CONNECTICUT HOUSING & SEGREGATION STUDY

Final Report

January 2024

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Executive Summary

The State Legislature mandated this study to provide a baseline of analysis that may be used to understand the extent of racial and economic segregation throughout the state and among the municipalities as well as the role state and federal housing programs may play in these conditions. The mandate of the legislation is to determine levels of segregation in CT and determine the extent to which government-assisted affordable housing has contributed to or alleviated it over time.

The study was designed to have four primary areas of investigation:

- Assessment of segregation (race, income) 1990-2020,
- Overview of subsidized housing programs,
- Geospatial assessment of subsidized housing programs in relation to segregation, and
- Outreach (advocates, program directors, participants/residents, developers).

Scope of Work

The methodologies and products of the work performed under the various areas of investigation include:

- **Descriptive Statistics:** The descriptive statistics section presents a series of maps to highlight demographic trends and better understand the unique spatial relationship of segregation, subsidized housing and the complex network of contributing factors that have influenced them over time, including:
    - Population growth;
    - Housing development practices;
    - Relationship between public housing locations and segregation;
    - Construction costs; and,
    - Gaps between voucher values, fair market rents, and real estate market values.

- **Indices of Segregation:** The goal of this section is to better understand if or how segregation has changed over the past 30 years for the Black Non-Hispanic, Hispanic, and Asian and Pacific Islander Non-Hispanic communities throughout the state. To the end, multiple indices were utilized to better capture the range of segregation dimensions that occur across socioeconomic groups over time including population distributions (evenness and exposure) and geographic patterns (clustering, centralization, and concentration) for each of Connecticut's ten (10) New England City and Town Areas (NECTA), nine (9) planning regions/councils of government (COG), eight (8) counties, and 169 cities and towns (also known as minor civil divisions or MCDs). To better understand the changes to segregation by area of urban/rural classification, the base census data were also aggregated, and the segregation indices run for the seven (7) National Center for Education Statistics Locale (NCES locales) types (City-Midsize, City-Small, Rural-Distant, Rural-Fringe, Suburban – Large, Suburban – Midsize, and Town-Fringe). The indices were calculated using block groups standardized to the 2020 area for the years 1990, 2000, 2010, and 2020 to cover the full 30-year time period covered in the scope of work. These dimensions and their respective indices[1] are described in the full report.

  The ultimate conclusion is that the concentration of people of color is so centered in cities due to

[1] Formulas and further information related to segregation indices used in this study were obtained from: U.S. Census Bureau. (2021, November 21). *Housing Patterns: Appendix B: Measures of Residential Segregation.* Retrieved from https://www.census.gov/topics/housing/housing-patterns/guidance/appendix-b.html.

historical practices, that the indices generally do not change substantially, although a comparison of the indices of segregation at almost every level shows a decrease in segregation for each of the reference populations when compared to the White Non-Hispanic population between 1990 and 2020. Segregation in the State of Connecticut is high, regardless of the index or race/ethnicity being referenced. Midsize cities (Bridgeport, Hartford, New Haven) having ingrained urban patterns have the highest measures of segregation. These are followed closely by the suburbs, which are the areas (if there are any) in which segregation is holding steady or increasing. Rural areas have the lowest levels of segregation, generally due to low population density.

Many of the areas that are seeing decreased segregation are a reflection of migration and socioeconomic trends that have driven the State's segregation patterns over the past 30 years including, but not limited to, the following scenarios:

- Highly segregated cities experiencing White out-migration and increasing in-migration of people of color to neighborhoods that were previously White only;
- Out-migration of one Non-White race group such as Black Non-Hispanics and in-migration from another Non-White group of residents such as Hispanics or Asian Pacific Islander Non-Hispanics;
- Increasing segregation at the metropolitan region level with reduced segregation in core central cities and increased segregation in some inner/outer suburbs;
- Increasing segregation among fast-growing ethnic enclaves in select communities, as neighborhoods increasingly became more homogenous;
- Broadly reduced segregation among people of color and White Non-Hispanics across the State but with relatively smaller improvements in desegregation of communities among Blacks to Whites as compared to people of color to Whites, which became considerably less segregated.

- **Economic Segregation**: the study also included an assessment of the Gini index, or Gini co-efficient, which measures income distribution across a population. A higher Gini index indicates greater inequality, with high-income individuals receiving much larger percentages of the population's total income. The Gini Index is not a perfect measurement of income distribution. For example, a high-income area and a low-income area can have the same Gini co-efficient, as long as incomes are distributed similarly within each. The Gini index throughout the State of Connecticut continues to increase.

- **Spatial Analysis**: One of the primary charges of this scope of work was to determine if there is a predictive relationship between the presence of government subsidized affordable housing units and segregation by race and ethnicity across the State's municipalities. There were a number of challenges to this task: 1) the number of underlying factors that influence segregation; 2) the diversity and complexity of subsidized housing programs, some of which had data available only at the municipal level; and, 3) the use of segregation indices, which are intended for use in regional rather than local analysis. Nonetheless, in an attempt to answer this question, a series of regression analyses were completed using the most commonly used measures of segregation, the Black non-Hispanic Dissimilarity Index and the Hispanic Dissimilarity Index. **Ultimately, while there was correlation between the locations of subsidized affordable housing and segregation levels, there was no direct causal relationship given the many other factors that contribute to housing choice and development patterns.**

- **Best Practices and Outreach**: This study surveyed best practices around the nation for decreasing segregation and increasing the development of affordable housing. In addition, Urbanomics reached out to subsidized housing stakeholders including advocates, affordable housing developers, public housing directors, residents of public housing, and other agency and planning professionals throughout the state of Connecticut to ensure a more complete understanding of the issues and challenges of developing and maintaining subsidized housing as well as increasing mobility and thereby decreasing segregation.

  The national best practices and input from the interviewees were largely in agreement. Everyone interviewed agreed that the demand for subsidized housing continues to grow as market rate housing in the state becomes more and more expensive and wages do not keep up with the cost of living. Further, all agreed that diversifying housing opportunity throughout the state through the creation of new stock and the use of housing choice vouchers are the primary manners to decrease racial segregation in housing.

- **Deliverables:** The deliverables submitted as a result of the work performed include:
  - **Housing Program Summaries**: Classifications of more than 80 housing programs active in Connecticut as well as a summary of the array of funding sources that support activities that seek to preserve, develop, or expand access to affordable housing of all types.
  - **All Data Viewer Tool**: Detailed data on program sizing in terms of the number of units, recipients, and households supported by 5-year period from 1990 to 2020 on the All Data Viewer Tool on the State of Connecticut's Open Data Portal for public viewing.
  - **Income Race Segregation Comparison Tool**: Excel tool allowing the user to pull up each of the 200 individual geographic areas and 11 indices analyzed. The tool consists of four worksheets that: 1) present index descriptions and allow the comparison of 2) Gini index and race, 3) race indices by geographic classification, and 4) the Gini index by geographic classification.
  - **Town and Program Databases***: Data collection at the program site level presented significant challenges for several reasons including inconsistencies in reporting methods as requirements and administration of programs changed over time; multiple programs are used to subsidize units in a single building causing overlap in the data; and, suppression of single-family program data to protect privacy.* In order to provide the best product possible and a foundation for future work, included within the larger deliverables are a "Town database" that provides all the program data available from multiple sources at the municipal level as well as a deduplicated "Program database" of site-based program data. The program database also includes imputed race data for each development.

Key Findings

As shown in our research and indicated with outreach to advocates, apart from the policy and regulatory provisions of specific programs that have influenced economic and racial segregation, broader issues and more impactful factors exist. Some of these current and historic issues are:

- exclusionary zoning practices;
- bias in real estate, banking, and appraisal practices (e.g., red-lining);

- private covenants and community prejudices (e.g., sundown towns);[2]
- appraisal bias that assigns a higher value to owned properties over rentals, or to white owners over people of color;
- localism (preserving local control in the face of regional solutions);
- local opposition, including NIMBY (Not in My Backyard)-oriented perspectives; and
- lack of sufficient motivation to change.

Extensive data collection, outreach, and analysis detailed in the body of this report have led to the following additional findings.

- Connecticut's metropolitan areas, including Bridgeport and Hartford, remain among the most segregated in the nation in terms of the race and ethnicity dissimilarity index[3] and among the highest in income inequality as measured by the Gini index, even though levels of segregation and income inequality have decreased over the past 30 years.[4]
- The most commonly used index of segregation, the dissimilarity index, assessed in terms of Black non-Hispanic to White non-Hispanic or Hispanic to White non-Hispanic, has decreased in general. Decreased segregation levels may have more to do with increasing shares of Black, Hispanic and Asian/Pacific Islander populations across areas than increased integration.
- As of 2020, in 65% of Connecticut communities a greater share of subsidized housing heads of household were people of color than in the municipality as a whole.[1] Additionally, according to HUD's Picture of Subsidized Households annual surveys, the share of head of households of all HUD program units that are people of color increased from 59% in 2000 to 71% in 2020 statewide; whereas the share of head of households that are people of color living in any housing type increased from 18% to 29%.
- Ultimately, site-specific program data are not sufficient as time series to determine causality and pass rigorous statistical testing between the presence of subsidized housing and segregation with any degree of certainty.[5] However, it is quite clear that development-based subsidized housing projects cluster in communities that have already demonstrated a willingness to accept subsidized housing, which typically are already segregated communities as a result of historical dynamics and factors.[6]
- Demand for subsidized housing continues to increase in a residential market in which demand far outpaces supply; development and construction costs are increasing each year; and developers of affordable housing are stacking subsidies in order to create units.[7]
- The average time on a housing choice voucher wait list in Connecticut is 28 months and wait lists can be closed for years until they reopen again. DOH last opened the RAP waitlist in 2017,

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[2] Sundown towns are communities that for decades—formally or informally—kept out African Americans or other groups. 39 of the 169 cities and towns in Connecticut are listed as being potential sundown towns, either through ordinance or unofficial exclusionary practices.
Matt Cheney. (2023). *Historical Database of Sundown Towns*, History and Social Justice Website. Retrieved from https://justice.tougaloo.edu/sundown-towns/using-the-sundown-towns-database/state-map/

[3] Based on findings from Brown University's Diversity and Disparities Project, US metropolitan area rankings of the White to Black Dissimilarity Index, the Bridgeport metro ranks 20th highest while the Hartford metro ranks 33rd.
Diversities and Disparities Project. (2021). Spatial Structures in the Social Sciences, Brown University. Retrieved from https://s4.ad.brown.edu/projects/diversity/SegSorting2020/Default.aspx.

[4] See Indices of Segregation Section 5, Figures 4.2, 4.7-4.20.

[1] See Descriptive Statistics section, Figure 4.13-4.15. Note: The majority of subsidized housing programs do not collect data on the race and/or ethnicity of residents. In these cases, HUD program demographic data was used as a proxy for other programs.

[5] See Spatial Analysis Section 6.2 and 6.3

[6] See Descriptive Statistics Section 4, Figures 4.13-4.15

[7] See section 4.5.

accepting 7,000 of the 48,000 applications. 1,400 households of the 7,000 still have not received vouchers.[8]

- The gap between subsidized and market rate housing costs continues to increase, making it ever more difficult for households to leave subsidized housing.
- Studies show that changes to public housing program through affirmative housing, including the expansion of housing choice vouchers and the creation of new subsidized developments with the use of LIHTC and 8-30g programs, have done little to decrease segregation. [9]
    - Development projects are dependent on local approvals and acceptance of projects tends to take place only where subsidized developments already exist as stated by both affordable housing developers and advocates and evidenced in DOH's Government Assisted map (see Figures 6.7-6.16).
    - Housing choice vouchers and single-family mortgages have greater potential to alleviate segregation because they may be used more broadly (throughout the provisional community in the case of vouchers and the state in the case of mortgages). However, the programs have historically not lived up to their potential due to challenges in accessing vouchers, finding properties/landlords that will accept the vouchers, and because fair market rents (FMRs) used to determine voucher values are not keeping pace with the soaring rental market.[10]

Recommendations

Any efforts to eliminate how governments perpetuate segregation by race, income, and other identities will need to take a multidimensional approach that breaks down longstanding obstacles to housing access, economic integration, interaction, and opportunity. With this and the findings in mind, the actionable recommendations and strategies include:

1. Increase Access to Existing Subsidized Housing
    a. Create a Statewide Application Portal to be a single access point to active federal, state and local housing choice vouchers, site-based housing, and public housing opportunities statewide.
        i. First step is a feasibility study to determine start up and maintenance costs.
        ii. Portal should tie into community information to inform mobility decisions.
    b. Maintain fund for security deposit coverage for housing choice vouchers.
2. Develop Quality Housing Throughout the State
    a. Establish and adopt an actionable affirmative housing policy.
        i. Target an array of income levels
        ii. Include both incentives for compliance and penalties for non-compliance.
        iii. Incentivize redevelopment of existing projects.
    b. Streamline the Approvals Process to Reduce Development Costs
        i. Eliminate select discretionary review processes (i.e., for design, architecture, and historical preservation) the back and forth among which can add years and hundreds of thousands of dollars to development costs.
3. Housing Choice Vouchers

[8] Connecticut Department of Housing. (2023). How to Apply for RAP and Section 8. CT.gov - Connecticut's Official State Website. Retrieved from https://portal.ct.gov/DOH/DOH/Additional-program-pages/How-to-Apply-for-RAP-and-Section-8

[9] Abramovitz, M., & Smith, R. J. (2020). *The Persistence of Residential Segregation by Race, 1940 to 2010: The Role of Federal Housing Policy; Families in Society: The Journal of Contemporary Social Services*.

[10] See Program Descriptions, Appendix A, Homeownership Assistance Programs (1-26) and Rental Subsidies and Assistance (61-64, 69,71).

   a. Advocate for fair market rents (voucher values) that are more reflective of real market conditions.
   b. Align CT and federal program voucher values to eliminate uncertainty for both landlords and tenants.
   c. Create vacancy gap fund to cover the month required for HUD inspection and approval.
4. Public Housing Improvements
   a. Consider a RAD-type redevelopment program for aging State properties.
   b. Reduce program administration costs
   c. Make household evaluations biennial instead of annual.
   d. Allow age-restricted only housing to avoid elderly/disabled conflict.
   e. Provide on-site mental health and other supportive services.
   f. Allow flexibility in redevelopment/renovations to meet changing needs of residents.
5. Promote Mobility to Deconcentrate Poverty
   a. Continue to support and expand mobility counseling services.
   b. Fund and implement the Single Access Portal to enable mobility.
   c. Provide post-move supportive services to assist in integration in higher opportunity areas.
6. Modify Legislation to Promote Housing Development and Desegregation
   a. State Plan of Conservation and Development
      i. Incorporate affordable housing and desegregation language into relevant sections.
      ii. Incentivize transit-oriented and mixed-use development.
      iii. Require and incentivize mixed-income housing as part of mixed-use and transit-oriented developments.
      iv. Require compliance with affirmative affordable housing plans.
      v. Modify environmental policy restriction that allows multi-family housing only in sewered areas to reflect potential of new septic technologies.
7. Modify Legislation to Promote Housing Development and Desegregation
   a. Revise Low-Income Housing Tax Credit Qualified Allocation Plan (QAP) criteria to allow greater geographic diversity
      i. Replace priority location score with a score for how well the project meets local unmet demand as assessed by FSHA.
      ii. Replace “lowest credit per qualified unit” tie-breaker points with those for communities who have not yet received funding.
   b. Use CGS Sec. 15. Section 8-68d to collect data on race/ethnicities for all subsidized units.

1. Introduction

The State of Connecticut (CT) is at a crossroads in terms of addressing both segregation and affordability in its housing stock. The State Legislature mandated this study to provide a baseline of analysis that may be used immediately and updated over time to understand the extent of segregation throughout the state and among the municipalities as well as the role state and federal housing programs may play to alleviate these conditions. The mandate of the legislation is to determine levels of segregation in CT and determine the extent to which government-assisted affordable housing has contributed to or alleviated it over time.

The study was designed to have four primary areas of investigation:

- Assessment of segregation (race, income) 1990-2020,
- Overview of subsidized housing programs,
- Geospatial assessment of subsidized housing programs in relation to segregation, and
- Outreach (advocates, program directors, participants/residents, developers).

The impetus behind this report is to investigate how selected federal and state programs may perpetuate or reduce racial and economic segregation in the State of Connecticut. However, as shown in our research and indicated with outreach to advocates, apart from the policy and regulatory provisions of specific programs that have influenced economic and racial segregation, broader issues and more impactful factors exist. Some of these current and historic issues are:

- exclusionary zoning practices;
- bias in real estate, banking, and appraisal practices (e.g., red-lining);
- private covenants and community prejudices (e.g., sundown towns);[11]
- appraisal bias that assigns a higher value to owned properties over rentals, or to white owners over people of color;
- localism (preserving local control in the face of regional solutions);
- local opposition, including NIMBY (Not in My Backyard)-oriented perspectives; and
- lack of sufficient motivation to change.

This report serves to present the funding and programmatic context of affordable housing in the State of Connecticut; measures of segregation over time for each town[12] in the state; the spatial relationship of government-subsidized housing locations in the state to segregation; summaries of the outreach efforts undertaken, and concluding with the implications of the work performed to date as well as recommendations of what can be done to reduce segregation.

[11] Sundown towns are communities that for decades—formally or informally—kept out African Americans or other groups. 39 of the 169 cities and towns in Connecticut are listed as being potential sundown towns, either through ordinance or unofficial exclusionary practices.
Matt Cheney. (2023). *Historical Database of Sundown Towns*, History and Social Justice Website. Retrieved from https://justice.tougaloo.edu/sundown-towns/using-the-sundown-towns-database/state-map/

[12] For purposes of statistical analysis of census data, city/town/municipality equivalents were used known as County Subdivisions. These are the primary divisions of counties and their equivalent entities for the reporting of decennial census data. They include census county divisions, census subareas, minor civil divisions (the primary geographic unit of cities and towns in Connecticut), and unorganized territories.

2. Housing Program Types and Target Areas

Section 1 provides a summary of the array of funding sources that support activities that seek to preserve, develop, or expand access to affordable housing of all types. For the purposes of this study's analysis, the term "affordable housing" refers to the federal definition of the term, also known as the 30 Percent Rule, in which occupants pay no more than 30 percent of gross income on housing costs.[13] Affordable housing programs were classified into four broad categories for purposes of analysis:

- Homeownership Assistance & Subsidies (i.e. mortgage, down-payment assistance)
- Housing Development & Preservation (i.e. developer loans, tax credits, financing)
- Rental Subsidies & Assistance (i.e. housing vouchers, public housing, elderly rental assistance)
- Supportive & Special Needs Housing (i.e. project-based housing for individuals with unique needs)

Although the focus of this study's analysis of state and federal housing investments is within the realm of housing programs that seek to preserve or expand access to affordable housing, the study will further consider the impact of other housing activities that reduce housing costs, such as federal subsidies to homeowners through tax deductions (mortgage interest, home equity loan interest, property taxes, etc.).

All active affordable housing programs in the state of Connecticut over the years from 1990 to 2020 have been categorized among the four classifications described above and presented in a Gantt chart format on the following pages to show complexities and shifts in the many different programs as administrations and program names change and funding sources shift.

It should be noted that a single program may overlap with several categories. In these instances, the program is classified by predominant type, but the symbols below are used and placed to the left of the heading to indicate the overlap.

This report includes detailed descriptions of federal and state housing programs active in Connecticut (see Appendix A) including their history, administrative structure, activities, and appropriations (see Section 3). Further detailed data on program sizing in terms of the number of units, recipients, and households supported is included by 5-year period from 1990 to 2020 on the All Data Viewer Tool on the State of Connecticut's Open Data Portal. Locational data for Connecticut Housing Programs can be found on the Story Map website.

Data collection at the program site level presented significant challenges for several reasons including inconsistencies in reporting methods as requirements and administration of programs changed over time; multiple programs are used to subsidize units in a single building causing overlap in the data; and, suppression of single-family program data to protect privacy. In order to provide the best product possible

[13] The 30-percent rule for measuring housing affordability is considered the foundation for the federal government's definition of what is considered affordable housing. The rule was drawn from the 1969 Brooke Amendment passed by Senator Edward Brooke, the United States' first popularly elected African-American senator and pioneer of affordable housing legislation. Brooke and Senator Walter Mondale authored the 1968 Fair Housing Act which protects against race-based housing discrimination. The 1969 Brooke Amendment originally capped public housing rent at 25 percent of a resident's income but that threshold was raised to 30 percent in 1981 by Congress. Representative Barney Frank stated that "[the amendment] said originally that the poorest of the poor who get housing through various public programs shouldn't be expected to pay more than 25 percent of their income for housing, precisely because they have so little."
Author Unknown. (2014, September 22). *Rental Burdens: Rethinking Affordability Measures*. HUD User, PD&R. Retrieved from https://www.huduser.gov/portal/pdredge/pdr_edge_featd_article_092214.html#:~:text=HUD%20defines%20cost%2Dburdened%20families,of%20one's%20income%20on%20rent

and a foundation for future work the team created a "Town database" that provides all the program data available from multiple sources at the municipal level as well as a deduplicated "Program database" of site-based program data. The program database also includes imputed race data for each development, which is largely based on data collected for HUD programs. Both the Project and Town Level databases are available upon request by contacting dapa@ct.gov.

Figure 2.1 Housing Program Types and Target Areas Table Legend

Figure 2.2 Housing Program Types: Homeownership Assistance/Subsidies

Homeownership Assistance/Subsidies

Services	Admin.	Program Name
	VA/CTDOH	Specially Adapted Housing Program
	FHA/HUD/ CHFA	203(k) Rehab Mortgage Insurance & Loan Program
	CHFA	Conventional AMI Loan Program (CALP)
	CHFA	CT Fair Alternative Mortgage Lending Initiative and Education Services Program (CTFAMLIES)
	CHFA	Down Payment Assistance Program (DAP)
	CHFA	Emergency Mortgage Assistance Program (EMAP)
	CHFA	HFA Preferred Loan Program
	CHFA	HFA Advantage Loan Program
	CHFA	Home of Your Own Program for Persons with Disabilities
	CHFA	Homebuyer Mortgage Program
	CHFA	Homeownership Mortgage for Residents of Public Housing
	CHFA	Limited Equity Cooperative
	CHFA	Mobile/Manufactured Home Loan Programs
	CHFA	Police Homeownership Program
	CHFA	Teachers Mortgage Assistance Program
	CHFA	Time to Own-Forgivable Down Payment Assistance Program
	CHFA	Veterans & Military Service Members
	CHFA	Smart Move Second Mortgage Program
	CHFA	Veterans Homeownership Pilot Program
	CHFA	Homeowner's Equity Recovery Opportunity (HERO) Loan Program
	CHFA	Pilot Downpayment Assistance and/or Closing Cost Program for Manchester
	CHFA	Urban Rehabilitation Homeownership Mortgage Program (UR HOME)
	CT	Bond Financing
	DOH/Capital for Change	Energy Conservation Loan Program
	Habitat for Humanity	Habitat For Humanity Home Ownership Program

Figure 2.3 Housing Program Types: Housing Development/Preservation

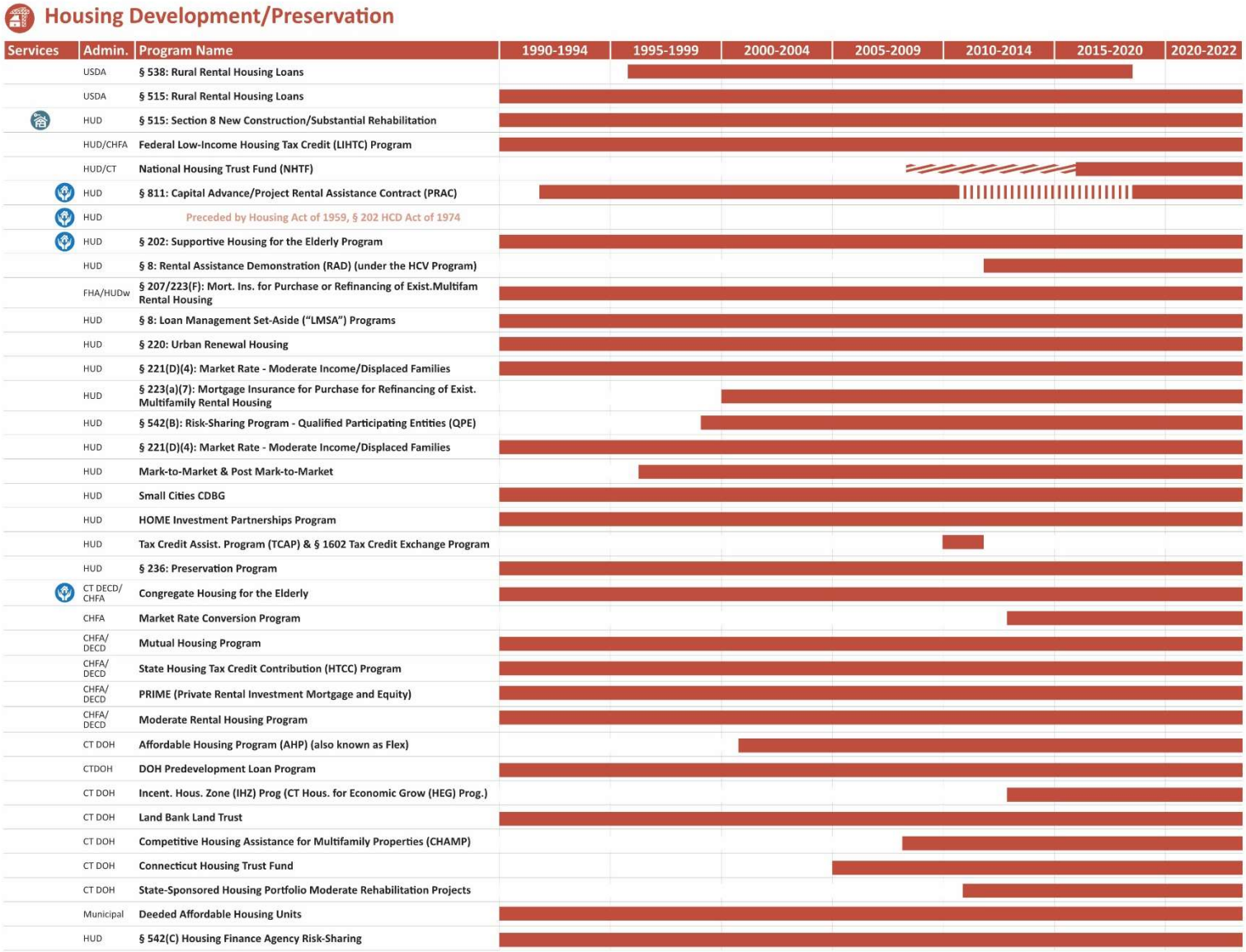


Figure 2.4 Housing Program Types: Rental Subsidies & Assistance

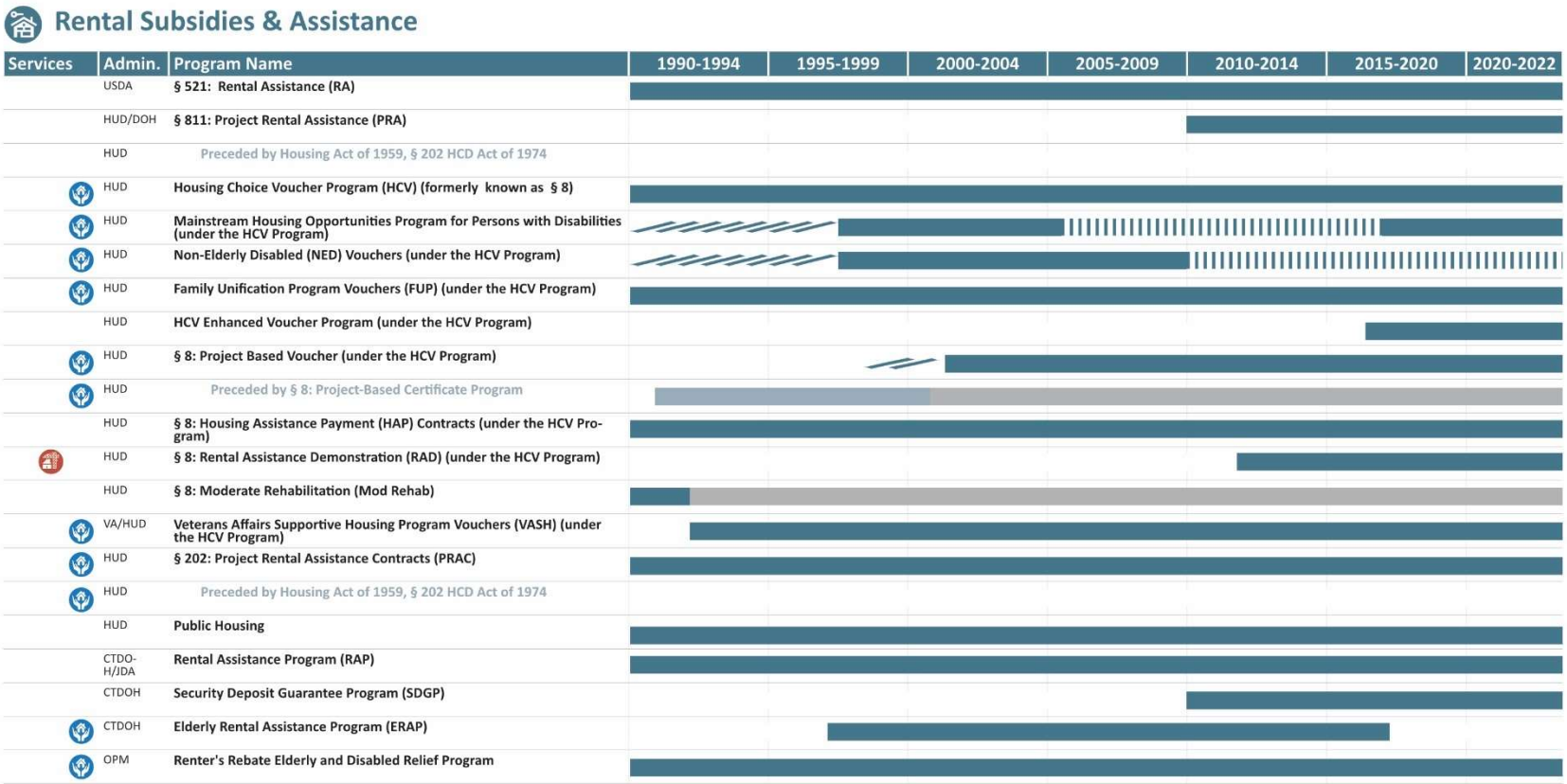
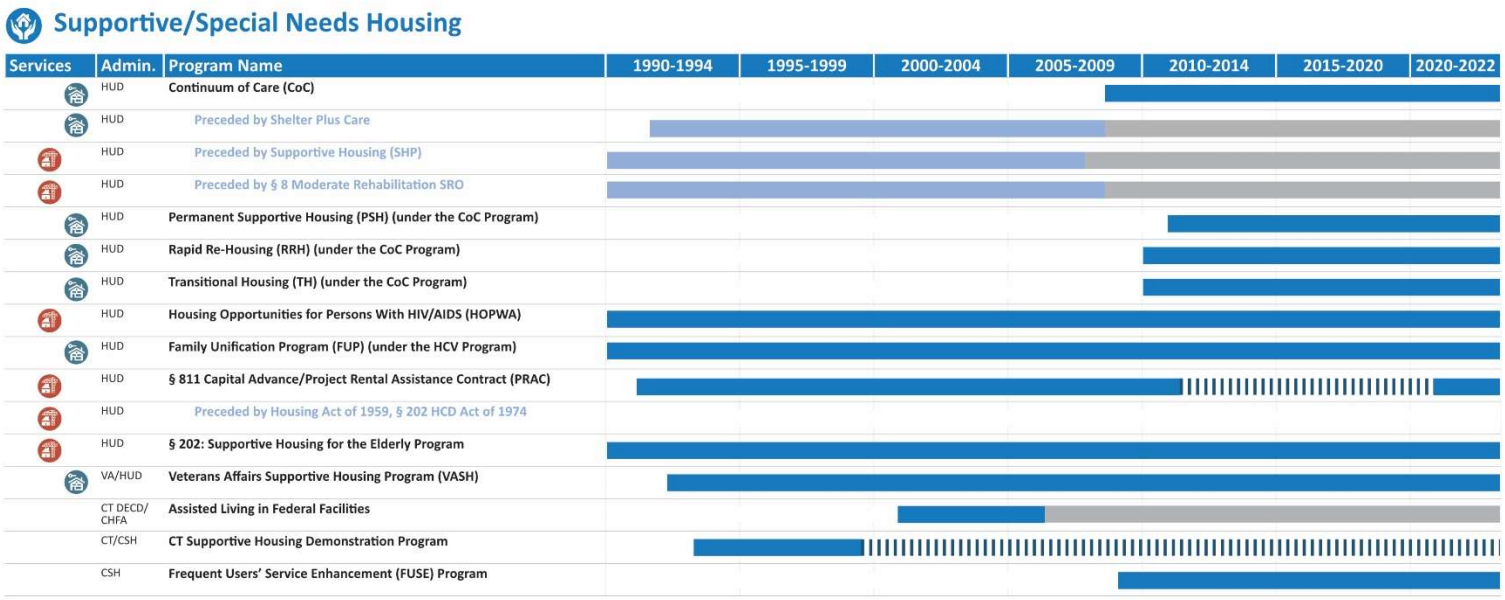


Figure 2.5 Housing Program Types: Supportive/Special Needs Housing



Most housing programs included in the above tables continue to remain actively funded as summarized below:

- Homeownership Subsidies & Assistance: 20 out of 25 remain funded,
- Housing Development/Preservation: 33 out of 36 remain funded and another single program is not funded beyond existing properties,
- Rental Subsidies & Assistance: 15 out of 19 remain funded and another single program is not funded beyond existing properties, and
- Supportive & Special Needs Housing: 11 out of 15 remain funded.

Two programs remain on the books but are no longer funded at all (Non-Elderly Disabled (NED) Vouchers, and the CT Supportive Housing Demonstration Program). Another six programs were replaced by other programs and are no longer funded (Shelter Plus Care, Supportive Housing (SHP), Section 8 Moderate Rehabilitation SRO, Assisted Living in Federal Facilities, Section 8: Project-Based Certificate Program, and Section 8: Moderate Rehabilitation (Mod Rehab)).

3. Funding Sources

In most of the United States, the majority of funding for affordable housing comes from the Federal government's Department of Housing and Urban Development (HUD). Connecticut is one among 43 states that operate state-funded rental assistance programs to fill the gap between supply and demand, however these program expenditures are relatively small compared to the federal outlays.[14] A detailed description of federal and state housing programs active in Connecticut including their history, administrative structure, activities, and appropriations is included in Appendix A and summarized in table format within Figures 2.1-2.5.

Due to data collection complications with tracking reliable housing program expenditures over time at the federal and state level and the typical several-year lag between appropriation of funds versus expenditures of those same funds, the focus of housing program investments for this study is on budget appropriations. Attempts were made to track housing program expenditures across five-year interval study years but variability in program expenditures on a year-to-year basis due to the timing of major project investments and inconsistent program expenditure reporting techniques applied across programs generated a range of complications that interfered with reliable analysis.

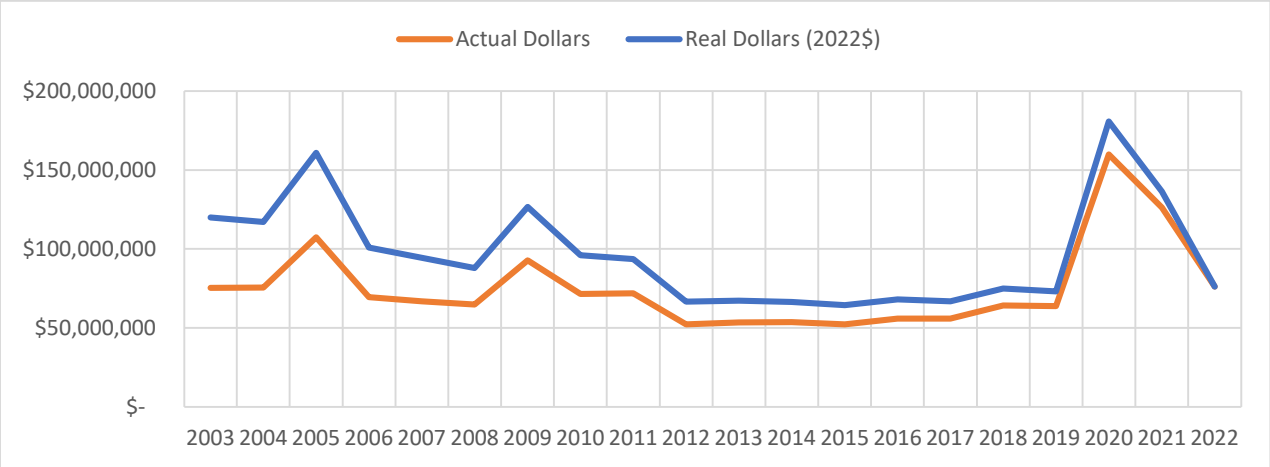
A sizable share of Connecticut's funding for affordable housing-related programs comes from HUD's Community Planning & Development (CPD) appropriations. These appropriations fund both statewide programs through the DOH as well as local programs administered by the state's largest municipalities. Adjusted for inflation, CPD appropriations have increased in response to economic recessions such as the 2007-2009 recession as well as the 2020 pandemic and declined in later years of economic recovery. Generally, CPD funds have been on the decline since 2003. The largest components of CPD appropriations are the Community Development Block Grant (CDBG) Program and the HOME Investment Partnerships Program (HOME), accounting for nearly 60 percent and 25 percent of annual CPD appropriations on average from 2003 to 2022, respectively. CDBG funds are distributed to 23 government entities in the state including DOH and 22 municipalities while HOME funds are allocated to DOH and six municipalities. HOME is a housing program with expenditure activities limited to buying and/or rehabilitating affordable housing for rent, homeownership, or direct rental assistance to low-income people. CDBG expenditures may be allocated to a range of community development and housing activities including but not limited to economic development, housing development, homeownership assistance, program administration, planning, public services, acquisitions, and infrastructure whose purpose must primarily benefit low- and moderate-income persons. In FY 2020, 25.9 percent of CDBG expenditures across the state went to housing activities, down from 30.6 percent in 2015 and 32.3 percent in 2010.

Beyond HUD's CPD appropriations, HUD provides funding for Public Housing and the Housing Choice Voucher (HCV) programs under the Public and Indian Housing (PIH) program office. Funding for these programs is appropriated directly to State (DOH) and local Public Housing Authorities (PHAs). In Connecticut, PHAs are quasi-public agencies with authority established by the state to provide safe, sanitary, and affordable housing, among other powers. In 2021, nearly $112 million in funding was distributed to 32 PHAs in Connecticut for public housing activities including $75 million in operating funds

[14] Pelletiere, D., Canizio, M., Hargrave, M., & Crowley, S. (2008, October). *Housing Assistance for Low-Income Households: States Do Not Fill the Gap*. National Low-Income Housing Coalition. Retrieved from https://nlihc.org/resource/housing-assistance-low-income-households

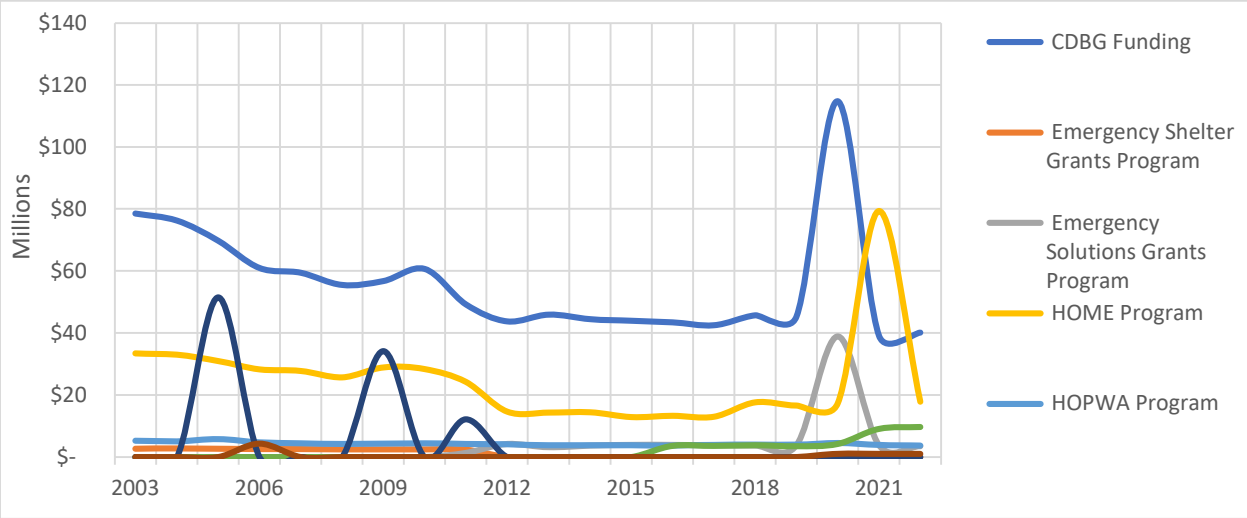
and $36 million in capital funds. Fifty of the state's 106 PHAs, including the Connecticut Department of Housing (DOH) and City of Hartford[15] collectively have a total budget of $531.4 million in FY 2023 with total reserves of $79.5 million (15.0%) that may be expended under strict guidelines on HCV activities. HUD recommends that PHAs maintain reserves of 4%-12% depending on PHA size[16].

Figure 3.1 Statewide Annual HUD Community Planning & Development Appropriations, FY 2003-2022



Note: Includes HUD Community Planning and Development Appropriations for the following programs: CDBG, Emergency Shelter Grants, Emergency Solutions Grants, HOME, HOPWA, Housing Trust Fund, Neighborhood Stabilization, and Recovery Housing.
Source: HUD, Community Planning & Development Appropriations Budget & Allocations. Available at: https://www.hud.gov/program_offices/comm_planning/budget.

Figure 3.2 Statewide Annual HUD Community Planning & Development Appropriations by Program, 2003-2022



Note: Includes HUD Community Planning and Development Appropriations for the following programs: CDBG, Emergency Shelter Grants, Emergency Solutions Grants, HOME, HOPWA, Housing Trust Fund, Neighborhood Stabilization, and Recovery Housing.
Source: HUD, Community Planning & Development Appropriations Budget & Allocations. Available at: https://www.hud.gov/program_offices/comm_planning/budget.

[15] DOH administers the HCV program for communities across the state that lack PHAs of their own.
[16] Allow the value of reserves is 15% of the collective budget, each PHA may be within its individual accepted reserve limitations.

3.1. Federal vs. State Funding

The following figures provide information on historic funding appropriations (program budgets) for the State of Connecticut's key individual statewide housing programs. Looking at development and housing support programs, the state has been the primary contributor to these program funds over the years with funding primarily allocated to the State Housing Trust Fund and Affordable Housing (FLEX) programs.

Federal funding supports a range of HUD programs in Connecticut including the:

- Recovery Housing Program (RHP),
- HOME Investment Partnerships Program (HOME),
- Community Development Block Grant (CDBG) program
- National Housing Trust Fund (NHTF),
- Emergency Solutions Grants Program (ESG),
- Housing Opportunities for Persons with AIDS (HOPWA),
- Section 8 Rental Assistance,
- Rapid Rehousing,
- Coordinated Access,
- Permanent Supportive Housing,
- Homeless Youth,
- Homeless Management Information System (HMIS), and
- Low-Income Housing Tax Credit (LIHTC) program.

Tracking funding and expenditures on the state's affordable housing activities over several decades is a challenging activity due to changes in reporting requirements, program structure, and reporting formats over time. Figure 3 includes detailed budget appropriations for FY 2021 and FY 2022 for a selection of housing programs grouped into the four major housing program categories. These budgets include funding for statewide programs administered by DOH as well as funds for CDBG and HOME, which are appropriated both directly to large municipalities and DOH for the rest of the state. HUD's HCV and Public Housing program budgets are allocated directly to PHAs and DOH for services areas without a local PHA.

Among these selected programs, budgets totaled nearly $1.3 billion in FY 2022. The largest program budgets were in the Rental Subsidies and Assistance category led by the HCV program ($534.5 million), Project-Based Section 8 ($287.3 million), Public Housing ($115.7 million), and the State Rental Assistance program ($79.0 million). Other programs with large budgets were in Housing Development and Preservation including the State Affordable Housing (FLEX) program ($100 million), the State Housing Trust Fund ($30 million), the CDBG program ($40.2 million), and HOME program ($17.9 million).

Figure 3.3 Selected Budgeted Federal and State Funding for Housing Activities, FY 2021 & 2022

Budget Source	Program	2021	2022
Homeownership Assistance/ Subsidies			
State	Crumbling Foundations	$156,000	$158,383
State	Lead Hazard Removal-Healthy Homes	$1,000,000	$1,000,000
Subtotal		**$1,156,000**	**$1,158,383**
Housing Development/Preservation			
Federal	Community Development Block Grant	$36,176,508	$40,199,886
Federal	HOME Investment Partnerships Program	$73,483,526	$17,869,942
Federal	Federal Housing Trust Fund	$8,448,637	$9,720,275
State	State Housing Trust Fund	$30,000,000	$30,000,000
State	Affordable Housing (FLEX)	$100,000,000	$100,000,000
State	Fair Housing	$670,000	$670,000
Subtotal		**$248,778,671**	**$198,460,103**
Rental Subsidies & Assistance			
State	Elderly Rental Registry & Counselor	$1,011,170	$1,011,170
State	Elderly/Congregate Rental Assistance	$1,935,626	$1,935,626
State	Rental Assistance Program	$78,994,081	$78,994,081
State	Security Deposit Guarantee Program	$661,142	$661,142
State	Rent Bank	$0	$1,500,000
Federal	Public Housing*	$111,826,241	$115,721,760
Federal	Housing Choice Vouchers*	$474,574,464	$534,525,264
Federal	Project Based Section 8*	$281,652,096	$287,277,276
Federal	Section 8 Moderate Rehabilitation (Mod Rehab)*	$3,199,392	N/A
Federal	Section 202 Project Rental Assistance*	$13,741,800	$14,358,624
Federal	Section 811 Project Rental Assistance*	$2,090,352	$2,016,000
Subtotal		**$ 969,686,364**	**$1,038,000,943**
Supportive/ Special Needs Housing			
Federal/State	Rapid Rehousing (includes ESG and CoC))	$9,101,934	$9,101,934
Federal/State	Emergency Solutions Grants Program	$13,284,084	$23,284,084
Federal/State	Housing Opportunities for Persons AIDS	$4,421,077	$4,421,077
Federal	Recovery Housing Program	$944,199	$1,064,668
State	Subsidized Assist Living Demonstration	$2,636,000	$2,928,000
State	Congregate Operating Subsidy	$7,189,480	$9,189,480
Federal/State	Permanent Supportive Housing	$1,607,447	$1,607,447
Federal/State	Coordinated Access	$1,179,571	$2,679,571
Federal/State	Homeless Youth	$5,471,087	$6,113,062
State	Homeless Diversion	$107,116	$107,116
Federal/State	Homeless Management Information System	$231,576	$231,576
Subtotal		**$46,173,571**	**$60,728,015**
Total		**$1,265,794,606**	**$1,298,347,444**

Note: (*) Derived from HUD's average costs per unit from its Annual Picture of Subsidized Households report. The above list of programs is a sample of active housing programs in the state with known budget appropriations.
Source: HUD, Exchange Grantee Awards, Available at: https://www.hudexchange.info/GRANTEES/ALLOCATIONS-AWARDS/; HUD, Picture of Subsidized Households, Available at: https://www.huduser.gov/portal/datasets/assthsg.html#2009-2022_query; CT DOH, Annual Action Plan for Housing and Community Development, 2021-22, 2022-23. Available at: https://portal.ct.gov/DOH/DOH/Housing/Notices-and-Publications

Figure 3.4 provides historic budgets appropriated to DOH from 2012 to 2022 from federal and state sources.[17] Since 2012, Connecticut has funded 85 percent of the budget for statewide Development and Housing Support programs,[18] according to DOH's Annual Action Plans for Housing and Community Development. Program funding for statewide individual and family services programs[19] was concentrated among the HCV and State Rental Assistance Programs, of which the HCV program is fully funded by HUD. Nearly half (46%) of total Individual and Family Services statewide program funding has been funded by the State of Connecticut, on average since 2012. The state fully funds the Connecticut Housing Finance Authority's (CHFA) Housing Tax Credit Contribution (HTCC) program while the federal government funds CHFA's Low-Income Housing Tax Credit (LIHTC) program. These programs have funded at roughly equal levels over the past ten years.

Figure 3.4 Budgeted State and Federal Funding for State Housing Programs, FY 2013 to FY 2023, (In $ Millions)

Funding Source	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
State and Federal Funding for Development and Housing Support											
State	144.8	148.2	119.1	175.0	169.9	181.0	191.0	33.6	N/A	144.6	196.9
HUD	17.9	17.9	18.9	18.2	18.7	21.7	25.8	25.5	N/A	26.7	35.9
Total	**162.7**	**166.1**	**138.0**	**193.2**	**188.6**	**202.7**	**216.8**	**59.0**	N/A	**171.3**	**232.8**
State %	**89.0%**	**89.2%**	**86.3%**	**90.6%**	**90.1%**	**89.3%**	**88.1%**	**56.9%**	**N/A**	**84.4%**	**84.6%**
State and Federal Funding for Individual and Family Services											
State	57.2	57.2	61.6	86.6	87.9	82.9	79.7	80.3	N/A	94.5	108.2
HUD	70.6	70.6	69.1	79.0	77.5	77.5	89.4	93.6	N/A	94.5	87.8
SSBG	11.9	11.9	10.7	10.7	11.3	11.3	6.5	6.5	N/A	6.5	6.5
Total	**139.7**	**139.7**	**141.3**	**176.3**	**176.7**	**171.8**	**175.6**	**180.4**	N/A	**195.5**	**202.4**
State %	**40.9%**	**40.9%**	**43.6%**	**49.1%**	**49.7%**	**48.3%**	**45.4%**	**44.5%**	**N/A**	**48.3%**	**53.5%**
CHFA State and Federal Funding											
State	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	N/A	10.0	10.0
HUD	7.9	7.9	7.9	7.9	8.5	8.5	12.5	12.5	N/A	12.5	10.0
Total	**17.9**	**17.9**	**17.9**	**17.9**	**18.5**	**18.5**	**22.5**	**22.5**	N/A	**22.5**	**20.0**
State %	**55.9%**	**55.9%**	**55.9%**	**55.9%**	**54.1%**	**54.1%**	**44.4%**	**44.4%**	**N/A**	**44.4%**	**50.0%**

Notes: State funding in 2019-2020 was down sharply for Development and Housing Support due to the lack of funding for the State Housing Trust Fund and Affordable Housing (FLEX) programs. Those programs were funded at $130 million in FY 2018-2019 and 2021-2022. Does not include federal funding allocated directly to individual municipalities.
Data not available for 2020-21.
Source: CT DOH, Annual Action Plan for Housing and Community Development, FY 2012-13 to 2022-23. Available at: https://portal.ct.gov/DOH/DOH/Housing/Notices-and-Publications

[17] These monies do not include budgets allocated directly to municipalities from HUD's CPD appropriations such as CDBG or HOME or HUD's PIH appropriations for programs like Public Housing and HCV for funding local PHA activities.

[18] Development & Housing Support includes the following programs: Recovery Housing, HOME, CDBG, National Housing Trust Fund, State Housing Trust Fund, Affordable Housing (Flex), ARPA Affordable Housing Production, Subsidized Assist Living Demonstration, Elderly Rental Registry & Counselor, Fair Housing, Elderly/Congregate Rental Assistance, Congregate Operating Subsidy, Crumbling Foundations, and Lead Hazard Removal-Healthy Homes.

[19] Individual & Family Services includes the following programs: Emergency Solutions Grant, Housing Opportunities for Persons AIDS, Section 8 Rental Assistance, Homeless Diversion, Rental Assistance Program, Rapid Rehousing (includes ESG and CoC)), Coordinated Access, Security Deposit Guarantee Program, Permanent Supportive Housing, Homeless Youth, Rent Bank, and Homeless Management Information System.

3.2. Housing Choice Vouchers

The Housing Choice Voucher (HCV) program is HUD's primary program for providing very low-income families, seniors, and disabled individuals with affordable housing. As of January 2023, 39,400 HCV program units were leased in Connecticut (see Figure 3.5). Approximately 88.5 percent of units were leased and out of 44,544 units with Annual Contributions Contracts (ACC) between HUD and local PHAs, 5,144 units were not leased at that time. Nearly four percent of HCV awardees (households awarded vouchers) had not obtained leases through the HCV program. Connecticut has a similar share of special purpose vouchers (vouchers targeted toward specific populations) as the United States (10.2% versus 10.8%).

In terms of program efficiency, the state's PHAs had a higher share of HCV units rented to awardees and a smaller share of unhoused HCV awardees than the nation as a whole. Despite a declining percentage of HCV contracted units being leased since 2017 nationally, the state has maintained a largely stable leasing percentage over these years. In terms of program budget utilization (see Figure 3.6), the state's rate was 94.9 percent in 2022 compared with the US average of 97.2 percent. The state's utilization rate was 0.6 percentage points lower than the US on average over the years from 2015-2022.

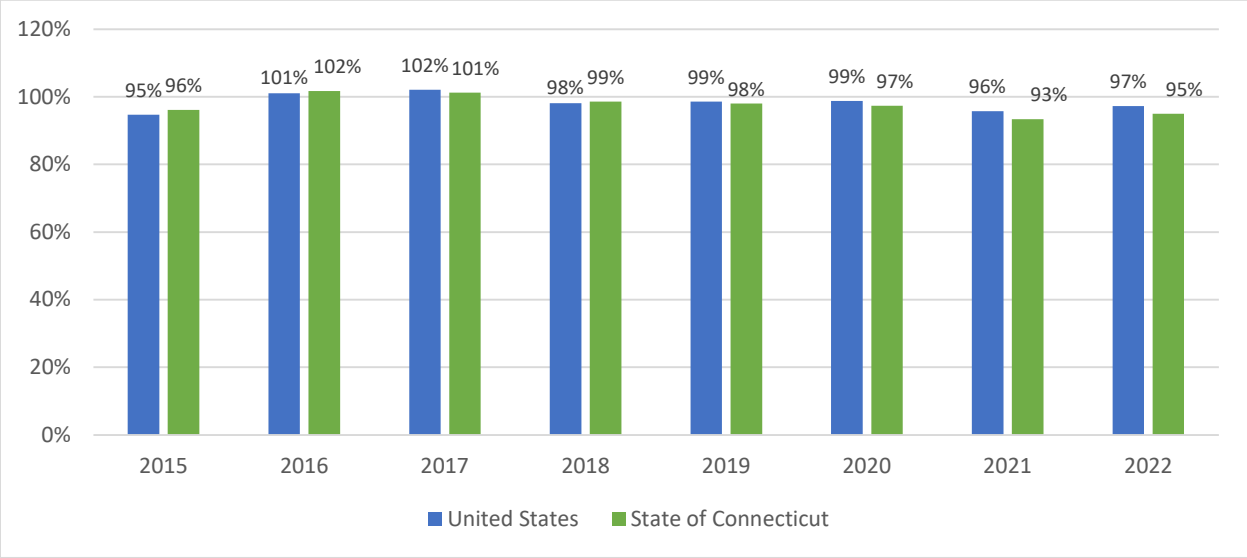
Average HCV unit costs have increased by 22.2 percent in Connecticut from January 31, 2015 to January 31, 2023. However, unit costs expanded at an even higher rate in the United States as a whole with a gain of 36.5 percent. According to the US Bureau of Labor Statistics' Consumer Price Index, inflation increased by 27.5 percent over this period, thereby the state's HSV units managed to appreciate in cost 5.3 percentage points below the national rate of inflation while the nation's HSV units appreciated 9.0 percentage points higher.

Figure 3.5 State of Connecticut Housing Choice Voucher Program Unit Count & Costs

	Connecticut	United States
Current Units Under ACC	44,544	2,665,500
Current Reported Leasing	39,400	2,269,245
2023 YTD Leasing Percentage	88.5%	85.1%
Units Remaining Under ACC	5,144	396,255
Total HCV Awards	40,816	2,382,707
% of Unhoused HCV Awardees	3.6%	5.0%
Average Per Unit Cost	$993	$879
% Change 2015-2023	22.2%	36.5%
% of Special Purpose HCV Awardees		
% of Special Purpose HCVs	10.2%	10.8%
% of Mainstream HCVs	3.0%	2.9%
% of Non-Elderly Disabled HCVs	2.5%	2.3%
% of Family Unification HCVs	2.1%	1.1%
% of Veterans Affairs Supporting Housing HCVs	2.6%	4.5%

Source: HUD, Housing Choice Voucher Program Data Dashboard, 2023. Available at: https://app.powerbigov.us/view?r=eyJrIjoiM2Y2OTQ2MTAtODVkNC00YmM2LThhOWEtZWY4MGU5YWFmZDFmIiwidCI6IjYxNTUyNGM1LTIyZTktNGJjZC1hODkzLTExODBhNTNmYzdiMiJ9.

Figure 3.6 HCV Program Budget Utilization Rates, Connecticut vs United States as a Whole



Source: HUD, Housing Choice Voucher Program Data Dashboard, 2023. Available at: https://app.powerbigov.us/view?r=eyJrIjoiM2Y2OTQ2MTAtODVkNC00YmM2LThhOWEtZWY4MGU5YWFmZDFmIiwidCI6IjYxNTUyNGM1LTIyZTktNGJjZC1hODkzLTExODBhNTNmYzdiMiJ9.

4. Descriptive Statistics

4.1. Demographic Trends

Section 5 of this report will provide information on the changes in several of the many measures of segregation. However, these measures do not necessarily provide meaningful understanding of the conditions that underly and surround segregation. This section presents a series of maps to highlight demographic trends and better understand the unique spatial relationship of segregation, subsidized housing and the complex network of contributing factors that have influenced them over time. The socioeconomic data presented in this section can be found using the All Data Viewer Tool developed for this study.

It is important to note that any changes in segregation indices may simply reflect changes in overall diversity, i.e., Non-White populations where they had not previously existed in the broader reference area. Moreover, the relative impact of change in segregation levels should take into consideration additional factors beyond the direction of the trend, including the number of residents affected in a given community and intensity of segregation (the actual segregation index value).

Similarly, many of the areas that are seeing decreased segregation (as discussed in detail in Section 5 of this report) are a reflection of migration and socioeconomic trends that have driven the State's segregation patterns over the past 30 years including, but not limited to, the following scenarios:

- Highly segregated cities experiencing White out-migration and increasing in-migration of people of color to neighborhoods that were previously White only;
- Out-migration of one Non-White race group such as Black Non-Hispanics and in-migration from another Non-White group of residents such as Hispanics or Asian Pacific Islander Non-Hispanics;
- Increasing segregation at the metropolitan region level with reduced segregation in core central cities and increased segregation in some inner/outer suburbs;
- Increasing segregation among fast-growing ethnic enclaves in select communities, as neighborhoods increasingly became more homogenous;
- Broadly reduced segregation among people of color and White Non-Hispanics across the State but with relatively smaller improvements in desegregation of communities among Blacks to Whites as compared to people of color to Whites, which became considerably less segregated.

4.2. Population Growth

Figures 4.1.1-4.1.4 present the overall influences of these changes by bringing together four maps showing the change in the overall share of the Non-White population as well as its three primary component groups. The total Non-White population in the state grew by roughly 794,000 between 1990 and 2020, increasing from 16.2 percent of the total population to 36.8 percent (+20.6 percentage points). Figure 4.1 illustrates the population growth from 1990 to 2020 among Non-White residents for each municipality. While each municipality had some growth in their Non-White population, the greatest population growth has taken place close to major highway corridors where business centers and job clusters are located.

Over the past thirty years, little of the overall racial and ethnic diversification of the State came from growth in the African American/Black Non-Hispanic population. This group increased in number by one hundred thousand individuals overall, but as a share of the State's total population, it increased from 7.9 percent in 1990 to 10.0 percent in 2020 or only 2.1 percentage points. Figure 4.1.2 presents the change in the share of the African American/Black Non-Hispanic population at the municipal level. While Figure 4.1.1 shows a geographic dispersion in growth of people of color throughout the municipalities, the detailed breakdown in Figure 4.1.2 shows how the growth of the African American/Black Non-Hispanic population was concentrated in only a few towns. Further, many towns farther away from urban centers have seen a decline in their overall share of African American residents.

The largest contributor to the diversification of Connecticut is the Hispanic population, which almost doubled between 1990 and 2020 and increased in share from only 6.5 percent of the population in 1990 to 17.3 percent of the population in 2020 (see Figure 4.1.3). Every municipality in the state saw increases in the share of the Hispanic population, but the greatest gains were seen along the major highway corridors.

Finally, the Asian-Pacific Islander share of the population increased throughout the state as well, with very few exceptions. Growing from 1.5 percent of the population in 1990 to 4.8 percent of the population in 2020 (see Figure 4.1.4); the Asian-Pacific Islander population is still relatively small, but its growth is widespread.

4.3. Housing Development Practices

Redlining

There are multiple underlying causes of the segregated racial settlement patterns in Connecticut. Figure 4.2 presents the total share of population that is White Non-Hispanic by block group, overlaid with "hazardous grade" areas from the 1930s Home Owners Loan Corporation (HOLC), i.e., redlined neighborhoods, which made it impossible for residents to get home loans. The crosshatched "hazardous areas" are generally at the epicenter of areas with very low percentages of White Non-Hispanic population.

Multifamily Housing Development

Figures 4.3-4.5 provide illustrations of the relative share of multifamily housing units to the total housing stock at the block group level in 1990 and 2020, first looking at the share of units with two or more units

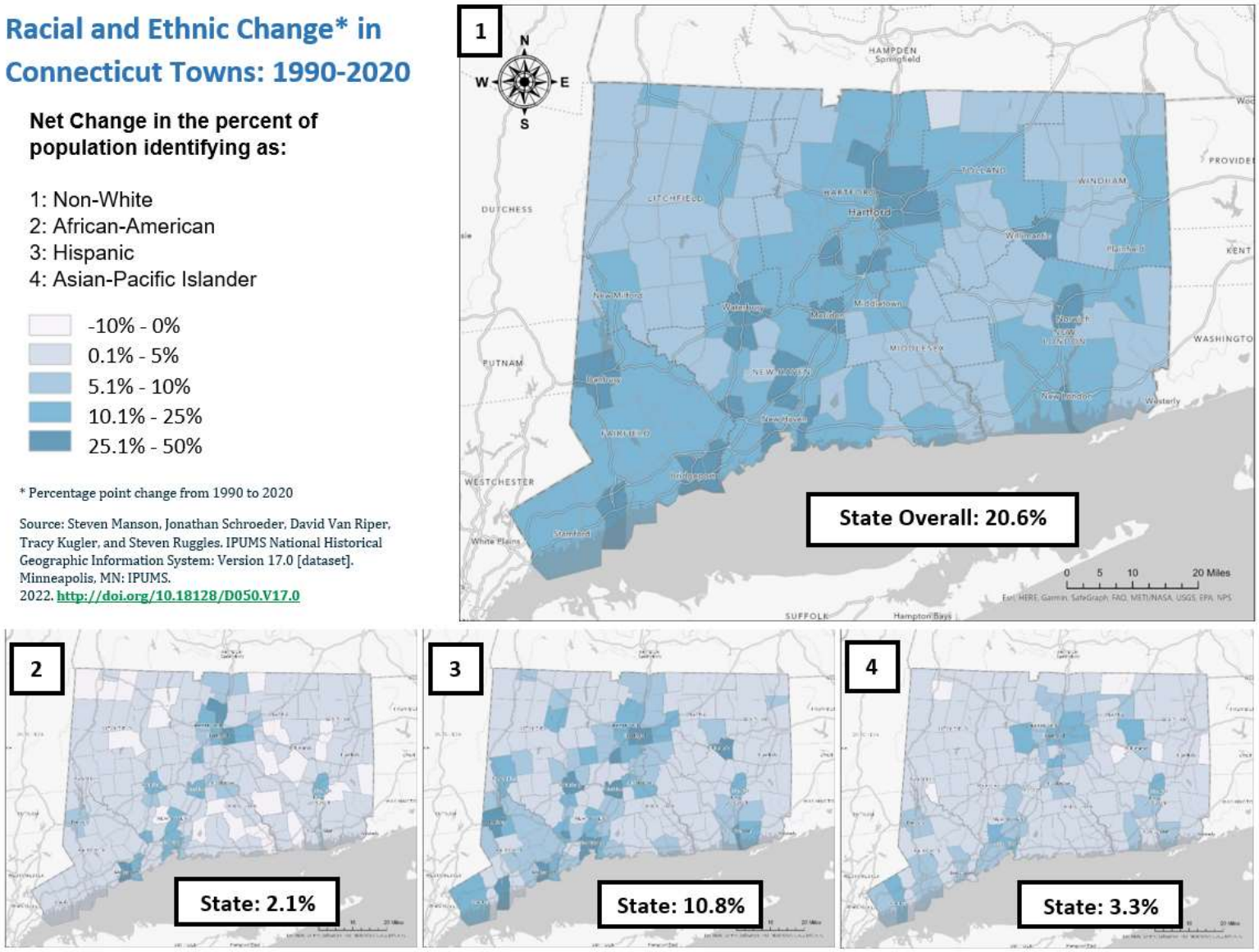
per building including duplexes and triplexes as well as larger low-rise and high-rise buildings, while the latter two maps look at the share of units in buildings with ten or more units, typical for higher density low-rise and high-rise buildings.

The initial two maps illustrate the prevalence of multifamily homes in both major urban centers and suburban areas within the state. In 2020, these homes constituted 58.6% of total housing units categorized as cities, 28.2% in suburbs, and 19.1% in town and rural areas. Although the share of multifamily units marginally decreased across all community types from 1990 to 2020 (less than two percentage points), it continues to remain a popular housing choice particularly in urban and suburban areas.

Examining higher-density multifamily buildings featuring ten or more units per structure—commonly associated with government-subsidized housing—the share of multifamily units out of the total housing stock slightly expanded since 1990. Specifically, the proportion increased from 21.8% to 23.9% in cities, from 9.1% to 10.0% in suburbs, and remained unchanged at 4.1% in towns and rural areas. It's worth noting that these changes are relatively small and may be challenging to discern on the maps due to alterations in census block group boundaries over the years, especially in more rural regions. Several regions saw notable gains in multifamily housing including the Hartford and New Haven area suburbs as well as Lower Fairfield County.

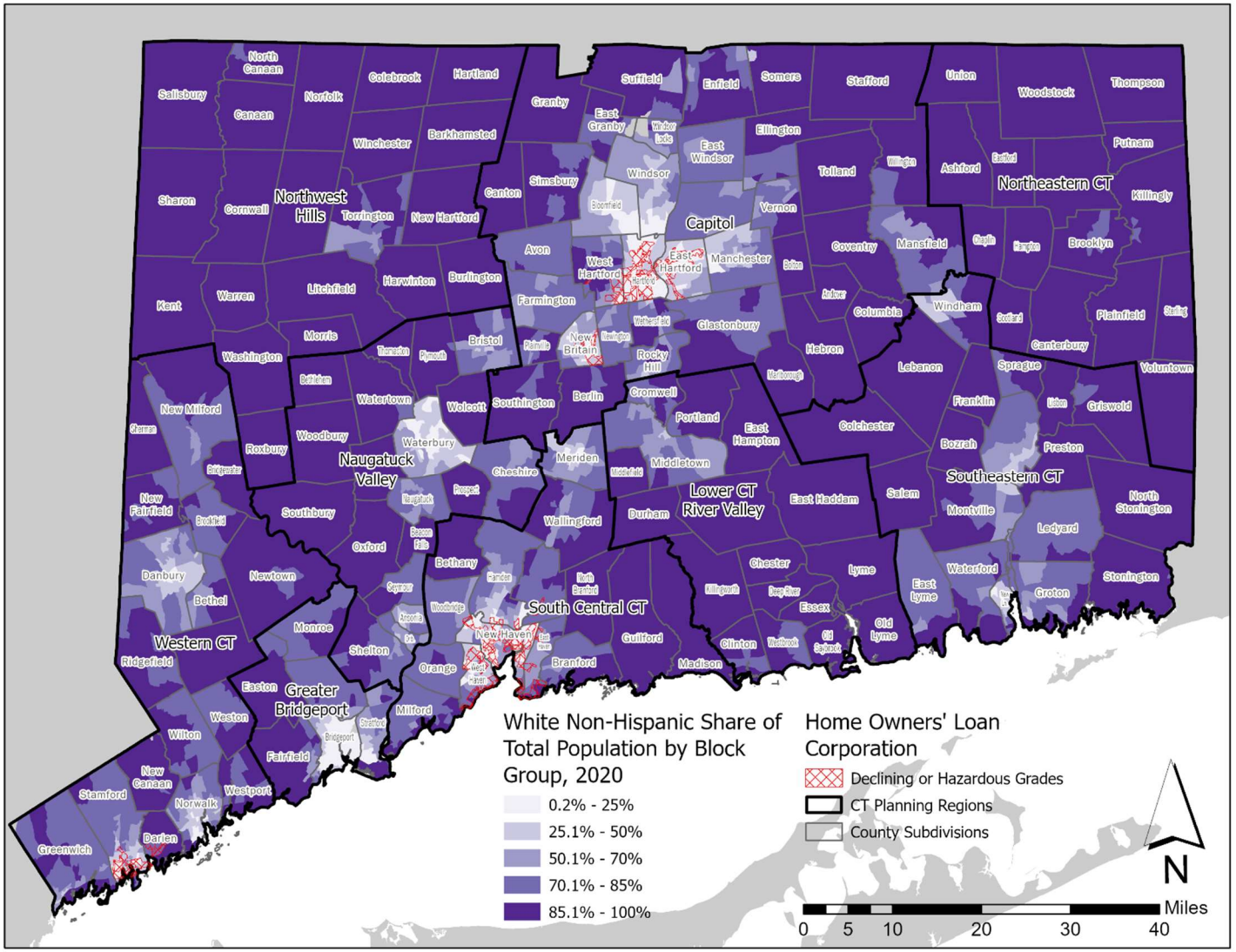
In Figure 4.6, total housing permits are quantified for each county subdivision over the period from 1990 to 2020 with separate figures illustrating total permits approved in each of the three decades. The 1990s saw robust housing construction across most communities (excluding the Northwest Hills and Northeastern CT COG areas) fueled by demand from baby boomer households, many of them forming families over these years. Growth was similarly strong during the 2000s but declined by 44 percent in the following decade. Permitting activity (228,378 permits) exceeded the number of actual units added (209,346) over the 30-year period by about 19,000 units as not all permitted units were actually constructed. Over the entire 30-year period, permits issued were highest in the Capitol Region (25.6% of statewide permits), followed by the Western (20.4%), South Central (13.2%), and Naugatuck Valley (11.9%) Planning Regions. The share of multifamily permits issued varied across regions. Over the past two decades, the South Central Region led the state in terms of the share multifamily permits issued (48.7%), followed by the Western Region (44.8%), and the Metro Region (42.0%) Just 31.3% permits issued statewide from 2000 to 2020 were for multifamily properties.

Figure 4.1. Racial and Ethnic Change in Connecticut Towns: 1990-2020



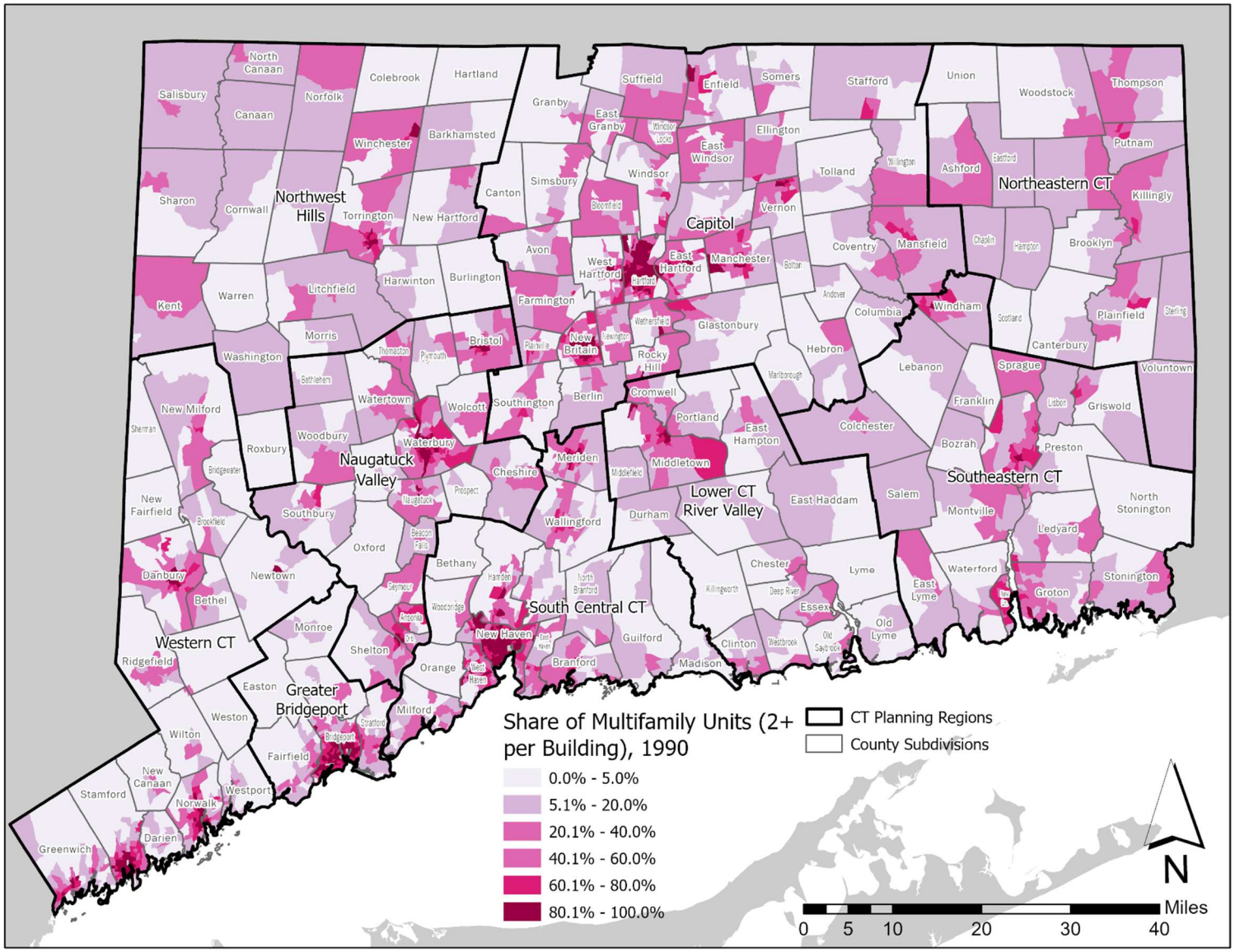
Source: US Census Bureau, 1990-2020 Decennial Census

Figure 4.2 Share of White Non-Hispanic Population by Block Group, 2020 and Historic Redlining Areas (Declining or Hazardous Grades)



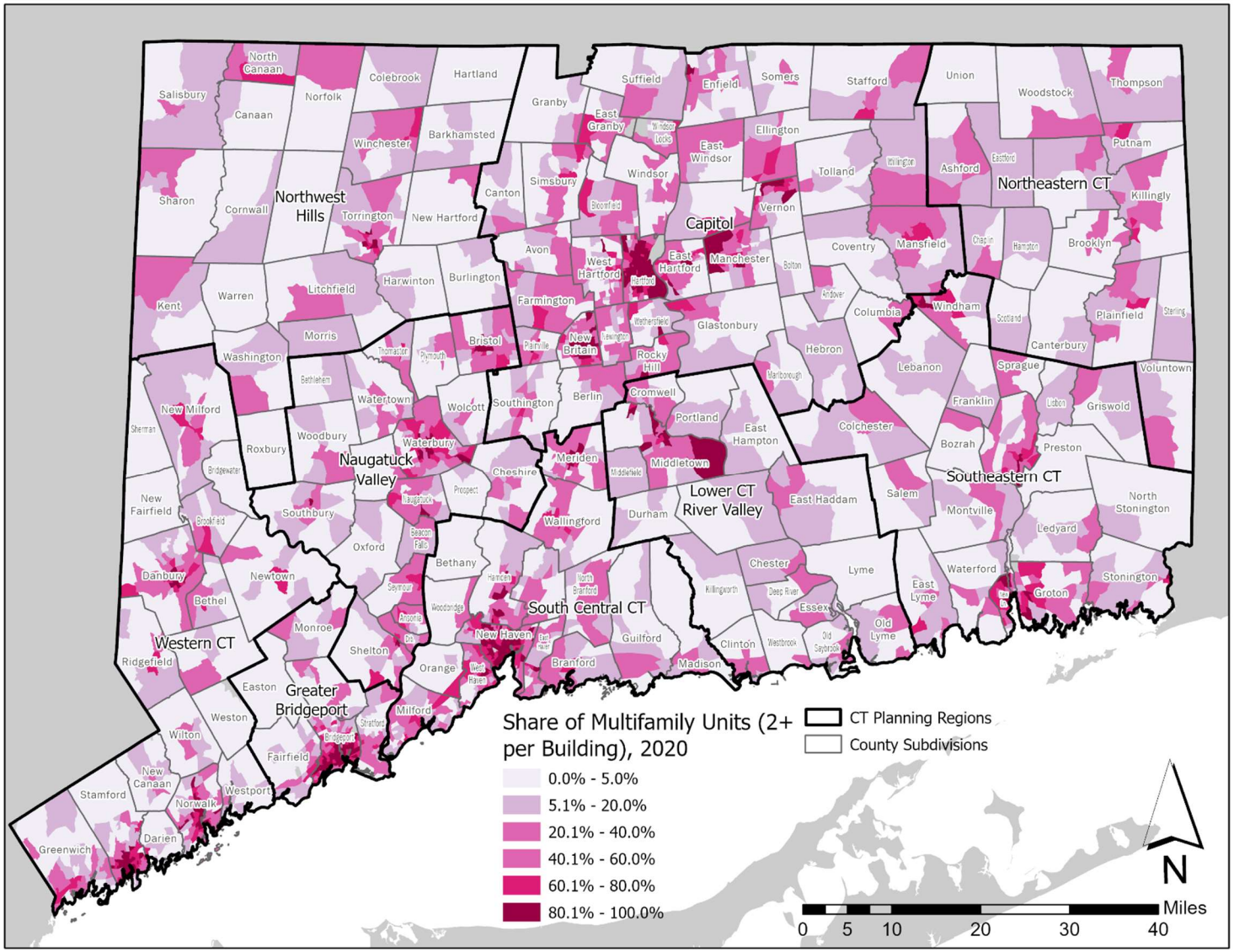
Note: The University of Richmond's HOLC database includes boundaries of redlining in 143 out of more than 200 US redlined cities that were redlined and therefore this is not a complete dataset of every city that experienced redlining by the HOLC in the 1930s.
Source: Home Owners' Loan Corporation (HOLC), collected by University of Richmond's Digital Scholarship Lab

Figure 4.3 Multifamily Housing Units with 2+ Units per Building as a Share of Total Housing, 1990



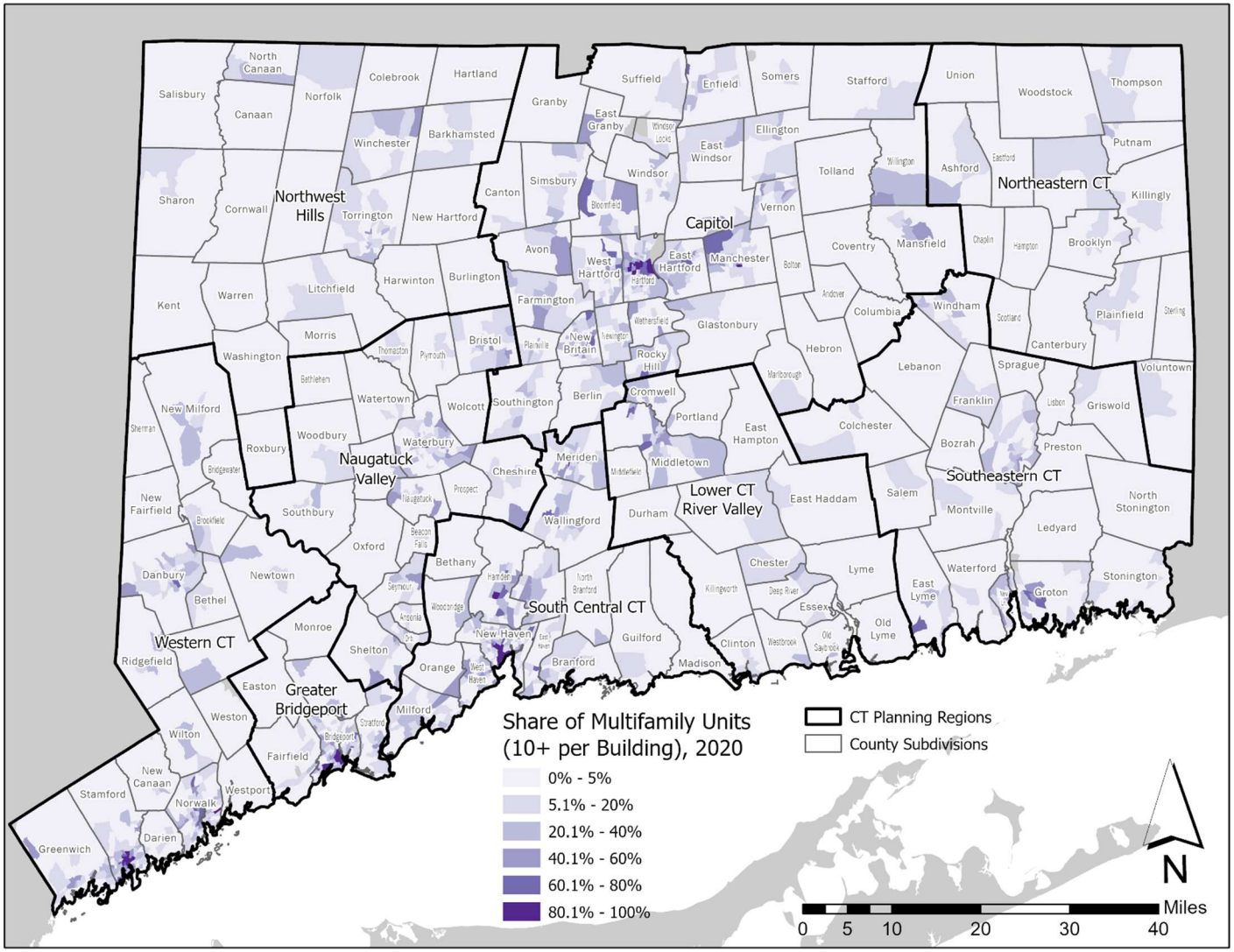
Source: US Census Bureau, 1990 Decennial Census, Summary File 3

Figure 4.4 Multifamily Housing Units with 2+ Units per Building as a Share of Total Housing, 2020



Source: US Census Bureau, ACS 2016-2020 5-Year Estimate

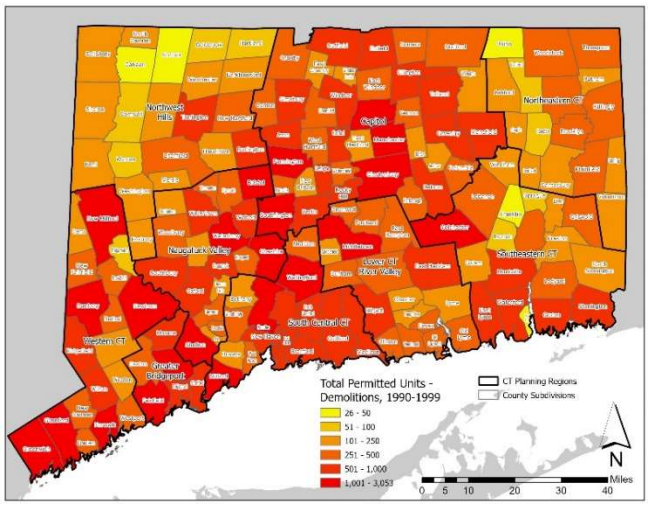
Figure 4.5 Multifamily Housing Units with 10+ Units per Building as a Share of Total Units, 2020



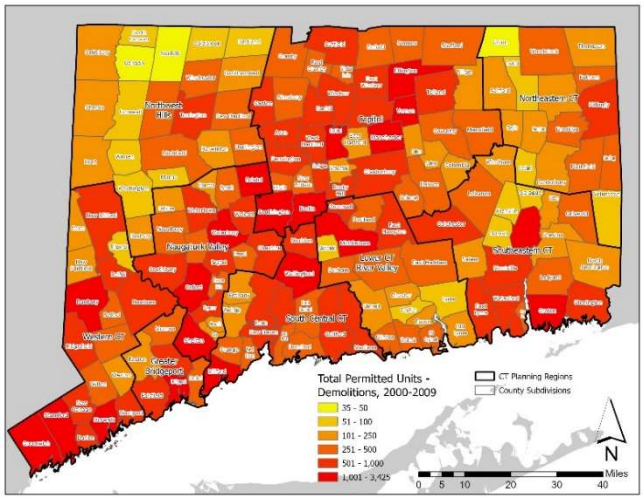
Source: US Census Bureau, US Census Bureau, ACS 2016-2020 5-Year Estimate 3

Figure 4.6 Total Housing Permits Minus Demolitions by County Subdivision by Decade, 1990-2020

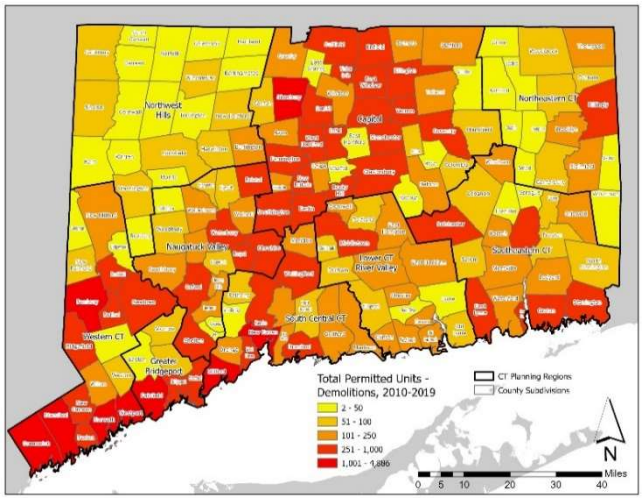
Total Permits Issued, 1990-1999



Total Permits Issued, 2000-2009



Total Permits Issued, 2010-2019



Source: Connecticut Department of Economic and Community Development, U.S. Census Monthly Building Permit Data, 1990-2020

Government Subsidized Housing

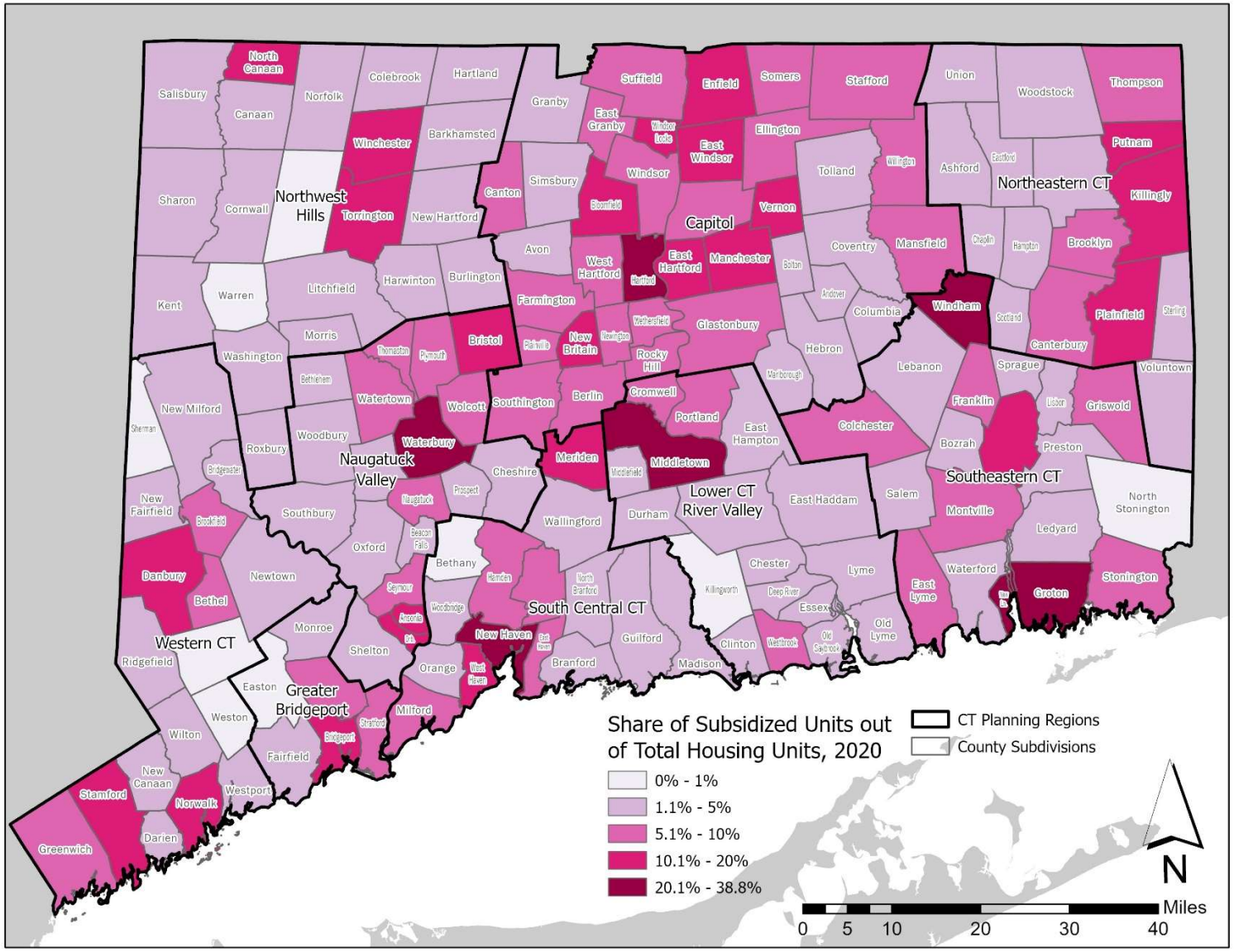
Government subsidized housing projects were often sited in urban areas and communities of color. Figure 4.7 shows subsidized housing based on data from DOH's Appeals List as the share of total households per municipality in 2020. As shown, the largest share of Connecticut municipalities have between one and five percent government subsidized housing units as a share of total housing. There are also nine communities that have less than 1% of units that are subsidized. At the other end, eight communities have more than 20% subsidized units.

Figures 4.8-4.12 present the majority of government-subsidized housing units in the state[20]. Figure 4.8 shows the distribution by target population (where such information was known). Figure 4.9 overlays the subsidized units over land area connected to sewer systems. Figures 4.10 and 4.11 overlay the public transit system on government subsidized housing and the percentage of population that is White Non-Hispanic, respectively. There is a negative relationship between transit-connected communities and the White Non-Hispanic population. As follows the Connecticut Plan of Conservation and Development, multifamily housing is generally limited to areas with municipal sewer systems and transit services. While the availability of transit access is still a strong requirement for some types of subsidized housing, there have been technological innovations in septic systems (i.e., large-capacity septic systems)[21] for multifamily housing that would no longer limit development to sewered areas. Finally, Figure 4.12 shows subsidized housing projects overlaid a map of the share of building permits that were multi-family issued from 2000 to 2020.

[20] Excludes some scattered site projects with locations not publicly available as well as project sites without known target resident population information.

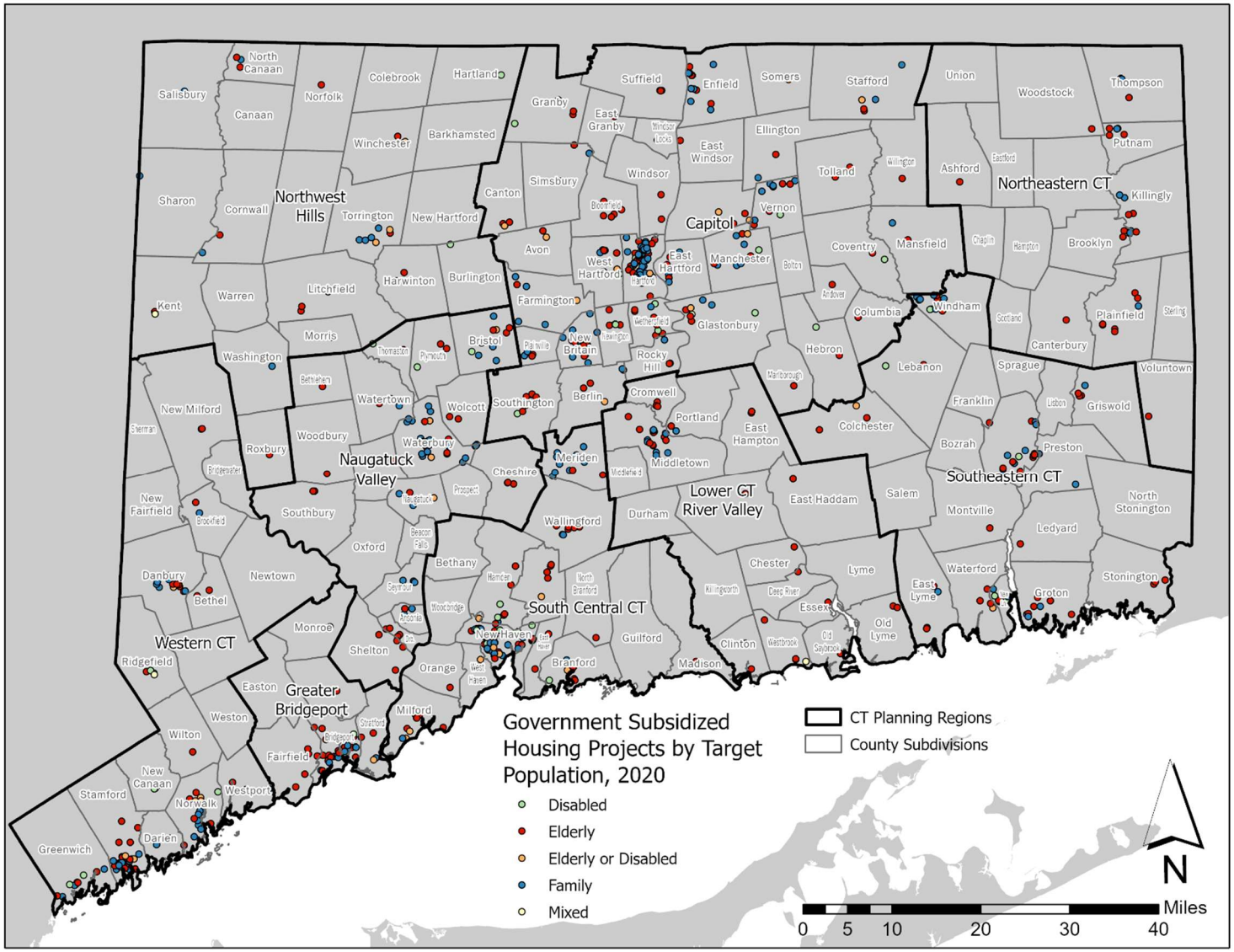
[21] EPA. (Date Unknown). Underground Injection Control (UIC), Large-Capacity Septic Systems. Retrieved from: https://www.epa.gov/uic/large-capacity-septic-systems

Figure 4.7 Share of Government Subsidized Housing Units out of Total Housing Units, 2020



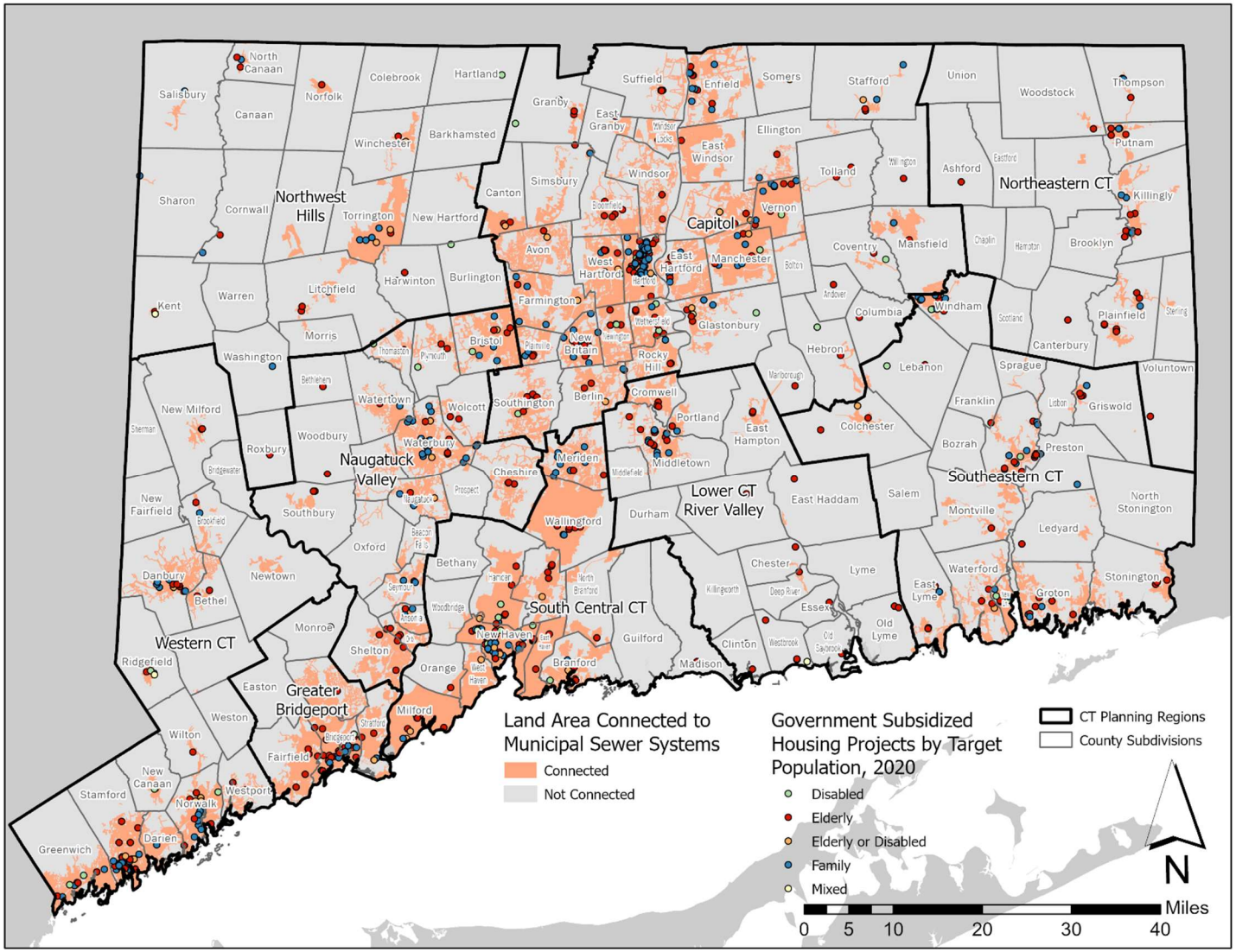
Source: US Census Bureau, 2020 Decennial Census; CT DOH 2020 Annual Appeals List

Figure 4.8 Government Subsidized Housing Projects by Target Population, 2020



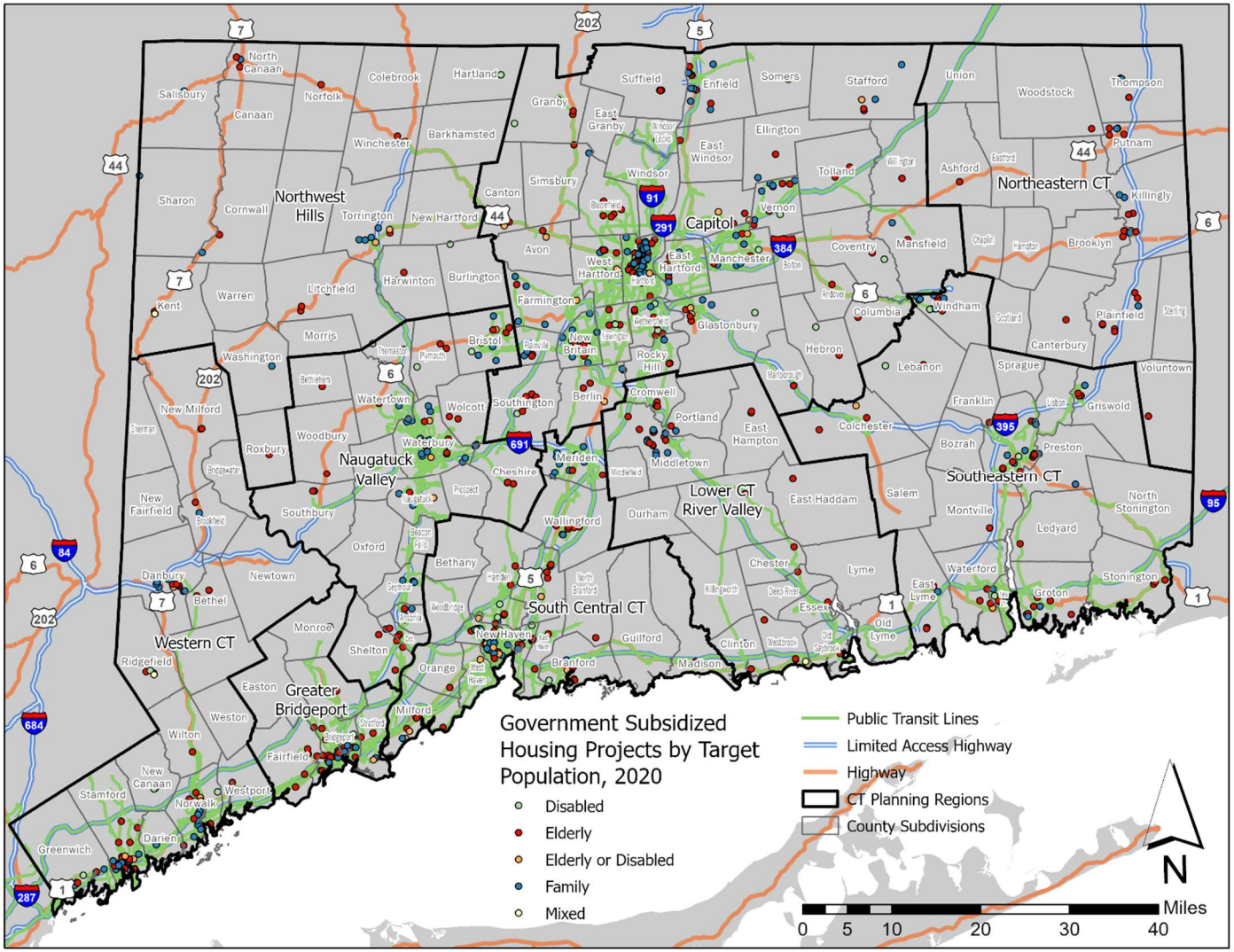
Note: Excludes some scattered site projects with locations not publicly available as well as project sites without known target resident population information.
Source: CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022

Figure 4.9 Subsidized Housing Projects 2020 and Municipal Sewer Systems



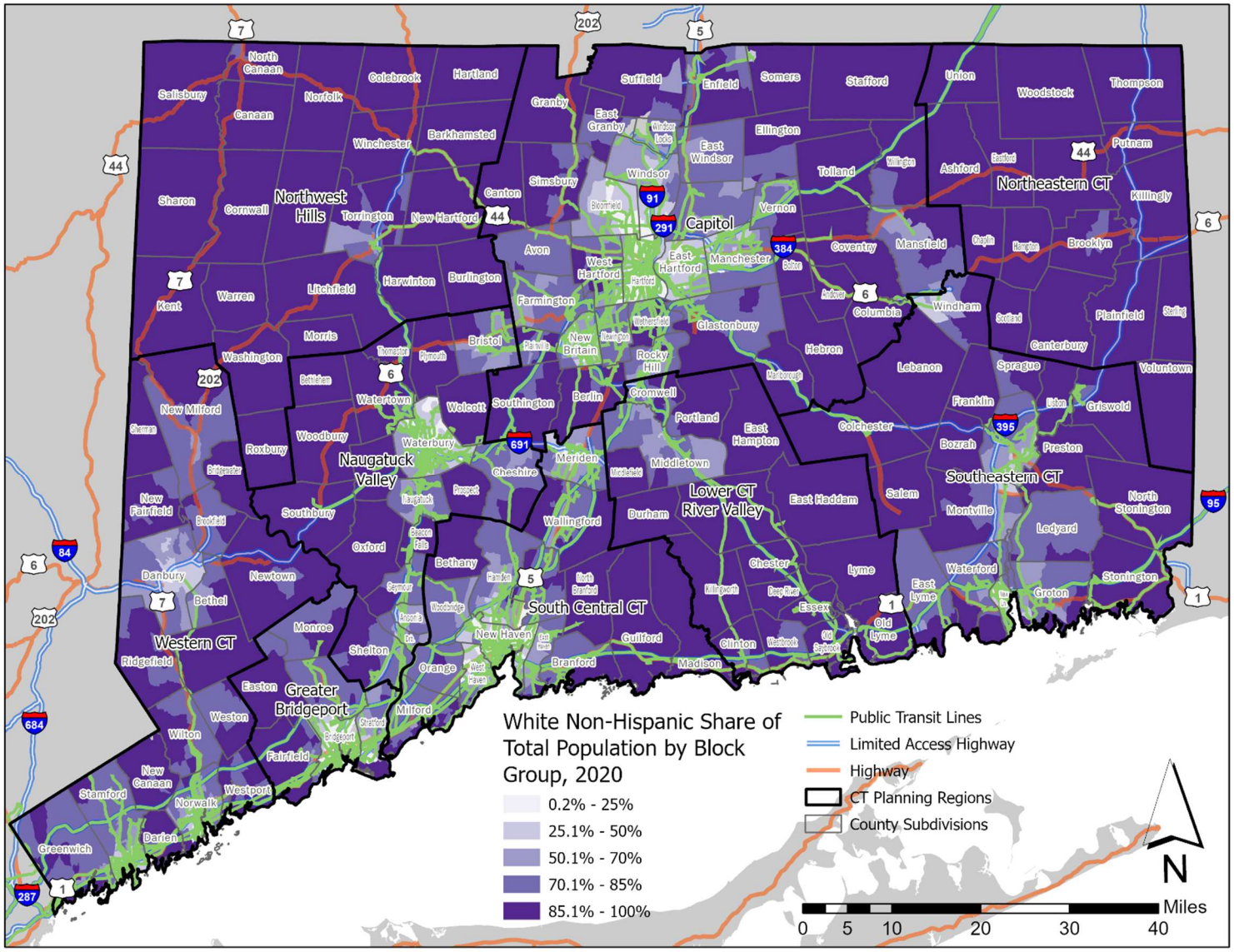
Note: Excludes some scattered site projects with locations not publicly available as well as project sites without known target resident population information.
Source: CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022; CT Department of Energy & Environmental Protection, Connected Sewer Service Areas, 2022

Figure 4.10 Government Subsidized Public Housing and Transit Networks



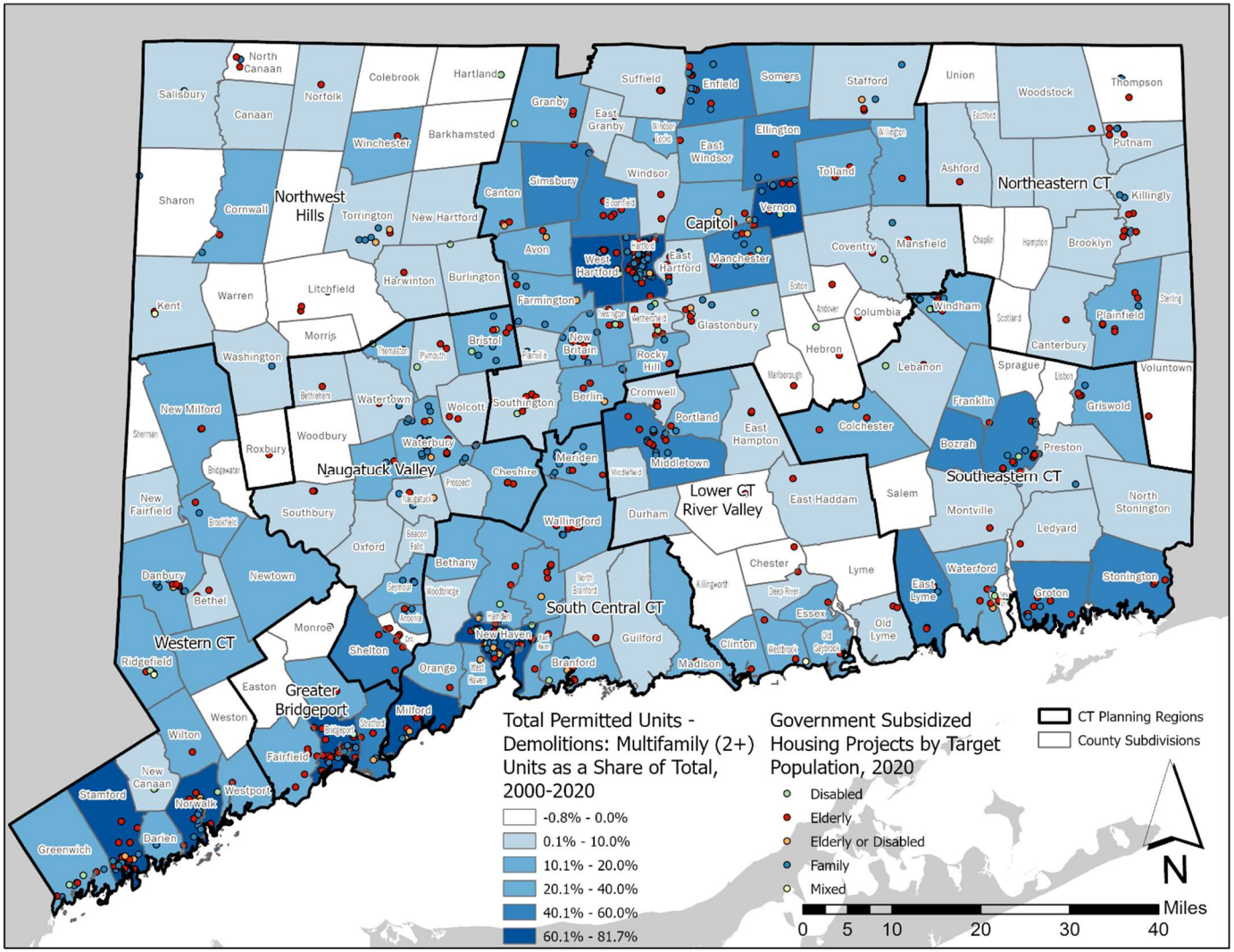
Note: Excludes some scattered site projects with locations not publicly available as well as project sites without known target resident population information.
Source: CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022; Transitland, 2021; ESRI, 2022

Figure 4.11 Share of White Non-Hispanic Population by Block Group, 2020 and Public Transit Networks



Source: US Census Bureau, 2020 Decennial Census; Transitland, 2021; ESRI, 2022

Figure 4.12 Share of Multifamily Units of Total Housing Permits Issued by County Subdivision, 2000-2020 & Government Subsidized Housing Projects by Target Population, 2020



Note: Excludes some scattered site projects with locations not publicly available as well as project sites without known target resident population information. Source: US Census Bureau, Annual Building Permit Survey Program, 1990-2020; CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022

4.4. Subsidized Housing Segregation Relationship

The figures in Sections 4.1-4.3 show population and housing density as well as the location of state and federal subsidized housing developments. As shown, the distribution of subsidized housing aligns with communities that have greater overall housing density and development activity, as well as clustering in areas with municipal water/sewer and public transportation access. Section 6 will provide an in-depth spatial analysis of the relationship of subsidized housing and the segregation indices discussed in Section 5.

Figures 4.13-4.15 on the following pages present the share of heads of all households by race/ethnicity[22] compared to share of heads of households in subsidized housing (i.e., subsidized households) by the same race/ethnicity in order to identify if subsidized households reflect area demographics or if they provide a step toward diversification. It should be noted that this map series consistently utilizes the same data under the same scaling for the purpose of clearly representing the variations in households by race/ethnicity across all households and subsidized households alone.

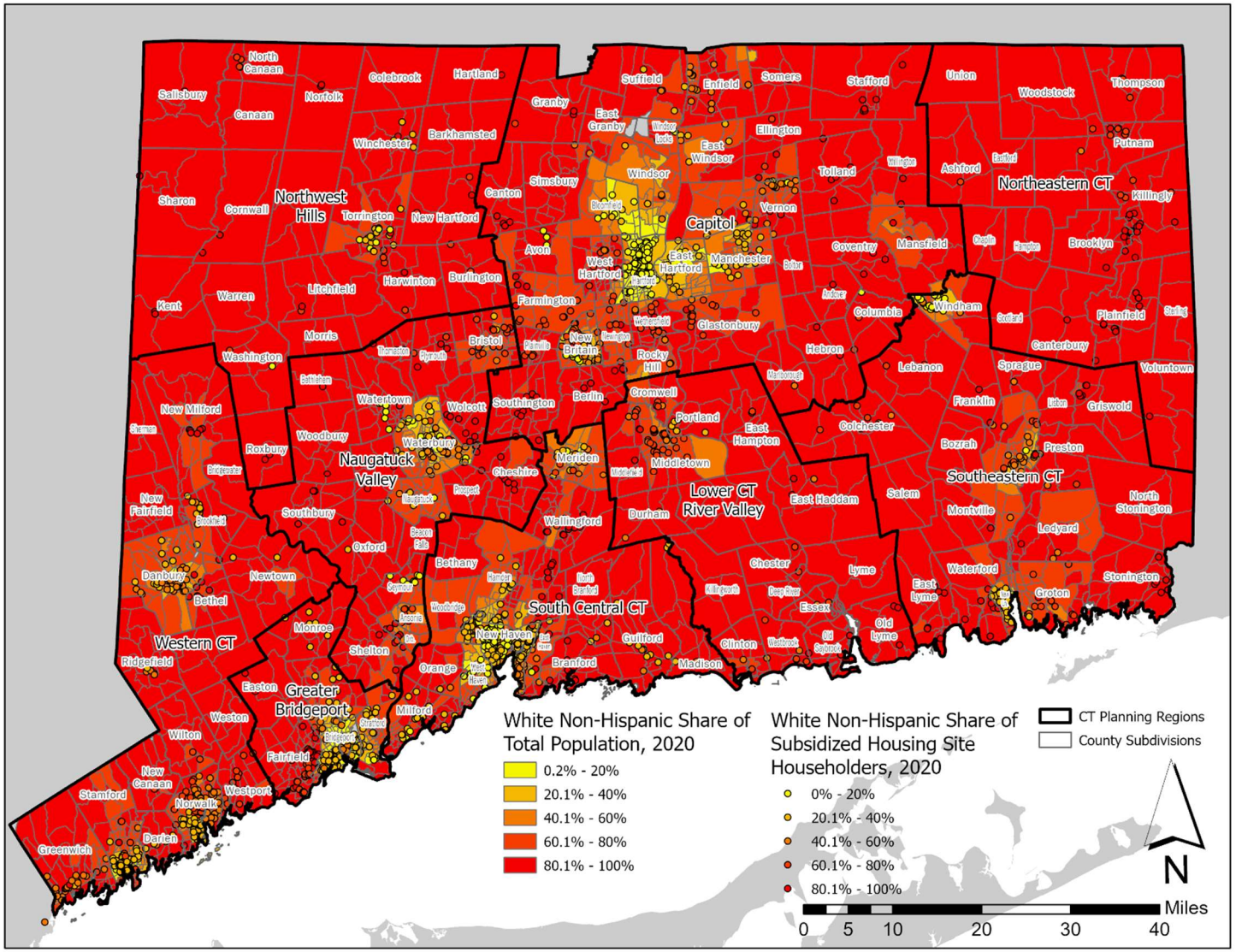
Figure 4.13 illustrates the share of total households and total subsidized households with head that identify as White Non-Hispanic. They are color coded at the same scale with yellow being a low share of White Non- Hispanic and red being a high share. In most areas, the colors are quite similar. The exceptions are municipalities including Stamford, Norwalk, Bridgeport, Waterbury, Stratford, Torrington, Avon, and Windham where the heads of subsidized housing are less likely to be White Non-Hispanic than household heads as a whole.

Figure 4.14 presents the same data but for heads of households who identify as Black Non-Hispanic. Once again, the colors are quite similar in most areas. The exceptions are municipalities include many of the same areas (Stamford, Norwalk, Bridgeport, Waterbury, and Stratford) but also Avon, where the heads of subsidized housing are less likely to be Black Non-Hispanic than household heads as a whole.

The Hispanic share of total households and total subsidized households is presented in Figure 4.15. They are color coded at the same scale with yellow being a low share of Hispanic and red being a high share. The disparities here are different than the Black and White Non-Hispanic populations. In the large coastal communities like Stamford, Bridgeport, and New Haven, the heads of households in subsidized housing are less likely to be Hispanic than heads of households as a whole. However, in Danbury, Waterbury, Torrington, and Meriden, and Windham heads of subsidized households are more likely to be Hispanic than in the population as a whole.

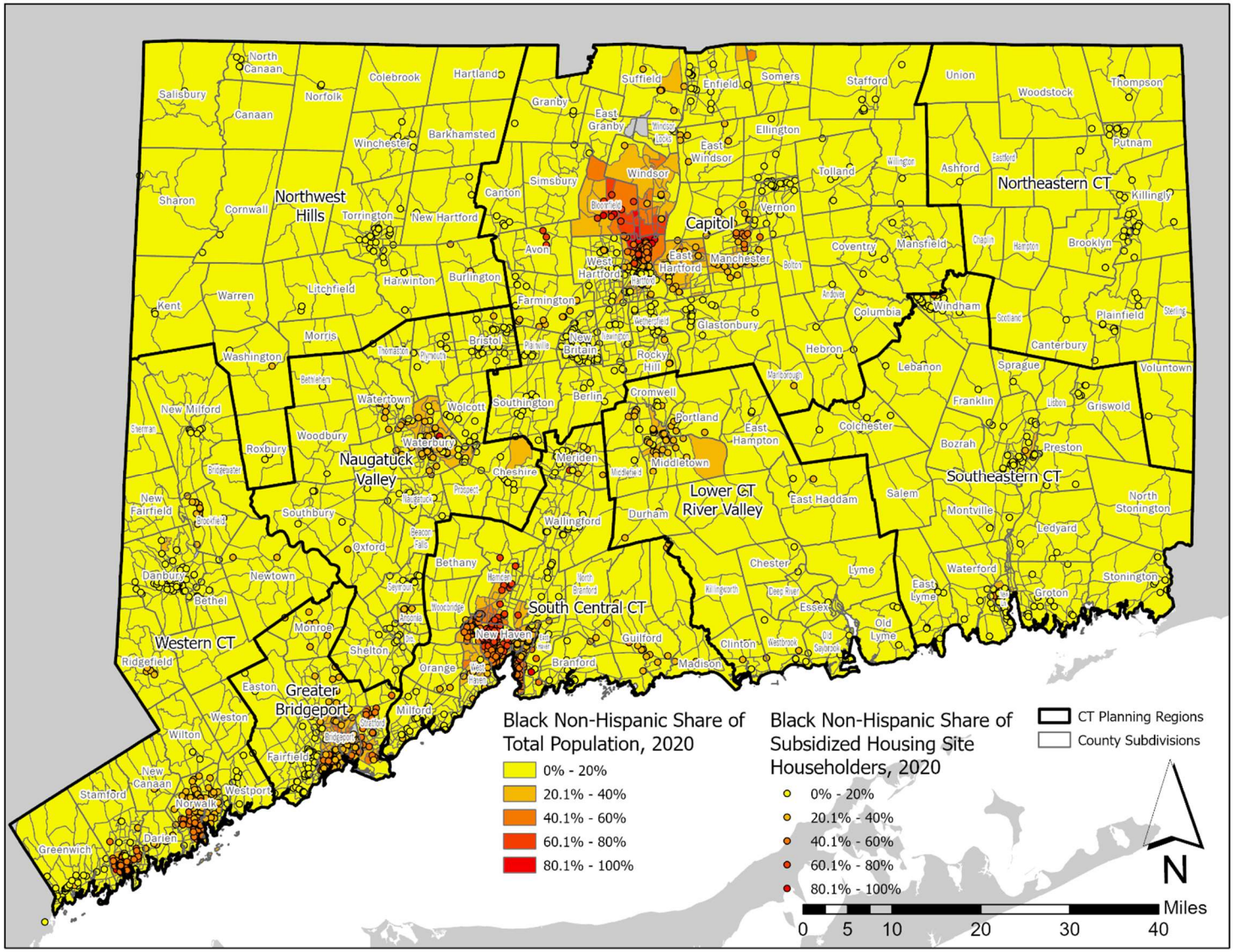
[22] Race and ethnicity of householders' data based on imputed historic data from HUD's Picture of Subsidized Households and other state program sources.

Figure 4.13 White Non-Hispanic Population vs White Non-Hispanic Share of Households in Site-Based Subsidized Housing, 2020



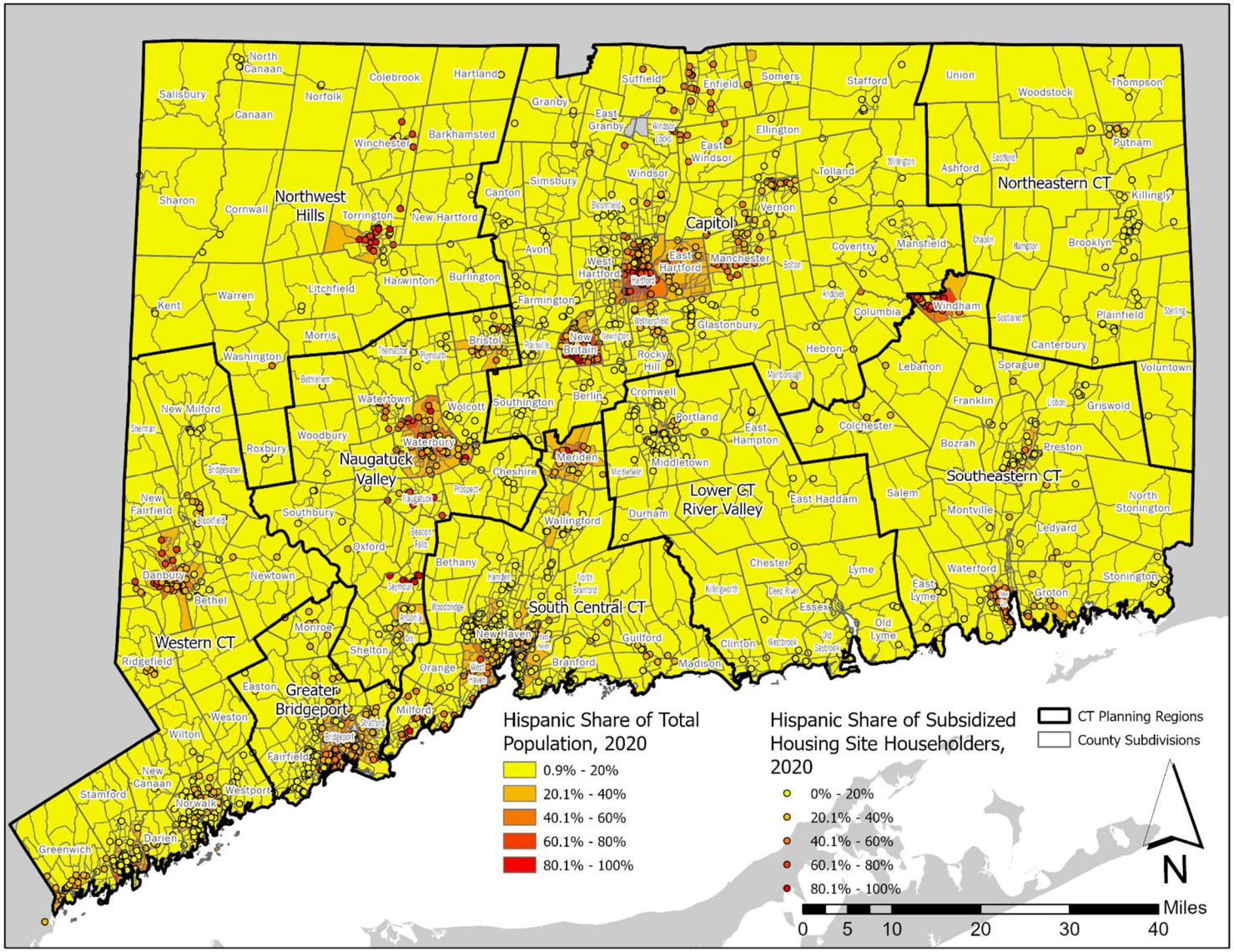
Note: Excludes some scattered site projects with locations not publicly available. Project householders by race and ethnicity data imputed based on historic HUD data.
Source: US Census Bureau, 2020 Decennial Census; CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022

Figure 4.14 Black Non-Hispanic Population vs Black Non-Hispanic Share of Households in Site-Based Subsidized Housing, 2020



Note: Excludes some scattered site projects with locations not publicly available. Project householders by race and ethnicity data imputed based on historic HUD data.
Source: US Census Bureau, 2020 Decennial Census; CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022

Figure 4.15 Hispanic Population vs Hispanic Share of Households in Site-Based Subsidized Housing, 2020



Note: Excludes some scattered site projects with locations not publicly available. Project householders by race and ethnicity data imputed based on historic HUD data.
Source: US Census Bureau, 2020 Decennial Census; CTDOH, Annual Appeals Lists, 2000-2020; HUD, Picture of Subsidized Housing, 2000-2020; HUD, LIHTC Database, 2022

4.5. Costs

Construction Costs

Along with demand outpacing supply and very little new construction, housing construction costs contribute to the baseline asking rents, making it more difficult for voucher holders to find units. According to the most recent data available from CBRE Group (Coldwell Banker Richard Ellis), a real estate services firm, materials and labor costs have increased by 42.5% between March 2020 and March 2022 and are forecasted to increase by 14.1% over 2022 by the end of 2023.[23]

As shown in Figure 4.16, CHFA's 2023 Construction Cost Guidelines[24] provide a guideline cost of $220 per square foot for steel frame multifamily buildings (although higher costs may be allowed based on reviews of needs and/or extraordinary circumstances), whereas multiple construction and financing sources put multifamily construction costs at anywhere from $210 to $398 per square foot based on nationwide averages.

Housing Vouchers

Along with government subsidized housing projects, HUD and the State of Connecticut provide housing choice vouchers through Section 8 or Connecticut's Rental Assistance Program (RAP), that households can use to find their own housing on the market. Figures 4.17 and 4.18 map the share of households using rental vouchers including HCV, State Section 8 and RAP vouchers in 2000 and 2020, respectively. As shown, the greatest shares of households using vouchers were located in Hartford and New Haven in each time period. However, Figure 6.19 illustrates the increase in the share of households using vouchers in communities including Middletown, Meriden, Bridgeport, Waterbury, Ansonia, Derby, Stamford, Norwalk, New London, Groton, and New Britain. Fewer vouchers were used in Mansfield and Milford.

Demand for rental vouchers sharply accelerated over the past decade as housing prices and rental rate costs far outpaced income growth. The number of vouchers in use increased by 32.0 percent across the state from 2010 to 2020 with growth led by increases in the Western Planning Region (+63.5%), followed by the Southeast (+59.7%), Lower Connecticut River Valley (+47.0%), and Northwest Hills (+42.4%) Planning Regions.

Median Rent and FMRs

The Census Bureau's estimates (as informed by household surveys) of median gross rent by municipality for 2020 is shown in Figure 4.19. The most expensive communities have median rents of between $2,300 and $3,100. Stamford and Greenwich are reported by the Census as having median rents of between $1,700 and $2,300. However, Census data lag by at least two years and also reflect the terms of existing and long-term leases so they are not an indicator of current market conditions, i.e., asking rents. According to current listings, the average asking rent for a two-bedroom apartment is $3,365 in Stamford[25] and $4,856 in Greenwich.[26] At the same time, Fair Market Rents (FMRs) as allowed by HUD for Section 8 housing vouchers for these two communities are $2,563 and $2,628, respectively.[27]

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[23] CBRE. (2022, July 6). *2022 U.S. Construction Cost Trends*. Retrieved from https://www.cbre.com/insights/books/2022-us-construction-cost-trends

[24] Connecticut Housing Finance Authority. (2023). *Construction Guidelines: Construction Costs.* Retrieved from https://www.chfa.org/assets/1/6/ConstnGuidelines-ConstnCost1.pdf

[25] Apartments.com. (2023, Dec. 12). *Stamford, CT Local Guide*. Retrieved from https://www.apartments.com/local-guide/stamford-ct/.

[26] Apartments.com. (2023, Dec. 12). *Greenwich, CT Local Guide*. Retrieved from https://www.apartments.com/local-guide/greenwich-ct/.

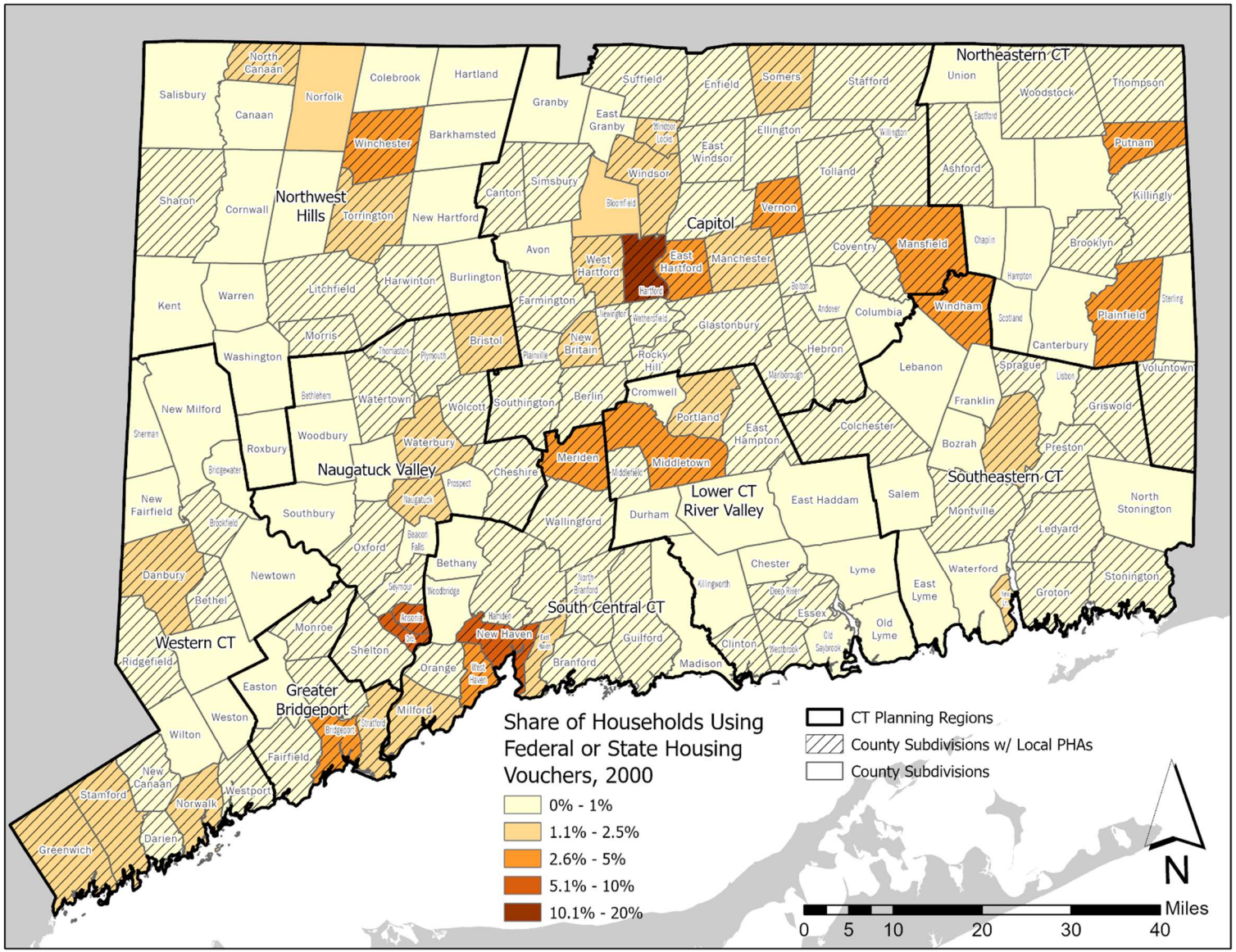
[27] HUDUSER. (2023). *FY2024 $fmrtype$ Fair Market Rents Documentation System*. Retrieved from https://www.huduser.gov/portal/datasets/fmr/fmrs/FY2024_code/select_Geography.odn

Figure 4.16 Multifamily Construction Cost per Square Foot

Source	Baseline Cost per Square Foot
CHFA Guidelines	$220
Levelset[28]	$398
Fixr[29]	$210-$310
Willowdale Equity[30]	$398
Multifamily Loans[31]	$350

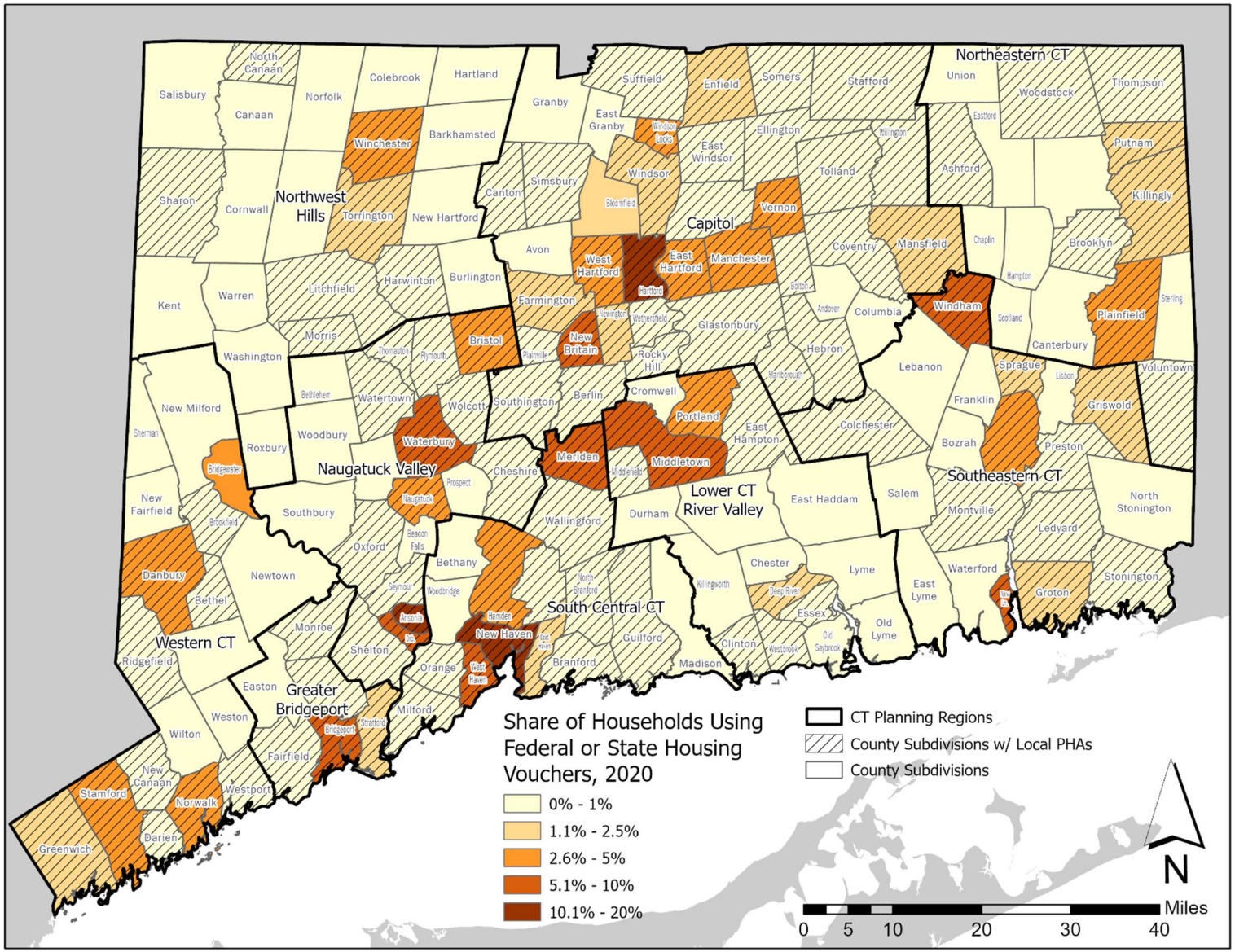
[28] Scalisi, T. (2022, January 20). *How Much Does it Cost to Build an Apartment Complex in 2022?* Levelset. Retrieved from https://www.levelset.com/blog/cost-to-build-an-apartment-complex/#:~:text=Across%20the%20nation%2C%20the%20average,around%20%2437%20million%20to%20construct.
[29] Graham, A. (2023, January 31). How much does it cost to build an apartment building? Fixr. Retrieved from https://www.fixr.com/costs/build-apartment
[30] Di Cerbo, D. (2023, December 11). *Cost to Build an Apartment Complex in 2023: Apartment Building Cost Calculator*. Willowdale Equity. Retrieved from https://willowdaleequity.com/blog/cost-to-build-an-apartment-complex/
[31] Hamann, J. (2023, August 11). *Apartment Construction Costs: Calculator & Investor Guide*. Janover Inc. Retrieved from https://www.multifamily.loans/apartment-finance-blog/multifamily-construction-costs-an-investor-guide/

Figure 4.17 Share of Households Using Federal or State Housing Vouchers, 2000



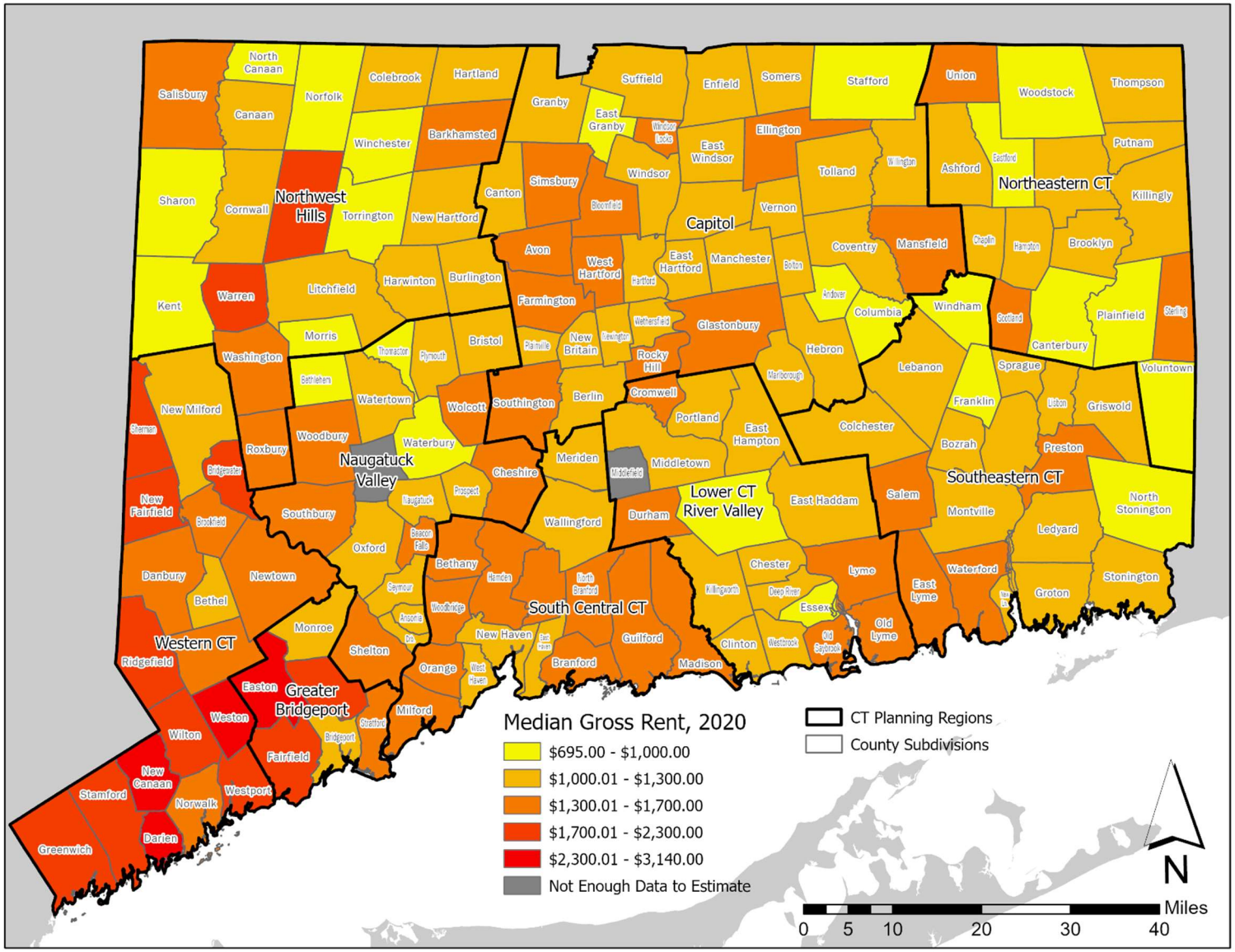
Source: CT DOH, Annual Rental Assistance Databases, 2010-2020; HUD, Picture of Subsidized Housing, 2000-2020

Figure 4.18 Share Households Using Federal or State Housing Vouchers, 2020



Source: CT DOH, Annual Rental Assistance Databases, 2010-2020; HUD, Picture of Subsidized Housing, 2000-2020

Figure 4.19 Median Gross Rent, 2020



Source: US Census Bureau, ACS, 2016-2020 5 Year Estimate

4.6. A Look at the Academic Literature

Academic and government research has sought to better understand the nexus between government-subsidized housing and segregation levels for several decades with research primarily focusing on economic impacts while the impact of subsidized housing programs on segregation is less widely understood. In The Persistence of Residential Segregation by Race (2020), Abramovitz and Smith study the role of federal housing policy over the period from 1940 to 2010 looking at the isolation index and identified that despite metropolitan areas becoming more diverse across the nation, individual cities often became more segregated despite substantial housing interventions in those areas. On the drivers of segregation, other research has focused less on policy impacts than behavioral choices. In a 2013 study, Friedman, Tsao, and Chen sought to better understand the segregation of Black and White households by tenure, finding that controlling for socioeconomic and demographic factors, renters were far less segregated than homeowners, in contrast to the myth that homeownership is a path to integration. Clapp and Ross's 2004 paper on school segregation and housing markets within the State of Connecticut concluded that segregation in the state's schools "was not maintained by an exclusionary system of housing discrimination but rather appears that segregation is attributable to sorting based on preferences."

Over the past 50 years, HUD has sought to enhance housing outcomes for disadvantaged households, experiencing varying degrees of success. However, historical investigations revealed that HUD's mid-century policies inadvertently intensified the concentration of public housing in minority neighborhoods, contributing to heightened levels of segregation. In the pivotal legal case of Gautreaux v. Chicago Housing Authority (1966), plaintiffs asserted that both the Chicago Housing Authority and HUD were perpetuating racial segregation by concentrating public housing units predominantly in African American neighborhoods. The case's resolution prompted a significant overhaul of HUD policies, signaling a profound shift toward addressing segregation and advocating for more equitable housing practices.

HUD's Section 8 program was one such direct response with limited success despite its long-term policy goals to promote housing choice and reduce segregation. More recently, HUD's Moving to Opportunity (MTO) demonstration project in 1994 expanded the use of housing vouchers in several participating communities across the nation to support the relocation of public housing tenants to less-disadvantaged communities. MTO research has shown that relocations have proven effective at improving health, work, and school outcomes for public housing residents that have relocated outside of high-poverty areas, however, MTO does require residents to move to communities with lower concentrations of minority residents. Multiple Connecticut communities have participated in the MTO demonstration project including Bristol, Middletown, New Haven, and Norwalk.

Beyond HUD's HCV and public housing programs, LIHTC has been a recent focus of study, with researchers seeking to better understand the program's economic impacts on neighborhoods where such housing has been constructed. Horn and O'Regan's 2011 paper on the relationship between the LIHTC program and racial segregation found that the construction of LIHTC developments in communities with a large concentration of minority residents was likely to contribute to a decrease in neighborhood racial segregation after occupancy. Similar findings were found by Diamond and McQuade in their 2019 study of the spillover effect of LIHTC development on neighborhood residents, with their research showing that new LIHTC developments in communities with high shares of minority residents increased non-minority new homebuyers. Jongho Won of UC Irvine completed a recent study on the long-term economic impact

of the LIHTC program on neighborhood-level income segregation across all metro areas in the United States, finding that LIHTC units although likely to increase the level of poverty across a metro area, resulted in positive spillover effects on neighborhood economic status when located within high poverty areas.

5. Indices of Segregation and Income Inequality

5.1. Overview

Segregation among white and black residents (as well as other race and ethnicity groups) has an enduring legacy following the abolishment of slavery, the Great Migration and later government-induced segregation in cities and suburban communities. While these official practices largely peaked throughout the United States and Connecticut during the mid-20th century, segregation has continued through the early decades of the 21st century. A series of government orders in the form of federal laws (Civil Rights Act, Fair Housing Act, Voting Rights Act), executive orders and Supreme Court decisions (Brown v. Board of Education of Topeka), sought to abolish policies that enforced segregation during the mid-20th century. Despite these attempts to improve economic conditions for people of color, systemic inequality in a range of forms continues to exist in everyday life. Housing segregation, which is the topic of this study, has been reduced to some extent from peak levels during the 1960s and 1970s. As Douglas Massey wrote in 2013 in the article titled *The Changing Bases of Segregation in the United States,* "what changed over time was the level at which this racial separation occurred, as macro-level segregation between states and counties gave way steadily to micro-level segregation between cities and neighborhoods." [32]

There are three types of segregation as it pertains to the physical location of affordable housing units. This report is concerned with **Regional Segregation**, which is characterized by the centralization of affordable housing units in certain locations of urban, suburban, or rural areas, rather than being distributed evenly across these regions. [33] Regional segregation often occurs via the disproportionate concentration of affordable housing units in urban areas compared with suburban and rural areas.

5.2. Geographies

The goal of this section is to better understand if or how segregation has changed over the past 30 years. Urbanomics used the open-source Python Spatial Analysis Library (PySAL) segregation package[34] to calculate indices of segregation for each of Connecticut's ten (10) New England City and Town Areas (NECTA), nine (9) planning regions/councils of government (COG), eight (8) counties, and 169 cities and towns (also known as minor civil divisions or MCDs), based upon the population by race in the component Census Block Groups of each[35]. To better understand the changes to segregation by area of urban/rural classification, the base census data were also aggregated, and the segregation indices run for the seven (7) National Center for Education Statistics Locale (NCES locales) types:

- City-Midsize: an urbanized area inside a city with a population between 100,000 and 250,000,
- City-Small: an urbanized area inside a city with a population below 100,000,
- Rural-Distant: rural territory more than 5 miles, but less than 25 miles from an urbanized area
- Rural-Fringe: rural territory that is less than 5 miles from an urbanized area,
- Suburban – Large: territory outside of a city with a population of 250,000 or more,
- Suburban – Midsize: territory outside of a city with a population of between 100,000 and 250,000, and
- Town-Fringe: territory inside an urban cluster that is less than 10 miles from an urbanized area.

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[32] Massey, D. S., Rothwell, J., & Domina, T. (2009). *The Changing Bases of Segregation in the United States. Annals of the American Academy of Political and Social Science*, 626(1), 10.1177/0002716209343558. Retrieved from: https://doi.org/10.1177/00027162093435586.1

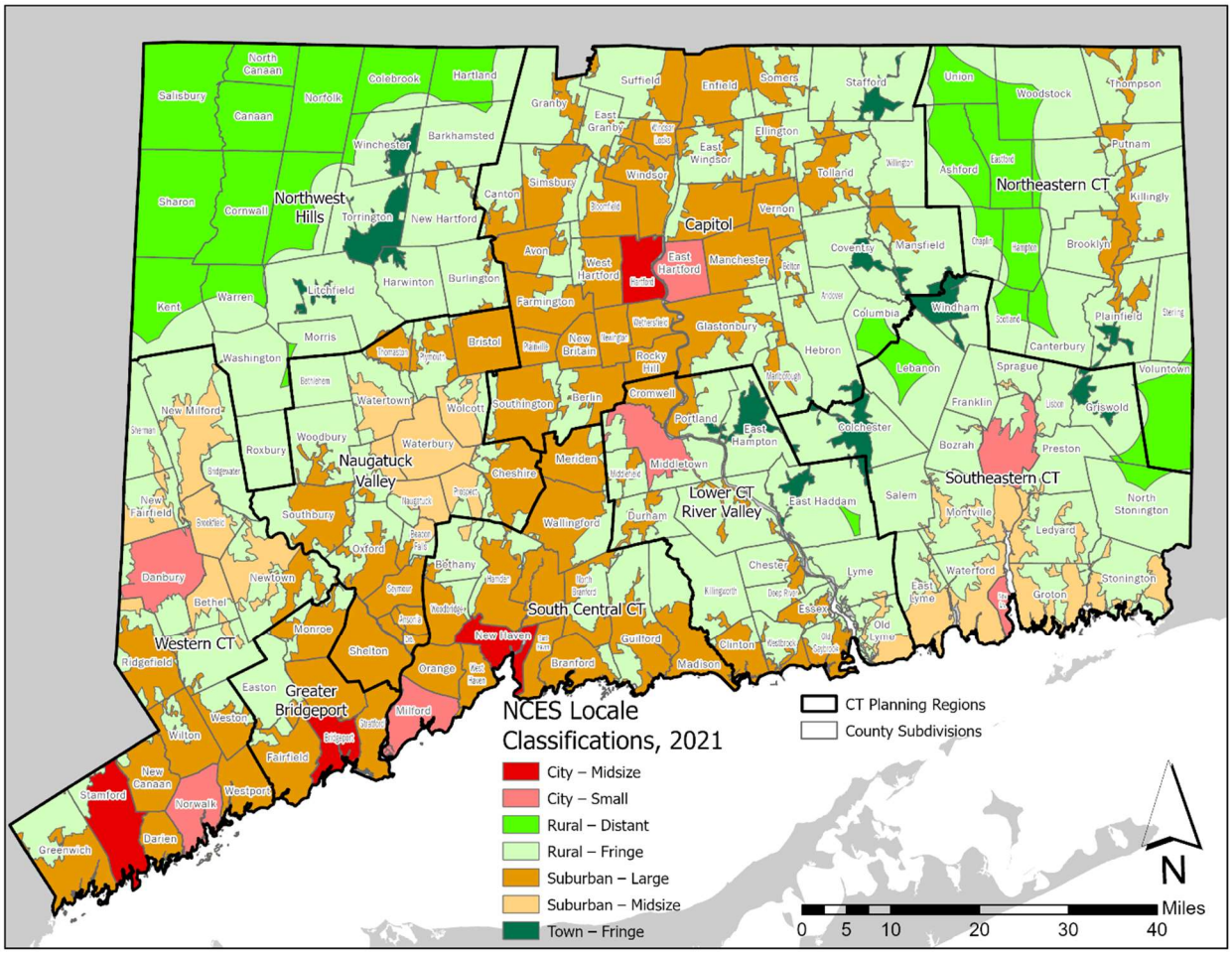
[33] There is also intra-site and intra-building segregation, which involve the concentration of affordable units within a development site or single building, respectively.

[34] Python Spatial Analysis library (PySAL), Segregation package. Retrieved from: https://pysal.org/notebooks/explore/segregation/intro.html.

[35] Levels of segregation are generally aggregating the index scores of smaller areas to the larger area to determine the overall level of segregation.

As shown in the following map depicting the locales, the greatest portions of the state of Connecticut are classified as Suburban -Large and Rural - Fringe.

Figure 5.1 NCES Locale Classifications



Source: National Center for Education Statistics, Education Demographic and Geographic Estimates Program, Locale Classifications, 2021.

5.3. Indices of Segregation

As noted by Flavia Feitosa et al., in *Global and Local Spatial Indices of Urban Segregation*, "it is a consensus among researchers that urban segregation is a multidimensional process, whose depiction requires different indices for each dimension."[36] Therefore, multiple indices were utilized in this study to better capture the range of segregation dimensions that occur across socioeconomic groups over time including

[36] Feitosa, F. F., Câmara, G., Monteiro, A. M. V., Koschitzki, T., & Silva, M. P. S. (2007). *Global and Local Spatial Indices of Urban Segregation. International Journal of Geographical Information Science*, Page 305. Retrieved from https://www.zef.de/fileadmin/user_upload/0bda_Feitosaetal.pdf.

population distributions (evenness and exposure), and geographic patterns (clustering, centralization, and concentration). These dimensions and their respective indices[37] are described further below:

- **Evenness**: How evenly the subject population is dispersed across a geographic area.
    - The measure of evenness used in this exercise is the Dissimilarity Index, which conceptually measures the percentage of a group's population that would have to change place of residence for each census block group to have the same overall share of that group as in the MCD as a whole. The index ranges from 0 (complete integration) to 1.0 (complete segregation). A score of 0.5 indicates that 50% of the minority group's population would have to relocate to achieve equal distribution throughout the reference area.
        - The **Dissimilarity** Index measures the percentage of one group that would have to move across neighborhoods to be distributed the same way as the total population. Dissimilarity is most useful when comparing two groups rather than a particular group vs total population.
        - The **Multi-Dissimilarity** index measures the percentage of one group that would have to move across neighborhoods to be distributed the same way as a reference group, in this case white non-Hispanics. Multi-dissimilarity is best used when comparing two groups rather than a group vs total population. Multi-dissimilarity is the version of the Dissimilarity Index that is most commonly used and referred to for studies on population segregation. When this report refers to Dissimilarity, it is multi-dissimilarity, i.e., the relationship between the selected demographic group and white non-Hispanics.
- **Exposure**: The degree of potential contact, or possibility of interaction, between minority and majority group members. This effort includes two measures of exposure: Isolation and Interaction.
    - The **Isolation Index** captures the percentage of minority residents in the census tract where the average minority resident lives, corrected for the fact that this number increases with the minority share of the overall county population. The measure ranges from 0 (complete integration) to 1 (complete segregation) e.g., an isolation index of 0.3 indicates that the average minority resident lives in a census tract in which the minority share of the population exceeds the overall reference geography average by roughly 30%.
    - The **Interaction Index** estimates the exposure of minority group members to members of the majority group as the minority-weighted average of the majority proportion of the population in each areal unit. E.g., an interaction index of 0.4 indicates that 40 of the next 100 people the minority resident meets will be with a person of another group. This measure also ranges from 0 to 1, but the values are reversed in that 0 equals complete segregation and 1 equals complete integration.

[37] Formulas and further information related to segregation indices used in this study were obtained from: U.S. Census Bureau. (2021, November 21). *Housing Patterns: Appendix B: Measures of Residential Segregation.* Retrieved from https://www.census.gov/topics/housing/housing-patterns/guidance/appendix-b.html.

- **Concentration**: The relative share of the ratio of a minority group in the block group to a larger reference area (e.g., MCD) relative to the ratio of the total population in the block group to the total population of the MCD.
    - The **Absolute Concentration** Index computes the total area inhabited by a group and compares this with the minimum and maximum areas (the areal sum, respectively, of the fewest number of the geographically smallest and the greatest number of the geographically largest areal units) that could accommodate a group of that size (at observed densities). The index varies from 0.0 to 1.0, where a score of 1.0 means that a group has achieved the maximum spatial concentration possible (all minority members live in the smallest areal units).
    - The **Relative Concentration** Index measures the share of space occupied by one group compared to another group. It is measured similarly to the Absolute Concentration Index but takes into consideration the distribution of the majority group as well. This measure varies from -1.0 to 1.0. A score of 0.0 means that the minority and majority groups are equally concentrated. An index of -1.0 means that the concentration of the majority exceeds that of the minority to the maximum extent, and an index of 1.0 represents the reverse trend.
- **Centralization**: The degree to which a group is spatially located near the center of an urban area. This metric is not particularly meaningful at the NCES Locale or Statewide level because they lack meaningful core and peripheries in terms of population centrality, and is best used for municipal, regional, or labor market area geographies.
    - The **Absolute Centralization** Index examines only the distribution of the minority group around the population centerpoint of a particular area and varies between -1.0 and 1.0. Positive values indicate a tendency for [minority] group members to reside close to the city center, while negative values indicate a tendency to live in outlying areas.
    - The **Relative Centralization** Index compares the areal profile of the majority and minority populations, and may be interpreted as the relative share of the minority population that would have to change their area of residence to match the centralization of the majority. The index varies between -1.0 and 1.0 with positive values indicating that minority members are located closer to the population center than majority, and negative values for the reverse. An index of 0.0 indicates that the two groups have the same spatial distribution around the population center.
- **Clustering**: The extent to which units inhabited by minority members adjoin one another, or cluster, in space, e.g., in cases where minority members are located adjacent to contiguous distressed areas that are home to a disproportionate number of other minority members. As is the case with centralization, the clustering index is not meaningful at the NCES Locale or Statewide level and is best used for municipal, regional, or labor market area geographies.
    - The **Absolute Clustering** index "expresses the average number of [minority] members in nearby [areal units] as a proportion of the total population in those nearby [areal units]", where distances between areal units are measured from their centroids. It varies from 0.0 to 1.0 with levels closer to zero indicate high levels of clustering while values closer to 1 indicate lower levels of clustering. This index has a sociological perspective similar to the interaction/isolation indices with a focus on contact with the majority population group.

- The **Relative Clustering** Index compares the average distance between [minority] members with the average distance between [majority] members. It ranges from 0.0 and greater, with levels closer to zero indicate the same level of clustering as the majority group higher values indicate a greater difference in clustering to that of the majority group. This index has a sociological perspective similar to the interaction/isolation indices with a focus on contact with the majority population group. This index has a sociological perspective similar to the interaction/isolation indices with a focus on contact with the majority population group.

Academic sources debate the validity of each dimension and the related index/indices of measurement as evidenced by the number of indices that have been developed. As described by Nick Baily, a professor of Urban Studies at the University of Glasgow, in his 2020 article titled Understanding the Processes of Changing Segregation, "Studies of the processes behind changes in segregation remain in their relative infancy. A standard approach has yet to emerge, with each analysis a largely custom-built effort. Findings are therefore partial and fragmentary…"[38] Oka and Wong further postulate in an article in HUD's Cityscape journal that this is because of the changing nature of the underlying concept:

> "The mushrooming in the number of segregation measures reflects that the concept of segregation is fluid, difficult to pin down, and multifaceted so that one or a few simple definitions are not capable of capturing its essence entirely. As a result, rather ineffective and insufficient ways of measuring segregation are evident in research and practice."[39]

5.4. Index of Income Inequality

The **Gini index**, or Gini co-efficient, measures income distribution across a population. The co-efficient ranges from 0 (or 0%) to 1 (or 100%), with 0 representing perfect equality and 1 representing perfect inequality. Values greater than 1 are theoretically possible due to negative income or wealth. A higher Gini index indicates greater inequality, with high-income individuals receiving much larger percentages of the population's total income. The Gini Index is not a perfect measurement of income distribution. For example, a high-income area and a low-income area can have the same Gini co-efficient, as long as incomes are distributed similarly within each.

The World Bank regularly publishes the Gini index for each nation, with the United States' data generated from the Current Population Survey (CPS), sponsored by the Bureau of Labor Statistics and conducted by the U.S. Census Bureau. Since 2010, the Census Bureau has released Gini index data across various geographies, including states, municipalities, counties, and census tracts. However, estimates derived from household income distribution tables in the American Community Survey (ACS) may be biased downward due to topcoding, where a substantial portion of total income at the top end (specifically, the number of households with $200,000 or more in annual income category) is aggregated, **leading to an underestimation of true income inequality**.

With this issue known, the Gini index was estimated for the state of Connecticut, its planning regions, county subdivisions, NECTA areas, and NCES Locales for years of 1990, 2000, 2010, 2015 and 2020 using several different statistical tools. However, the results based on household income distributions and

[38] Baily, N. (2020). *Understanding the Processes of Changing Segregation. Handbook of Urban Segregation.* Page 475.
[39] Oka, M., & Wong, D. W. S. (2015). *Spatializing Segregation Measures: An Approach to Better Depict Social Relationships. Cityscape: A Journal of Policy Development and Research*, 17(1), Page 97.

aggregate household income data from the US Census Bureau's Decennial Census Summary Files (for 1990 and 2000, as well as the ACS data for 2010, 2015 and 2020) all generated Gini coefficients not in line with the Census Bureau's own calculations due to the top coding issue previously described and the lack of available detailed income ranges used by the Census Bureau in its internal calculations that are published as part of the ACS.

First, the Gini index was calculated using R Studio, an open-source statistical software. The computation utilized the 'ineq' package, developed by Christian Kleiber of the University of Basel and Achim Zeileis of the University of Innsbruck, Austria. This package offers a range of statistical tools specifically designed for measuring inequality, concentration, and poverty. The instructions for using the tool were followed based on examples[40] provided by Dr. Mark L Burkey of North Carolina A&T State University which calculated the Gini index based on household income distributions and aggregate household income data.

A secondary Gini index was computed using Python, an open-source coding software, in conjunction with the Numpy statistical package. The script estimated the statewide Gini index for 2020 based on household income distribution. The script utilized aggregate household income and total households data, applying the Lorenz curve formula to determine the Gini index and reflect income distribution inequality. Figure 5.2 presents the results of the two estimated Gini coefficients for the State of Connecticut from 1990 to 2020, comparing them with the official estimates calculated by the Census Bureau. The estimated Gini coefficients, depicted in the figure, were found to lack the reliability of the Census Bureau's internal data in estimating the coefficient and failed to capture the overall trend toward higher levels of income inequality over time. Instead, the estimated coefficients suggested reduced inequality each decade.

In light of these findings, it was concluded that estimating the Gini coefficient for various state geographic areas was not a practical exercise due to inherent weaknesses in the data. Consequently, it was recommended to use official Census Bureau calculations for accurate assessments. The Income Race Segregation Data Tool to be described includes official Census Bureau estimates for the State, planning regions, and county subdivisions wherever available, covering the years 2010, 2015, and 2020.

[40] Burk, M. L. (2006, March). *Gini Coefficients for the 2000 Census*. North Carolina A&T State University. Retrieved from https://mpra.ub.uni-muenchen.de/57900/1/MPRA_paper_57900.pdf.

Figure 5.2 Gini Coefficients for the State of Connecticut: Official Census Release and Estimations, 1990-2020

Preparer	Data Source	Data Tool	1990	2000	2010	2015	2020
US Census Bureau, ACS Program	ACS		N/A	N/A	0.482	0.493	0.497
Estimated by Project Team	ACS/SF3	Ineq R Data Package	0.673	0.684	0.657	0.649	0.623
Estimated by Project Team	ACS/SF3	Numpy Python data package	0.511	0.595	0.500	0.500	0.475

Source: US Census Bureau, 1990, 2000 Summary File 3; ACS 2010, 2015, 2020 5-Year Estimates.

5.5. Income Race Segregation Comparison Tool

Keeping in mind the "fluidity" of the concept of segregation, one of the goals of this study is to understand how segregation has changed over time for the Black Non-Hispanic, Hispanic, and Asian and Pacific Islander Non-Hispanic communities throughout the state. However, to analyze each of the almost 200 individual areas for which the eleven indices were run would not be effective or meaningful in written form. This report will provide highlights of findings for each of the indices, but to better communicate the information in a manner easily referenced, Urbanomics worked with OPM to create an Income Race Segregation Comparison Tool in Microsoft Excel format.

The tool, available online with the report, has four primary worksheets:

Index Descriptions

The Index Descriptions sheet provides a summary of each index, its value scale, and the relationship of the scale value to segregation level as presented in the immediately preceding section.

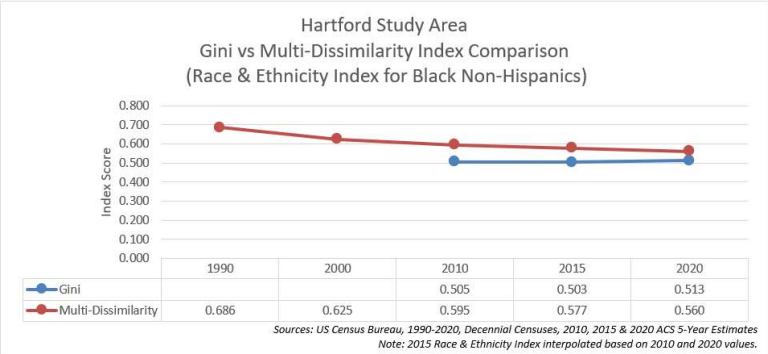
Gini vs Race Comparison

This sheet consists of a dropdown menu that allows the user to select the geography type, location (sub geography), Index, and Race & Ethnicity Group. This tool uses an interpolation of the 2010 and 2020 race and ethnicity indices to estimate the 2015 index for purposes of comparison with the three years of available Gini index statistics. The selected index for the race/ethnicity group is then displayed next to the Gini index for the geographic area in both table and chart form as shown in Figure 5.3.

Figure 5.3 Income Race Segregation Tool: Gini vs Race Comparison Page

Geography Type	Location	Index	Race & Ethnicity Group
County_Subdivision	Hartford	Multi-Dissimilarity	Black Non-Hispanic
Select from dropdown filter above	*Select from dropdown filter above*	*Select from dropdown filter above*	*Select from dropdown filter above*

	1990	2000	2010	2015	2020
Gini Index			0.505	0.503	0.513
Race & Ethnicity Index	0.686	0.625	0.595	0.577	0.560



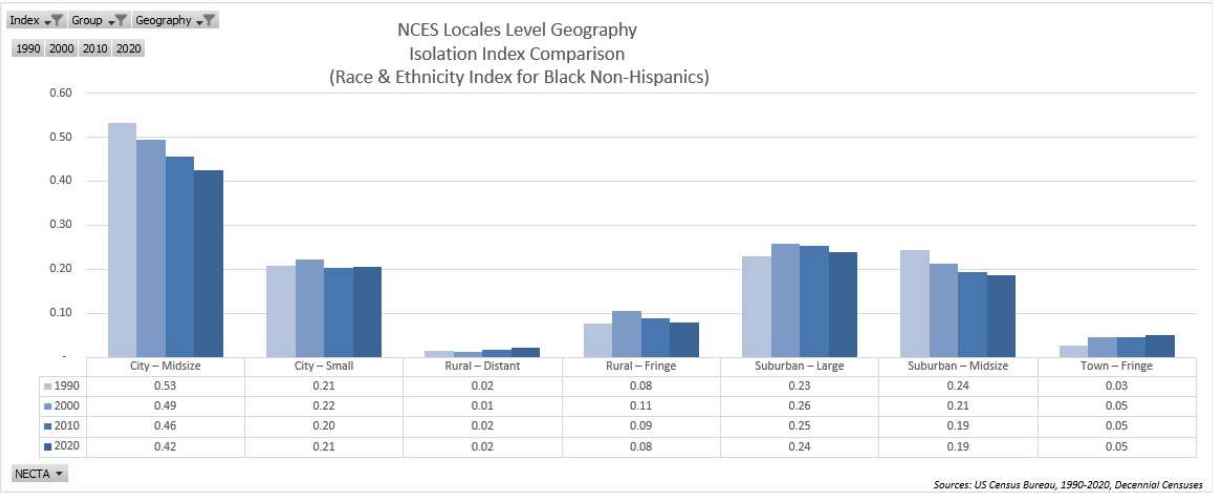
Geographic Comparison: Race Indices

This sheet provides a time series comparison of one index for one demographic group for each sub geography. The sheet consists of a dropdown menu that allows the user to select the index, race and ethnicity group, and geography type. It should be noted that certain indices work best with municipal or regional geographies such as those that deal with spatial clustering of populations such as the centralization and clustering indices. The index for the race/ethnicity group and geographic area selected is then presented in both table and chart form as shown in Figure 5.4.

Figure 5.4 Income Race Segregation Tool: Geo Comparison Race Indices Page

Index	Isolation	*Select from dropdown filter to the left*
Group	Black Non-Hispanic	*Select from dropdown filter to the left*
Geography	NCES_Locales	*Select from dropdown filter to the left*

Row Labels	1990	2000	2010	2020
City – Midsize	0.53	0.49	0.46	0.42
City – Small	0.21	0.22	0.20	0.21
Rural – Distant	0.02	0.01	0.02	0.02
Rural – Fringe	0.08	0.11	0.09	0.08
Suburban – Large	0.23	0.26	0.25	0.24
Suburban – Midsize	0.24	0.21	0.19	0.19
Town – Fringe	0.03	0.05	0.05	0.05
Grand Total	**1.33**	**1.35**	**1.25**	**1.20**



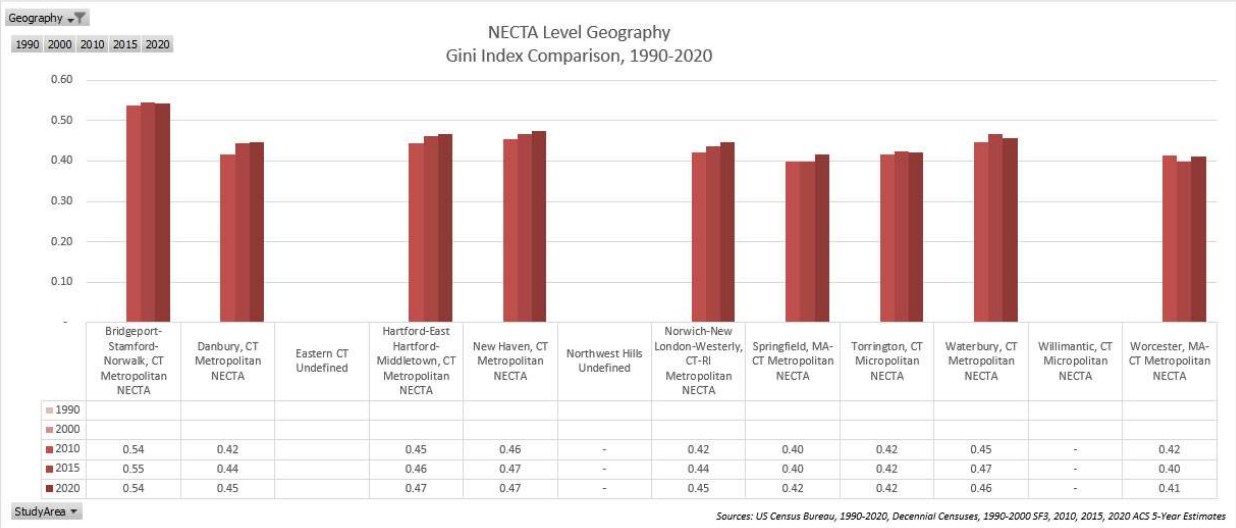
<u>Geographic Comparison: Gini Index</u>

This sheet provides a time series comparison of the Gini index for one demographic group for each classification of the selected geography. The user selects the geography type from the dropdown menu to populate the table and chart form with the Gini index for the sub-areas, as shown in Figure 5.5 for the Connecticut planning regions.

Figure 5.5 Income Race Segregation Tool: Geo Comparison Gini Indices Page

Geography NECTA *Select from dropdown filter to the left*

Study Areas	1990	2000	2010	2015	2020
Bridgeport-Stamford-Norwalk, CT Metropolitan NECTA			0.54	0.55	0.54
Danbury, CT Metropolitan NECTA			0.42	0.44	0.45
Eastern CT Undefined					
Hartford-East Hartford-Middletown, CT Metropolitan NECTA			0.45	0.46	0.47
New Haven, CT Metropolitan NECTA			0.46	0.47	0.47
Northwest Hills Undefined			-	-	-
Norwich-New London-Westerly, CT-RI Metropolitan NECTA			0.42	0.44	0.45
Springfield, MA-CT Metropolitan NECTA			0.40	0.40	0.42
Torrington, CT Micropolitan NECTA			0.42	0.42	0.42
Waterbury, CT Metropolitan NECTA			0.45	0.47	0.46
Willimantic, CT Micropolitan NECTA			-	-	-
Worcester, MA-CT Metropolitan NECTA			0.42	0.40	0.41
Grand Total			**3.96**	**4.04**	**4.08**



5.6. Findings

As previously mentioned, each index was run for municipalities, planning regions, counties, NCES Locales, and NECTA areas using block groups standardized to the 2020 area for the years 1990, 2000, 2010, and 2020 to cover the full 30-year time period covered in the scope of work.[41] What follows are the highlights for each index for the Planning Regions and NCES locale typology, which is representative of community type. The Income and Race Segregation Comparison Tool available at Housing and Segregation Study (ct.gov) may be used to look up results for individual communities.

Dissimilarity Index

Brown University's Diversity and Disparity program[42] provides uniform relative values for the dissimilarity index as follow.

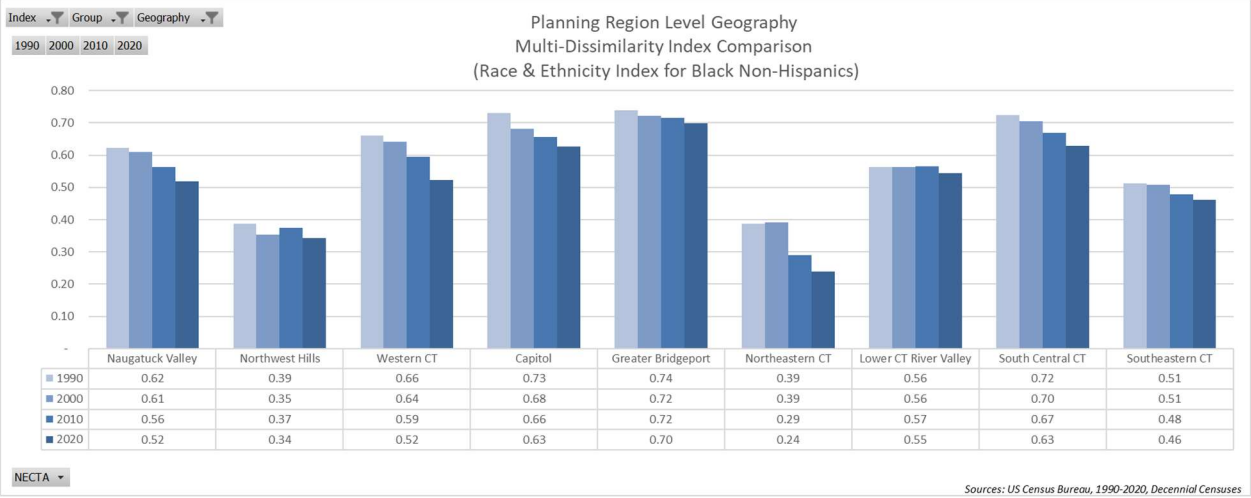
- Low = Index of less than 0.30
- Moderate = Value between 0.31 and 0.59
- Very High = Value of 0.60 or more

[41] Initially the indices were to be run for the five-year intervals, however the demographic source data for 1995, 2005, and 2015 are not necessarily compatible with the decennial census year data.

[42] Diversities and Disparities Project. (2021). Spatial Structures in the Social Sciences, Brown University. Retrieved from https://s4.ad.brown.edu/projects/diversity/segregation2020/city.aspx?cityid=908000.

Ranging from 0.39 to 0.73 in 1990 and from 0.24 to 0.70 in 2020, the dissimilarity index of segregation decreased across all planning regions for Black Non-Hispanics in relationship to White Non-Hispanics, as shown in Figure 5.6. However, even after seeing decreases in their index scores, the Capitol region (CRCOG), Greater Bridgeport (CT Metro) and South Central (SCRCOG) regions still have very high levels of segregation. The Northeastern and Northwest Hills regions have relatively low levels, at 0.24 and 0.34 respectively.

Figure 5.6 Black Non-Hispanic Multi-Dissimilarity by Planning Region 1990-2020

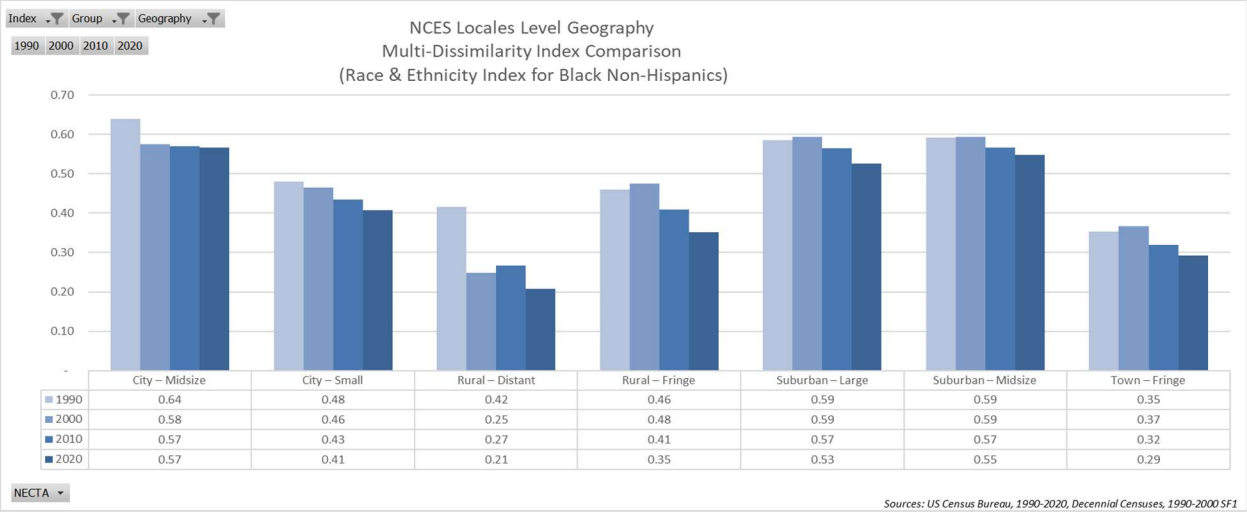


	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.62	0.39	0.66	0.73	0.74	0.39	0.56	0.72	0.51
2000	0.61	0.35	0.64	0.68	0.72	0.39	0.56	0.70	0.51
2010	0.56	0.37	0.59	0.66	0.72	0.29	0.57	0.67	0.48
2020	0.52	0.34	0.52	0.63	0.70	0.24	0.55	0.63	0.46

Looking at locale typologies as shown in Figure 5.7, rural and town-fringe areas had lower levels of segregation than all other community types throughout the 30-year period primarily due to low population density, which leads to larger and fewer Census block groups (the reference areas for this study) among which to move.[43] Several factors have contributed to the more homogeneous socioeconomic character of rural and town areas including lower diversity in area wages and housing options as well as lesser job growth and housing development activity which has historically driven in-migration. Suburban areas, which in general had little multifamily development and often have exclusionary zoning, had relatively high levels of segregation and showed the least improvement between 1990 and 2020.

[43] The Census block group geographic areas are statistical sub-areas of Census tracts usually with between 600 and 3,000 residents. In rural areas Census block groups have much larger areas than those in urban communities.
U.S. Census Bureau. (2023). *Geography Program Glossary*. Retrieved from https://www.census.gov/programs-surveys/geography/about/glossary.html.

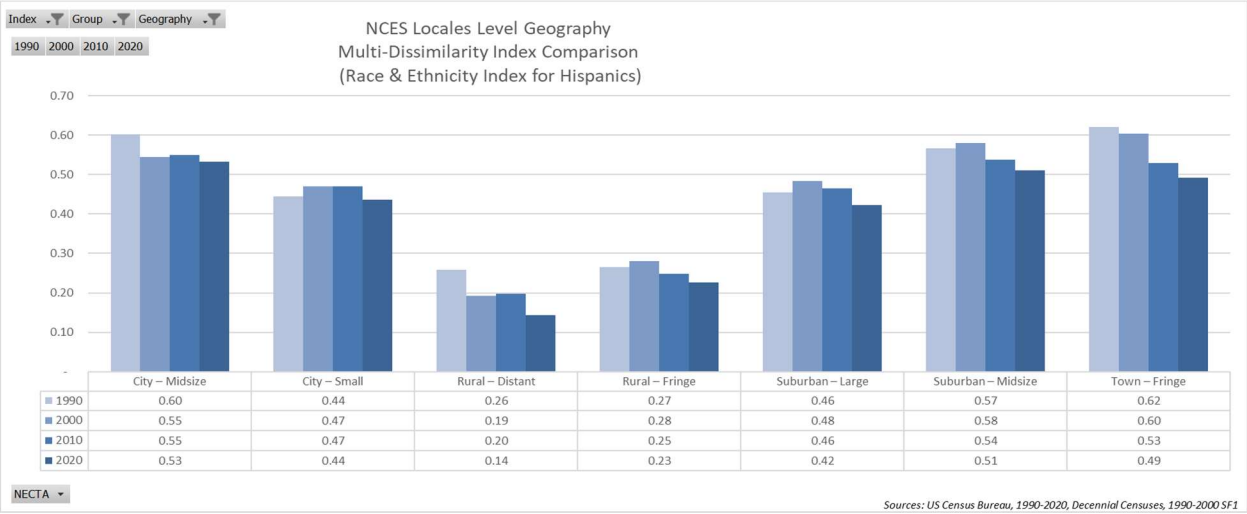
Figure 5.7 Black Non-Hispanic Multi-Dissimilarity by NCES Locales 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.64	0.48	0.42	0.46	0.59	0.59	0.35
2000	0.58	0.46	0.25	0.48	0.59	0.59	0.37
2010	0.57	0.43	0.27	0.41	0.57	0.57	0.32
2020	0.57	0.41	0.21	0.35	0.53	0.55	0.29

The dissimilarity index for Hispanics is at the high end of the moderate range in all but the rural areas in 2020. Segregation fell the most in Fringe Town communities going from a very high level of segregation in 1990 (0.62) to a more moderate 0.49 in 2020.

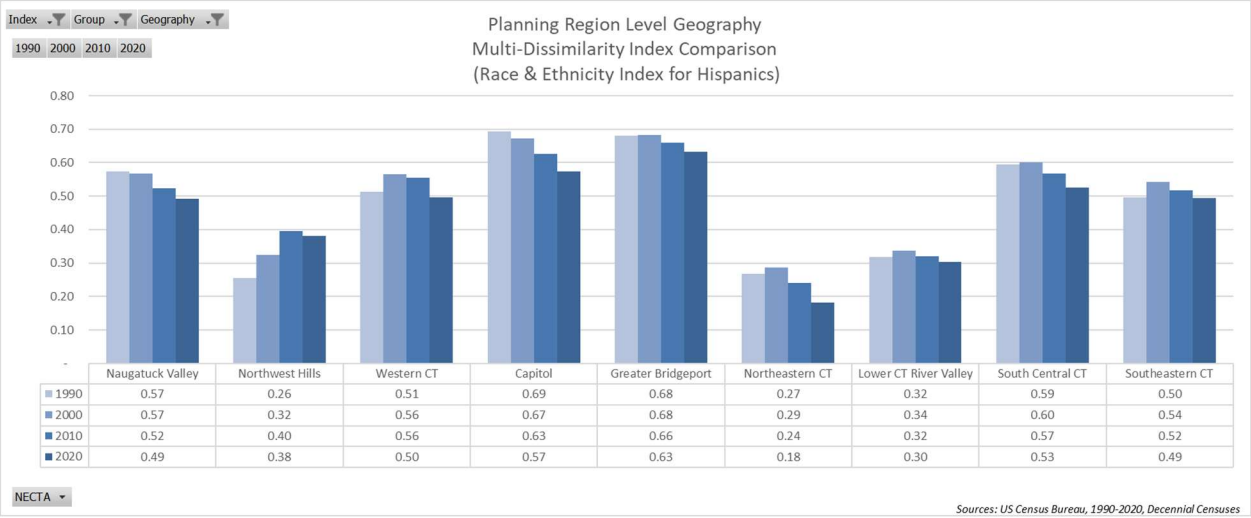
Figure 5.8 Hispanic Multi-Dissimilarity by NCES Locales 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.60	0.44	0.26	0.27	0.46	0.57	0.62
2000	0.55	0.47	0.19	0.28	0.48	0.58	0.60
2010	0.55	0.47	0.20	0.25	0.46	0.54	0.53
2020	0.53	0.44	0.14	0.23	0.42	0.51	0.49

When looking at the Hispanic dissimilarity index at the planning region level, the changes in segregation largely follow the predominant area locales typology, e.g., planning regions made up of municipalities that are classified as primarily rural distant will have segregation scores that echo the locale type. The planning regions with the greatest amount of rural land have the lowest segregation levels, while the those with more urban and suburban land uses have higher values. There were increases in dissimilarity index for segregation between 1990 and 2000, and 2000 and 2010 in several planning regions, but only the Northwest Hills planning region had a higher level of Hispanic segregation in 2020 than it did in 1990 (see Figure 5.9).

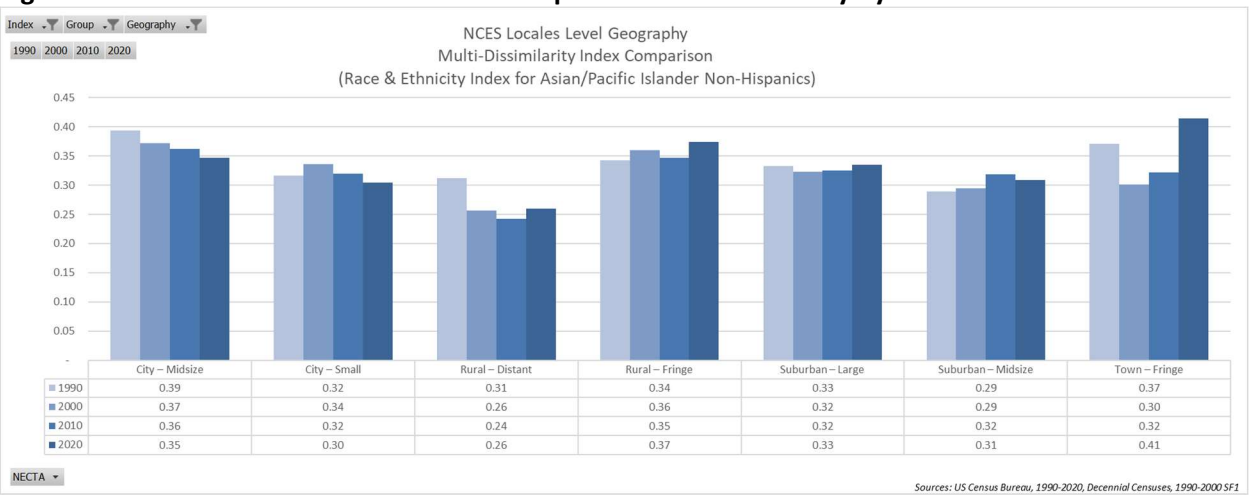
Figure 5.9 Hispanic Multi-Dissimilarity by Planning Region 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.57	0.26	0.51	0.69	0.68	0.27	0.32	0.59	0.50
2000	0.57	0.32	0.56	0.67	0.68	0.29	0.34	0.60	0.54
2010	0.52	0.40	0.56	0.63	0.66	0.24	0.32	0.57	0.52
2020	0.49	0.38	0.50	0.57	0.63	0.18	0.30	0.53	0.49

For Non-Hispanic Asian and Pacific Islanders, segregation as measured by dissimilarity is lower overall than for Black Non-Hispanics and Hispanics, ranging between 0.26 and 0.41 among NCES locales in 2020. In general, dissimilarity segregation scores increased in suburban and town communities but declined in cities between 1990-2020 (see Figure 5.10)

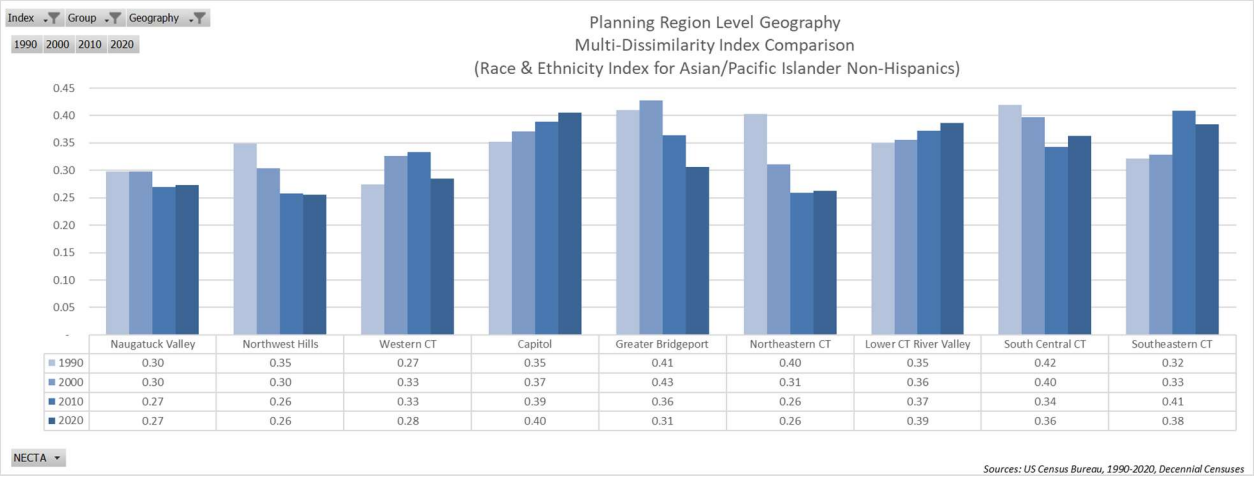
Figure 5.10 Asian and Pacific Islander Non-Hispanic Multi-Dissimilarity by NCES Locales 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.39	0.32	0.31	0.34	0.33	0.29	0.37
2000	0.37	0.34	0.26	0.36	0.32	0.29	0.30
2010	0.36	0.32	0.24	0.35	0.32	0.32	0.32
2020	0.35	0.30	0.26	0.37	0.33	0.31	0.41

Looking at the planning region scores, the Capitol, Lower Connecticut River Valley and Southeastern regions had higher levels of segregation of this type in 2020 than they did in 1990.

Figure 5.11 Asian and Pacific Islander Non-Hispanic Multi-Dissimilarity by Planning Region 1990-2020

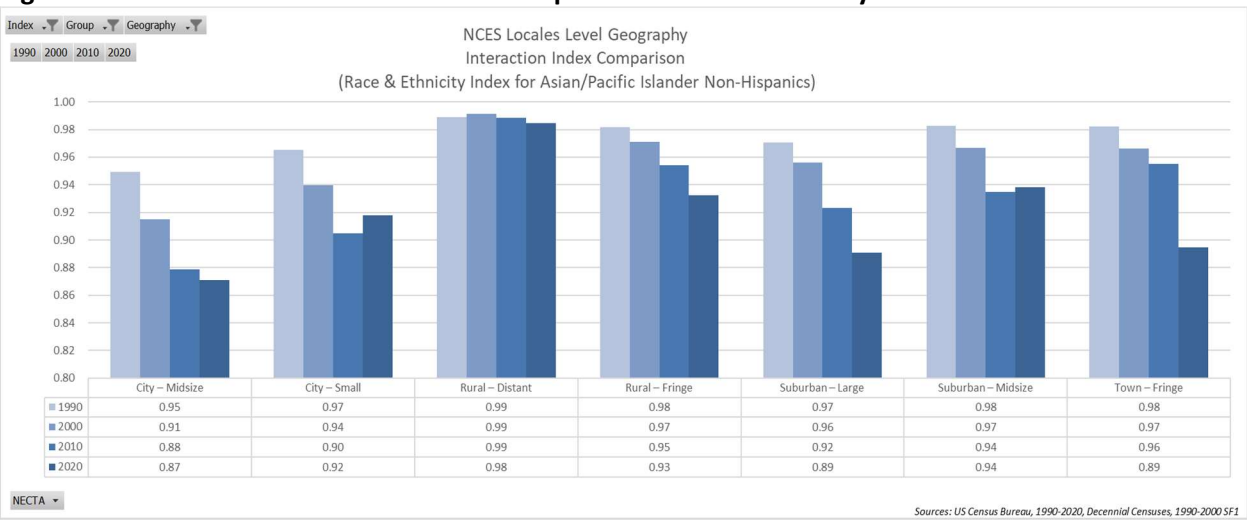


	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.30	0.35	0.27	0.35	0.41	0.40	0.35	0.42	0.32
2000	0.30	0.30	0.33	0.37	0.43	0.31	0.36	0.40	0.33
2010	0.27	0.26	0.33	0.39	0.36	0.26	0.37	0.34	0.41
2020	0.27	0.26	0.28	0.40	0.31	0.26	0.39	0.36	0.38

Interaction Index

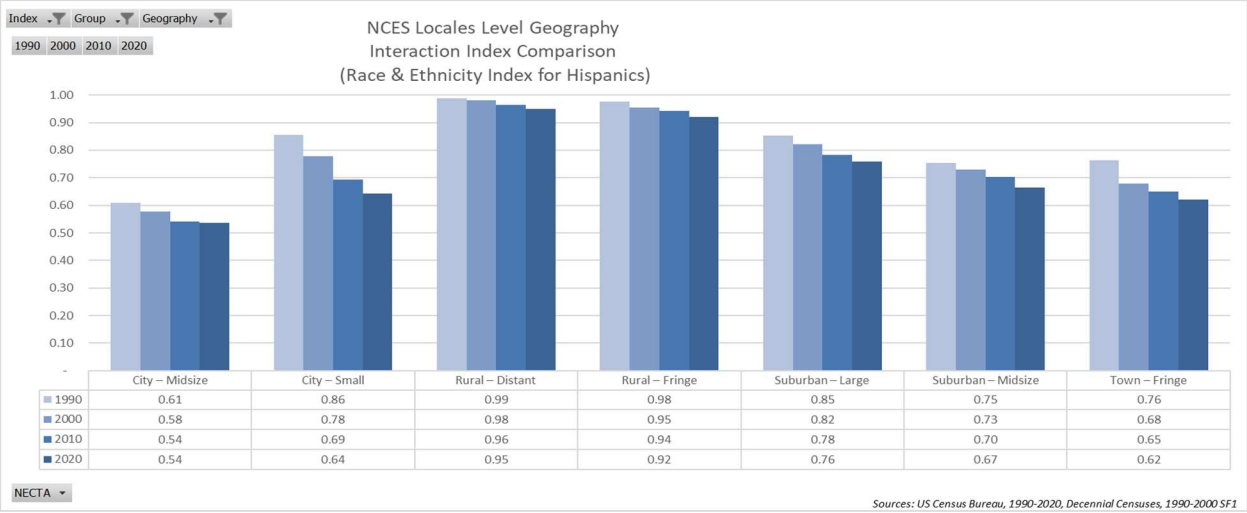
Asian/Pacific Islanders have consistently maintained very high levels of interaction, which is due to their relatively small share of population to total population in most communities. Despite having higher levels of interaction, Asian/Pacific Islanders interaction index scores are declining across all regions from 1990 to 2020, indicating increasing levels of segregation. A similar trend occurred among Hispanics, with a decline in interaction (i.e., increase in segregation) in small cities and town fringe areas and to a lesser extent suburban communities. For both groups, this change in this metric is likely due to the growth in overall share of total population. Additionally, communities with high concentrations of recent immigrants generally have lower interaction levels than other groups because they are likely to maintain closer social ties with their ethnic community due to shared language and culture.

Figure 5.12 Asian and Pacific Islander Non-Hispanic Interaction Index by NCES Locale 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.95	0.97	0.99	0.98	0.97	0.98	0.98
2000	0.91	0.94	0.99	0.97	0.96	0.97	0.97
2010	0.88	0.90	0.99	0.95	0.92	0.94	0.96
2020	0.87	0.92	0.98	0.93	0.89	0.94	0.89

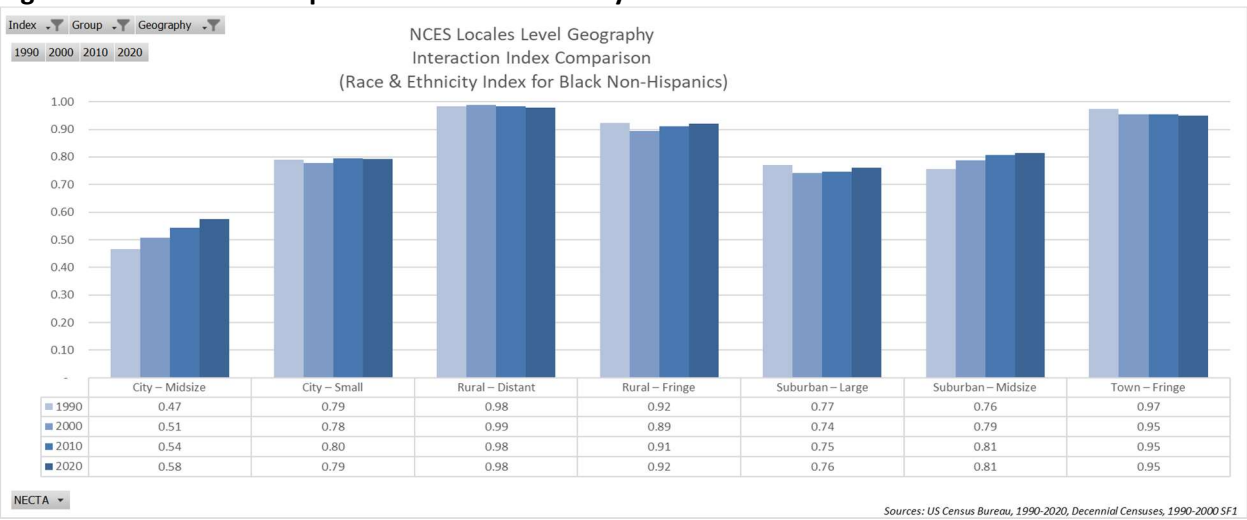
Figure 5.13 Hispanic Interaction Index by NCES Locale 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.61	0.86	0.99	0.98	0.85	0.75	0.76
2000	0.58	0.78	0.98	0.95	0.82	0.73	0.68
2010	0.54	0.69	0.96	0.94	0.78	0.70	0.65
2020	0.54	0.64	0.95	0.92	0.76	0.67	0.62

As expected, due to historic practices and their continuation, Black Non-Hispanics have the lowest interaction index scores with the White Non-Hispanic population. Interaction indices for both Black Non-Hispanics and Hispanics are lowest in midsize and small cities, followed by midsize and large suburbs.

Figure 5.14 Black Non-Hispanic Interaction Index by NCES Locale 1990-2020

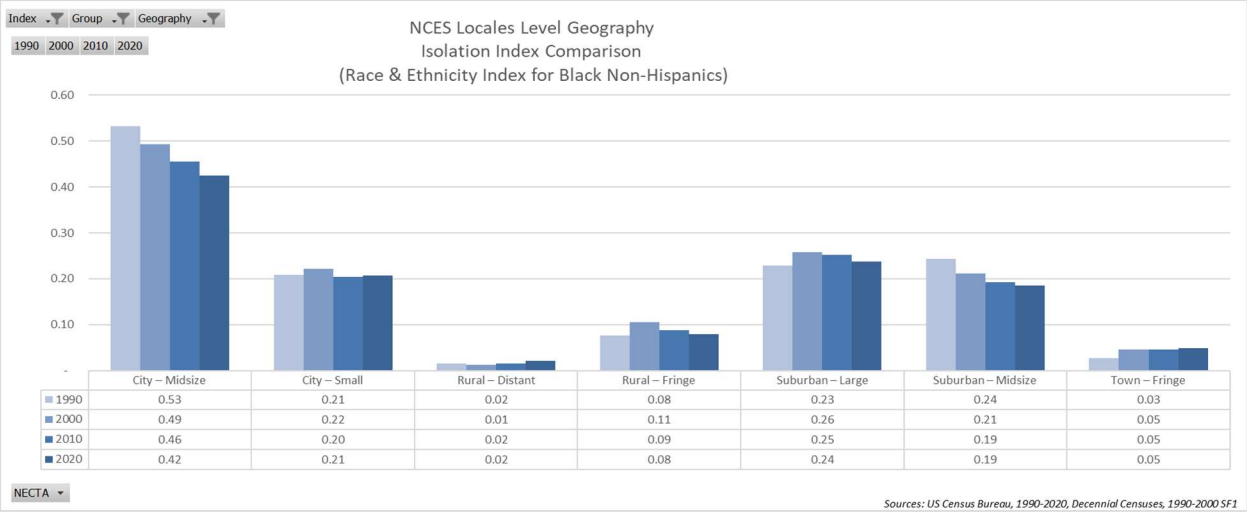


	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.47	0.79	0.98	0.92	0.77	0.76	0.97
2000	0.51	0.78	0.99	0.89	0.74	0.79	0.95
2010	0.54	0.80	0.98	0.91	0.75	0.81	0.95
2020	0.58	0.79	0.98	0.92	0.76	0.81	0.95

Isolation Index

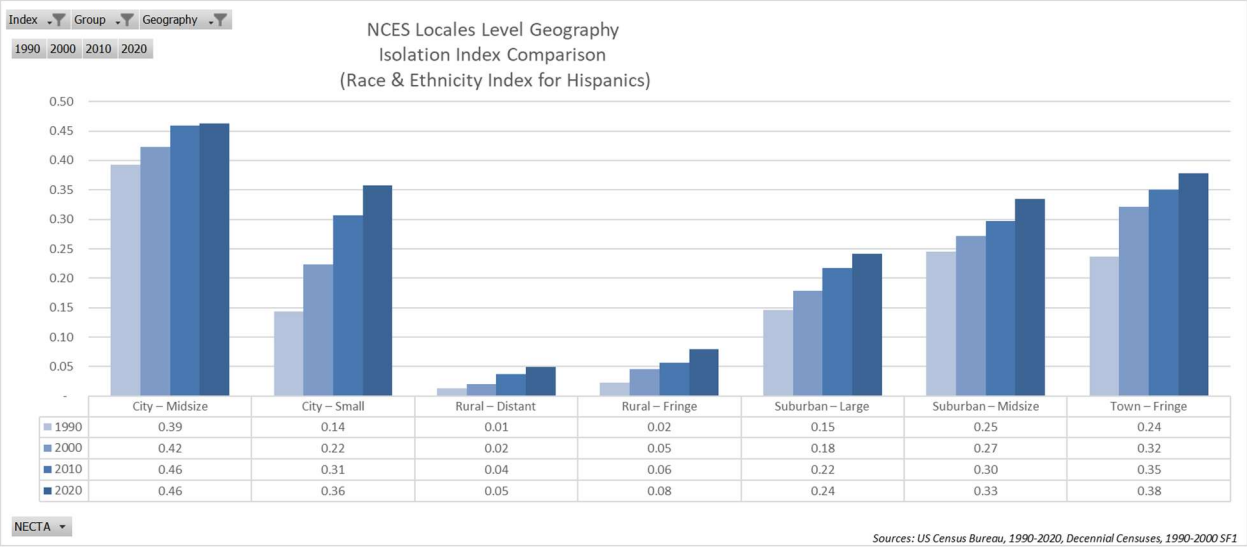
The Isolation index is the opposite of the interaction index in that it measures the level to which members of a single group are isolated from other groups. Figures 5.14-5.16 present the findings for isolation, which are the reciprocal of those of interaction.

Figure 5.15 Asian and Pacific Islander Non-Hispanic Isolation Index by NCES Locale 1990-2020



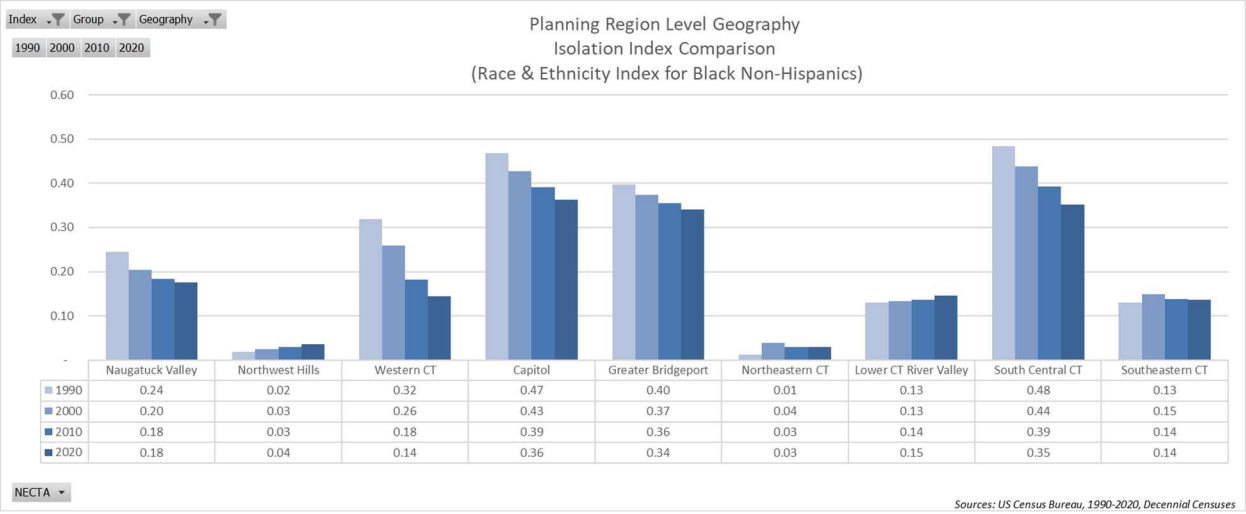
	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.53	0.21	0.02	0.08	0.23	0.24	0.03
2000	0.49	0.22	0.01	0.11	0.26	0.21	0.05
2010	0.46	0.20	0.02	0.09	0.25	0.19	0.05
2020	0.42	0.21	0.02	0.08	0.24	0.19	0.05

Figure 5.16 Hispanic Isolation Index by NCES Locale 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.39	0.14	0.01	0.02	0.15	0.25	0.24
2000	0.42	0.22	0.02	0.05	0.18	0.27	0.32
2010	0.46	0.31	0.04	0.06	0.22	0.30	0.35
2020	0.46	0.36	0.05	0.08	0.24	0.33	0.38

Figure 5.17 Black Non-Hispanic Isolation Index by NCES Locale 1990-2020

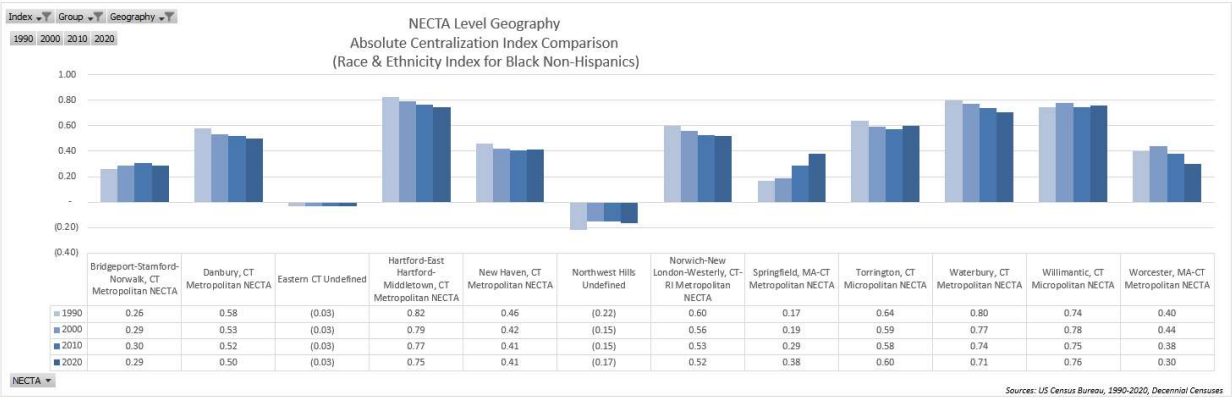


	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.24	0.02	0.32	0.47	0.40	0.01	0.13	0.48	0.13
2000	0.20	0.03	0.26	0.43	0.37	0.04	0.13	0.44	0.15
2010	0.18	0.03	0.18	0.39	0.36	0.03	0.14	0.39	0.14
2020	0.18	0.04	0.14	0.36	0.34	0.03	0.15	0.35	0.14

Absolute Centralization Index

With an emphasis on higher positive values denoting a greater concentration of a minority group around a region's population center, the index for the Black Non-Hispanic resident population is most pronounced in the Hartford NECTA labor market area compared to other labor market regions in the state. However, a discernible trend has emerged over the past several decades, indicating a decrease in centralization as Black non-Hispanic individuals migrate from the core areas of Hartford and East Hartford towards the suburbs of the region. This shift suggests a diminishing spatial segregation in these suburban locales. Notably, a parallel pattern is observed in additional labor market areas like Waterbury, Danbury, and Norwich/New London, while others, such as New Haven, have demonstrated a relatively stable demographic distribution over time.

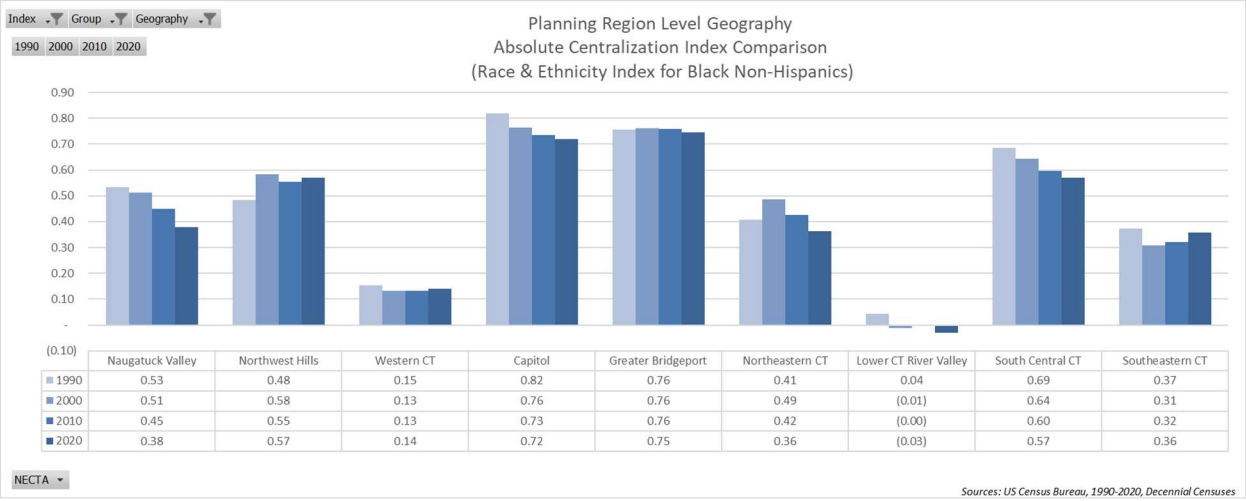
Figure 5.18 Black Non-Hispanic Absolute Centralization Index by NECTA Region 1990-2020



	Bridgeport-Stamford-Norwalk, CT Metropolitan NECTA	Danbury, CT Metropolitan NECTA	Eastern CT Undefined	Hartford-East Hartford-Middletown, CT Metropolitan NECTA	New Haven, CT Metropolitan NECTA	Northwest Hills Undefined	Norwich-New London-Westerly, CT-RI Metropolitan NECTA	Springfield, MA-CT Metropolitan NECTA	Torrington, CT Micropolitan NECTA	Waterbury, CT Metropolitan NECTA	Willimantic, CT Micropolitan NECTA	Worcester, MA-CT Metropolitan NECTA
1990	0.26	0.58	(0.03)	0.82	0.46	(0.22)	0.60	0.17	0.64	0.80	0.74	0.40
2000	0.29	0.53	(0.03)	0.79	0.42	(0.15)	0.56	0.19	0.59	0.77	0.78	0.44
2010	0.30	0.52	(0.03)	0.77	0.41	(0.15)	0.53	0.29	0.58	0.74	0.75	0.38
2020	0.29	0.50	(0.03)	0.75	0.41	(0.17)	0.52	0.38	0.60	0.71	0.76	0.30

Looking at absolute centralization by planning region, the majority of planning regions, including the Capitol, Naugatuck Valley, Northeastern, South Central and Lower Connecticut River Valley regions have seen decentralization of the Black Non-Hispanic population. The Greater Bridgeport region and Western regions have seen little change in this metric, while Northwest Hills and Southeastern regions have evidenced an increase in the centralization of the Black Non-Hispanic population.

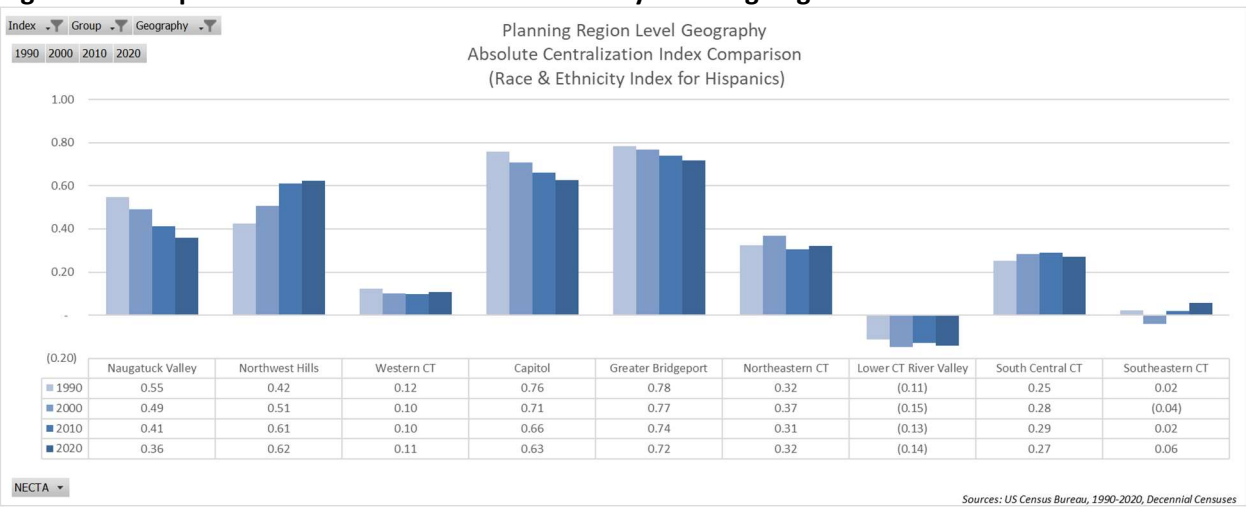
Figure 5.19 Black Non-Hispanic Absolute Centralization Index by Planning Region 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.53	0.48	0.15	0.82	0.76	0.41	0.04	0.69	0.37
2000	0.51	0.58	0.13	0.76	0.76	0.49	(0.01)	0.64	0.31
2010	0.45	0.55	0.13	0.73	0.76	0.42	(0.00)	0.60	0.32
2020	0.38	0.57	0.14	0.72	0.75	0.36	(0.03)	0.57	0.36

Within the Hispanic population, certain areas in Connecticut have witnessed a parallel shift towards decentralization from the regional population center. Notably, this trend is observed in the Capitol , Greater Bridgeport, and Naugatuck Valley regions. In contrast, there has been a significant increase in centralization in the Northwest Hills, characterized by its comparatively rural nature. Additionally, the Western, South Central, and Southeastern regions have experienced a notable but less pronounced increase in centralization of the Hispanic population. Northeastern Connecticut has shown minimal change over time. In the Lower Connecticut River Valley Hispanics predominantly reside in the peripheral areas of the region, situated away from the population center.

Figure 5.20 Hispanic Absolute Centralization Index by Planning Region 1990-2020

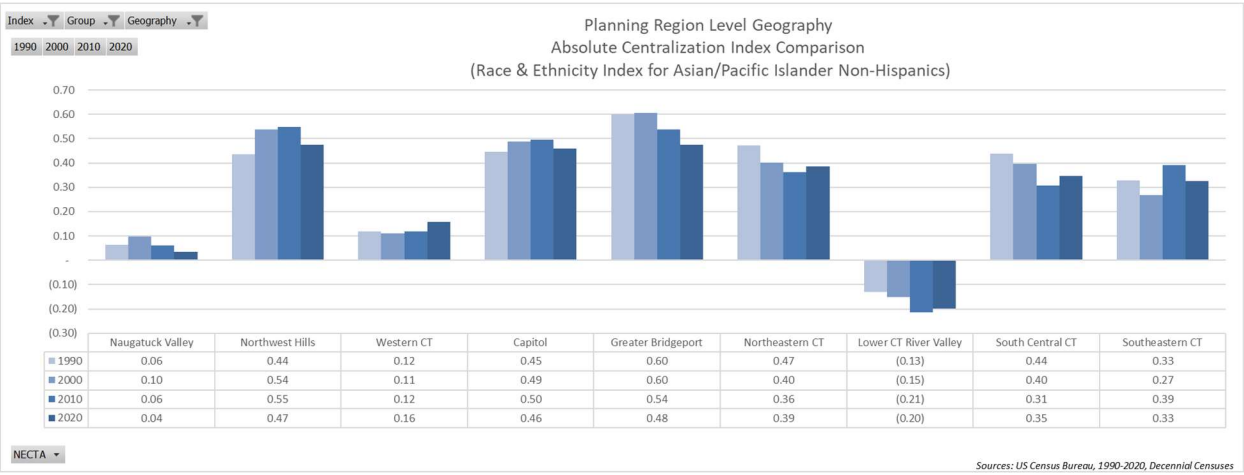


	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.55	0.42	0.12	0.76	0.78	0.32	(0.11)	0.25	0.02
2000	0.49	0.51	0.10	0.71	0.77	0.37	(0.15)	0.28	(0.04)
2010	0.41	0.61	0.10	0.66	0.74	0.31	(0.13)	0.29	0.02
2020	0.36	0.62	0.11	0.63	0.72	0.32	(0.14)	0.27	0.06

Asian and Pacific Islanders exhibited trends similar to Hispanics, residing predominantly in the peripheral areas of the Lower Connecticut River Valley, away from the population center. Like both Black Non-Hispanics and Hispanics, Asian and Pacific Islanders moved increasingly to the population centers of the Western region and the Northwest Hills, while decentralization occurred in the Greater Bridgeport and Naugatuck Valley regions. Notably, Asian and Pacific Islanders increasingly moved to the core population

center in the Capitol region in contrast to the outward moves to the peripheral communities among Black Non-Hispanics and Hispanics.

Figure 5.21 Asian and Pacific Islander Non-Hispanic Absolute Centralization Index by Planning Region 1990-2020



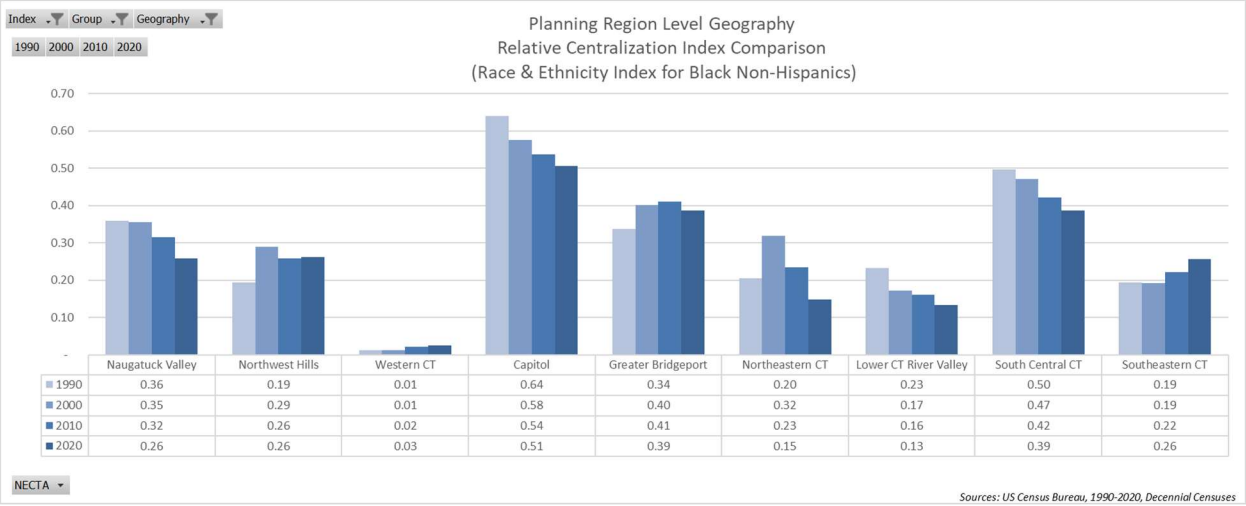
	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.06	0.44	0.12	0.45	0.60	0.47	(0.13)	0.44	0.33
2000	0.10	0.54	0.11	0.49	0.60	0.40	(0.15)	0.40	0.27
2010	0.06	0.55	0.12	0.50	0.54	0.36	(0.21)	0.31	0.39
2020	0.04	0.47	0.16	0.46	0.48	0.39	(0.20)	0.35	0.33

Relative Centralization Index

The relative centralization index gauges the proportionate distribution of majority and minority population groups required to align with the centrality pattern of the majority population. Positive values suggest that minority groups are situated closer to the center, whereas negative values indicate the opposite trend. The figures below unequivocally illustrate that Black and Asian/Pacific Islander Non-Hispanics, as well as Hispanics, reside significantly closer to population centers than White Non-Hispanics. This distinction is somewhat less pronounced in the Western region, where the distribution tends to be relatively even or with an index close to zero.

For Black Non-Hispanics, the relative centralization index is on the decline in various areas, signifying a reduction in segregation. This trend is observed in the Capitol, Naugatuck Valley, Lower Connecticut River Valley, and South Central regions. Conversely, increased segregation in terms of centrality is evident in the Greater Bridgeport, Northwest Hills, and Southeastern regions.

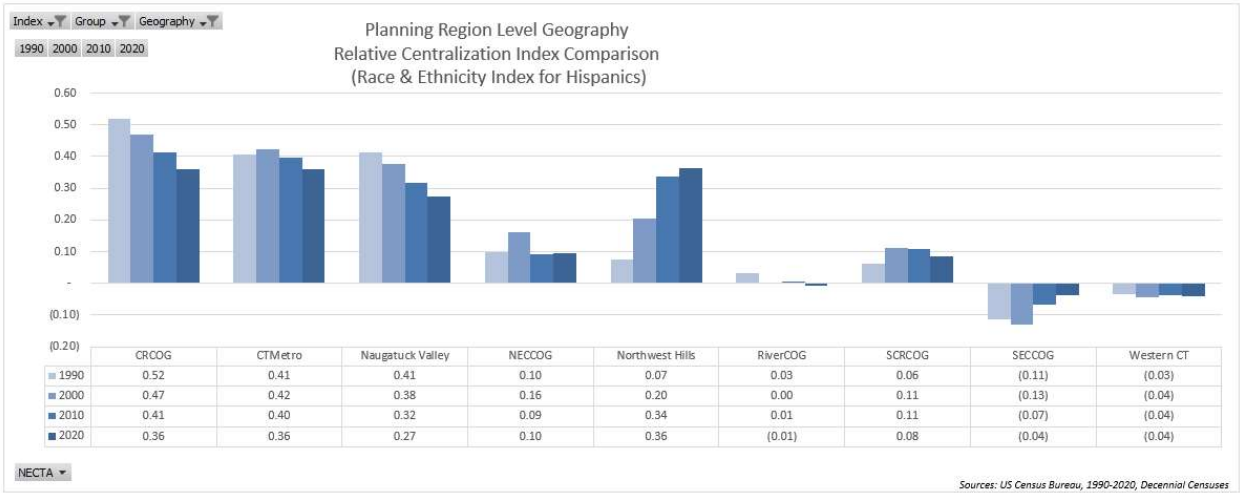
Figure 5.22 Black Non-Hispanic Relative Centralization Index by Planning Region 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.36	0.19	0.01	0.64	0.34	0.20	0.23	0.50	0.19
2000	0.35	0.29	0.01	0.58	0.40	0.32	0.17	0.47	0.19
2010	0.32	0.26	0.02	0.54	0.41	0.23	0.16	0.42	0.22
2020	0.26	0.26	0.03	0.51	0.39	0.15	0.13	0.39	0.26

The presented figure indicates a relatively uniform distribution of Hispanic centrality in the Lower Connecticut River Valley, South Central, Southeastern, and Western regions. Overall, population centrality in these areas is shifting towards reduced segregation. However, an exception is observed in the Northwest Hills, where the population is progressively moving closer to the population centers, diverging from the distribution pattern of the White non-Hispanic population. Notably, both the Capitol and Naugatuck Valley areas stand out for a significant decline in segregation from urban areas towards lower density areas over the past several decades.

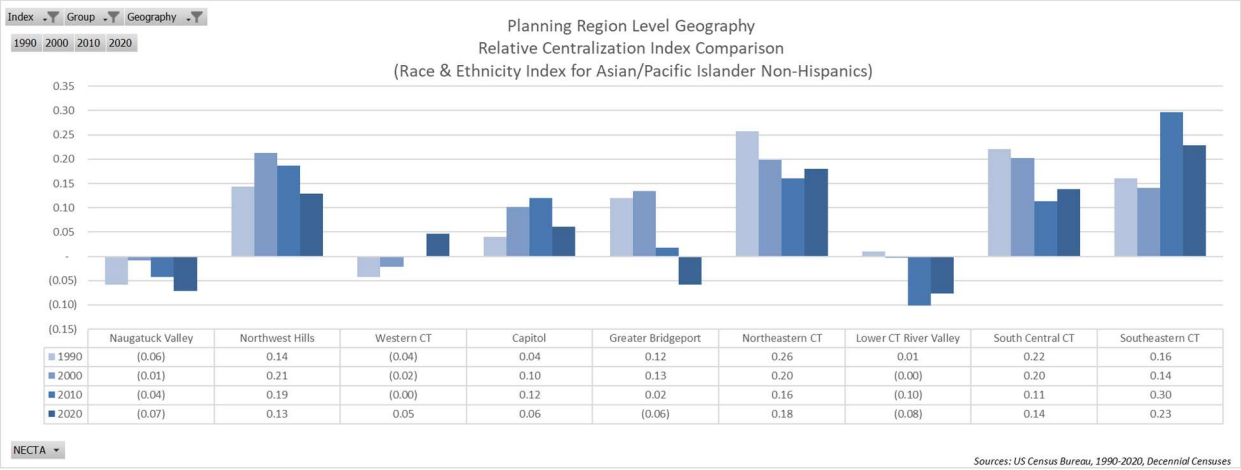
Figure 5.23 Hispanic Relative Centralization Index by Planning Region 1990-2020



	CRCOG	CTMetro	Naugatuck Valley	NECCOG	Northwest Hills	RiverCOG	SCRCOG	SECCOG	Western CT
1990	0.52	0.41	0.41	0.10	0.07	0.03	0.06	(0.11)	(0.03)
2000	0.47	0.42	0.38	0.16	0.20	0.00	0.11	(0.13)	(0.04)
2010	0.41	0.40	0.32	0.09	0.34	0.01	0.11	(0.07)	(0.04)
2020	0.36	0.36	0.27	0.10	0.36	(0.01)	0.08	(0.04)	(0.04)

Asian and Pacific Islander Non-Hispanics often choose to live in proximity to the population centers of suburban and town communities, while opting for residences toward the outskirts of cities and rural areas. Notably, in various regions, there has been a shift among Asian and Pacific Islanders from residing in more centrally located areas to less dense areas compared to White Non-Hispanics. This trend is evident in communities such as the Greater Bridgeport and Lower Connecticut River Valley regions. Conversely, in the Western region, there has been a movement from less dense to more dense areas among the Asian and Pacific Islander population.

Figure 5.24 Asian and Pacific Islander Non-Hispanic Relative Centralization Index by Planning Region 1990-2020



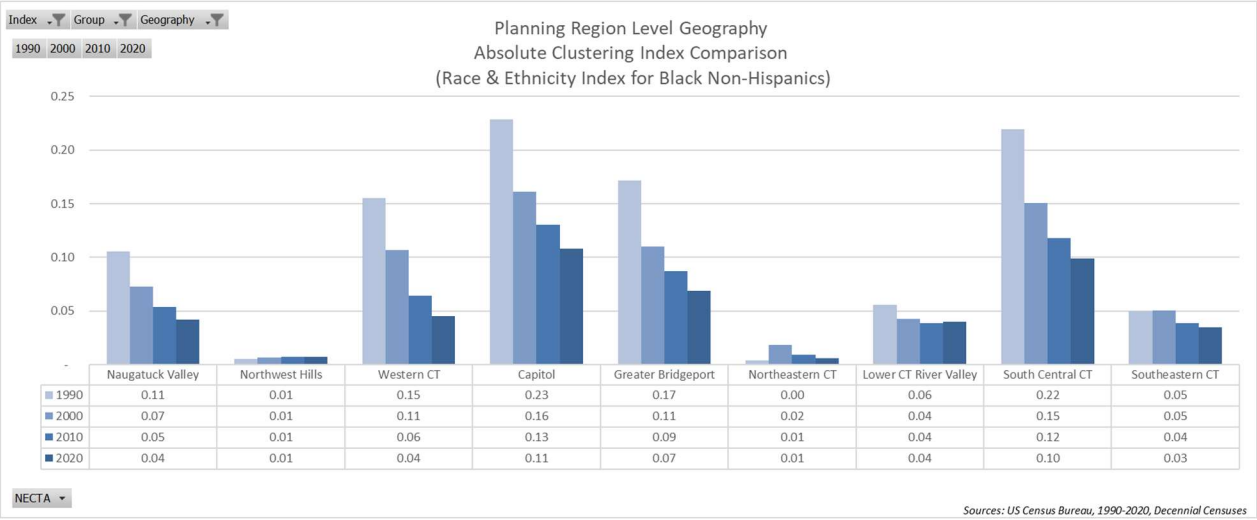
	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	(0.06)	0.14	(0.04)	0.04	0.12	0.26	0.01	0.22	0.16
2000	(0.01)	0.21	(0.02)	0.10	0.13	0.20	(0.00)	0.20	0.14
2010	(0.04)	0.19	(0.00)	0.12	0.02	0.16	(0.10)	0.11	0.30
2020	(0.07)	0.13	0.05	0.06	(0.06)	0.18	(0.08)	0.14	0.23

Absolute Clustering Index

Absolute clustering is a metric that gauges the average number of minorities in a specific area relative to the total population in that same area. A level of 0.0 signifies a high degree of segregation by clustering, while 1.0 indicates no difference in clustering between the minority and majority groups. This measure is commonly employed to assess the relative contact between a minority group and the majority population.

The figure below illustrates the absolute clustering index scores for Black Non-Hispanic residents, which generally witnessed a decline from 1990 to 2020 across all areas, indicating an escalating level of segregation through clustering. Notably, the Northwest Hills and Northeast region exhibited the highest levels of clustering segregation but with relatively minimal change observed over time.

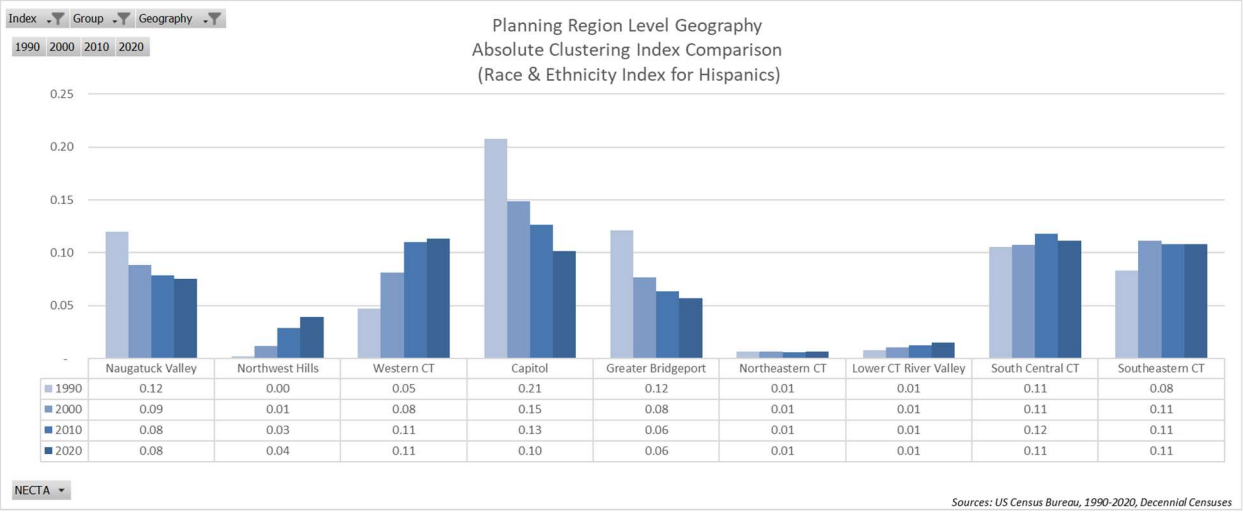
Figure 5.25 Black Non-Hispanic Absolute Clustering Index by Planning Region 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.11	0.01	0.15	0.23	0.17	0.00	0.06	0.22	0.05
2000	0.07	0.01	0.11	0.16	0.11	0.02	0.04	0.15	0.05
2010	0.05	0.01	0.06	0.13	0.09	0.01	0.04	0.12	0.04
2020	0.04	0.01	0.04	0.11	0.07	0.01	0.04	0.10	0.03

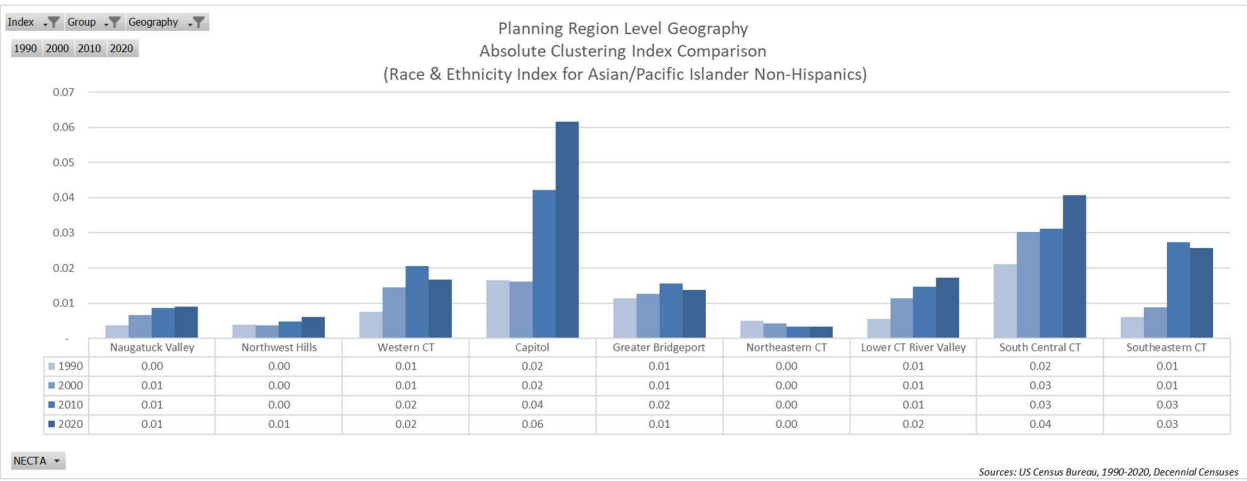
Hispanics and Asian/Pacific Islanders Non-Hispanics exhibit trends in clustering that align somewhat with those of Black Non-Hispanics, characterized by elevated levels of clustering segregation in the Greater Bridgeport, Naugatuck, South Central, and Western regions. However, Asian/Pacific Islanders are notable for experiencing a reduction in clustering segregation in the Capitol region over time.

Figure 5.26 Hispanic Absolute Clustering Index by Planning Region, 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.12	0.00	0.05	0.21	0.12	0.01	0.01	0.11	0.08
2000	0.09	0.01	0.08	0.15	0.08	0.01	0.01	0.11	0.11
2010	0.08	0.03	0.11	0.13	0.06	0.01	0.01	0.12	0.11
2020	0.08	0.04	0.11	0.10	0.06	0.01	0.01	0.11	0.11

Figure 5.27 Asian and Pacific Islander Non-Hispanic Absolute Clustering Index by Planning Region 1990-2020



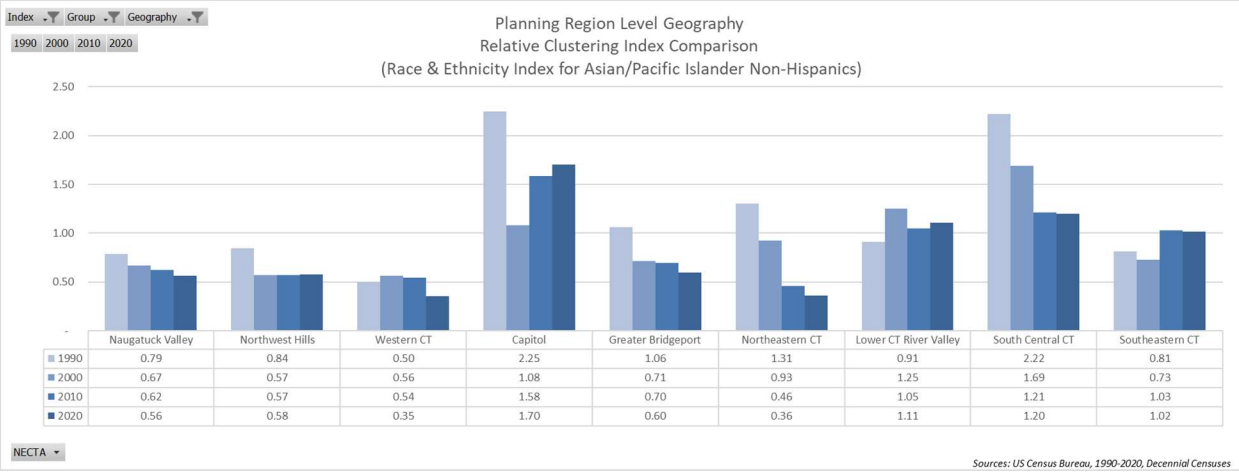
	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.00	0.00	0.01	0.02	0.01	0.00	0.01	0.02	0.01
2000	0.01	0.00	0.01	0.02	0.01	0.00	0.01	0.03	0.01
2010	0.01	0.00	0.02	0.04	0.02	0.00	0.01	0.03	0.03
2020	0.01	0.01	0.02	0.06	0.01	0.00	0.02	0.04	0.03

Relative Clustering Index

The Relative Clustering Index assesses the average distance between minority residents compared to the average distance between majority residents. The scale ranges from 0.0 to 1.0, where values closer to zero indicate high levels of clustering, and values closer to 1 or higher indicate lower levels of clustering. In essence, relative clustering serves as an indicator for relative population density between groups of residents.

Asian and Pacific Islanders Non-Hispanics exhibit distinct clustering patterns under this measure, showcasing generally lower levels of clustering across all planning regions compared to Black Non-Hispanics and Hispanics as their residential patterns reflect a similar density to that of White Non-Hispanics. It is important to mention that the scaling of figures varies across the three charts, with the clustering index values for Asian and Pacific Islanders being substantially lower than those for Black Non-Hispanics and Hispanics.

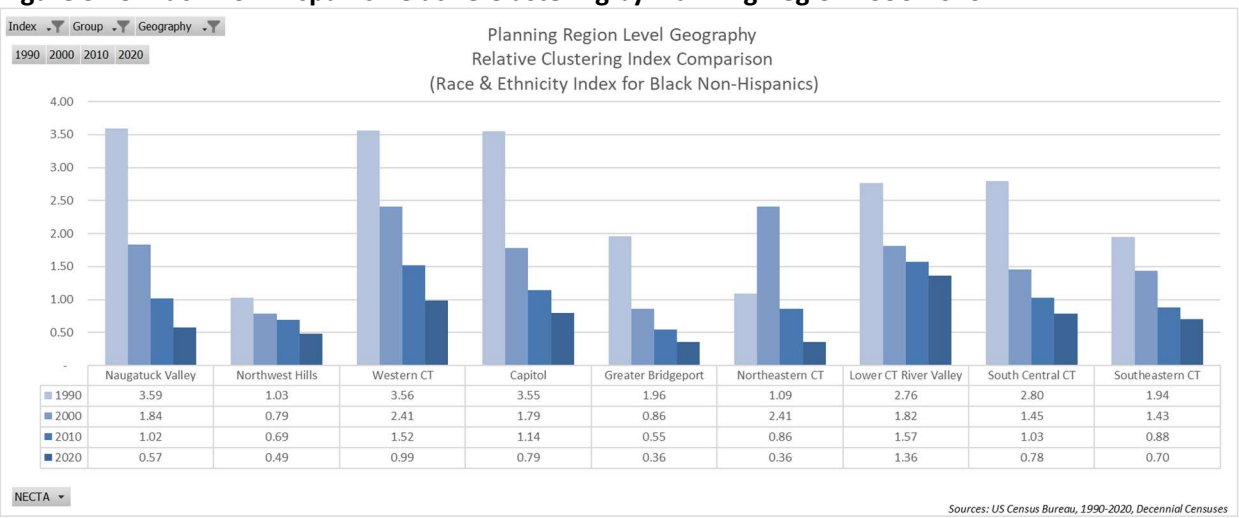
Figure 5.28 Asian and Pacific Islander Non-Hispanic Relative Clustering by Planning Region 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	0.79	0.84	0.50	2.25	1.06	1.31	0.91	2.22	0.81
2000	0.67	0.57	0.56	1.08	0.71	0.93	1.25	1.69	0.73
2010	0.62	0.57	0.54	1.58	0.70	0.46	1.05	1.21	1.03
2020	0.56	0.58	0.35	1.70	0.60	0.36	1.11	1.20	1.02

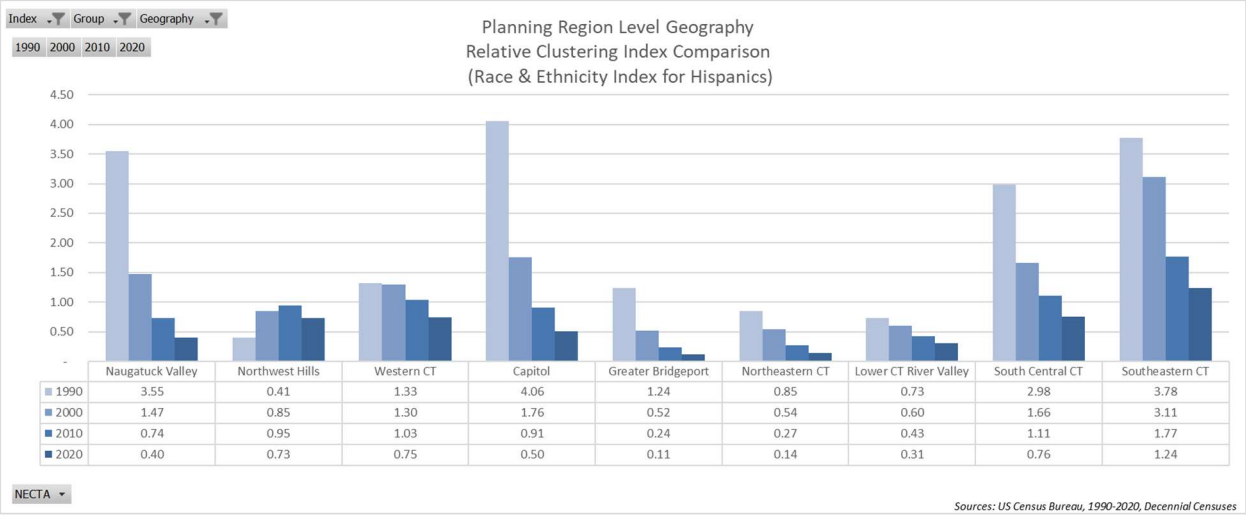
As shown in Figures 5.28 and 5.29, both Black Non-Hispanics and Hispanics have witnessed a decline in spatial segregation, evident in the consistent decrease of relative clustering indices to zero in each Planning Region.

Figure 5.29 Black Non-Hispanic Relative Clustering by Planning Region 1990-2020



	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	3.59	1.03	3.56	3.55	1.96	1.09	2.76	2.80	1.94
2000	1.84	0.79	2.41	1.79	0.86	2.41	1.82	1.45	1.43
2010	1.02	0.69	1.52	1.14	0.55	0.86	1.57	1.03	0.88
2020	0.57	0.49	0.99	0.79	0.36	0.36	1.36	0.78	0.70

Figure 5.30 Hispanic Relative Clustering by Planning Region 1990-2020

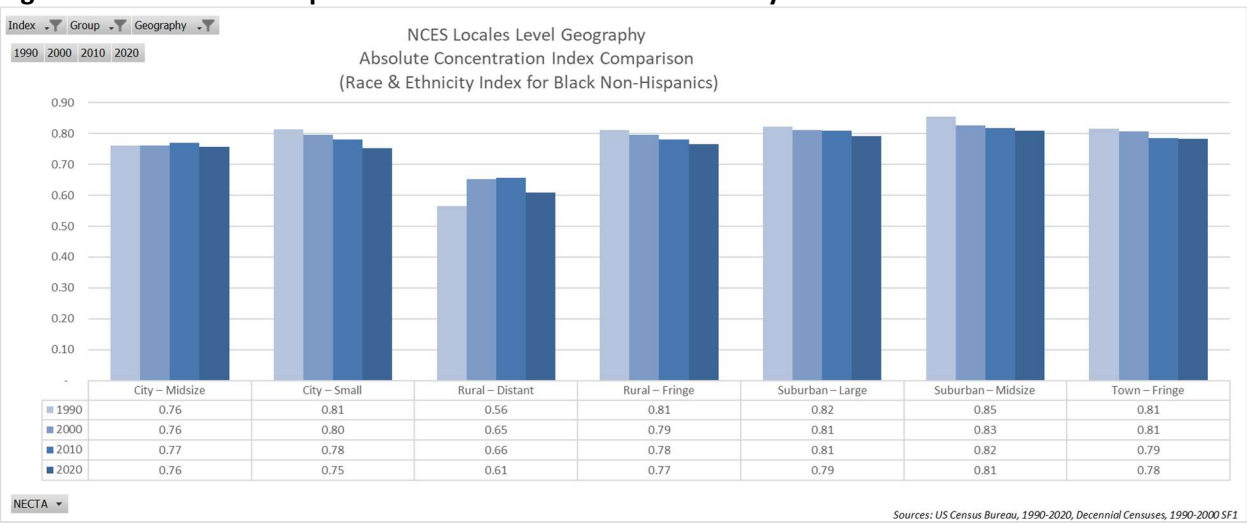


	Naugatuck Valley	Northwest Hills	Western CT	Capitol	Greater Bridgeport	Northeastern CT	Lower CT River Valley	South Central CT	Southeastern CT
1990	3.55	0.41	1.33	4.06	1.24	0.85	0.73	2.98	3.78
2000	1.47	0.85	1.30	1.76	0.52	0.54	0.60	1.66	3.11
2010	0.74	0.95	1.03	0.91	0.24	0.27	0.43	1.11	1.77
2020	0.40	0.73	0.75	0.50	0.11	0.14	0.31	0.76	1.24

Absolute Concentration Index

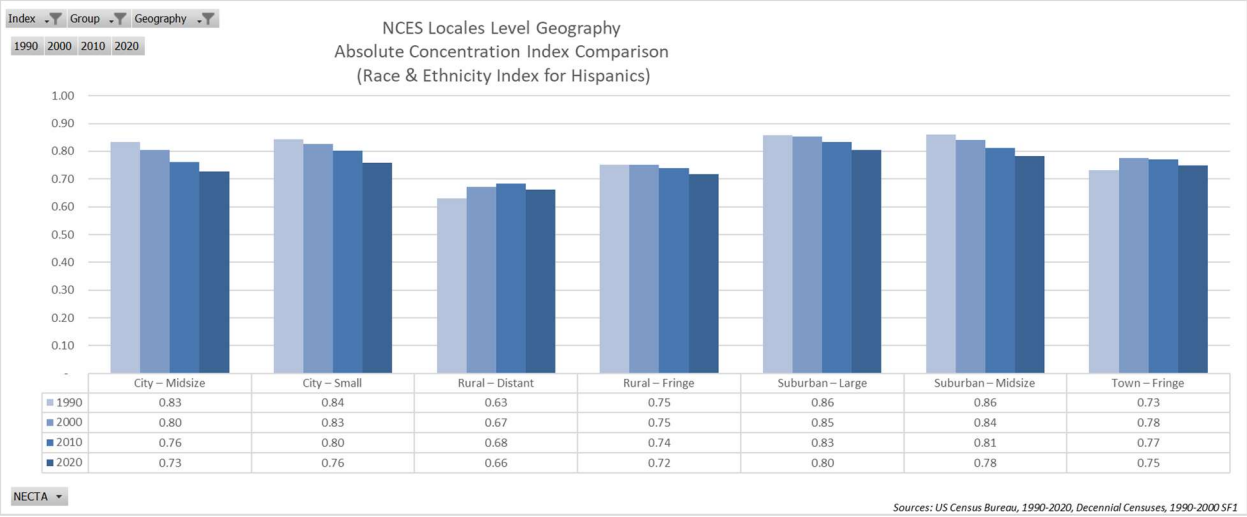
The Absolute Concentration Index computes the total area inhabited by a group and compares this with the minimum and maximum areas, in this case block groups, which vary in size depending on population density. Spatial concentration generally declined across all three population groups from 1990 to 2020, indicating lessoning degrees in this aspect of segregation. However, all three groups had very high indices—above 0.75 in most categories.

Figure 5.31 Black Non-Hispanic Absolute Concentration Index by NCES Locale 1990-2020



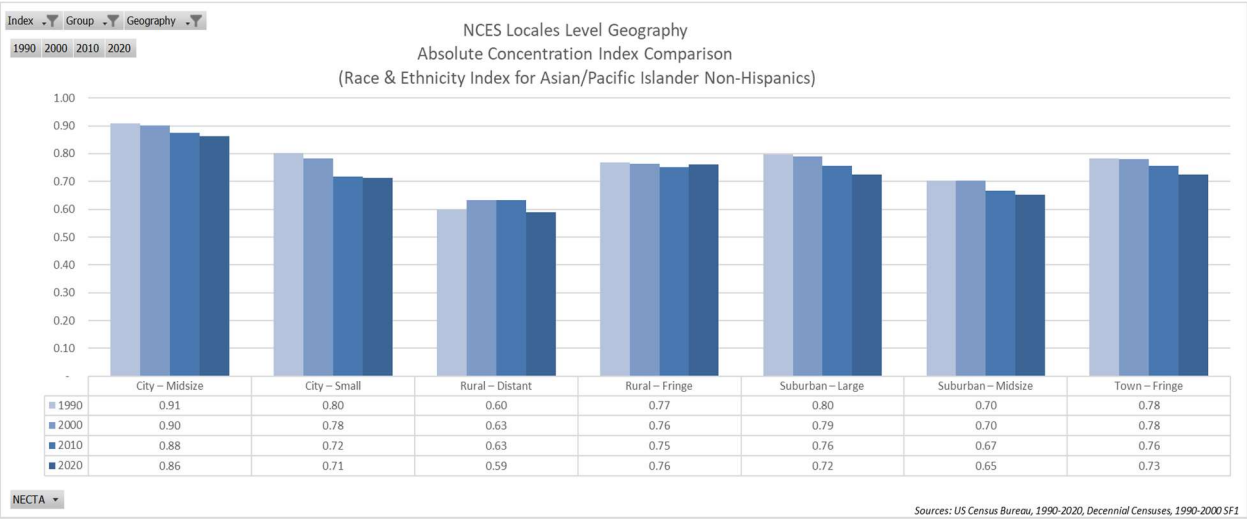
	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.76	0.81	0.56	0.81	0.82	0.85	0.81
2000	0.76	0.80	0.65	0.79	0.81	0.83	0.81
2010	0.77	0.78	0.66	0.78	0.81	0.82	0.79
2020	0.76	0.75	0.61	0.77	0.79	0.81	0.78

Figure 5.32 Hispanic Absolute Concentration Index by NCES Locale 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.83	0.84	0.63	0.75	0.86	0.86	0.73
2000	0.80	0.83	0.67	0.75	0.85	0.84	0.78
2010	0.76	0.80	0.68	0.74	0.83	0.81	0.77
2020	0.73	0.76	0.66	0.72	0.80	0.78	0.75

Figure 5.33 Asian and Pacific Islander Non- Hispanic Absolute Concentration Index by NCES Locale 1990-2020



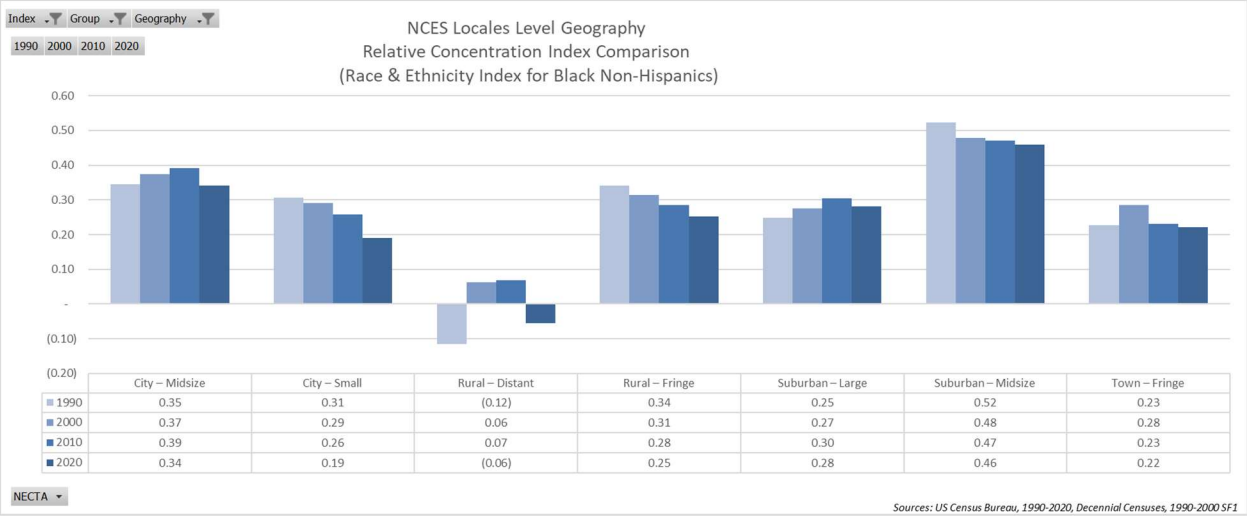
	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.91	0.80	0.60	0.77	0.80	0.70	0.78
2000	0.90	0.78	0.63	0.76	0.79	0.70	0.78
2010	0.88	0.72	0.63	0.75	0.76	0.67	0.76
2020	0.86	0.71	0.59	0.76	0.72	0.65	0.73

Relative Concentration Index

The Relative Concentration Index gauges the proportion of space occupied by one group relative to another, considering the distribution of the majority group on a relative basis. A negative score indicates that the concentration of the majority exceeds that of the minority, while a positive score implies the reverse. A score of zero signifies perfect integration.

Over the past 30 years, the Relative Concentration Index for the Black Non-Hispanic population in most Planning Regions has generally moved downward, approaching zero. This trend suggests increasing integration and less concentration relative to the White Non-Hispanic population. However, for the rural-distant typology, the White Non-Hispanic population appears more clustered, indicating that the Black Non-Hispanic population is relatively dispersed in those areas. In the large suburban locale, there was an increase in segregation among Black Non-Hispanics by this measure.

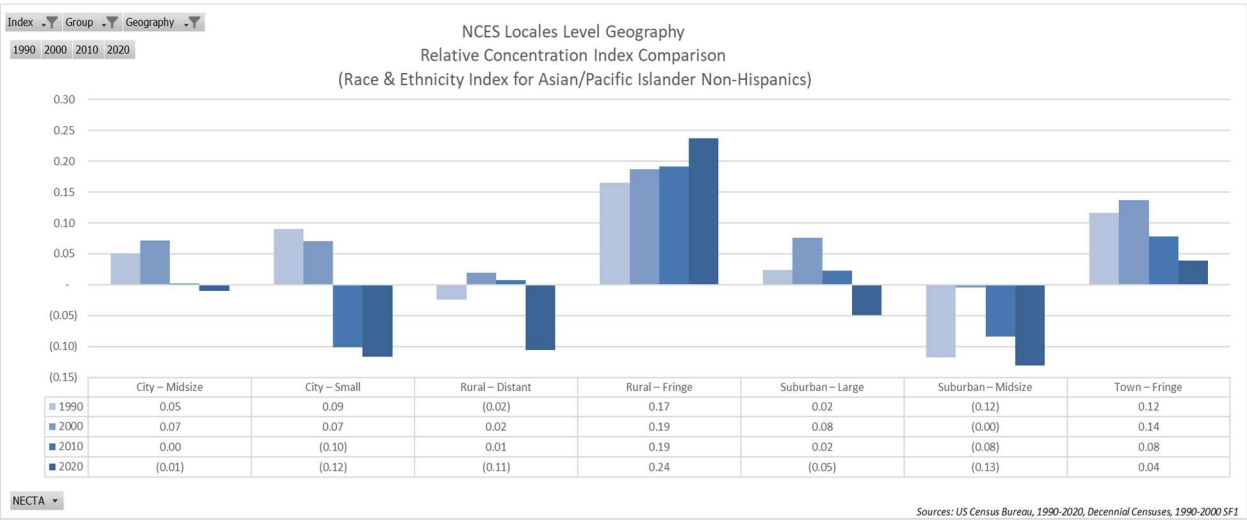
Figure 5.34 Black Non- Hispanic Relative Concentration Index by NCES Locale 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.35	0.31	(0.12)	0.34	0.25	0.52	0.23
2000	0.37	0.29	0.06	0.31	0.27	0.48	0.28
2010	0.39	0.26	0.07	0.28	0.30	0.47	0.23
2020	0.34	0.19	(0.06)	0.25	0.28	0.46	0.22

Asian/Pacific Islanders have been similarly concentrated compared with the majority population group (scores close to zero as shown in the lower scaling of the chart). That trend is shifting slightly with the concentration of the majority increasingly exceeding Asian/Pacific Islanders in recent years in cities, distant rural areas and the suburbs, while the fringe rural areas have seen increasing concentration of Asian Pacific Islander Non-Hispanics.

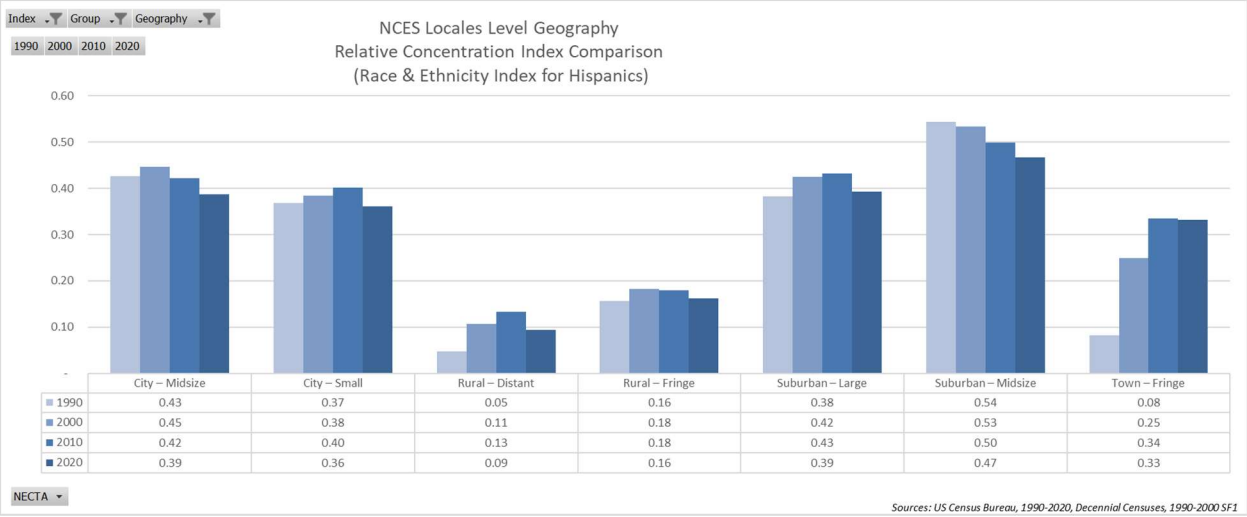
Figure 5.35 Asian and Pacific Islander Non- Hispanic Relative Concentration Index by NCES Locale 1990-2020



	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.05	0.09	(0.02)	0.17	0.02	(0.12)	0.12
2000	0.07	0.07	0.02	0.19	0.08	(0.00)	0.14
2010	0.00	(0.10)	0.01	0.19	0.02	(0.08)	0.08
2020	(0.01)	(0.12)	(0.11)	0.24	(0.05)	(0.13)	0.04

Hispanic residents are more spatially concentrated than White Non-Hispanics across locale typologies, although Hispanics have gotten closer to White Non-Hispanic concentration levels in all areas accept for Town- Fringe.

Figure 5.36 Hispanic Relative Concentration Index by NCES Locale 1990-2020



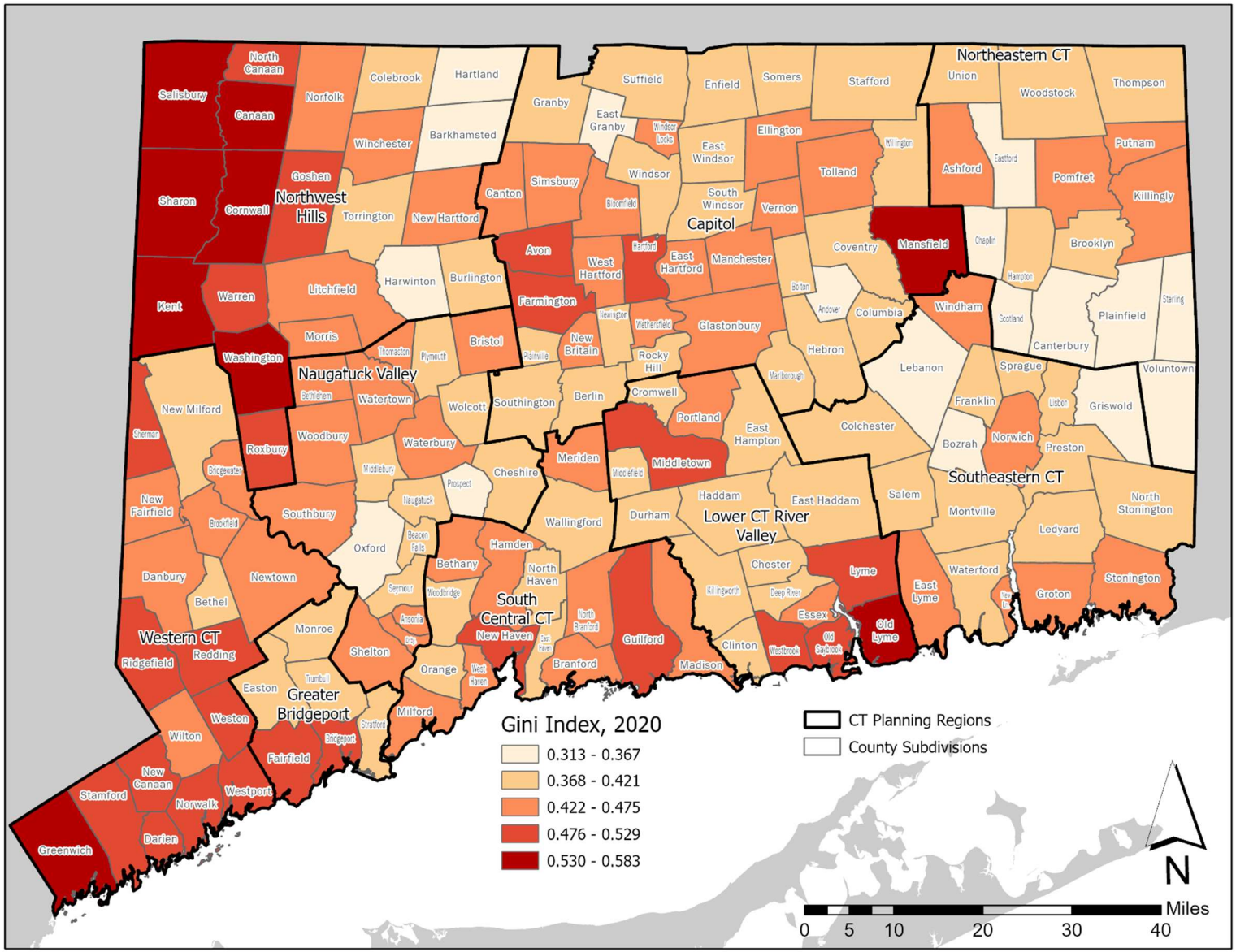
	City – Midsize	City – Small	Rural – Distant	Rural – Fringe	Suburban – Large	Suburban – Midsize	Town – Fringe
1990	0.43	0.37	0.05	0.16	0.38	0.54	0.08
2000	0.45	0.38	0.11	0.18	0.42	0.53	0.25
2010	0.42	0.40	0.13	0.18	0.43	0.50	0.34
2020	0.39	0.36	0.09	0.16	0.39	0.47	0.33

Income Inequality

The gap between the highest and lowest earning households, known as Income inequality, has only increased for the state of Connecticut over the past decades as a smaller percentage of the population controls a greater share of wealth. One measure of income inequality is the Gini index. As presented by the Census Bureau, the Gini index for the state has crept up by 1.5 percentage points from 48.2% to 49.5% from 2010 to 2020.

The majority of municipalities (124 of 169) have seen increases in the wealth gap as well, with increases in the Gini measure ranging from +0.1 percentage points in North Haven to +13.9 percentage points in Old Lyme. Figure 5.37 maps the 2020 Gini index by municipality. The highest indices are largely in the coastal and suburban communities that house the historic estates of Connecticut.

Figure 5.37 Gini Index by Municipality, 2020



Source: US Census Bureau, ACS, 2016-2020 5-Year Estimate

5.7. Conclusions

The concentration of people of color is so centered in cities due to historical practices, that the indices generally do not change substantially, although a comparison of the indices of segregation at almost every level shows a decrease in segregation for each of the reference populations when compared to the White Non-Hispanic population between 1990 and 2020.

Segregation for the Asian-Pacific Islander Non-Hispanic population has increased using some indices; however, overall segregation levels are relatively low compared to the other two groups.

Segregation in the State of Connecticut is high, regardless of the index or race/ethnicity being referenced. Midsize cities (Bridgeport, Hartford, New Haven) having ingrained urban patterns have the highest measures of segregation. These are followed closely by the suburbs, which are the areas (if there are any) in which segregation is holding steady or increasing. Rural areas have the lowest levels of segregation, generally due to low population density.

The next section of this report will examine the relationship between the location of subsidized housing and segregated communities.

6. Spatial Analysis

6.1. Introduction

One of the primary charges of this scope of work was to determine if there is a predictive relationship between the presence of government subsidized affordable housing units and segregation by race and ethnicity across the State's municipalities. There were a number of challenges to this task: 1) the number of underlying factors that influence segregation; 2) the diversity and complexity of subsidized housing programs, some of which had data available only at the municipal level; and, 3) the use of segregation indices, which are intended for use in regional rather than local analysis. Nonetheless, in an attempt to answer this question, a series of regression analyses were completed using ArcGIS Pro geostatistical analytical tools on the most commonly used measures of segregation, the Black non-Hispanic Dissimilarity Index and the Hispanic Dissimilarity Index. These included the following approaches:

Exploratory Regression Analysis of Predictive Variables for Segregation Levels

An initial spatial statistical assessment of the relationships between various independent variables and the dependent variable to identify significant spatial patterns and assess the statistical strength of a wide range of independent and potentially predictive variables without focusing on a specific hypothesis. For this analysis, government subsidized housing data and socioeconomic factors were utilized as independent variables and segregation levels as the dependent variable.

- The exploratory regression analyses were performed for the years 2000, 2010, and 2020, covering various geographic regions including:
    - 1.0 **Statewide** analysis
    - 1.1 **Regional** analysis including a) cities and suburbs together, and b) cities alone, suburban communities alone, and rural and town communities together
    - 1.2 **Single variable and multivariable models** for each of the geographic regions were analyzed
    - 1.3 Finally, a series of **statistical diagnostic tests** were run on the predictive models identified by each of the exploratory analysis to assess the overall validity of potential regression models and test for a range of statistical issues

Full Regression Analysis of Government Subsidized Housing's Relationship on Segregation Levels

- Ordinary Least Squares (OLS) Regression: A global spatial statistical technique was used to assess the predictive power of various independent variables (for this analysis, government subsidized housing and other socioeconomic variables) on a dependent variable (for this analysis, segregation levels). OLS provides an overall estimation of linear relationships between these independent variables and the dependent variable, assuming a constant relationship across space.
- Multiscale Geographically Weighted Regression (MGWR): An advanced local spatial statistical technique that builds upon GWR, enabling the examination of relationships at multiple scales. In this analysis, MGWR provides a detailed understanding of how government subsidized housing influences segregation across diverse geographical contexts.

6.2 Exploratory Regression Analysis – Description of Variables

The exploratory regression analysis employed county subdivision (or town) data, treating the Black non-Hispanic Dissimilarity Index and the Hispanic Dissimilarity Index as separate dependent variables for

measures of segregation levels.[44] The exploratory variables (independent variables[45]) comprised government-subsidized affordable housing indicators and 27 socioeconomic variables sourced from the US Census Bureau. Each analysis focused on a single dependent variable (either Black non-Hispanic or Hispanic Dissimilarity Index) in conjunction with a subsidized housing program variable, exploring multiple combinations (up to three) of the 27 socioeconomic variables in each test.

The exploratory variables for each county subdivision related to subsidized housing encompassed the following data:

- Total Assisted Units from Appeals List / Total Housing Units (CTDOH Appeals List),
- Total Public Housing Units / Total Housing Units (HUD Picture of Subsidized Housing),
- Low Income Housing Tax Credit Subsidized Units / Total Housing Units (HUD Picture of Subsidized Housing & HUD LIHTC Database),
- Total Tenant Rental Assistance Vouchers / Total Housing Units (CTDOH Appeals List),
- State S8/State RAP Vouchers / Total Housing Units (CTDOH Rental Assistance Database and Appeals List),
- Housing Choice Vouchers / Total Housing Units (HUD Picture of Subsidized Housing),
- Deed Restricted Units / Total Housing Units (CTDOH Appeals List),
- Downpayment Loans (Active at time of year) / Total Housing Units (CHFA Loan Database), and
- First Mortgage Program Loans (Active at time of year) / Total Housing Units (CHFA Loan Database).

The socioeconomic exploratory variables were drawn from the US Census Bureau's Decennial Census and ACS programs, including:

- Median Age of the Total Population,
- Share of Total Population below the Federal Poverty Limit,
- Share of Rental Households Spending 30% or More of Annual Household Income on Housing Costs,
- Median Gross Rent,
- Median Owner-Occupied Home Value,
- Share of Rental Households of Total Occupied Housing Units,
- Homeowner Vacancy Rate,
- Renter Vacancy Rate,
- Total Housing Units,
- Population Density Per Square Mile,
- Share of Total Population Residing in Urbanized Areas,
- Share of Total Population in Households Under Age 18,
- Share of Total Population that is Foreign-Born,
- Share of Total Population Born in State of Residence,
- Share of Total Population Aged 18+ with Less than a Four-Year College Degree,
- Share of Total Population Aged 16+ in Labor Force,
- Share of Total Population Aged 16+ Unemployment Rate,
- Share of Total Population Aged 16+ Employed and Not Working from Home,
- Share of Total Population Aged 16+ Employed not From Home and Commuting Less Than 30 Minutes,
- Median Household Income,
- Seasonal Housing Share of Total Housing Units,
- Share of Total Population Under 18 years of Age,
- Share of Total Population Residing in Group Quarters,

[44] Dependent variables are outcomes or results in a scientific study that researchers measure and observe to determine the effects of changes in other variables known as independent variables. In other words, dependent variables are those outcomes that researchers seek to understand, explain, or predict.
[45] Exploratory or independent variables are data in the form of factors or conditions that researchers use to better understand their influence on a dependent variable that is the subject of study, allowing for exploration of relationships and patterns.

- Share of Total Housing Units that are Single Family Detached,
- Share of Total Housing Units that are located in Multifamily Buildings with 2+ Units,
- Share of Total Housing Units that are located in Multifamily Buildings with 10+ Units, and
- Share of Total Housing Units that are Mobile Home Units.

To comprehensively assess the relationship of subsidized housing independent variables in each exploratory regression analysis, a Summary of Variable Significance was generated. The Summary of Variable Significance identifies what proportion of the sample data's dependent variables (Dissimilarity Index) have potentially statistically significant relationships with the independent variables (subsidized housing or socioeconomic variables). A high value in this "Share of Significant Samples"[46] indicates potential statistical significance between the variables that should be further studied. This summary highlights the percentage of instances (e.g. Share of Significant Samples) where each independent variable demonstrates potential statistical significance[47] with the dependent variables.[48]

6.3 Exploratory Regression Analysis – Statewide Models

A. Statewide Single Variable Models

Generally, across all exploratory regression analyses, socioeconomic independent variables exhibited higher occurrences of statistical significance compared to the subsidized housing independent variables. For the Statewide exploratory regression analysis of 2020 dissimilarity indexes, the socioeconomic variables with the Share of Significant Samples exceeding 75 percent of the 169 county subdivision samples are all correlated with high-density communities. These included:

- Total Housing Units,
- Share of Total Population Residing in Urbanized Areas,
- Share of Total Population Aged 16+ Employed not From Home and Commuting Less Than 30 Minutes, and
- Population Density Per Square Mile.

The predictive strength of the nine subsidized housing variables varied based on historical periods, specific subsidized programs, and the type of racial and ethnic segregation under consideration. Subsidized housing independent variables with Share of Significant Samples exceeding 75% included the following variables in the 2020 analyses:

- For both Black non-Hispanic and Hispanic Analyses:

[46] This summary serves as a concise overview of the relative importance and reliability of independent variables in an exploratory regression statistical analysis. The "Percent Significant" in the Exploratory Regression Analysis, also known as the Share of Significant Samples, indicates the proportion of instances in which each independent variable was statistically significant.

[47] Statistical significance is a concept in statistics used to evaluate whether an observed effect or relationship in data is most likely a meaningful event (causation) or a chance occurrence (correlation). Statistical significance identifies the likelihood whether results are reliable or random. A measure of statistical significance is a p-value, which measures the probability of obtaining observed results if a statement of no effect or no difference is true. Typically, a p-value below a predetermined threshold level serves as an indicator for researchers to assume the data results could likely occur due to random chance alone and thus are not statistically valid results.

[48] The exploratory analysis employed Minimum Acceptable Adjusted R-squared scores to establish statistical significance across the model, revealing scores significantly lower than the proportion of statistically significant samples. In the next section, the determination of statistical significance in the diverse regression models will rely on t-tests, with scores markedly below the standard threshold of 0.5, a commonly accepted measure of statistical significance.

    - Assisted Units from Appeals List / Total Housing Units,
- For Hispanic Analysis only:
    - Tenant Rental Assistance / Total Housing Units, and
    - State S8/State RAP / Total Housing Units.

Variables such as population density, housing unit concentration, and residents' land use typology (urban vs. rural) demonstrated equally, if not more, robust predictive capabilities for segregation patterns. **These initial findings identified several potentially significant socioeconomic and subsidized housing variables for predicting the dissimilarity index. But more rigorous testing is necessary to confirm the strength of these initial findings.** Statistical significance tests discern genuine relationships between variables, distinguishing them from chance occurrences. Subsequently, diagnostic tests were run to evaluate the overall validity of exploratory regression models in terms of reliability and validity.

B. Statewide Single Variable Diagnostic Tests

The next step in the exploratory regression analysis was to identify predictive models that passed a series of statistical diagnostic tests[49]. These tests serve different purposes from identifying statistical significance alone, assessing the overall validity of potential regression models and testing for a range of statistical issues including goodness-of-fit, model simplicity, significance, redundancy, normality, and spatial clustering.

Six tests were used including:

- **Minimum Acceptable Adj R Squared**: measures how well independent variables explain variability in the dependent variable. For this test a minimum cutoff of 0.3 was utilized, where values of 0.3 to 0.5 generally represent a moderately strong model and values of 0.5 or higher represent a very strong model. A higher adjusted R-squared value indicates a better fit of the model, suggesting that a significant proportion of the variability in the dependent variable is explained by the independent variables;
- **Akaike's Information Criterion (AICc)**: used to determine which potential regression model performs better with smaller values providing a better fit to observed data. AICc is a measure that balances the goodness of fit of a model with the simplicity of the model (avoiding overfitting). The model with the lower AICc is considered more favorable, suggesting that it provides a better trade-off between accurately representing the data and avoiding unnecessary complexity;
- **Maximum Coefficient P-Value Cutoff**: used to assess significance of each coefficient in a regression model. These analyses used a maximum cutoff of 0.05 to control for the inclusion of less significant variables. This means that coefficients with p-values below 0.05 are considered statistically significant, and thereby identifies the most meaningful variables in the model;
- **Maximum VIF Value Cutoff**: a measure of multicollinearity (redundancy) among independent variables. This model used a maximum cutoff of 7.5 to avoid highly correlated variables in the model. This means that variables with Variance Inflation Factor (VIF) values exceeding 7.5 were

[49] ESRI, (2023). ArcGIS Pro 3.2 Exploratory Regression Tool Reference, Modeling Spatial Relationships Toolset. Retrieved from: https://pro.arcgis.com/en/pro-app/latest/tool-reference/spatial-statistics/exploratory-regression.htm

considered highly correlated and were controlled to enhance the model's accuracy and reliability;

- **Minimum Acceptable Jarque-Bera P-Value**: used to check the assumption of normality in the residuals of a regression model. A cutoff of 0.1 was used for the model as a threshold for the test's significance. In other words, this test was utilized to determine whether the residuals, which are the differences between observed and predicted values, follow a normal bell-shaped curve distribution pattern. A Jarque-Bera p-value below 0.1 suggests a departure from normality, which requires a closer review of the model's assumptions;
- **Spatial Autocorrelation (Global Moran's I)**: Evaluates whether there is spatial clustering in the residuals of the regression model using measurements of spatial autocorrelation, indicating whether values are close to each other geospatially. A cutoff of 0.1 was used for the model. This test helps understand to what extent there are spatial patterns or trends in the residuals, providing valuable insights into potential geographic influences on the model's performance.

Despite the earlier findings identifying several socioeconomic and subsidized housing variables that showed high a Share of Significant Samples to the dissimilarity index across a majority of communities across the state, the statewide exploratory regression analysis found zero single variable models[50] **among the 36 exploratory variables studied that passed all six diagnostic tests in any of the three study years**. **Therefore the direct relationship of the subsidizing housing variables on segregation levels was considered to be weak. It was not a surprise that a single variable alone could not fully explain the dissimilarity index, given the complexity of segregation involving multiple historical, cultural, institutional, and socioeconomic factors.** These influences vary significantly across regions and communities within the state.

C. Statewide Multivariate Models

Multivariate analyses were then employed to better understand the interplay among these factors. Among those multivariate models that passed the six statistical diagnostic tests, those with subsidized housing variables were fairly common, occurring in roughly half of those models with three or more variables. However, despite the frequency of occurrence, the predictive strength of the subsidized housing variables was weak to moderate. Other socioeconomic variables were stronger predictors of segregation levels than the subsidized housing variables.

It is important to note that assessing single variables in multivariable models is done within the context of combined predictive power, with their value coming from interactions with other variables. The true strength of a single variable in multivariable models depends on the extent to which it provides unique information, complements other variables, and contributes to a comprehensive understanding of the measured phenomenon.

Listed below are the numerous multivariate models including subsidized housing variables that successfully passed the six diagnostic tests. These passing models were observed in many instances where five variables were considered, particularly involving socioeconomic factors related to poverty, labor force participation, the share of multifamily housing units, and populations in group quarters (the last two

[50] A maximum model size of five independent variables was used in this exploratory analysis following best practices for using no more than one model variable per 30 geographic samples (cities and towns).

variables being closely linked to infrastructure for high-density communities). It is notable that these passing models were not consistent across time, instead varying from one decade to the next.

In summary, while subsidized housing variables exhibited limited predictive strength individually, they functioned as contributing variables within intricate and robust multivariate models that passed all six diagnostic tests, made up of socioeconomic, institutional, and housing factors that successfully predicted the dissimilarity index. <u>As such, the direct relationship of the subsidizing housing variables on segregation levels is considered to be weak while their indirect relationship is moderate.</u>

- Passing Models with Subsidized Housing Variables for Predicting Black non-Hispanic Dissimilarity Index
    - Year 2020: (Total LIHTC Units / Total Housing Units) + Share of Population Below Poverty Level + Total Housing Units + Share of Population 16+ Employed not from home and Commuting less than 30 Mins + Share of Population in Group Quarters
    - Year 2020: (Total LIHTC Units / Total Housing Units) + Share of Population Living in an Urban Area + Total Housing Units + Share of Persons 16+ in Labor Force + Share of Population in Group Quarters
    - Year 2020: (Total LIHTC Units / Total Housing Units) + Share of Population Below Poverty Level + Total Housing Units + Share of Population Living in an Urban Area + Share of Population in Group Quarters
    - Year 2000: (Total Public Housing Units / Total Housing Units) + Share of Population Below Poverty Level + Total Housing Units + Share of Persons 16+ in Labor Force + Share of Population in Group Quarters
    - Year 2000: (Total Public Housing Units / Total Housing Units) + Share of Population Below Poverty Level + Share of Persons 16+ in Labor Force + Year 2000: (Total Public Housing Units / Total Housing Units) + Median Age of Total Population + Share of Population in Group Quarters + Share of Housing Units in Buildings w/ 10+ Units
    - Year 2000: (Total Public Housing Units / Total Housing Units) + Median Age of Total Population + Homeowner Vacancy Rate + Share of Population Living in an Urban Area + Share of Group Quarters Population
    - Year 2000: (Total Public Housing Units / Total Housing Units) + Median Age of Total Population + Share of Population Below Poverty Level + Total Housing Units + Share of Persons 16+ in Labor Force + Share of Group Quarters Population
    - Year 2000: (Total Rental Assistance Vouchers / Total Housing Units) + Share of Population Below Poverty Level + Total Housing Units + Share of Persons 16+ in Labor Force + Share of Group Quarters Population
    - Year 2000: (Total Assisted Housing Units / Total Housing Units) + Share of Population Below Poverty + Population Density Per Square Mile + Unemployment Rate + Share of Group Quarters Population

- Passing Models with Subsidized Housing Variables for Predicting Hispanic Dissimilarity Index

    - Year 2020: (Total LIHTC Units / Total Housing Units) + Share of Foreign-Born Population + Share of Population 16+ Employed and Not Working From Home + Share of Group Quarters Population
    - Year 2020: (Total LIHTC Units / Total Housing Units) + Share of Population Living in an Urban Area + Share of Population Under 18 + Share of Population Native Born
    - Year 2020: (Total LIHTC Units / Total Housing Units) + Share of Population Native Born + Share of Population 16+ Employed not from home and Commuting less than 30 Mins + Share of Seasonal Housing
    - Year 2000: More than 33 passing models across a range of variables including four passing public housing models, 15 passing LIHTC models, ten passing Deed Restricted models, one passing CHFA 1st mortgage program model, and three rental assistance models.

6.4 Exploratory Regression Analysis – Regional Models

An additional exploratory analysis was conducted specifically for the state's city and suburban communities, aiming to enhance comprehension of the correlation between segregation and subsidized housing both statewide and in the State's regional population centers.

In the exploratory analysis focused on city and suburban areas, the predictive strength of subsidized housing variables was comparable to that observed in the statewide analysis. However, it is noteworthy that the predictive power appeared marginally weaker, primarily attributed to the diminished model strength resulting from a smaller sample size within the city and suburban county subdivision grouping (91 samples) compared to the statewide model (169 samples). This reduction in sample size can influence the robustness of predictions and underscores the importance of considering the impact of varying sample sizes on predictive outcomes in localized regression analyses. In other words, the statewide analysis typically had higher shares of statistical significance per variable than the smaller regions. This statistical characteristic is associated with the principles of statistical inference and hypothesis testing.

A third series of exploratory regression analyses were run for cities alone (11 samples), suburban communities alone (80 samples), and rural and town communities together (79 samples). This analysis had substantially weaker predictive power.

Moreover, none of the city and suburban exploratory analyses models passed the six diagnostic tests when the study area was more isolated than the statewide analysis. In this exercise, no regression models were able to reliably predict the dissimilarity index based on a single housing independent variable alone (an indicator of direct relationship). **Based on these findings, the city and suburban analysis determined a weak direct relationship of the subsidized housing variables on segregation levels.**

6.5 Full Regression Analysis of Subsidized Housing's Relationship on Segregation Levels

Typically, a full regression is completed if a passing model worthy of further study was identified in the exploratory regression analysis. Although no model worthy of further study was identified, to better understand regional and localized significance of the subsidized housing variables to the dissimilarity indexes, several full regression analyses were completed including Ordinary Least Squares (OLS)[51] and Multiscale Geographically Weighted Regression (MWGR).[52] For this exercise, only the relationship between total assisted units (independent variable) and the dissimilarity index (dependent variable) was studied.

As anticipated from the exploratory analyses, the standalone predictive capability of a single subsidized housing variable for the dissimilarity index proved to be weak with adjusted R-Squared values of roughly 0.3. Both Ordinary Least Squares (OLS) and Multiscale Geographically Weighted Regression (MWGR) analyses identified concerns related to bias, normality, and outliers, which, in turn, led to unreliable results. Given these findings, it was deemed unnecessary to pursue further studies and detailed results were not worthy of publication.

[51] OLS is a global regression method that assumes a constant relationship between independent and dependent variables across a study area and ignores spatial variations.
[52] MWGR, like GWR, allows for varying spatial relationships and is best used to evaluate local and global spatial variations in relationships between variables.

6.6 Conclusions

The initial findings from the exploratory analysis identified several potentially significant socioeconomic and subsidized housing variables for predicting the dissimilarity index with varying levels of strength depending on the municipality. Further, more robust statistical diagnostic testing determined that zero single subsidized housing variables were capable of predicting the index statewide. Therefore, the direct statewide relationship of the subsidized housing variables on segregation levels was considered to be weak. It was not a surprise that a single variable alone could not fully explain the dissimilarity index, given the complexity of segregation involving multiple historical, cultural, institutional, and socioeconomic factors.

Next, the relationship of the subsidized housing variables to the dissimilarity index was modeled using multivariate regression techniques. While subsidized housing variables exhibited limited predictive strength individually, they functioned as contributing variables within intricate and robust multivariate models that passed all six diagnostic tests, made up of socioeconomic, institutional, and housing factors that successfully predicted the dissimilarity index. As such, the direct statewide relationship of the subsidizing housing variables on segregation levels is considered to be weak while their indirect relationship is moderate.

Ultimately, while there was correlation between the locations of subsidized affordable housing and segregation levels, there was no direct causal relationship given the many other factors that contribute to housing choice and development patterns.

7. Best Practices and Outreach

This study surveyed best practices around the nation for decreasing segregation and increasing the development of affordable housing. In addition, Urbanomics reached out to subsidized housing stakeholders including advocates, affordable housing developers, public housing directors, residents of public housing, and other agency and planning professionals throughout the state of Connecticut to ensure a more complete understanding of the issues and challenges of developing and maintaining subsidized housing as well as increasing mobility and thereby decreasing segregation.

Highlights from each are the in sections that follow.

7.1. Best Practices

Urbanomics performed a literature scan to determine best housing policy practices for decreasing segregation. Resources for best practices not previously mentioned in this report include, but are not limited to:

A. Harvard University Joint Center for Housing Studies[53]
B. Habitat for Humanity[54]
C. Brookings Institution[55]
D. The White House[56]
E. Regional Plan Association[57]
F. American Planning Association
G. Urban Land Institute
H. Poverty & Race Research Action Council: Mobility Works
I. The Russell Sage Foundation
J. HUD Fair Housing Planning Toolkit

Best practices are grouped by broad category. Note that not all best practices are within the State's ability to implement, nor does Urbanomics necessarily recommend all of the following best practices. Study findings and recommendations follow in the next section.

[53] Tegeler, P, Hiton, M. (2017). *Disrupting the Reciprocal Relationship Between Housing and School Segregation.* Retrieved from https://www.jchs.harvard.edu/sites/default/files/a_shared_future_disrupting_reciprocal_relationship.pdf
[54] Habitat for Humanity. (Date Unknown). "5 Policy Solutions to Advance Racial Equity in Housing". Retrieved from: https://www.habitat.org/stories/5-policy-solutions-advance-racial-equity-housing
[55] Ray, R; Perry, A; Harshbarger, D; Elizondo S; and Gibbons, A. (September 1, 2021) Brookings Institution. *Homeownership, racial segregation, and policy solutions to racial wealth equity*. Retrieved from: https://www.brookings.edu/articles/homeownership-racial-segregation-and-policies-for-racial-wealth-equity/
[56] Rouse, C; Bernstein, J; Knudsen, H; Zhang, J. (2021). *Exclusionary Zoning: Its Effect on Racial Discrimination in the Housing Market.* Retrieved from https://www.whitehouse.gov/cea/written-materials/2021/06/17/exclusionary-zoning-its-effect-on-racial-discrimination-in-the-housing-market/
[57] Regional Plan Association, (2019). The Fourth Regional Plan. *Strengthen and enforce fair housing laws.* Retrieved from http://fourthplan.org/action/fair-housing

Affordable Housing Initiatives

Assist communities in meeting Affirmatively Furthering Fair Housing (AFFH)[58] goals and obligations. AFFH is a 2023 Notice of Proposed Rulemaking published by HUD that would faithfully implement the Fair Housing Act's statutory mandate to ensure that HUD and its program participants be proactive and take meaningful actions to "overcome patterns of segregation, promote fair housing choice, eliminate disparities in opportunities, and foster inclusive communities free from discrimination."

Fair Housing Enforcement

1. Strengthen and enforce fair housing laws to enable affordable and/or multifamily housing development in all communities. Short of the massive federally-funded public housing developments post-World War II, mandated Fair Share Housing appears to be an effective way to create affordable housing in a state. Examples of states that have been successful in mandating affordable housing throughout their states follow. However, each law has been challenged extensively in the courts.
   A. Massachusetts' Chapter 40B law enacted in 1969 has "driven construction of affordable housing in suburban areas that otherwise would not allow it."[59]
   B. New Jersey created 50,000 units from 2015-2023 under the enforcement of the Mount Laurel doctrine. [60]
   C. Oregon passed House Bill 2001 in 2019, which sought to improve housing affordability and generate greater diversity in housing options by increasing density in residential zones located within communities with more than 25,000 residents. This legislation required such communities to allow the development of missing middle housing including duplexes, triplexes, fourplexes, townhouses, and cottage clusters on all land zoned for single-family homes and within communities with over 10,000 residents, duplexes are allowed on all land zoned for single-family housing.[61]

Stop Perpetuating Segregation

1. Zoning Reform: The state of Montana and individual communities throughout the country, including Chicago and Seattle, have found that incentive zoning which includes lowering minimum home- and lot-size requirements, allowing accessory dwelling units (ADU)s and minimizing the discretionary review processes to be useful tools in furthering equitable development. Zoning in Connecticut is a home-rule issue and while the State cannot control municipal zoning practice, it can encourage and/or incentivize inclusionary zoning. Some examples follow.
   a. In May 2023, the State of Montana, in response to an evaluation of exclusionary zoning practices statewide, enacting Senate Bill 407 to streamline permitting for commercial and

[58] HUD Affirmatively Furthering Fair Housing page. Retrieved from: https://www.hud.gov/AFFH
[59] Girouard, J. (February 2023). "Getting suburbs to Do Their Fair Share: Housing Exclusion and Local Response to State Interventions". The Russell Sage Foundation Journal of the Social Sciences. Retrieved from: https://www.rsfjournal.org/content/9/1/126#sec-7
[60] Fair Share Housing Center. (April 2023). *Dismantling Exclusionary Zoning: New Jersey's Blueprint for Overcoming Segregation*. Retrieved from https://www.fairsharehousing.org/wp-content/uploads/2023/04/Dismantling-Exclusionary-Zoning_New-Jerseys-Blueprint-for-Overcoming-Segregation.pdf
[61] Stuckmayer, Ethan. (2022). House Bill 2001: More Housing Choices for Oregonians, Oregon Department of Land Conservation and Development. Retrieved from: https://www.oregon.gov/lcd/UP/Documents/HB2001OverviewPublic.pdf

residential developments by eliminating local design review by volunteer boards as part of a series of pro-housing bills to "reaffirm and restore landowner's rights".[62]

b. Washington's House Bill 1110 provides a similar requirement for missing middle housing across 77 of the state's cities; however, density requirements are limited by the adequacy of local water and public sewer infrastructure. HB 1110 also provides an exemption from design review by appointed design boards for missing middle housing as well as various forms of parking requirement exemptions.

c. Vermont's Housing Opportunities Made for Everyone or HOME Act, signed in 2023, modernizes local zoning and land use regulations by allowing higher density development in areas with sewer and water service. This Act reduces barriers to housing development by providing exemptions for affordable housing in municipal centers including villages and streamlines municipal zoning by allowing higher density housing in areas with sewer and water service.

d. Chicago's Affordable Requirements Ordinance (ARO) mandates that any residential developments with 10 or more units that receive City entitlement, a city land purchase, or financial assistance provide a portion of units as affordable to households averaging 60% of AMI. In addition, the ARO includes allowances for off-site units to be built in neighborhoods lacking affordable housing, includes mandates and incentives for deeply affordable units, and increases accessibility standards.

2. Remove segregation-enabling legislation from existing laws and guiding land use documents. In some instances, state and local legislation may intentionally or unintentionally restrict the development of affordable housing outside of urban areas. Examples of this include restrictions of multi-family development to areas with municipal sewer from the State's Plan of Conservation and Development or state guidance that is more limiting than municipal zoning.

A. Re-invest in low-income areas to improve and diversify housing options. There are several examples of public and private investment that have been used to improve neighborhood quality for existing and new residents. **However, any re-investment of this nature should incorporate anti-gentrification measures to prevent displacement.**

a. Rental Assistance Demonstration (RAD) initiative. RAD was developed to allow the conversion of public housing developments to project-based Section 8 platform. This regulatory conversion has the purpose of allowing refinancing to fund renovations and to increase flexibility in meeting local affordable housing goals. The renovations often result in the creation of mixed-income developments, reducing economic segregation.

b. Neighborhood Homes Investment Act: This is a bill (S.657 and HR.3940) before the US Congress that would allow a business-related tax credit for the acquisition, rehabilitation or remediation of real property in order to cover the "value gap" between the cost of rehabilitating a property and the post-construction value. The

[62] *Governor Gianforte Announces Bold, Transformational Pro-Housing Zoning Reform*. (May 17, 2023). *State of Montana Newsroom*. Retrieved from https://news.mt.gov/Governors-Office/Governor_Gianforte_Announces_Bold_Transformational_Pro-Housing_Zoning_Reform

intent of the bill is to focus on distressed urban and rural communities impacted by blight, absentee landlords, vacancy and abandoned properties.[63]

Housing Voucher Programs

1. Increase mobility of voucher holders. In 2019-2020, Congress granted 9 public housing authorities with $50 million to develop Housing Mobility Demonstration projects, now known as Community Choice Demonstration sites. In 2022, an additional $25 million in grant monies were funded in the Congressional appropriations bill. These funds have been used in programs throughout the country to provide voucher holders with better information on the advantages of moving to opportunity areas. CT DOH is one provider of mobility counseling services.[64]
2. Work with landlords to encourage more widespread participation in order to reduce concentration of subsidized housing.

Invest in affordable housing in areas of opportunity

1. Make public land available at low cost for affordable housing development
2. Increase opportunities for Black/Hispanic/ and Asian Homeownership
    1. Extend credit and down payment assistance to households of color.
3. Create community land trusts (CLT). The CLT is generally a non-profit organization that holds property on behalf of a municipality to ensure that its use meets community goals for affordable housing and other community needs are met.
4. Establish rent control. Rent control limits both the rents that a property owner can charge and their ability to evict tenants.
5. Tenant Opportunity to Purchase (TOPA): Implement or strengthen TOPA laws, allowing tenants the right of first refusal to purchase their homes when landlords decide to sell, preventing displacement.
6. Property Tax Relief for Long-Term Residents: Explore policies that provide property tax relief for long-term residents to help them remain in their homes despite rising property values.
7. Preservation of Naturally Occurring Affordable Housing (NOAH): Develop strategies to preserve existing affordable housing in the private market, recognizing the importance of naturally occurring affordable housing.
8. Equitable Development Agreements: Encourage developers to enter into agreements that prioritize affordable housing and community benefits in exchange for approvals and permits.
9. Social Impact Bonds for Housing Stability: Explore innovative financing mechanisms, such as social impact bonds, to fund programs that prevent housing displacement and promote housing stability.

[63] Neighborhood Homes website, managed by the National Community Stabilization Trust NHIA fact sheet. Retrieved from: *https://neighborhoodhomesinvestmentact.org/proposal*
[64] Poverty & Race Research Action Council. (2022). Mobility Works Housing Mobility Programs in the US. Retrieved from: https://www.prrac.org/wp-content/uploads/2022/11/HousingMobilitySurvey2022.pdf

Data Collection and Analysis

1. Regularly collect and analyze housing data to identify patterns of segregation. It is impossible to measure progress in reducing segregation without a benchmark or baseline. This study serves as a first step in creating a longitudinal analysis of segregation; however, we note the challenges of program data in Section 3; further the Open Communities Alliance prepared an in-depth Data Deficiencies study that documents where official state data are lacking.

7.2. Outreach

Urbanomics spoke with advocates, affordable housing developers, public housing directors, residents of public housing, and other agency and planning professionals throughout the state of Connecticut to ensure a more complete understanding of the issues and challenges of developing and maintaining subsidized housing as well as increasing mobility and thereby decreasing segregation. Much of the input acquired from the outreach echoed the best practices and program information described in Section 7.1. Key takeaways from the opinions shared in the outreach process have been summarized by topic below. The detailed questions and summarized answers for each group may be found in Appendix D.

Everyone interviewed agreed that the demand for subsidized housing continues to grow as market rate housing in the state becomes more and more expensive and wages do not keep up with the cost of living. Further, all agreed that diversifying housing opportunity throughout the state through the creation of new stock and the use of housing choice vouchers are the primary manners to decrease racial segregation in housing.

What follows are the summarized opinions of the interviewees. There are several occurrences where perceptions do not align with conditions, in which case [bracketed] information has been added.

Increase Affordable Housing Stock, particularly in Communities of Opportunity

- "Every real estate development is a miracle." Developers and advocates both noted that there is significant local opposition to developing subsidized or affordable housing in many areas of the state that prevent affordable housing development. Getting a project through approvals requires significant political will, and even with 8-30g there are no penalties for delay of project. Inclusionary zoning incentives and the Low-Income Housing Tax Credit (LIHTC) program have had limited success in creating new units. [LIHTC credits are limited to the state's allocation that is based on a per capita formula. CHFA estimates that Connecticut receives only one-third of what it could use.] LIHTC has created a significant number of units; however, there is criticism that these units do a not provide housing for those most in need. [Note: The Internal Revenue Code mandates that the average income of all units is 60% of AMI. This is strictly monitored for compliance by a third-party monitor. Further, according to a 2022 HUD report, the 2021 median income in Connecticut LIHTC housing (for those who reported income) was $20,100.[65]]
- Impediments to development are as follow:

[65] HUD, (2021). 2021 LIHTC Tenant Tables. Table 8. Retrieved from: www.huduser.gov/portal/datasets/LIHTC/2021-LIHTC-tenant-tables.pdf

  - NIMBYism coupled with home rule[66] continue to perpetuate historical segregation through housing and land use policies,
  - Lack of enforcement of policy,
  - Lack of funding, where DOH, CHFA, and cities lack adequate funding for research, planning, administration, and enforcement, and housing subsidies are not keeping pace with construction costs.
- Advocates and developers agreed that Fair Share Housing requirements and enforcement of 8-30g are the only ways to increase affordable housing supply in a manner that will decrease segregation.
  - It was also noted that there needs to be additional funding to subsidize affordable housing development made available to smaller communities that currently do not score as high as urban areas on the Qualified Allocation Plan (QAP) criteria. [The QAP is the tool through which the CHFA allocates LIHTC funding for the state of Connecticut. Projects seeking 9% LIHTC funding are ranked using a competitive point system for new construction, which grants points for rental affordability, financial efficiency and sustainability, local impact, opportunity characteristics; and qualifications and experience of the development team.[67]]

Support Mobility

A. Advocates stated the housing choice voucher program has provided opportunities for low-income residents to find housing in communities throughout the state. However, there are hurdles to voucher use:
   a. Voucher wait lists are very long and can be closed for years.
   b. The voucher application process can be onerous if a resident has to apply separately to each PHA supplying vouchers.
   c. It can be difficult for voucher holders to find landlords willing to accept vouchers.
   d. Voucher values do not keep up with market rents.
   e. Mobility counseling has increased the number of voucher holders that have moved to higher opportunity areas; however, despite the advantages, there still can be a lack of willingness of voucher holders to relocate for a variety of reasons including but not limited to access to jobs and services as well as community support.
B. Because subsidized housing costs are so far below market asking prices, there is little incentive for current residents of public housing to move elsewhere. As a result, it was noted "Mobility takes place over generations."

[66] Home rule refers to the authority granted by states to local municipalities to govern themselves independently within the framework of state laws. In this context, it allows local governments to create and enforce their own regulations and policies, distinct from those at the state level, within the boundaries set by state law.

[67] CHFA, Aug. 17, 2023. "Approval of Governor Regarding 2024 and 2025 LIHTC Qualified Allocation Plan."
Retrieved from: https://www.chfa.org/assets/1/19/2024_and_2025_LIHTC_Qualified_Allocation_Plan_(QAP)1.pdf?12764

7.3. Conclusion

The national best practices and input from the interviewees were largely in agreement.

The insights of affordable housing developers and public housing authority directors was particularly interesting in terms of getting at the practical impediments to housing development and mobility.

The team would like to thank all of the individuals and organizations that provided their insights. The input and information gathered through the outreach process was used to inform the recommendations of the study.

8. Key Findings & Recommendations

8.1. Key Findings

Extensive data collection, outreach, and analysis detailed in the body of this report have led to the following key findings.

- Connecticut's metropolitan areas, including Bridgeport and Hartford, remain among the most segregated in the nation in terms of the race and ethnicity dissimilarity index[68] and among the highest in income inequality as measured by the Gini index, even though levels of segregation and income inequality have decreased over the past 30 years.[69]
- The most commonly used index of segregation, the dissimilarity index, assessed in terms of Black non-Hispanic to White non-Hispanic or Hispanic to White non-Hispanic, has decreased in general. Decreased segregation levels may have more to do with increasing shares of Black, Hispanic and Asian/Pacific Islander populations across areas than increased integration.
- As of 2020, in 65% of Connecticut communities a greater share of subsidized housing heads of household were people of color than in the municipality as a whole.[1] Additionally, according to HUD's Picture of Subsidized Households annual surveys, the share of head of households of all HUD program units that are people of color increased from 59% in 2000 to 71% in 2020 statewide; whereas the share of head of households that are people of color living in any housing type increased from 18% to 29%.
- Ultimately, site-specific program data are not sufficient as time series to determine causality and pass rigorous statistical testing between the presence of subsidized housing and segregation with any degree of certainty.[70] However, it is quite clear that development-based subsidized housing projects cluster in communities that have already demonstrated a willingness to accept subsidized housing, which typically are already segregated communities as a result of historical dynamics and factors.[71]
- Demand for subsidized housing continues to increase in a residential market in which demand far outpaces supply; development and construction costs are increasing each year; and developers of affordable housing are stacking subsidies in order to create units.[72]
- The average time on a housing choice voucher wait list in Connecticut is 28 months and wait lists can be closed for years until they reopen again. DOH last opened the RAP waitlist in 2017, accepting 7,000 of the 48,000 applications. 1,400 households of the 7,000 still have not received vouchers.[73]
- As noted in Sections 4.5 and 7.2 of this report, the gap between subsidized and market rate housing costs continues to increase, making it ever more difficult for households to leave subsidized housing.

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[68] Based on findings from Brown University's Diversity and Disparities Project, US metropolitan area rankings of the White to Black Dissimilarity Index, the Bridgeport metro ranks 20th highest while the Hartford metro ranks 33rd.
Diversities and Disparities Project. (2021). Spatial Structures in the Social Sciences, Brown University. Retrieved from https://s4.ad.brown.edu/projects/diversity/SegSorting2020/Default.aspx.

[69] See Indices of Segregation Section 5, Figures 4.2, 4.7-4.20.

[1] See Descriptive Statistics section, Figure 4.13-4.15. Note: The majority of subsidized housing programs do not collect data on the race and/or ethnicity of residents. In these cases, HUD program demographic data was used as a proxy for other programs.

[70] See Spatial Analysis Section 6.2 and 6.3

[71] See Descriptive Statistics Section 4, Figures 4.13-4.15

[72] See section 4.5.

[73] Connecticut Department of Housing. (2023). How to Apply for RAP and Section 8. CT.gov - Connecticut's Official State Website. Retrieved from https://portal.ct.gov/DOH/DOH/Additional-program-pages/How-to-Apply-for-RAP-and-Section-8

- Studies show that changes to public housing program through affirmative housing, including the expansion of housing choice vouchers and the creation of new subsidized developments with the use of LIHTC and 8-30g programs, have done little to decrease segregation. [74]
    - Development projects are dependent on local approvals and acceptance of projects tends to take place only where subsidized developments already exist as stated by both affordable housing developers and advocates and evidenced in DOH's Government Assisted map (see Figures 6.7-6.16).
    - Housing choice vouchers and single-family mortgages have greater potential to alleviate segregation because they may be used more broadly (throughout the provisional community in the case of vouchers and the state in the case of mortgages). However, the programs have historically not lived up to their potential due to challenges in accessing vouchers, finding properties/landlords that will accept the vouchers, and because fair market rents (FMRs) used to determine voucher values are not keeping pace with the soaring rental market.[75]

Any efforts to eliminate how governments perpetuate segregation by race, income, and other identities will need to take a multidimensional approach that breaks down longstanding obstacles to housing access, economic integration, interaction, and opportunity. The programmatic strategies to alleviate segregation presented in the Section 8.2 (Recommendations) must be considered in context with the many other regulatory and non-regulatory factors that contribute to segregation. To date, affirmative housing legislation, federally and in Connecticut, has been contingent on voluntary action by local authorities. Stamford has created the largest share of new and renovated affordable housing in the state based on a pro-growth policy and active assistance to developers from the community and economic development departments in anticipation of planning board meetings. With this and the findings in mind, the actionable recommendations and strategies that follow are presented under the following overarching and sometimes overlapping goals:

- Increasing Access to Existing Subsidized Housing
- Development of Quality Housing Throughout the State
- Housing Choice Vouchers
- Promoting Mobility to Deconcentrate Poverty

In addition, there is a section dealing with recommended changes to existing policies and legislation.

- Changes to Existing Policies

8.2 Recommendations

1. Increasing Access to Existing Subsidized Housing

In terms of access to government-subsidized housing there are two key barriers to entry: administrative gatekeeping and, in the case of mobile vouchers, financial barriers.

There are dozens of state and federal housing programs in the State of Connecticut, administered by the state and local authorities, each with individual waitlists and differing criteria for acceptance. Further, most have individual website portals and methods for application. While the Department of Housing links to most of the programs, navigating to the applications to find out if one is eligible is a complicated and daunting task. For programs administered by individual PHAs, the potential applicant must follow links to each PHA's website to even determine

[74] Abramovitz, M., & Smith, R. J. (2020). *The Persistence of Residential Segregation by Race, 1940 to 2010: The Role of Federal Housing Policy; Families in Society: The Journal of Contemporary Social Services*.

[75] See Program Descriptions, Appendix A, Homeownership Assistance Programs (1-26) and Rental Subsidies and Assistance (61-64, 69,71).

IF the program is accepting applications. This process curtails the willingness to explore potential places of residence.

A. Create a Statewide Application Portal: All areas, one application.[76]

The application portal should be a single point of access to active federal, state, and local affordable housing choice vouchers, site-based housing, and public housing opportunities **statewide**. A statewide application portal will grant many of the benefits of regionalization of the [voucher] programs, while maintaining mandated distribution throughout the state and preventing the reinforcement of economic and racial segregation though the unintended creation of voucher receiving zones[77].

Creating and maintaining an application portal would require dedicated funding with a significant investment. However, in the long term the single portal would lift the burden of entering applications for the individual Public Housing Authorities that administer the programs, allowing them to better use their funding allotments in service of their clients. The feasibility of such a project should be studied in order to ensure that any tool that was created could continue to be maintained.

Additional portal considerations:

- Applicants and tenants are more likely to have smart phones than reliable computer access, so any portal should be developed as a mobile app.
- Site-specific opportunities should link to information about the local area, to include relevant information on quality of schools, local cost of groceries compared to state averages, childcare costs, major employers/job opportunities, local wages compared to state averages, crime rates; most importantly, there should be community asset maps showing local transit/transportation infrastructure, neighborhood/area amenities (e.g., laundromats, grocery stores, parks, cultural and religious assets), presence of supportive services.
- Applicants should be able to filter relevant opportunities by desired locations and other factors.
- We do not necessarily recommend that this be a two-way portal for property owners and managers to find tenants—there may be too much opportunity for discrimination in the selection process.

B. Maintain Fund for Security Deposit Coverage

Security deposits are not covered by HCVs or other rental subsidy programs, so it is up to the recipient to provide the one or two months of rent necessary for security on the rental. Further, landlords often request higher deposits for renters with low incomes or credit scores. While there are a number of charitable operations that help with security deposit coverage, they are local in nature and do not operate in all areas of the state. Maintaining the State fund, as established in Section 9 Public Act No. 23-207[78], to cover one-two months of security deposit as needed will get more tenants into housing faster, with the expectation of recovering the funds when tenants move out.

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[76] On March 21 2023, the State's legislature passed Senate Bill 1049 (File No. 150) which requires CT DOH to provide a list of applicants for their housing projects and the department to adopt regulations on creating and maintaining a statewide waiting list for these applications. For more information, see File Number 150 at https://www.cga.ct.gov/2023/FC/PDF/2023SB-01049-R000150-FC.PDF.

[77] The 1985 NJ Fair Share Housing Act codified Regional Contribution Agreements (RCAs), allowing municipalities to pay other municipalities to build their share of affordable housing for them. The RCAs, commonly known as voucher receiving zones, ended up reinforcing existing segregation. Ibid., Page 7.

[78] State of Connecticut. (October 1, 2023). *Public Act No. 23-207: An Act Establishing a Tax Abatement for Certain Conservation Easements and Addressing Housing Affordability for Residents in the State*. Retrieved from https://www.cga.ct.gov/2023/act/pa/pdf/2023PA-00207-R00SB-00998-PA.pdf

2. Development of Quality Housing Throughout the State

The regional housing market is at an all-time high with costs that have been outstripping wages for a decade. Construction and development costs are also increasing. Older developments (1940s-1980s) are falling into disrepair with maintenance and repair costs that exceed rents and facility budgets. Further, administrative costs of programs are increasing due to demanding reporting requirements.

A. Establish and Adopt an Actionable Affirmative Housing Policy

To encourage the equitable development of affordable housing throughout the State, CT OPM has issued an RFP for a Fair Share Housing Plan (FSHP) that if adopted would begin with affordable housing analyses for all eight COGs.

- The FSHP should target an array of income levels. One potential mechanism for encouraging a diversity of income ranges is that the contribution toward Fair Share of each unit be weighted by level of affordability as reflects demand—e.g., a unit at 30% of AMI counts as 1.5 units; a unit at 60% of AMI counts as 1.0 unit; a unit at 80% of AMI counts as 0.75 units.
- Approval for new housing development is largely controlled by local planning and zoning boards. Therefore, non-compliance with the FSHP should have significant consequences to the municipality if there is documentation that it is not acting in good faith, i.e., refusal of a proposed development due to frivolous reasons. Like the requirements of 8-30g, but not limited to the communities as per the statute, the cost of the burden of proof that a refused development is not appropriate shall be placed upon the municipality.
- Any redevelopment should explore incentives for the creation of additional and/or more deeply affordable units in the redevelopment of existing projects.

B. Streamline the Approvals Process

Construction and labor costs are high, driving up rates for housing developers of all types, but affordable housing developers in particular. Administration requirements for grant funding and the years it can take to get through the local approvals process add to development costs in Connecticut by an average of $100,000 for each year of delay[79] regardless of development size.

- **Eliminate Select Discretionary Review Processes** In this instance, discretionary review includes design and architectural review run by boards of volunteers; it does not include zoning board or site plan approvals. Further, if multifamily does not require special permit review in a given municipality, then multifamily affordable projects should not be subject to special permit review as well. Precedent: in response to an evaluation of exclusionary zoning practices statewide, in May 2023 the State of Montana enacted Senate Bill 407 to streamline permitting for commercial and residential developments by eliminating local design review by volunteer boards as part of a series of pro-housing bills to “reaffirm and restore landowner’s rights”.

3. Housing Choice Vouchers

As noted in the press, many state and federal housing choice vouchers go unused; however, the annual budget for voucher use is at close to 100% for all issuing organizations throughout the State. More vouchers than are likely to be accepted are issued in order to ensure that all funds will be spent, accepting that it is difficult to find landlords willing to take vouchers, especially in a strong real estate market, for multiple reasons. The State of Connecticut is to be praised for its commitment to attracting new landlords to the program as indicated in Section 19 of Substitute Senate Bill No. 998 of Public Act No. 23-207; what follows are additional recommendations to the bill:

- **Advocate for FMRs that are more reflective of real market conditions.** Voucher values based on fair market rents (FMRs) do not keep up with real estate conditions. Set almost a year in advance and based on county level income limits and rents from the previous year (e.g., 2021 FMRs were determined in 2020 using 2019 data) voucher values

[79] See Developer interviews. Outreach Section 7.2.

often lag market rents. Further, using county averages limit use of vouchers to the areas of the county with the lowest rents—generally compounding economic and racial segregation. FMRs should be determined on a smaller area basis, such as the target area zip code or Census tract to promote distribution to higher opportunity areas.

  - HCVs were intended to allow low-income residents to access safe and secure housing in the private market beyond project-based subsidized housing. In the current housing market, vouchers are now being used for low and extremely low-income households, especially seniors, to afford the rents in already subsidized housing developments.

- **Align CT and federal voucher program values.** It was noted in the outreach process that Connecticut and federal program voucher values do not align by area and bedroom size making it confusing for both renters and landlords; aligning CT program voucher amounts with those of the federal program(s) will eliminate a layer of uncertainty for participation.
- **Create vacancy gap fund.** The inspection procedure before a voucher can be used generally adds an extra month to the vacancy period between tenants. Providing an extra month of rent to cover the gap would encourage more landlords to accept vouchers.

A. Public Housing Improvements

Several of Connecticut's PHAs are part of HUD's Moving to Work (MTW) demonstration program, which allows participating PHAs more flexibility to design and test strategies to use their Federal dollars more efficiently, help residents become more self-sufficient, and increase housing choices for low-income families. PHAs increased FMRs to affordability levels of 120-140% of AMI to better meet market demand as well as allowing them to access their reserve funds. Most public housing in the state of Connecticut is HUD-funded and as such is beyond the purview of the State; however, there are potential lessons from the MTW program that could be applied to State properties. What follows are recommendations for PHAs.

- Consider a RAD-type program (as discussed in section 7.2) for State properties that would allow mixed-income redevelopment to offset construction/renovation costs of existing properties. Interviewed PHAs expressed dismay that renovation and/or maintenance costs of State-subsidized housing exceed allowable rents.[80]
- Reduce Program Administration costs for DOH and the PHAs so that funds and staff time can be dedicated toward housing and resident support. While these changes may not directly reduce segregation, they will potentially allow residents and voucher holders to achieve better outcomes, including mobility.
  - **Make household evaluations biennial instead of annual**
    There is little change in income levels year-to year for most public housing tenants. Annual evaluations of program parameters are time consuming/costly and not particularly valuable.
  1. **Policy changes to reduce the need for mediation**
     Conversations with public housing directors established that more and more time is spent mediating tenant disputes.[81]
     - **Allow age-restricted housing to avoid elderly/disabled conflict**
       The universal difficulty noted by all PHA directors we spoke with was the issues caused by the shift of senior housing to combined senior/disabled housing.[82] Seniors generally have one set of preferences when it comes to acceptable tenant behavior. Young people with disabilities are still young people whose hours and habits often conflict with their elderly neighbors.
     - **Provide on-site mental health and other supportive services**
       The hardships of the last several years have increased mental health concerns for everyone. Increased access to mental health and other supportive services for residents and employees would help alleviate the issues arising from an almost-universal mental health crisis.
- **Allow flexibility in redevelopment/renovations to meet changing needs of residents**
  There is a "missing middle" in public housing. The majority of public housing is focused on families or elderly or disabled individuals. There is a time when a family's children are grown and have left the unit so the parent(s) can no longer stay in a family unit, but is not old enough to qualify for elderly housing.

[80] Ibid.
[81] Ibid.
[82] Ibid.

4. Promoting Mobility to Deconcentrate Poverty

Studies show that moving to low-poverty areas from higher-poverty areas have benefits for both children and adults, however many Housing Choice Voucher (HCV) recipients live in high-poverty neighborhoods.[83] There are multiple factors contributing to this, including the preferences of HCV recipients, who may prefer to stay in their own communities where they have built a network of family, friends, community connections and opportunities, and where recipients do not fear racial profiling from simply walking in their own neighborhood. Other factors include administrative and access challenges addressed in the previous sections.

- **Continue to support and expand mobility counseling services**. A number of not-for-profits, housing authorities, and communities provide mobility counseling services to provide State RAP and Section 8 housing voucher holders better access to higher-opportunity communities. These services provide their clients with information on the higher-opportunity communities and benefits of relocation; as well as information on home maintenance and financial management, tenant rights, and sometimes help finding apartments and repairing credit.
- **Fund and Implement the Single Access Portal** for housing choice voucher and site-based affordable developments with area information so that potential tenants without easy access to mobility counseling can get immediate information on potential new neighborhoods and communities as noted in *Increasing Access to Existing Subsidized Housing Recommendation 1*.
- **Provide post-move supportive services to assist in integration**. As demonstrated in pilot programs such as Creating Moves to Opportunity in Seattle and King County, Washington, families who received supportive services beyond just mobility information that helped residents adjust to their new communities had higher success rates than those who received information alone.[84]

5. Changes to Existing Policies

Existing statutes and policies may unintentionally further segregation in the State. This section provides recommendations on how key guiding documents can be revised to further affordable housing creation and desegregation goals. There are multiple adjustments to State documents listed under the document heading.

A. State Plan of Conservation and Development

Prepared in accordance with Section 16a-27 of the Connecticut General Statutes (CGS), the State Plan of Conservation and Development provides the state policies pertaining to land and water resource conservation and development with which municipal planning decisions are to align.

2025-2030 First Draft

The State's Conservation and Development Policies Plan 2025-2030 first draft was submitted in November 2023 with the Draft Plan to be finalized by March 2024, and the Final Plan completed in 2025. The first draft of the plan primarily provides links to relevant State projects and outlines the priorities and respective vision framework for each.

As noted in the draft plan, the Connecticut General Statues identify four broad categories of state agency actions that must be consistent with the C&D plan, one of which is "The development or improvement of real property when the development costs are in excess of $200,000." [The draft plan recommends increasing this value threshold to one million.] Among these improvements would be residential projects, however the draft C&D, as yet, has no goals beyond a description of a "diversity of housing types that are able to meet resident's needs at all income levels and stages of life."[85]

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[83] Schwartz, H. L., Mihaly, K., & Gala, B. (2017). *Encouraging Residential Moves to Opportunity Neighborhoods: An Experiment Testing Incentives Offered to Housing Voucher Recipients*. HUD PD&R.

[84] DeLuca, S., Katz, L. F., & Oppenheimer, S. C. (2023). *When someone cares about you, it's priceless: Reducing administrative burdens and boosting housing search confidence to increase opportunity moves for voucher holders*. RSF: The Russell Sage Foundation Journal of the Social Sciences, 9(5), 179-211.

[85] Connecticut Conservation and Development Policies Plan 2025-2030 FIRST DRAFT November 2023. page 7. https://portal.ct.gov/-/media/OPM/IGPP/ORG/cdplan/1st_Draft_CDPlan_Nov_23-Website.pdf

Potential changes that would further the goals of creating affordable housing and alleviating segregation are as follows:

Incorporate Affordable Housing and Desegregation language into all relevant sections: Housing, Economic Development, and Community.

Repeal CGS Chapter 297a. The draft plan recommends the repeal of CGS Chapter 297a, the elimination of the use of Priority Funding Areas (PFA). This study is in concurrence with that recommendation insofar as the PFA is one of the criteria in distribution of housing grants, and communities outside of those areas find it difficult to compete for said funding.

Adopted 2018-2023 Plan

Further recommendations as regards the Plan of Conservation and Development refer to the currently active 2018-2023 Plan, with recommendations to be included in the 2025-2030 update.

Incentivize transit-oriented and mixed-use development. Policies 1.8 and 1.10 are to promote or encourage land uses around rail stations and as-of-right mixed-use zoning, respectively. We recommend consideration of potential tax-incentives or other benefits for communities who allow transit-oriented and mixed-use development.

Require and incentivize mixed-income housing as part of mixed-use and transit-oriented developments. The State Plan of Conservation and Development *Growth Management Principle # 2: Expand Housing Opportunities and Design Choices to Accommodate a Variety of Household Types and Needs* conveys that housing costs and the lack of affordable housing throughout the state are a detriment to economic and labor force development. As shown in the body of this report, the policy of promoting and encouraging "housing and/or affordable housing development" (Policy 2.6) has had limited success. The policy should be revised to incentivize and make mandatory mixed-income housing at a variety of income levels in all mixed-use and transit-oriented developments.

In accordance with Policy 2.7, the introductory text of Growth Management Principle #4 concludes with a statement that in instances where a village may want to expand existing or develop new, village-scale mixed-use centers, *"Cluster development techniques, when combined with properly installed and maintained decentralized water, wastewater and/or stormwater systems, can accommodate such growth without the needs for publicly subsidized expansions of infrastructure.*[86]*"* However, Policy 4.14 limits the use of these technologies to instances *"only when there is a demonstrated environmental, public health, public safety, economic, social, or general welfare concern, and then introduce such services only at a scale which responds to the existing need without serving as an attraction to more extensive development;*[87]*.* The conditional nature of Policy 4.14 effectively precludes the development of multifamily housing on septic systems. **In the upcoming Plan of Conservation and Development, revise Policy 4.14 to include housing demand as one of the demonstrated needs that would allow for the use of decentralized sewage and water systems. Further, strike the condition of "*without serving as an attraction to more extensive development*".**

Growth Management Principle #5 is to Protect and Ensure the Integrity of Environmental Assets Critical to Public Health and Safety. *5.7 Minimize the impacts of development on existing and identified drinking water sources by utilizing development forms and densities that limit impervious surface coverage to 10% of the overall area to be developed and which preserves the most amount of land in a natural or undisturbed state.*[88] It is vitally important to protect natural resources; however, as written the policy paints all of Connecticut, including areas that are not environmentally sensitive with the same restrictions. The 10% coverage requirement has the unintended result of

[86] CT OPM, (2019). Conservation and Development Policies, The Plan for Connecticut 2018-2023. Page 15. Retrieved from: https://portal.ct.gov/-/media/OPM/IGPP/ORG/cdplan/20190214--Formatted-Document--20182023-Adopted-State-CD-Plan.pdf
[87] Ibid., Page 16.
[88] Ibid., Page 18.

enforcing large minimum lot size requirements, eliminating the ability of municipalities to choose to zone for smaller lot sizes and allow increased housing density. **Modify policy 5.7 to apply only to environmentally sensitive areas, to allow for additional housing development.**

Require compliance with affirmative affordable housing plan(s). In order to assure that Connecticut has sufficient housing choice for current residents' mobility and to prevent further out-migration of young adult residents, the Plan of Conservation & Development should require compliance with the goals established by the 2023 CHFA Housing Needs Assessment and the state Fair Share Housing Plan out for bid as of December 2023, if adopted.

B. Low-Income Housing Tax Credit 2022 and 2023 Qualified Allocation Plan

Several housing professionals interviewed in the outreach for this study indicated the Low-Income Housing Tax Credit (LIHTC) program QAP scoring, while acknowledged as improved from previous iterations, contributes to the difficulty for smaller and more rural communities to qualify for funding and thereby diversify and increase their affordable housing stock.[89]

Rural applicants generally have low scores in the 18-point local impact category as they generally are not 1) in a priority location (5 points), 2) a transit-oriented development (4 points), nor a 3) historic place, adaptive reuse, or brownfield redevelopment project (3 points)[90]. Further, the primary tie-breaker category is "Lowest Credit per qualified unit," [91] which go to the largest projects due to economies of scale.

If possible within state purview, for future years QAP should 1) eliminate the Priority Location score and 2) replace with a score for how well the project meets community needs as assessed in the FSHA to be prepared in 2024 (if the FSHA is adopted). In addition, 3) For the tie-breaker, replace the "lowest credit per-qualified unit" value with a score indicating if a community has not previously received LIHTC funding.

C. CGS Sec. 15. Section 8-68d

Collect data on race/ethnicities for all subsidized units. One limitation in this Housing and Segregation Study is that the race/ethnicity analysis of public housing units is dependent upon data provided only for select HUD programs. The available demographic shares by location and project type (family, elderly, etc.) were used to impute the race and ethnicity of residents in subsidized housing absent original data for the majority of subsidized units; subsequently, we cannot be certain that the assumptions made reflect the reality of subsidized units in relation to segregation levels in their respective communities.[92]

In keeping with best practices discussed in section 7.2, some key programs could benefit from the collection of race/ethnicity data for subsidized householders, including all Connecticut and voucher programs. Each year, the Public Housing Authorities and municipalities share the local inventory of subsidized housing within their jurisdictions. Effective October 1, 2023, the statute detailing what housing authorities and municipalities should report was revised as follows (Sec. 15. Section 8-68d):

"Each housing authority shall submit a report to the Commissioner of Housing and the chief executive officer of the municipality in which the authority is located not later than March first, annually. The report shall contain … (5) such

[89] See Outreach Section 7.2.
[90] CHFA, (July 29, 2021). *Low-Income Housing Tax Credit 2022 and 2023 Qualified Allocation Plan*. Retrieved from https://www.chfa.org/assets/1/6/FINAL_2022-23_QAP_(July_2021).pdf.
[91] Ibid., Page 16.
[92] Methodology for this process can be found in Appendix B, Pages 9-10.

other information as the commissioner may require by regulations adopted in accordance with the provisions of chapter 54."[93]

It is recommended that DOH develop regulations to include race/ethnicity data in the annual reports.

[93] State of Connecticut. (October 1, 2023). *Substitute Senate Bill No. 998, Public Act No. 23-207: An Act Establishing a Tax Abatement for Certain Conservation Easements and Addressing Housing Affordability for Residents in the State*. Retrieved from https://www.cga.ct.gov/2023/act/pa/pdf/2023PA-00207-R00SB-00998-PA.pdf