

Environmental Justice Focus Populations

Definition Notes

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VERMONT

AGENCY OF DIGITAL SERVICES

Outline

1. Overview of EJFP Definition & Census Geographies

2. Challenges with the Existing Definition

- Accuracy vs Precision & Margin-of-Error
- Race and the 2020 Census

3. Alternative Options

- Changing Geography to Improve Reliability
- Modifying Thresholds
- Alternative Variables
- Specifying data source and update process/period



Environmental Justice Focus Population

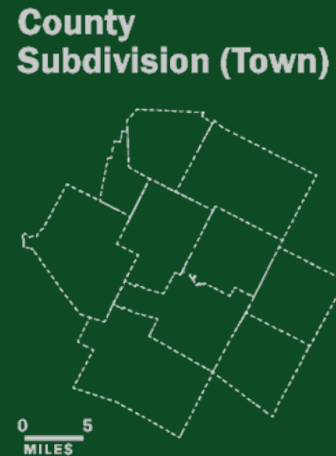
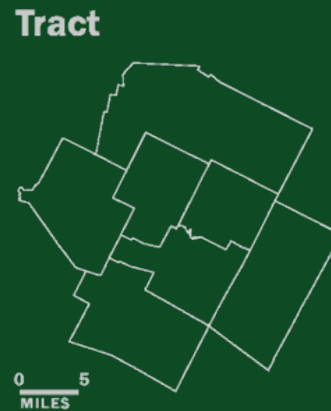
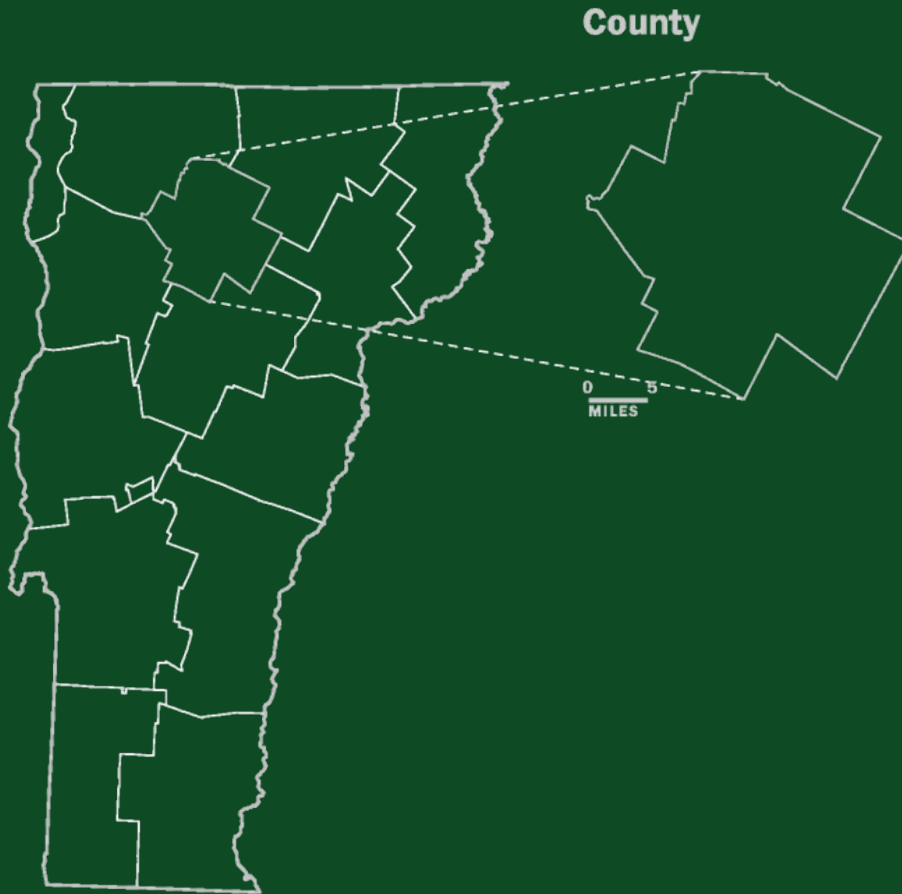
3 V.S.A. §6002(4)

Any census block group in which:

1. the annual median household income is not more than 80 percent of the State median household income;
2. Persons of Color and Indigenous Peoples comprise at least six percent or more of the populations; or
3. at least one percent or more of households have limited English proficiency.



Census Geography



GEODATA PORTAL LINKS

[State](#)
[County](#)
[County Subdivision \(Town\)](#)
[Census Tract](#)
[Census Block Group](#)
[Blocks](#)



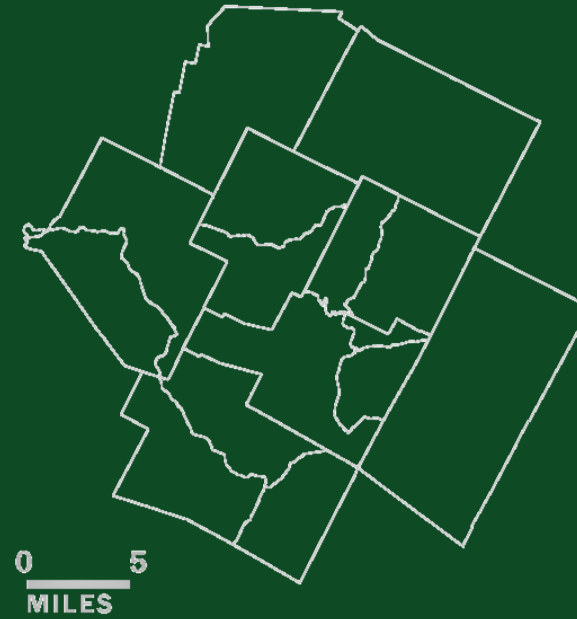
Census Geography

Tract



There are 193 tracts in Vermont with a median population of 3016 and 1316 households.

Block Group



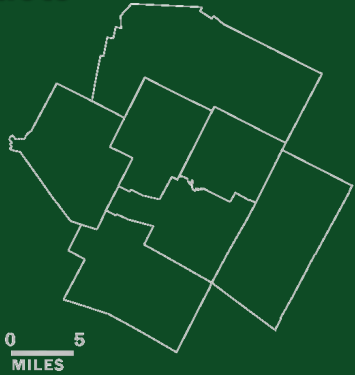
There are 552 block groups in Vermont with a median population of 1090 and 471 households

Tracts are typically made up of 2 or 3 block groups.



Census Geography

Tracts



Block Groups



These geographies can vary significantly in land area across the state depending on population density. More urban block groups/tracts are smaller in land area and more rural ones are larger.



TRACT

Population: 2252

Area: <1 square mile

Density: >2500/square mile

BLOCK GROUP

Population: 1439

Area: <0.7 square mile

Density >2000/square mile

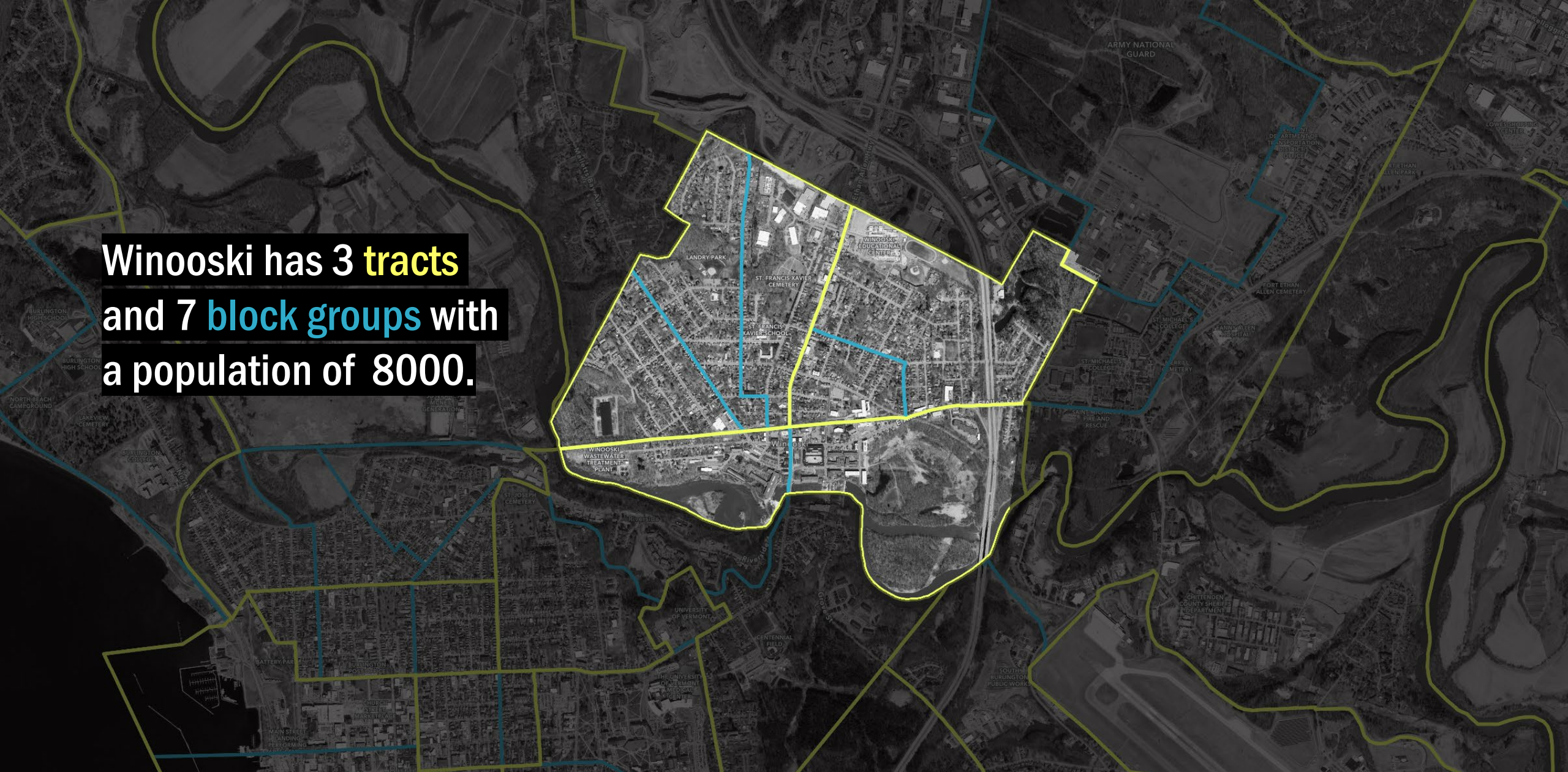
BLOCK GROUP

Population: 813

Area: <0.2 square mile

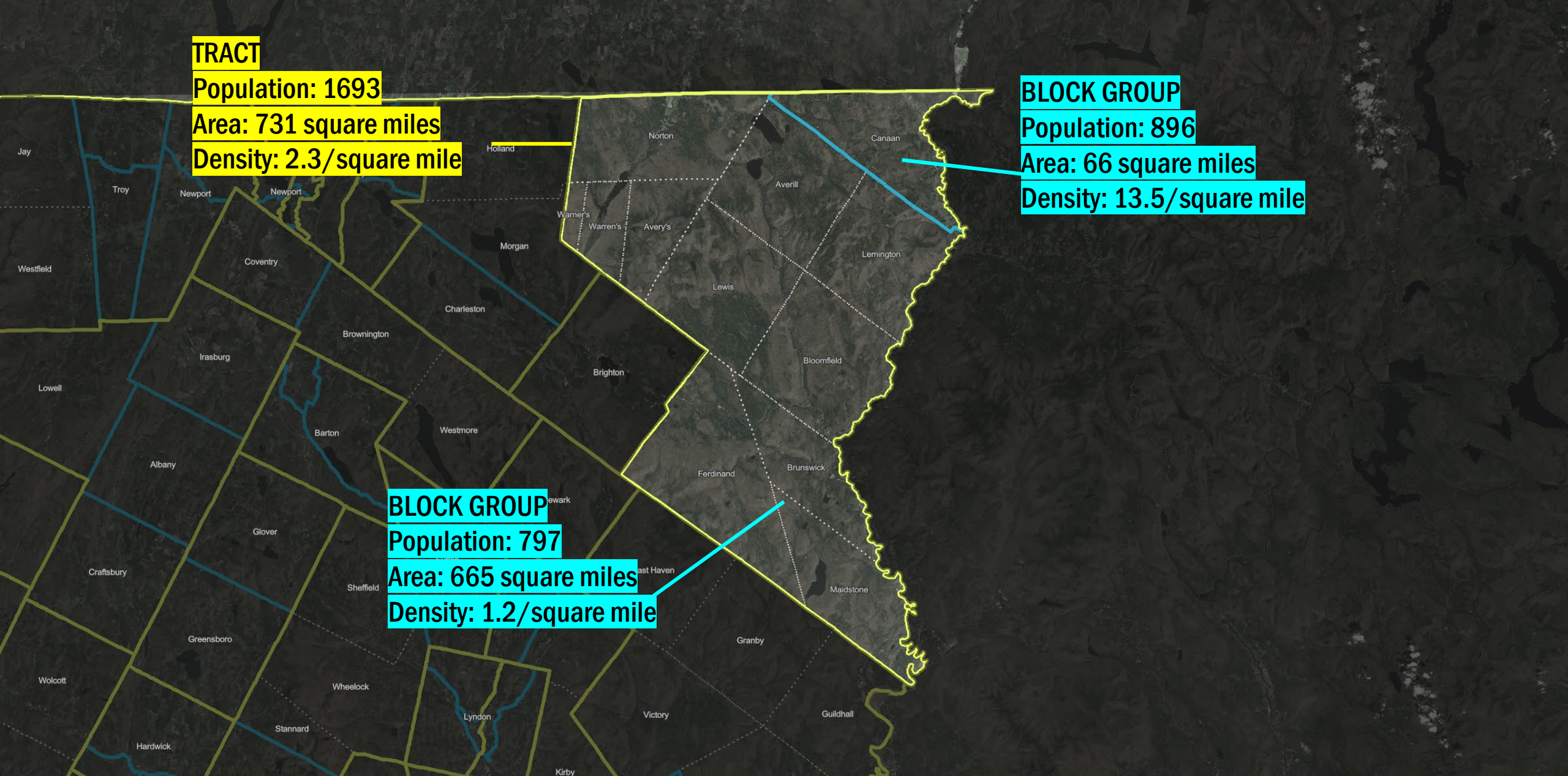
Density: >4500/square mile

Example of a Tract with 2 Block Groups in Winooski



**Winooski has 3 tracts
and 7 block groups with
a population of 8000.**

County Subdivisions (towns) can have multiple tracts.



TRACT

Population: 1693

Area: 731 square miles

Density: 2.3/square mile

BLOCK GROUP

Population: 896

Area: 66 square miles

Density: 13.5/square mile

BLOCK GROUP

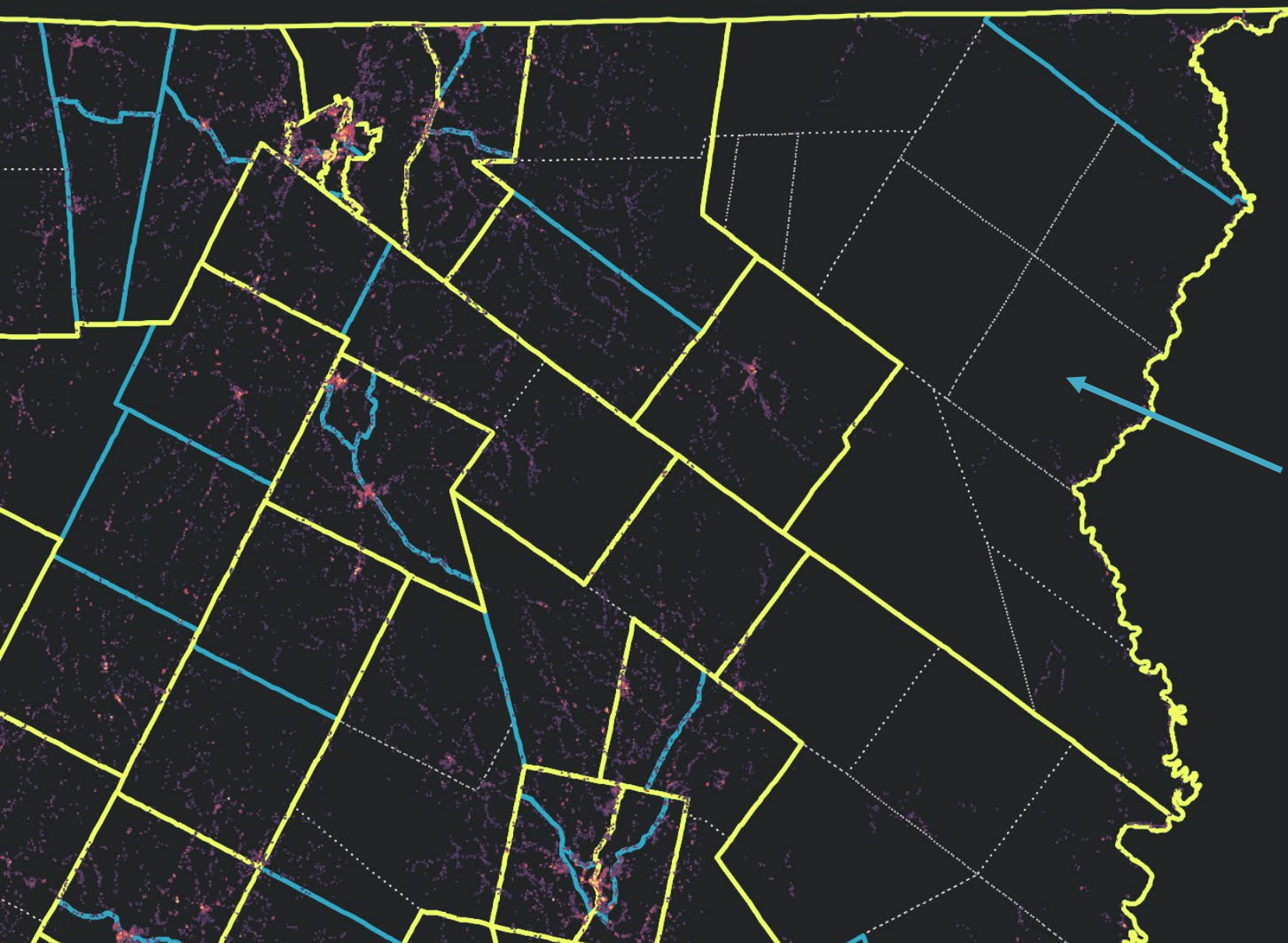
Population: 797

Area: 665 square miles

Density: 1.2/square mile

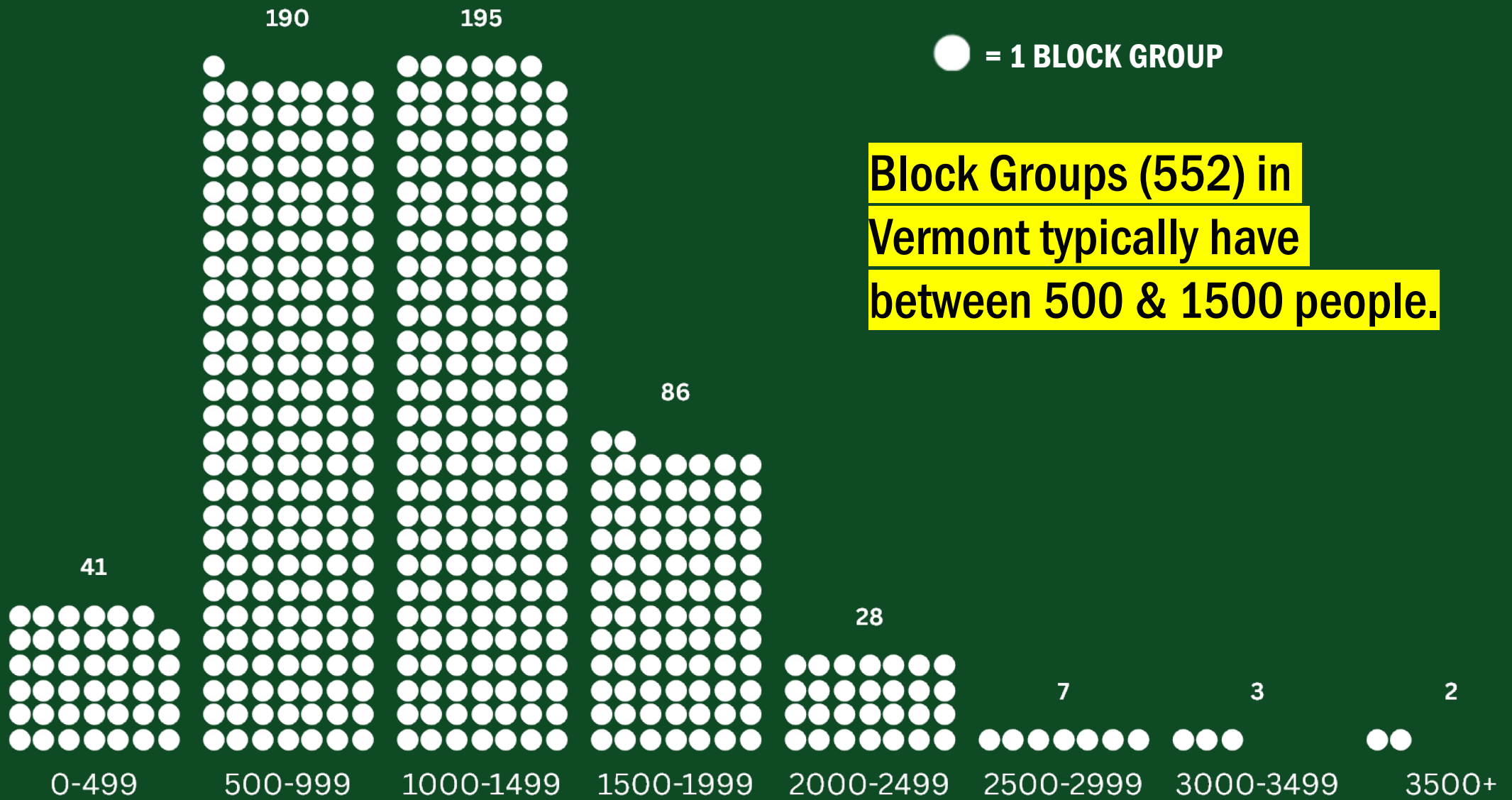


Example of the largest tract in Vermont in the NEK.



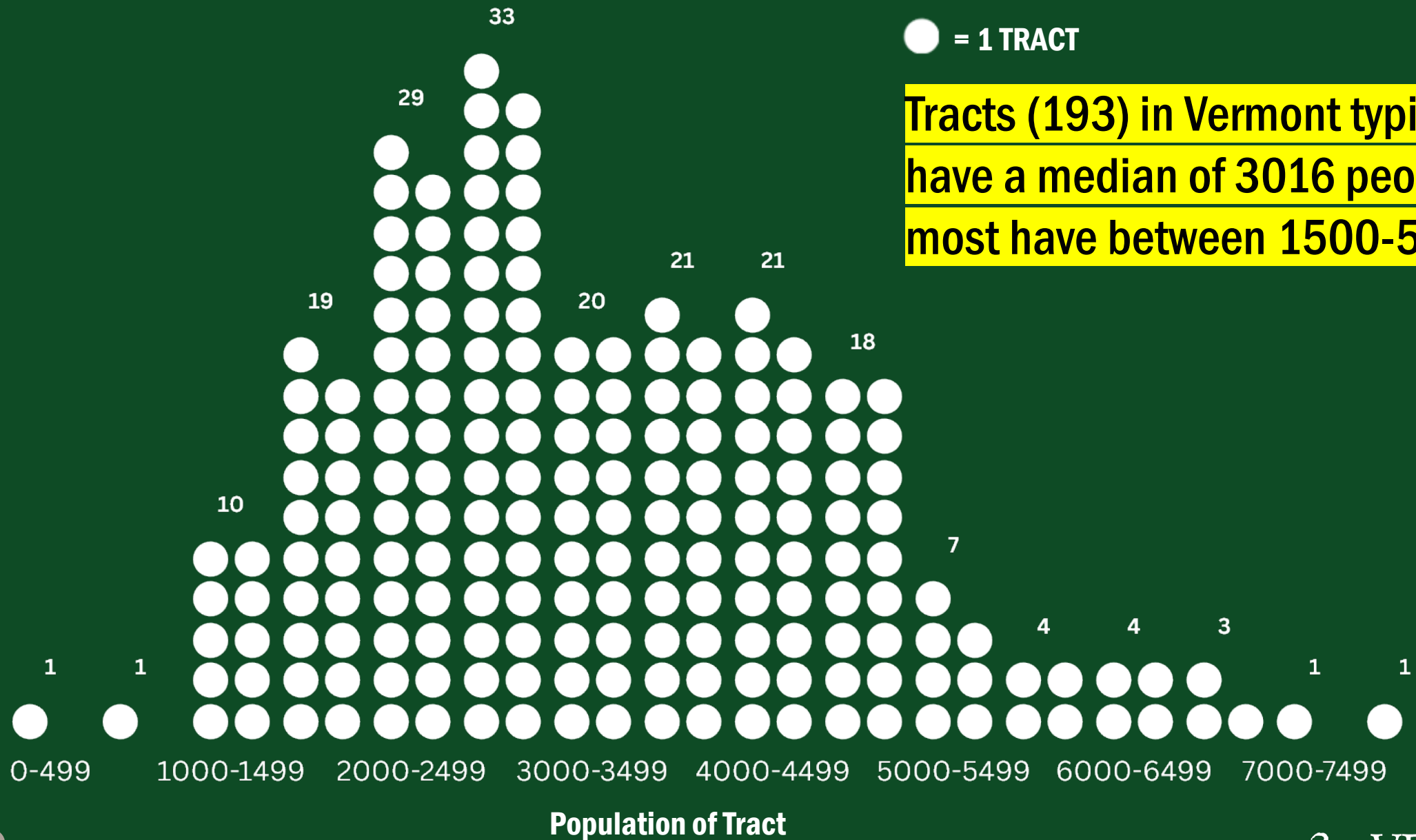
**Example of a single
block group with 11
towns and total
population of 797.
Several of the towns
have zero population**

In very rural areas, Tracts/Block Groups can have multiple towns.



Population of Block Group





Decennial Census vs ACS

Decennial Census of Population and Housing:

- Count of where every resident lives on April 1
- Every ten years ending in zero, except 1791. (1791-2020)
- Includes data on race and ethnicity.

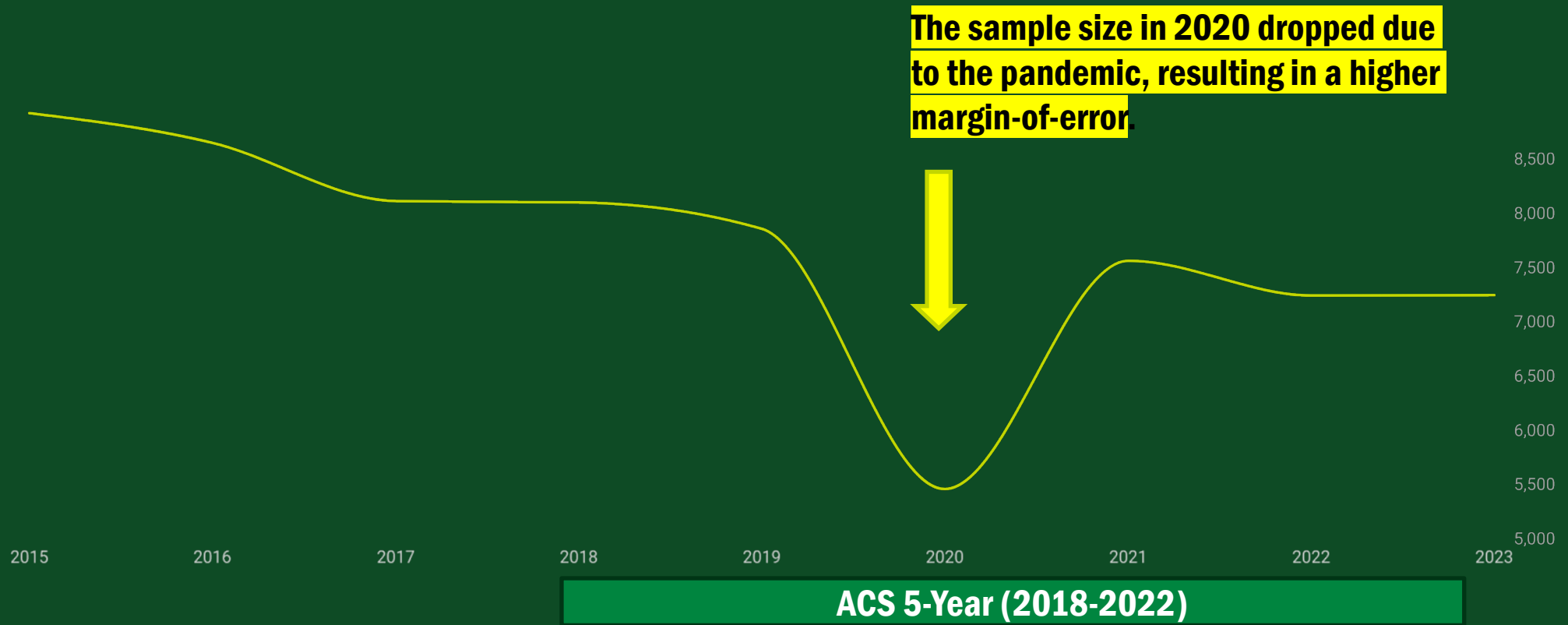
American Community Survey (ACS):

- On-going sample (approx 3.5 million addresses/ year)
- 2005-present (1-year & 5-year estimates)
- Includes data on race, income, and language.



ACS Sample Size in Vermont

In a given year, around 8k out of 334k total homes are surveyed in Vermont.



What is a Margin-of-Error?

The margin of error shows how much an estimate might vary. To find the range, add the margin of error to get the upper limit and subtract it to get the lower limit. The American Community Survey uses a 90% confidence level for these calculations.

Since **Block Groups have smaller sample sizes than tracts, they have larger margins-of-error.** Let's look at an example.



Median Household Income

● \$74,014 (ACS 5-Year: 2018-2022 Statewide)

\$59,211 – 80% of median

Illustration of a median margin of error for a block group with median income for VT.



Median
Household
Income

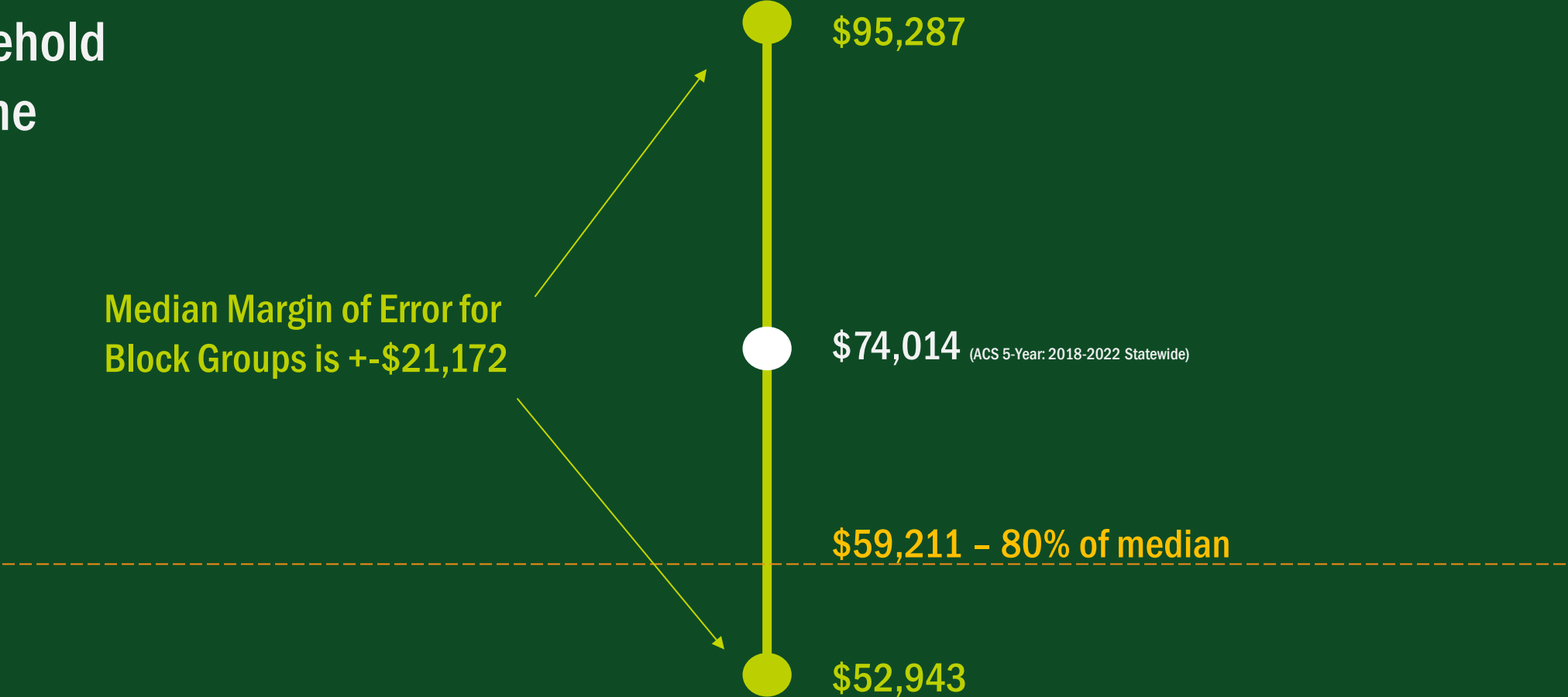
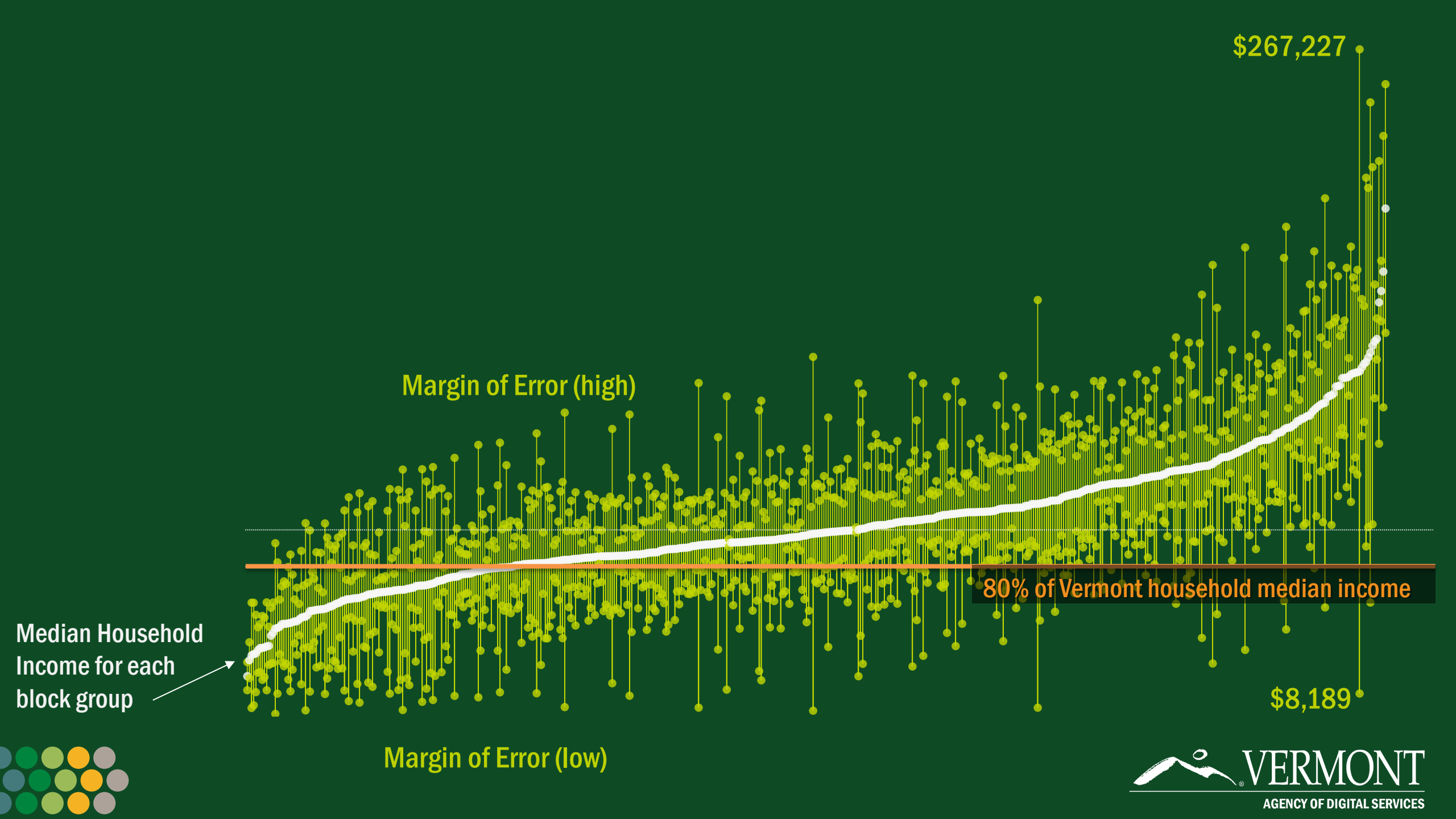


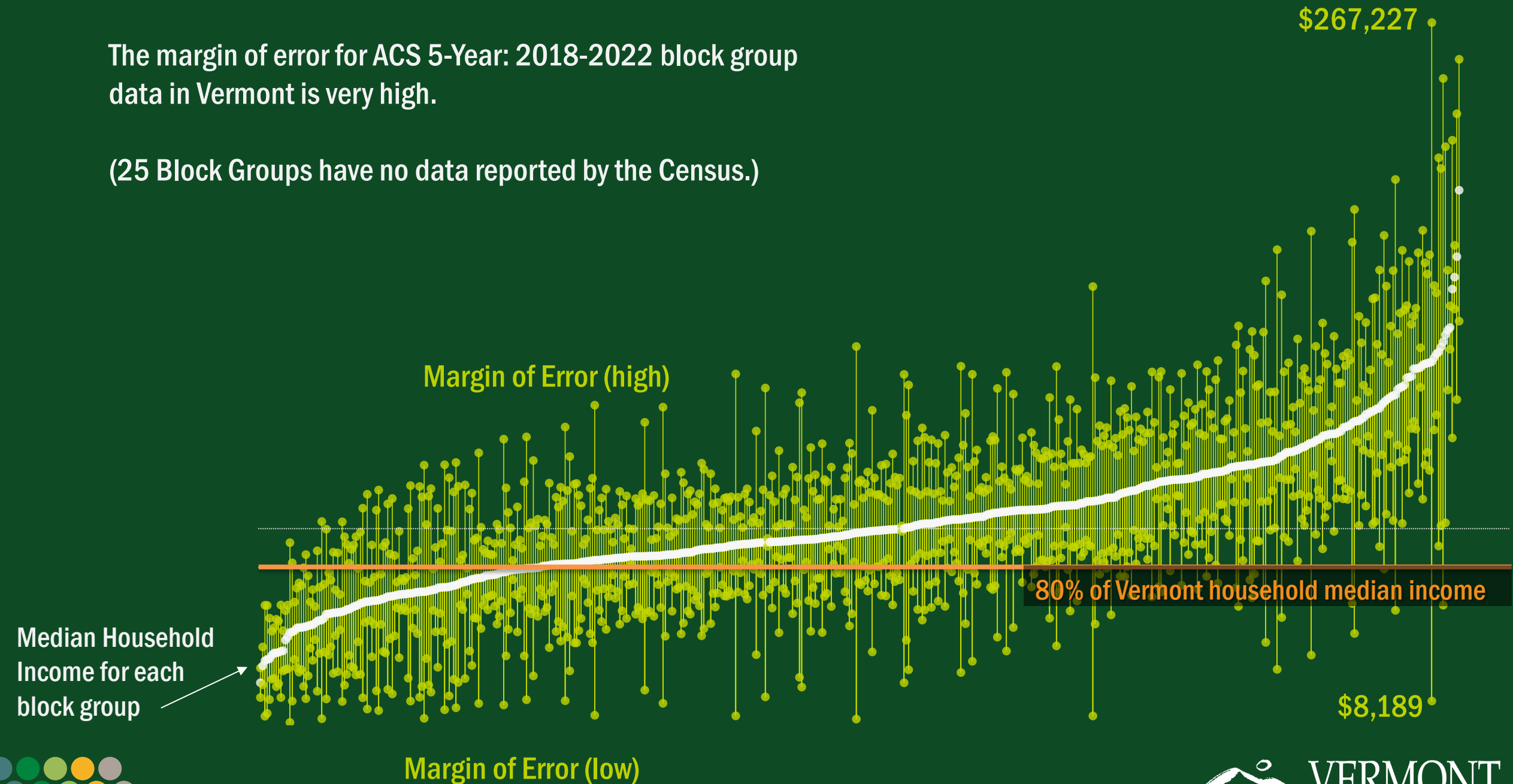
Illustration of a median margin of error for a block group with median income for VT





The margin of error for ACS 5-Year: 2018-2022 block group data in Vermont is very high.

(25 Block Groups have no data reported by the Census.)



Median Household Income

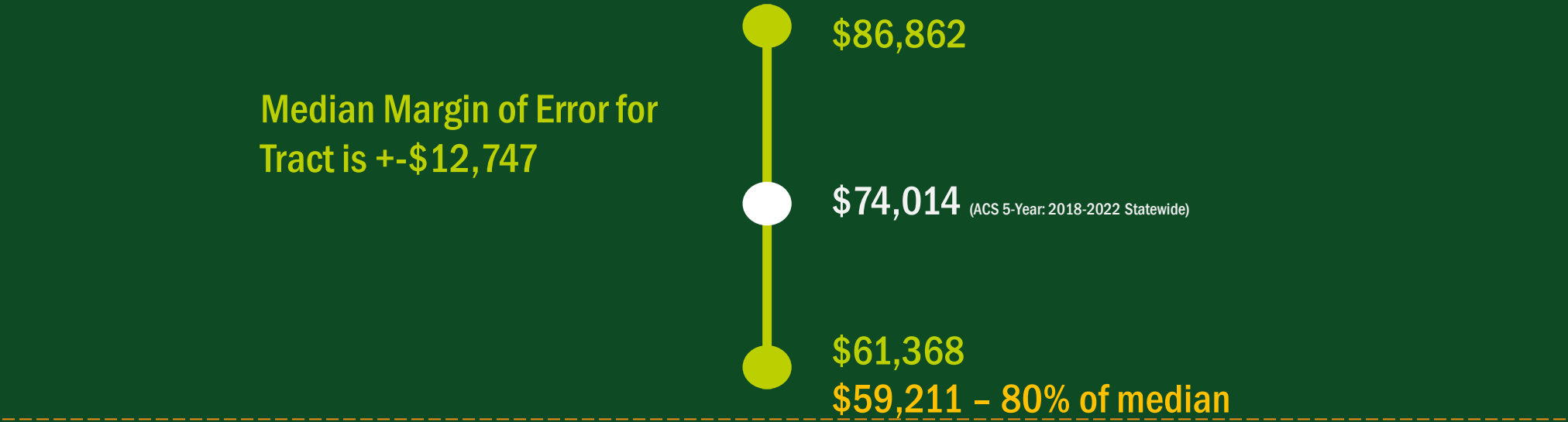
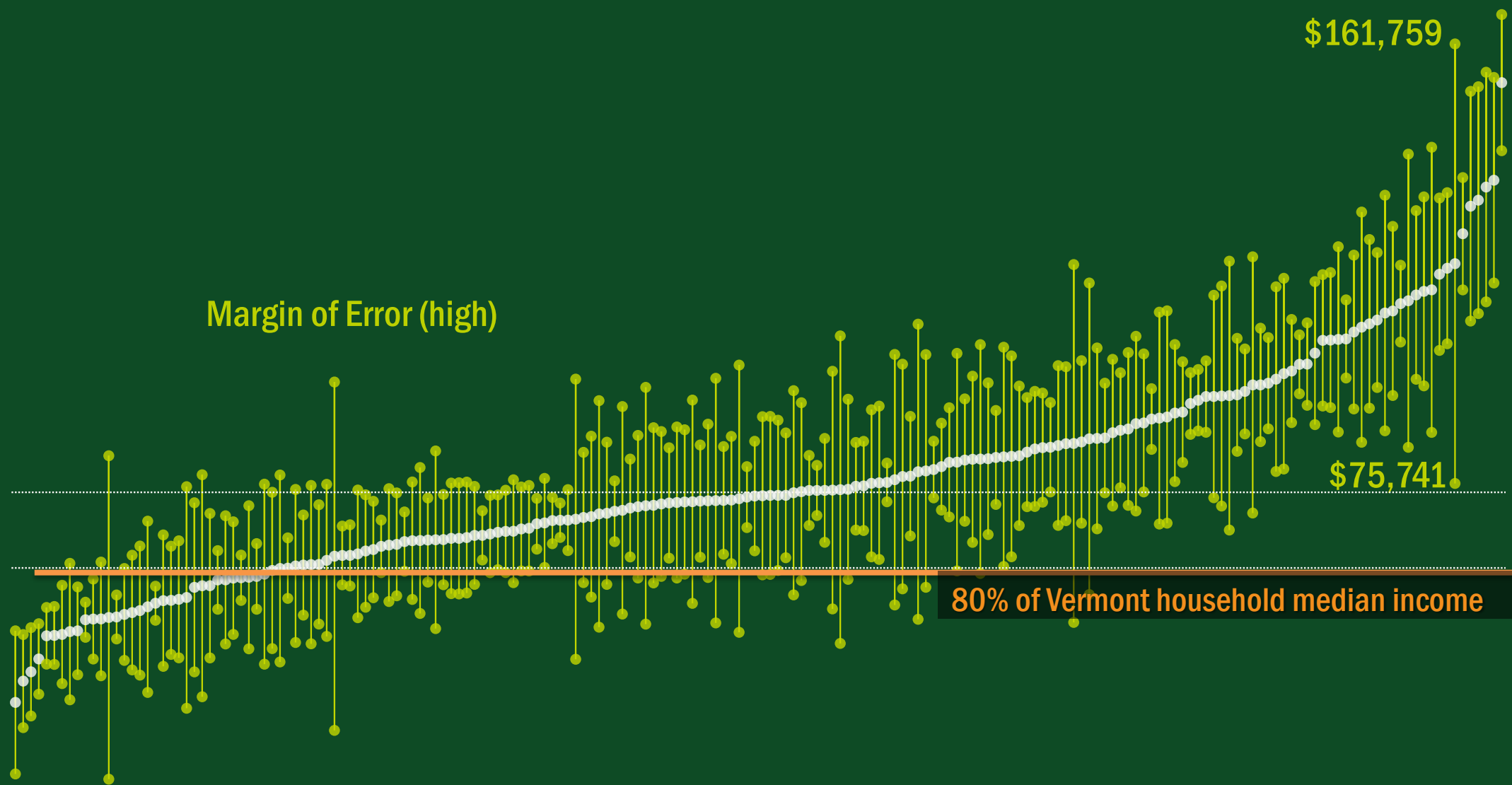


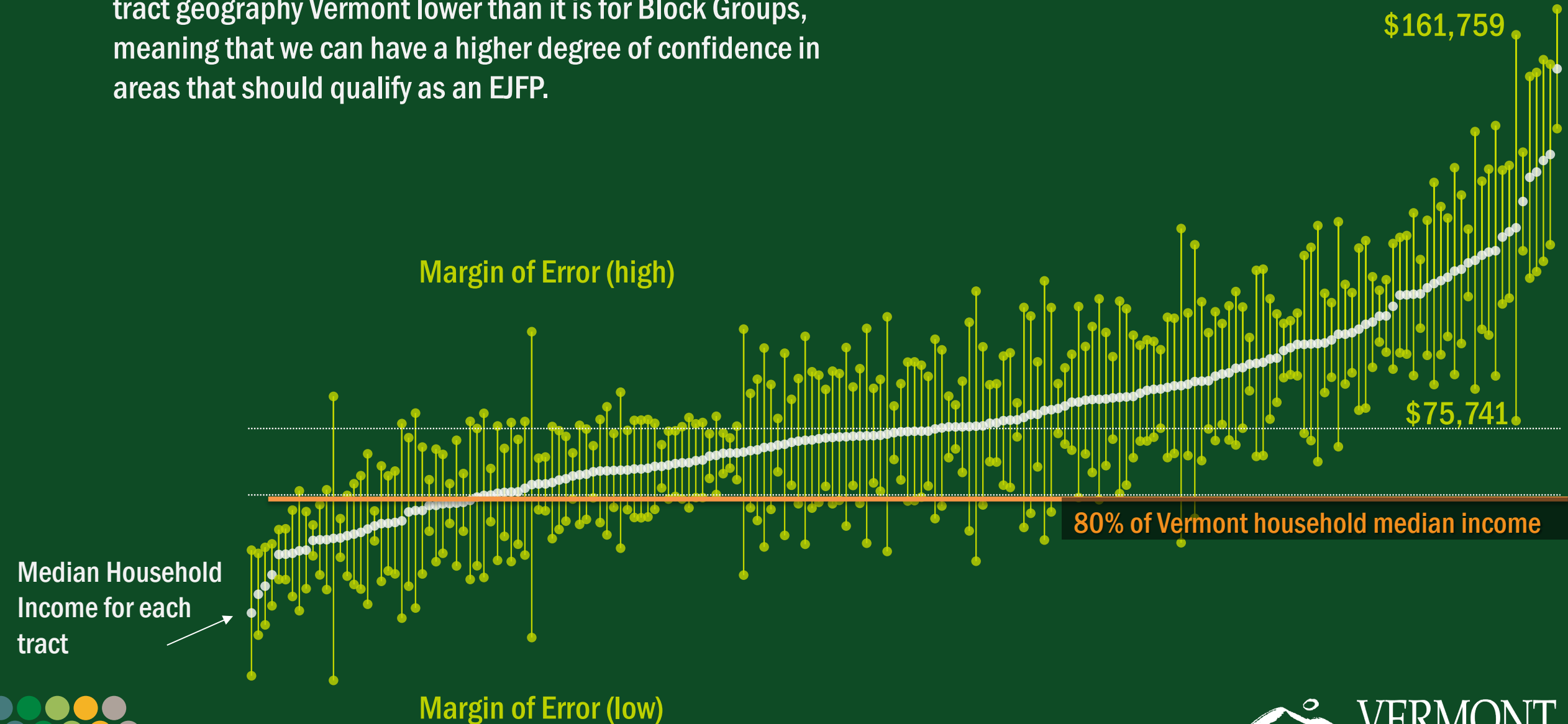
Illustration of a median margin of error for a tract with median income for VT.



Median Household
Income for each
tract



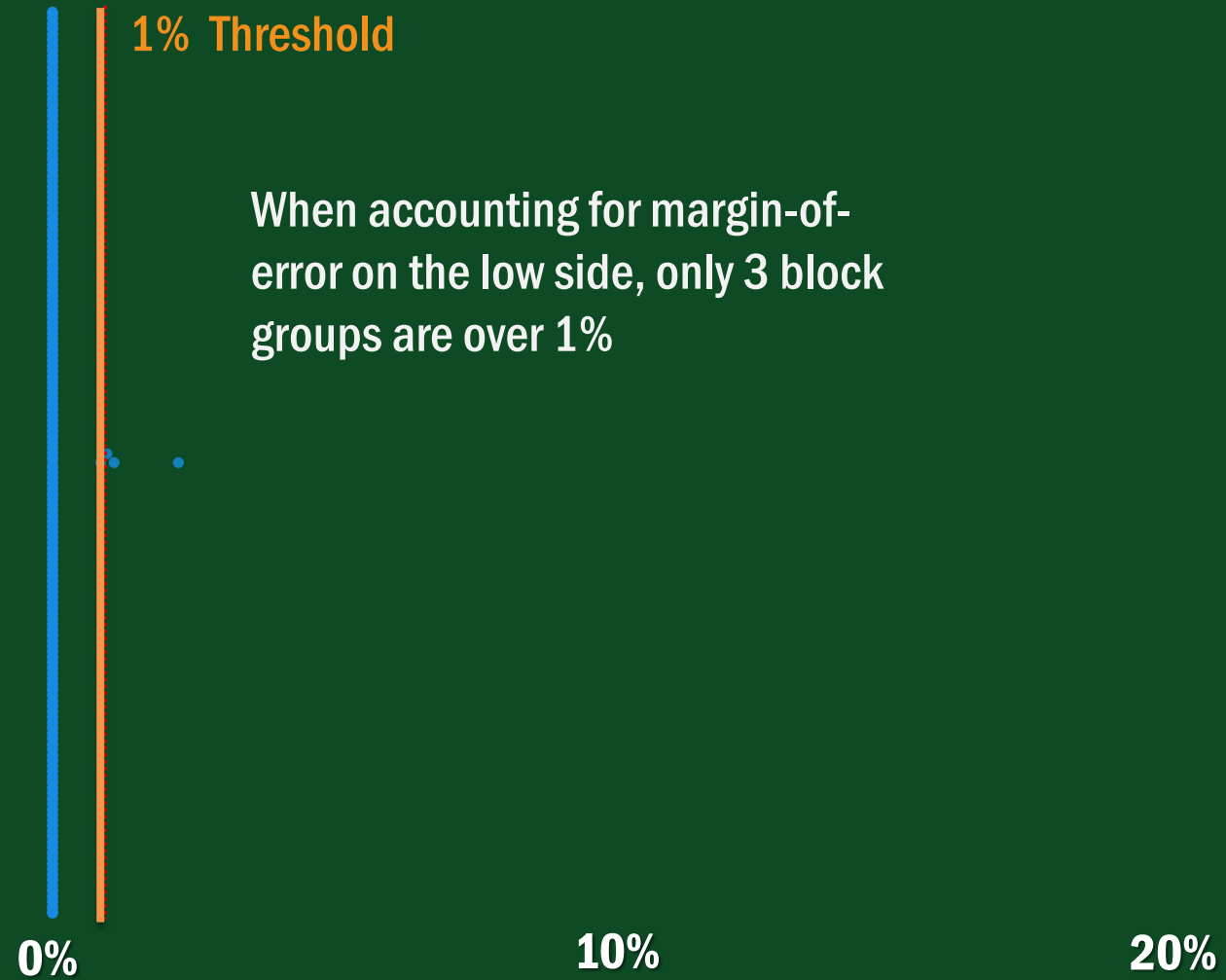
The margin of error for ACS 5-Year: 2018-2022 data at the tract geography Vermont lower than it is for Block Groups, meaning that we can have a higher degree of confidence in areas that should qualify as an EJFP.



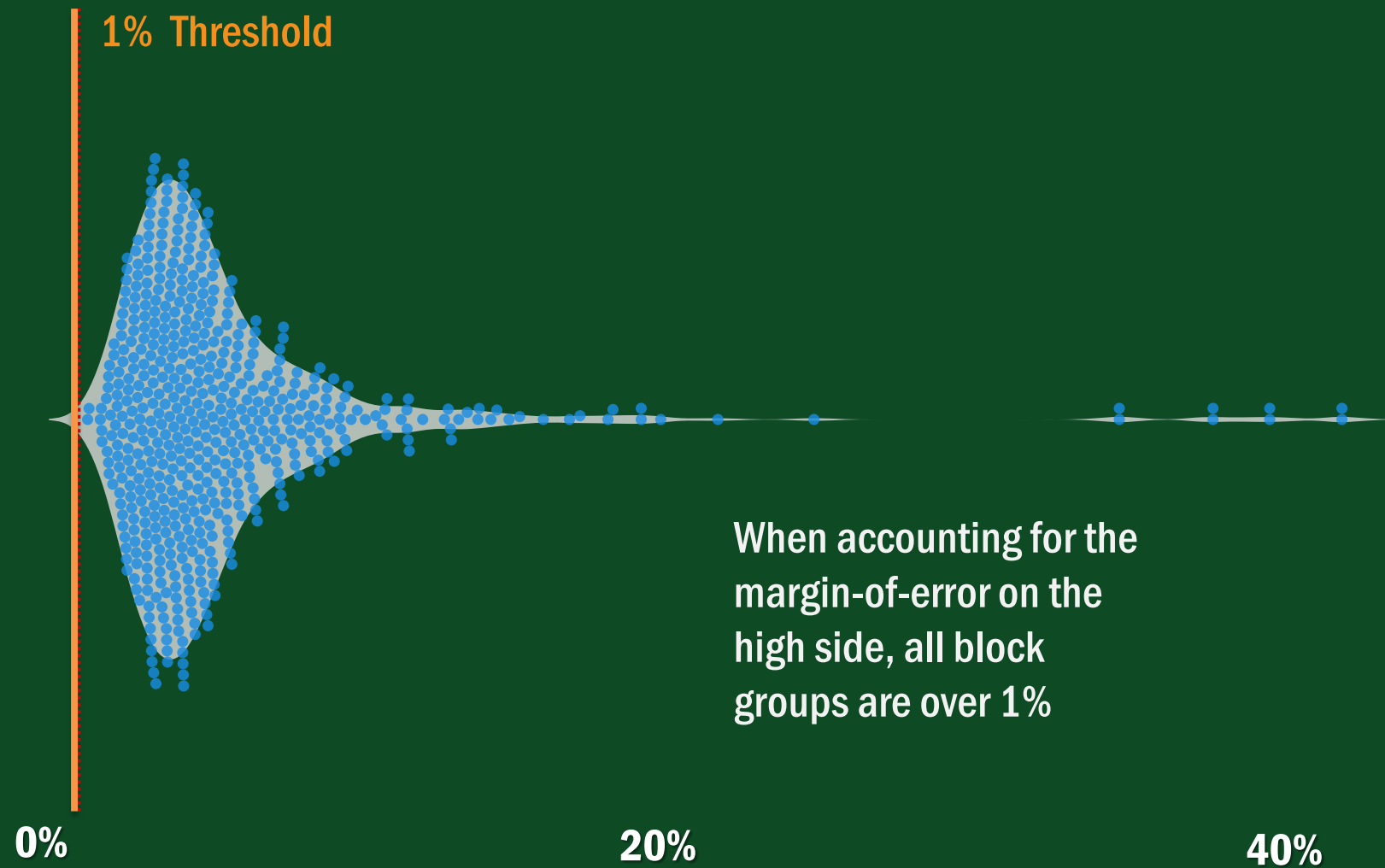
% Households in Block Group who Speak Language Other than English



% Households in Block Group who Speak Language Other than English



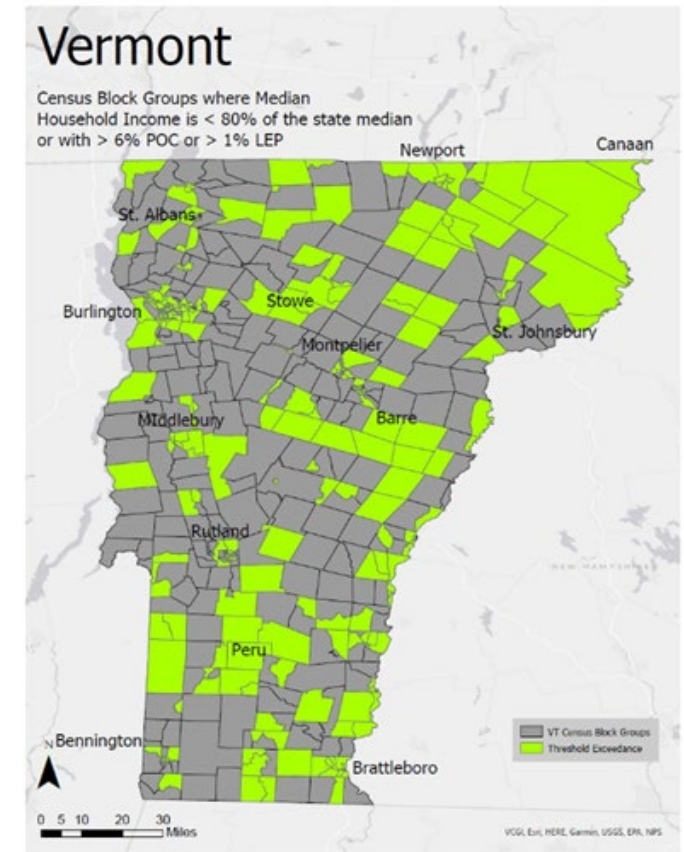
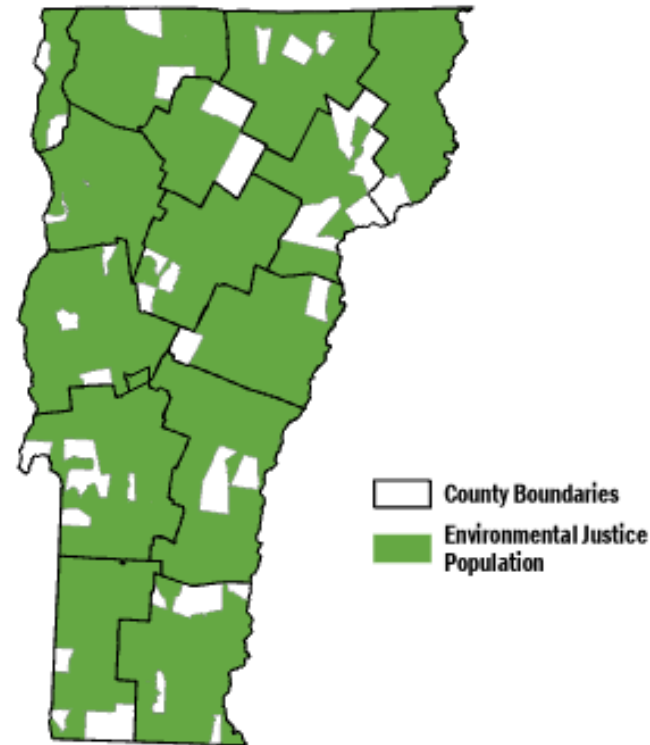
% Households in Block Group who Speak Language Other than English



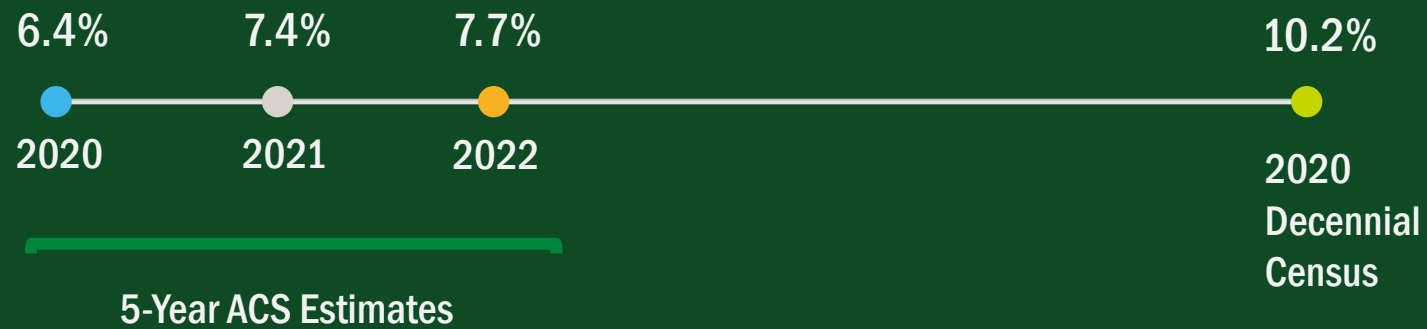
Race and the 2020 Census



Why do these maps look so different?



Percent of Vermont Population: Person of Color and Indigenous Peoples



Change in Percentage Distribution of Race Groups for Vermont Counties (2010-2020)

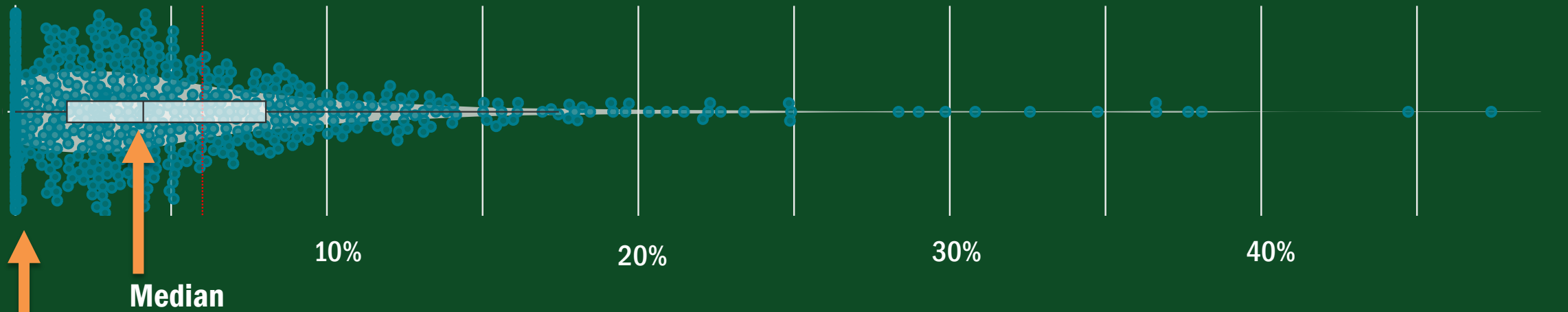
County	American Indian and Alaska Native	Asian	Black or African American	Native Hawaiian and Other Pacific Islander	White	Some Other Race	Population of two or more races
Addison County	0.06	0.16	0.21	0.01	-4.82	0.62	3.75
Bennington County	-0.06	0.37	0.32	-0.03	-5.06	0.56	3.91
Caledonia County	-0.11	0.42	0.24	0.06	-5.03	0.39	4.05
Chittenden County	-0.03	1.49	0.8	0	-6.78	0.53	3.99
Essex County	-0.27	-0.08	-0.04	0.08	-3.32	0.03	3.58
Franklin County	-0.05	0.16	0.23	0	-4.49	0.34	3.79
Grand Isle County	-0.33	0.15	0.34	-0.06	-3.08	0.3	2.67
Lamoille County	-0.04	0.03	0.26	-0.01	-5	0.47	4.29
Orange County	0.17	0.09	0.17	0.01	-4.88	0.39	4.06
Orleans County	0.27	0.11	-0.11	-0.03	-3.66	0.21	3.21
Rutland County	0.02	0.16	0.31	0	-5.51	0.36	4.65
Washington County	0.01	0.22	0.35	0.02	-5.53	0.53	4.41
Windham County	0.04	0.04	0.22	-0.03	-5.14	0.67	4.19
Windsor County	0.05	0.02	0.23	0.01	-4.72	0.51	3.91

Data Source: 2010 & 2020 Decennial Census

Note from the Census: “The observed changes in the Multiracial population could be attributed to a number of factors, including demographic change since 2010. But we expect they were largely due to the improvements to the design of the two separate questions for race and ethnicity, data processing, and coding, which enabled a more thorough and accurate depiction of how people prefer to self-identify.”



2016-
2020
ACS



Median

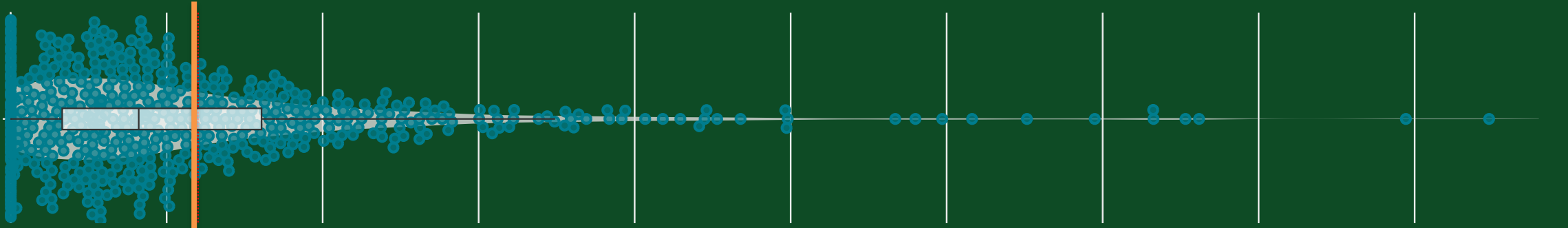
Block groups with estimated
zero BIPOC population
(estimated that 100% of
population is white only.)

% BIPOC population

● = 1 BLOCK GROUP



2016-
2020
ACS



Existing EJFP 6% threshold
(all block groups this side of line qualify as EJFP population.)

**% BIPOC Population
for Block Groups**



6%

10%

20%

30%

2016-
2020
ACS

2017-
2021
ACS

2018-
2022
ACS

Existing EJFP 6% threshold

% BIPOC Population
for Block Groups

6%

10%

20%

30%

2016-
2020
ACS

2017-
2021
ACS

2018-
2022
ACS

2020
Decennial
Census

Existing EJFP 6% threshold

The 5 year ACS
estimates should
eventually catch up to
the 2020 Census
counts.

6%

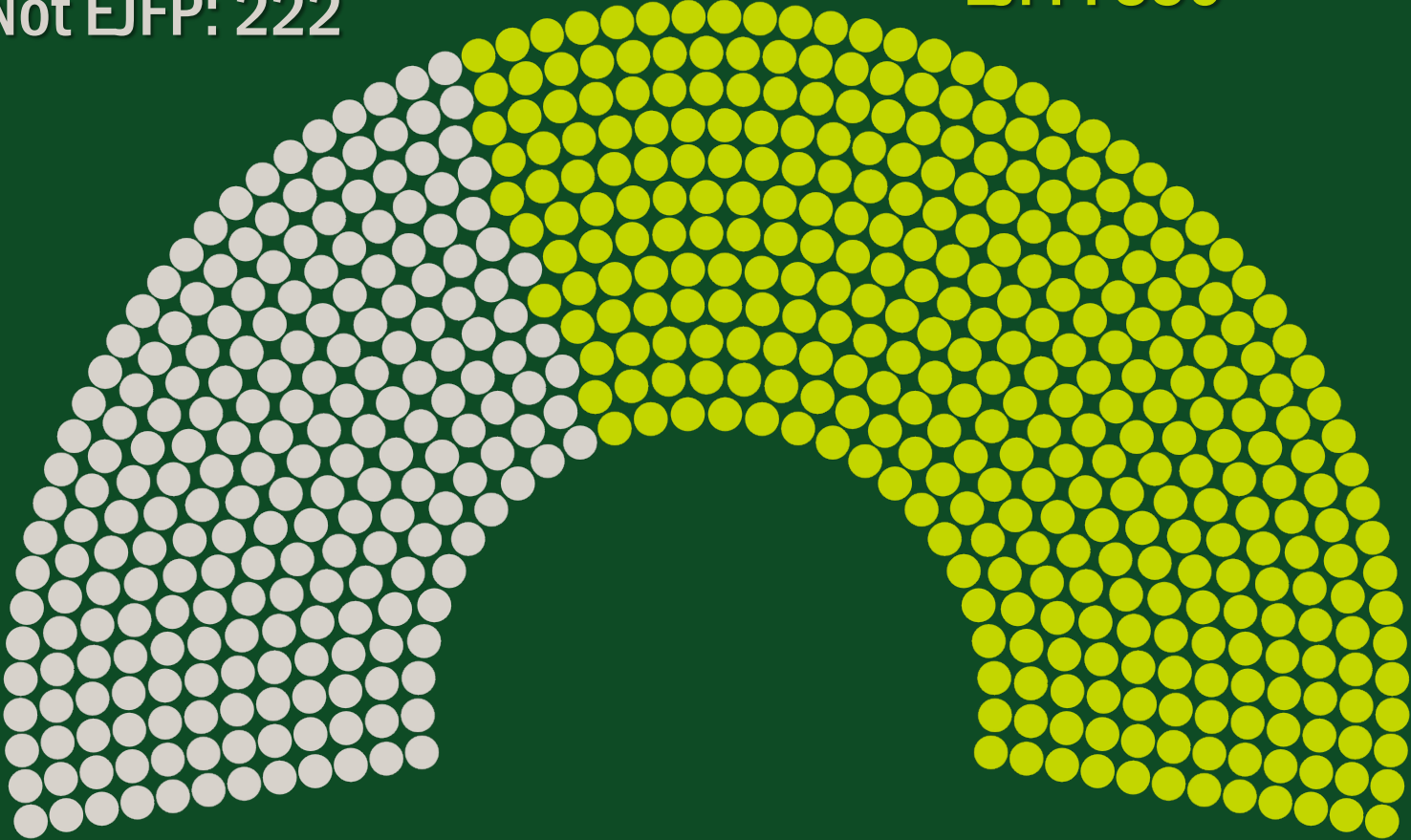
10%

20%

30%

Not EJFP: 222

EJFP: 330



EJFP Definition & Block
Groups using 2018-
2022 ACS 5-Year



Not EJFP: 222

Race: 164

Income: 58

Language: 15

Race + Income: 41

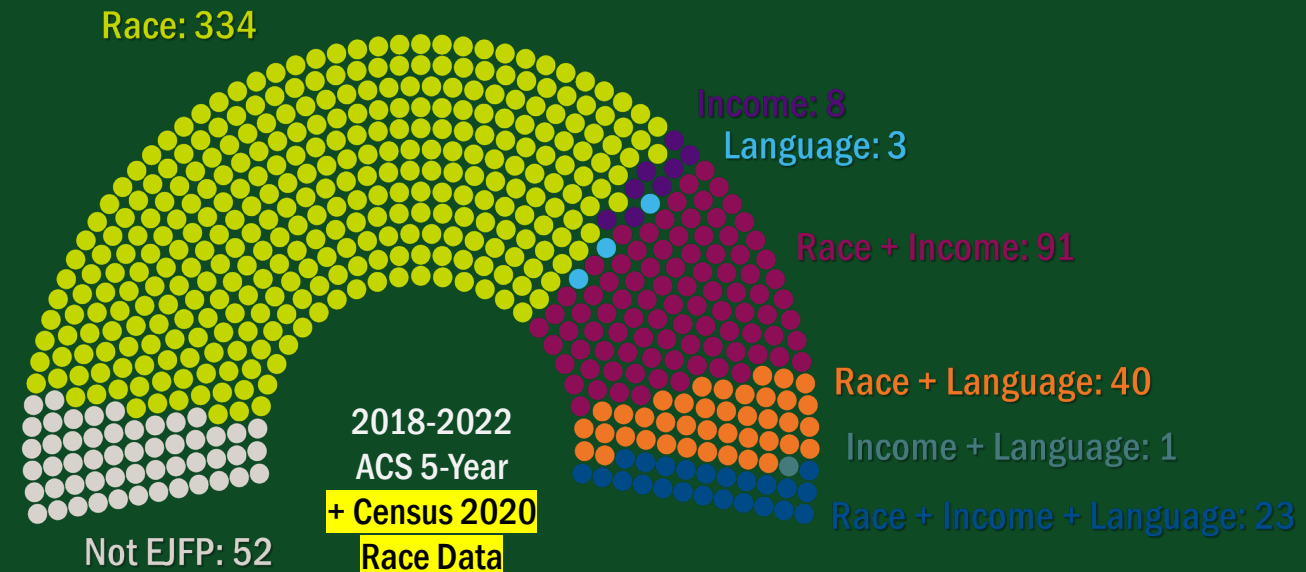
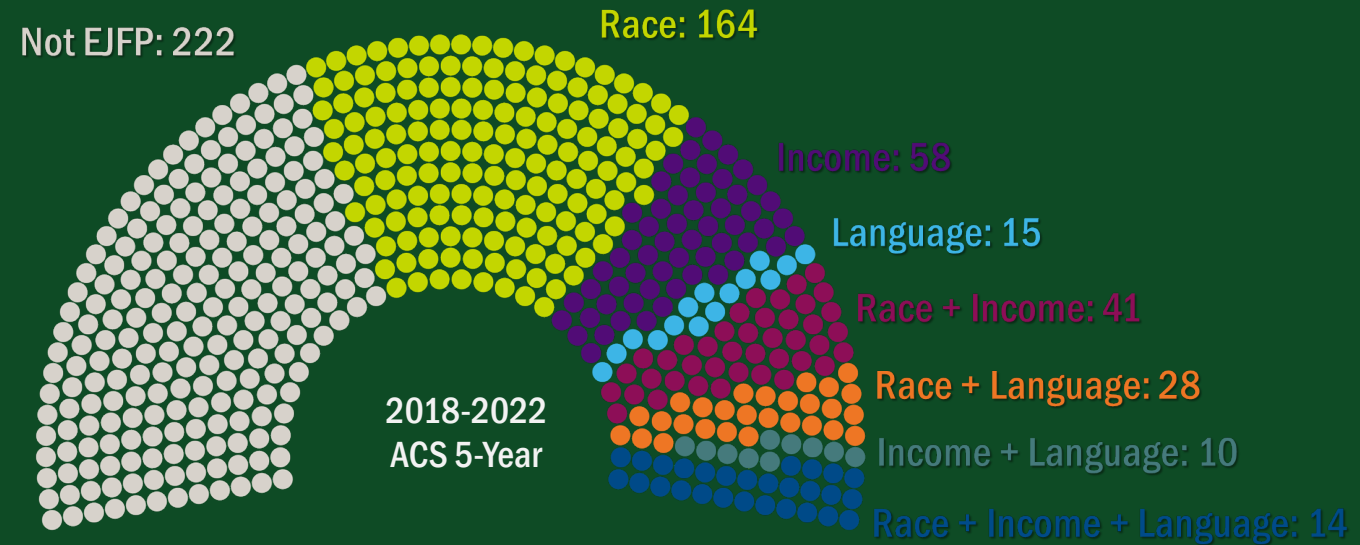
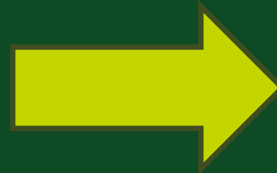
Race + Language: 28

Income + Language: 10

Race + Income + Language: 14



Using 2020 Census counts and a 6% threshold for Persons of Color and Indigenous Peoples results in 500 out of 552 block groups qualifying as EJFP, encompassing more than 92% of Vermont's population.

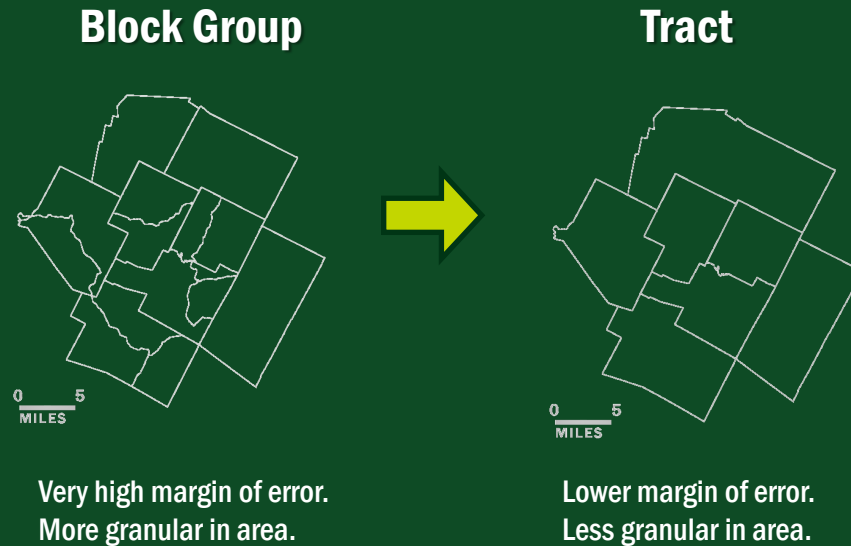


Alternative Options to Consider



Changing Geography

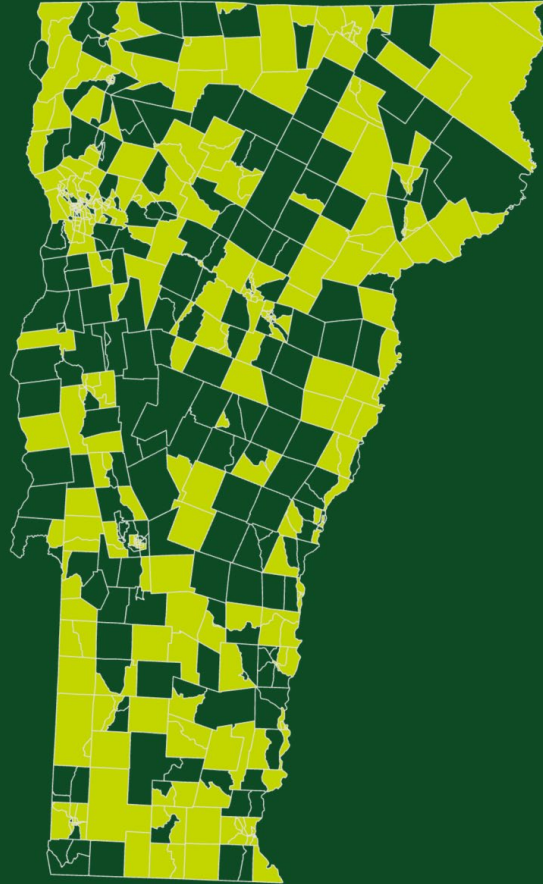
Using tracts instead of block groups would significantly reduce the margin-of-error, increasing the confidence that EJFP qualifying areas actually meet the definition. The primary tradeoff is that most of the areas would be larger in size.



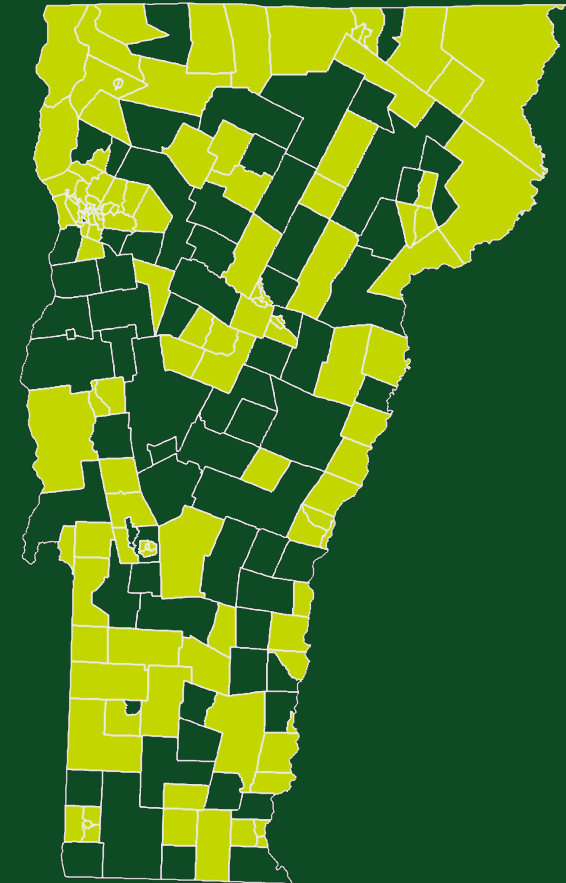
Current EJFP Definition using
ACS 5-Year (2018-2022) at
Block Group and Tract
Geographies.

EJFP Qualifying Area

Block Groups



Tracts



Block Group / Tract– Examples

Census Block Groups

- North Carolina: Department of Environmental Quality – [North Carolina Community Mapping System](#)
- Massachusetts: Office of Environmental Justice & Equity – [Environmental Justice Map Viewer](#)
- Pennsylvania: Department of Environmental Protection – [PennEnviroScreen](#)

Census Tracts

- Maryland: Department of the Environment – [Environmental Justice Screening Tool](#)
- Colorado: Department of Public Health & Environment – [EnviroScreen](#)
- Washington: Department of Health – [Environmental Health Disparities Map](#)
- California: Office of Environmental Health Hazard Assessment – [Communities Environmental Health Screening Tool](#) (CalEnviroScreen)
- Connecticut: Department of Energy and Environmental Protection (and the University of Connecticut Institute for Resilience and Climate Adaptation) – [Environmental Justice Screen Tool](#)
- New York City: Office of Climate & Environmental Justice – [Environmental Justice NYC](#)



Modifying Thresholds

According to the 2020 Census 10.2% of Vermont's population identify as Persons of Color and/or Indigenous Peoples. This is more accurate than the 6.3% estimated by the 2019 ACS data.

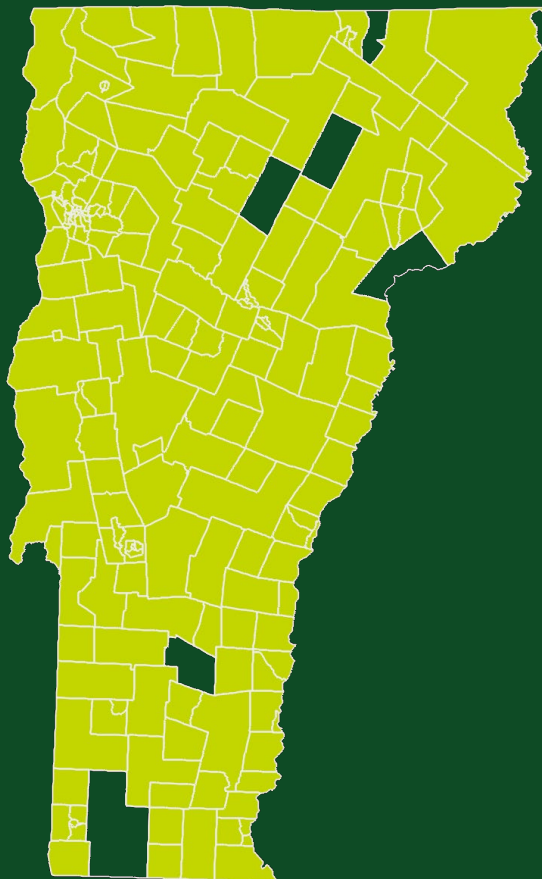
Using the current 6% threshold it is likely that over 90% of Vermont's population will live in an EJFP block group.



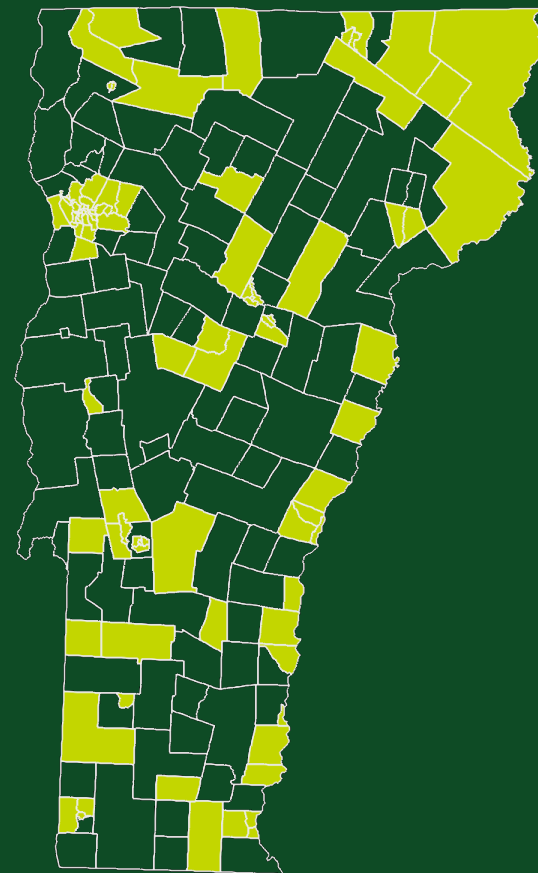
Example using ACS 5-Year (2018-2022) for income and language and Census 2020 race and ethnicity data at (tract geography.) The map on the left uses the existing 6% BIPOC threshold and the map on the right uses a 10% threshold. (Note: this example was created for educational purposes and is not a recommendation.)

EJFP Qualifying Area

>6% BIPOC definition



>10% BIPOC (other variables the same)



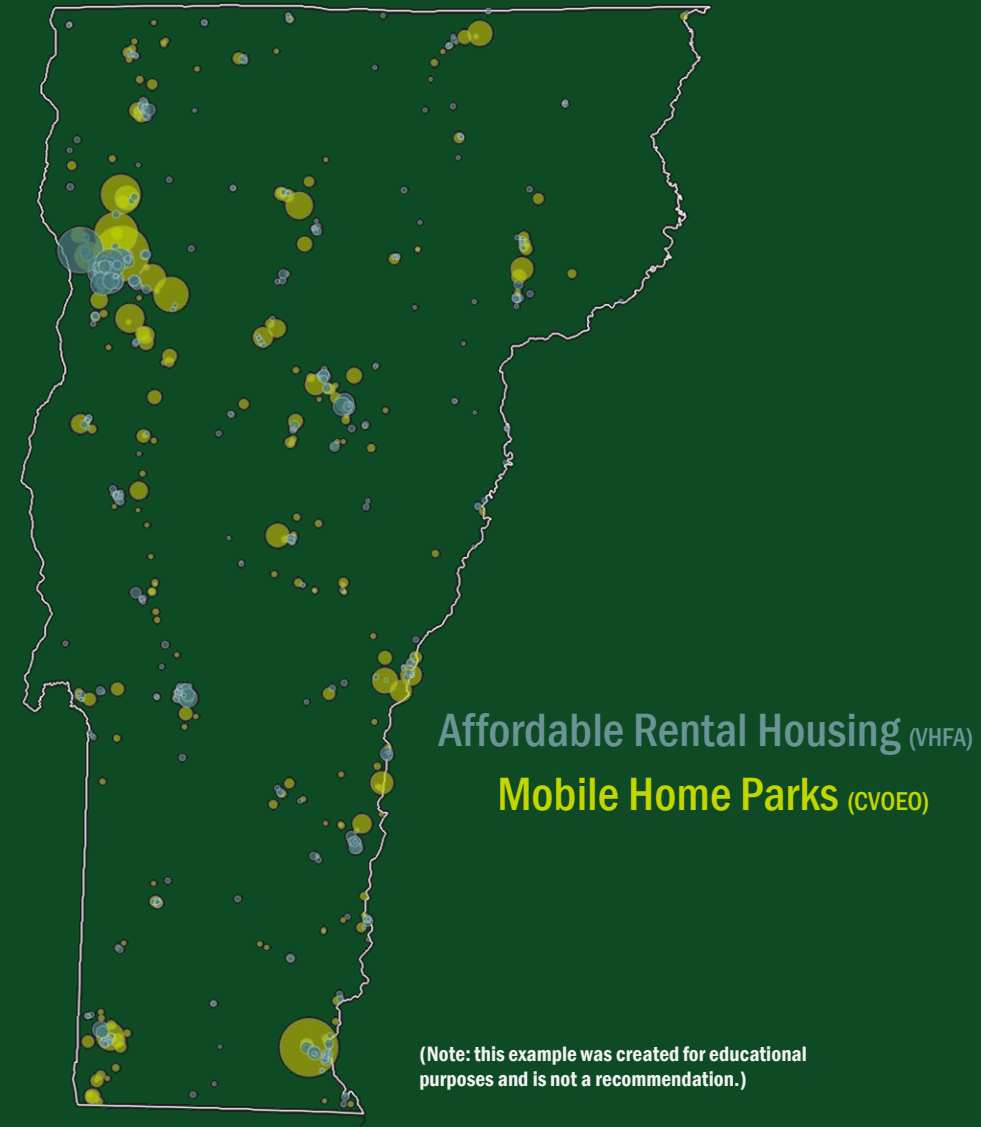
Modifying Thresholds

Getting an accurate count of the number of households that speak languages other than english in Vermont is very challenging, and ACS estimates are not reliable. Setting the threshold for households that have limited English proficiency as low as 1% risks introducing random areas as EJFP.



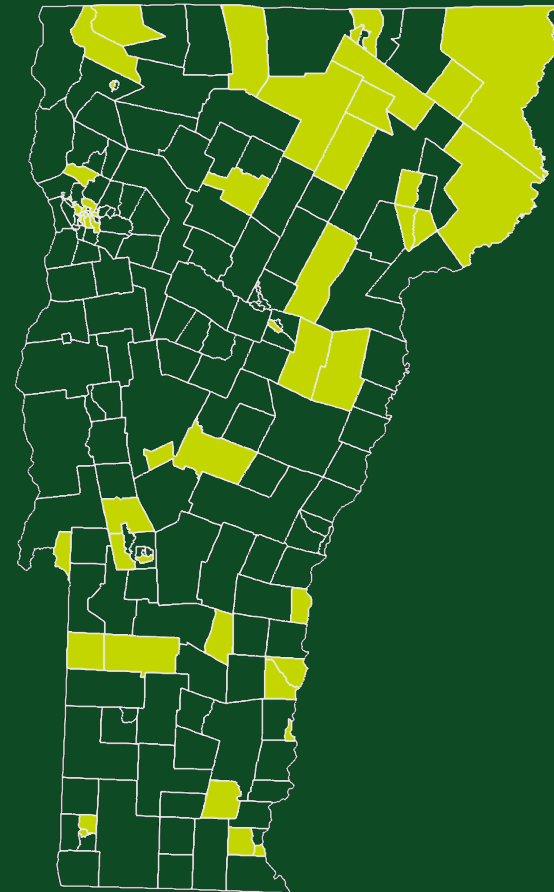
Alternative Variables

Depending on the use case, some Census ACS data variables may not be a good fit. Local knowledge and service organizations may have more accurate and appropriate information.



Specifying Source and Update Period

Specifying the data source and an extended period of time for applicability can be a practical way to ensure predictability and help with administration.



New Market Tax Credits (NMTC)

Example: The NMTC program is a federal initiative that provides tax credits for investment in low-income communities. Eligibility areas are updated every 5 years using ACS data (for example, ACS 2011-2015 & ACS 2016-2020) and has a transition period to qualify under both. The program does not update the eligibility data annually because of the cost and complexity.



Questions/Discussion

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