more, or 1,000 individuals, whichever is less, speak a language other than English and speak English less than "very well." Census tracts that exceeded the DOJ's "Safe Harbor" standards were identified as LEP communities.

The HESA is home to a large LEP population, mostly within the city of Danbury. About 44.5 percent of the city's population speaks a language other than English, and 22 percent has LEP. After English, Spanish is the most commonly spoken language at home by HESA residents, with 21,110 speakers, followed by Portuguese with 7,124 speakers. As of 2015, there were 11,784 Spanish speakers and 3,856 Portuguese speakers with LEP. In addition to exceeding the 1,000-individual threshold, the Spanish and Portuguese languages had at least one census tract that exceeded 5 percent of the population speaking English less than "very well."

Based on DOJ guidance, vital documents for the I-84 Danbury Project should be translated into both Spanish and Portuguese.

4.3.2 Low-Mobility Communities

Low-mobility populations lack access to a vehicle and must rely on other modes of transportation for their daily travel needs. These modes include but are not limited to bus, rail, walking, or biking. Figure 4-8 presents the distribution of low-mobility communities within the HESA by census tract. CTDOT's Public Involvement Procedures (PIP) note the importance of accessibility in the outreach process. Strategies for engaging low-mobility populations include holding meetings and workshops within low-mobility neighborhoods and ensuring that key public events are held in areas that are accessible by transit during regularly scheduled hours of operation.

The HVMPO Title VI Plan and CTDOT PIP do not offer specific thresholds for assessing low-mobility populations. This study utilizes a similar methodology as was used to identify low-

income and minority community thresholds by identifying census tracts where zero-vehicle households exceed the HVMPO average. As of 2016, approximately 5.2 percent of households in the HVMPO region do not have access to a vehicle. Census tracts that have 5.2 percent or more of households without access to a vehicle were identified as low-mobility communities. Eleven census tracts were identified as low-mobility communities. Nine of these tracts are located in the city of Danbury while the remaining two are located in Brookfield and Newtown.

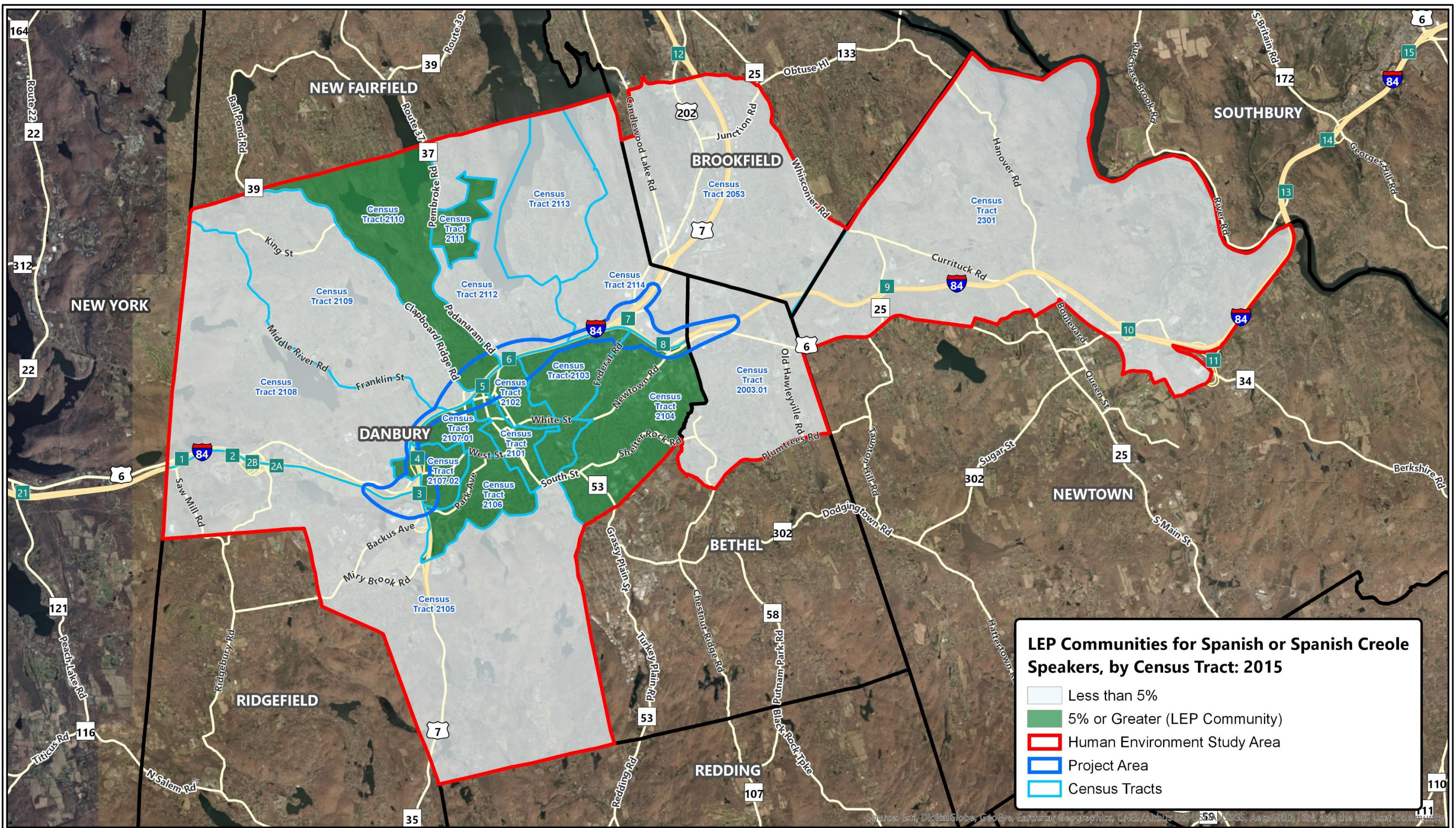
Table 4-2 presents EJ and Title VI communities by census tract. Tables 4-3 and 4-4 present data on households without access to a vehicle by census tract.

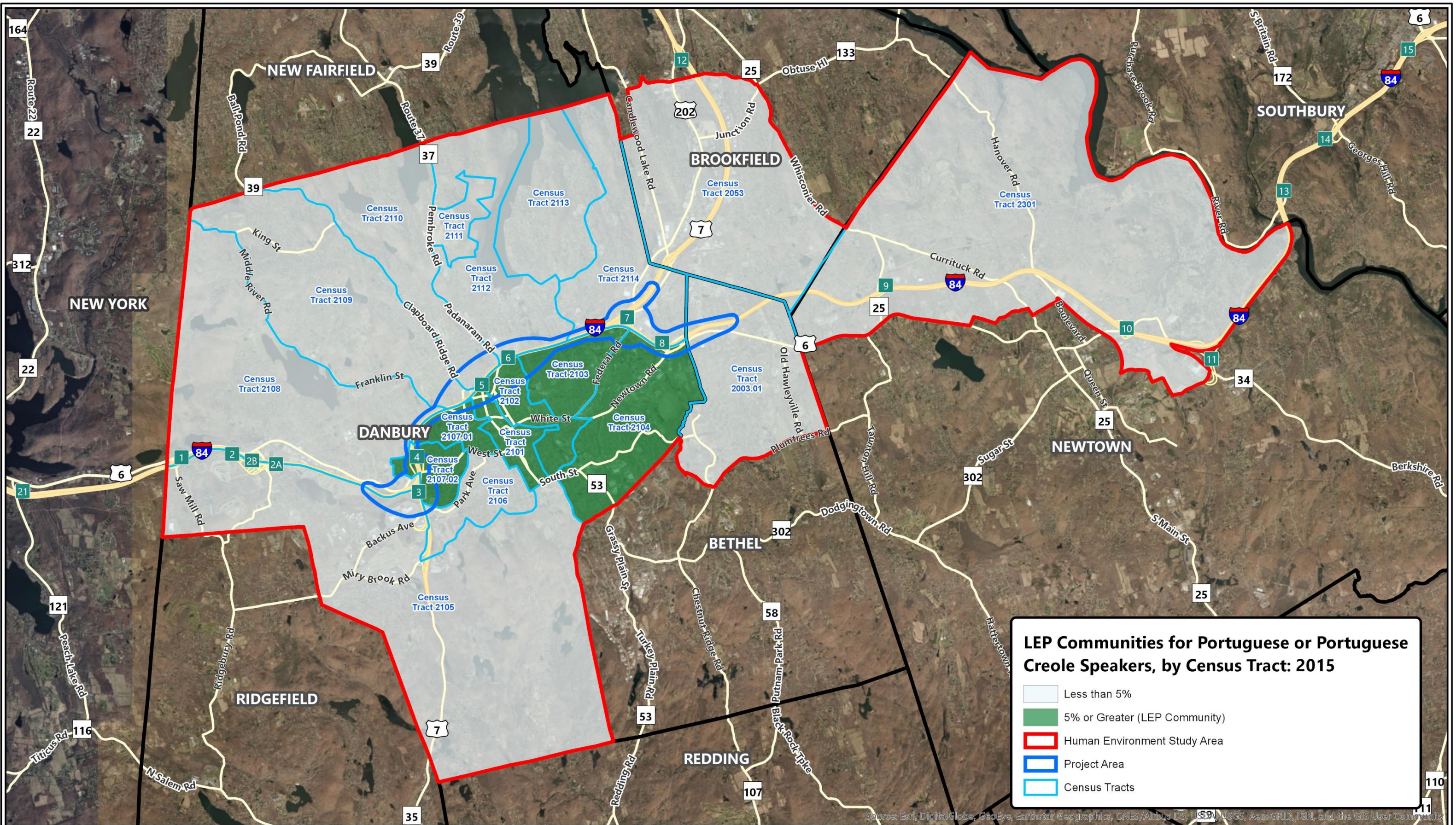
TABLE 4-2
Environmental Justice and Title VI Communities, by Census Tract: 2016

Census Tract ID	Municipality	Minority Community	Low Income Community	Limited English Proficiency (LEP) Community	Low Mobility Community	EJ Area
Tract 2113	Danbury		Yes			Yes
Tract 2104	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2111 ¹	Danbury	Yes				Yes
Tract 2114	Danbury					No
Tract 2103	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2109	Danbury					No
Tract 2101	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2112	Danbury	Yes	Yes		Yes	Yes
Tract 2108	Danbury	Yes				Yes
Tract 2106	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2105	Danbury	Yes	Yes		Yes	Yes
Tract 2110	Danbury	Yes				Yes
Tract 2102	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2107.02	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2107.01	Danbury	Yes	Yes	Yes	Yes	Yes
Tract 2003.01	Bethel					No
Tract 2301	Newtown				Yes	No
Tract 2053	Brookfield				Yes	No

Census tracts highlighted in blue are EJ areas.
1. Census Tract 2111 contains primarily the Danbury Federal Correctional Institute.







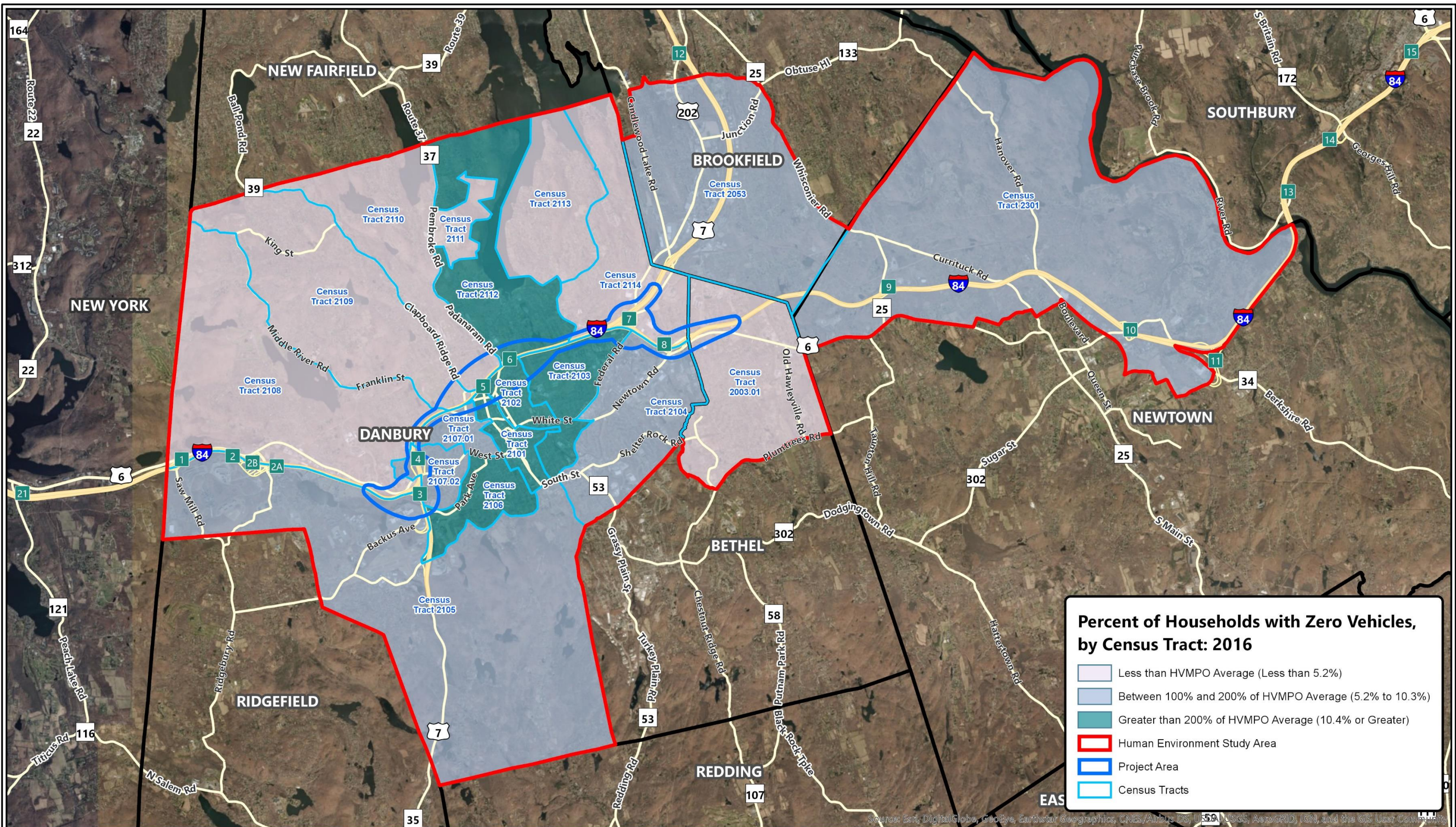


FIGURE 4-8
Low Mobility Communities

TABLE 4-3
Limited English Proficiency (LEP) Population, by Census Tract: 2016

Census Tract ID	Total Population	Population Age 5+	LEP Population	Percent LEP	LEP Target Area
2113	3,919	3,797	189	5.0%	
2104	9,036	8,248	2,343	28.4%	Yes
2111	1,038	1,032	154	14.9%	
2114	5,534	5,411	313	5.8%	
2103	5,967	5,682	1,346	23.7%	Yes
2109	4,990	4,756	233	4.9%	
2053	6,170	5,957	309	5.2%	
2101	6,030	5,525	2,139	38.7%	Yes
2301	6,854	6,647	132	2.0%	
2112	6,659	6,277	876	14.0%	
2108	6,192	5,883	506	8.6%	
2106	6,328	5,777	2,153	37.3%	Yes
2105	7,712	7,131	804	11.3%	
2003.01	5,448	5,157	214	4.1%	
2110	4,442	4,196	519	12.4%	
2102	6,073	5,677	2,681	47.2%	Yes
2107.02	4,774	4,368	1,295	29.6%	Yes
2107.01	5,196	4,828	1,846	38.2%	Yes
HESA Total ¹	102,362	96,349	18,052	18.7%	-
HVMPO	229,521	218,230	22,160	10.2%	-

Source: American Community Survey, 5-Year Estimates: 2012-2016. Table S1601
1. The HESA includes all Census Tracts within the City of Danbury and adjacent Census tracts in the Towns of Bethel, Brookfield, and Newtown.

TABLE 4-4
Households with Access to Zero Vehicles, by Census Tract: 2016

			Households with Access to Zero Vehicles		Low Mobility Target Area
Census Tract ID	Total Population	Total Households	Number	Percent of Households	
2113	3,919	1,317	31	2.4%	
2104	9,036	3,291	186	5.7%	
2111 ¹	1,038	7	0	0.0%	
2114	5,534	2,163	55	2.5%	
2103	5,967	1,888	208	11.0%	Yes
2109	4,990	2,071	98	4.7%	
2053	6,170	2,232	157	7.0%	
2101	6,030	2,519	444	17.6%	Yes
2301	6,854	2,635	156	5.9%	
2112	6,659	2,494	269	10.8%	Yes
2108	6,192	1,761	66	3.7%	
2106	6,328	2,186	326	14.9%	Yes
2105	7,712	3,441	187	5.4%	
2003.01	5,448	1,680	58	3.5%	
2110	4,442	1,488	57	3.8%	
2102	6,073	1,761	311	17.7%	Yes
2107.02	4,774	1,490	92	6.2%	
2107.01	5,196	1,549	87	5.6%	
HESA Total ²	102,362	35,973	2,788	7.8%	-
HVMPO	229,521	82,240	4,291	5.2%	-

Source: American Community Survey, 5-Year Estimates: 2012-2016. Table B25044
1. Census Tract 2111 contains Federal Correctional Institute Danbury. Inmate population is not considered part of a "household."
2. The HESA includes all Census Tracts within the City of Danbury and adjacent Census tracts in the Towns of Bethel, Brookfield, and Newtown.



Appendix A: Race, Ethnicity, and Income Characteristics by Census Tract in the Human Environment Study Area

**I-84 Danbury Project
Danbury, Connecticut**

Geographic Unit	Municipality	Total Population	White		Hispanic or Latino		Minority		Median Household Income (\$)	Per Capita Income (\$)
			Total	%	Total	%	Total	%		
Tract 2113	Danbury	3,919	3,252	83.0	276	7.0	667	17.0	99,020	45,327
Tract 2104	Danbury	9,036	4,138	45.8	2,764	30.6	4898	54.2	66,691	30,021
Tract 2111	Danbury	1,038	280	27.0	399	38.4	758	73.0	x	7,113
Tract 2114	Danbury	5,534	4,276	77.3	842	15.2	1258	22.7	89,458	43,168
Tract 2103	Danbury	5,967	2,956	49.5	1,824	30.6	3011	50.5	56,513	25,583
Tract 2109	Danbury	4,990	4,145	83.1	375	7.5	845	16.9	89,375	51,539
Tract 2101	Danbury	6,030	1,740	28.9	3,594	59.6	4290	71.1	35,732	20,109
Tract 2112	Danbury	6,659	4,235	63.6	1,043	15.7	2424	36.4	72,598	35,358
Tract 2108	Danbury	6,192	4,182	67.5	1,035	16.7	2010	32.5	108,966	39,710
Tract 2106	Danbury	6,328	2,903	45.9	2,376	37.5	3425	54.1	60,057	24,966
Tract 2105	Danbury	7,712	5,441	70.6	1,135	14.7	2271	29.4	85,781	45,584
Tract 2110	Danbury	4,442	2,620	59.0	836	18.8	1822	41.0	80,417	32,667
Tract 2102	Danbury	6,073	1,674	27.6	3,174	52.3	4399	72.4	36,544	16,234
Tract 2107.02	Danbury	4,774	1,614	33.8	2,337	49.0	3160	66.2	55,577	24,032
Tract 2107.01	Danbury	5,196	1,777	34.2	2,639	50.8	3419	65.8	53,814	19,996
Tract 2003.01	Bethel	5,448	4,611	84.6	522	9.6	837	15.4	129,394	41,168
Tract 2301	Newtown	6,854	6,314	92.1	399	5.8	540	7.9	103,868	48,696
Tract 2053	Brookfield	6,170	5,263	85.3	446	7.2	907	14.7	94,063	39,734
Sources: U.S. Department of Commerce, Bureau of the Census; American Community Survey 2016 Estimates										