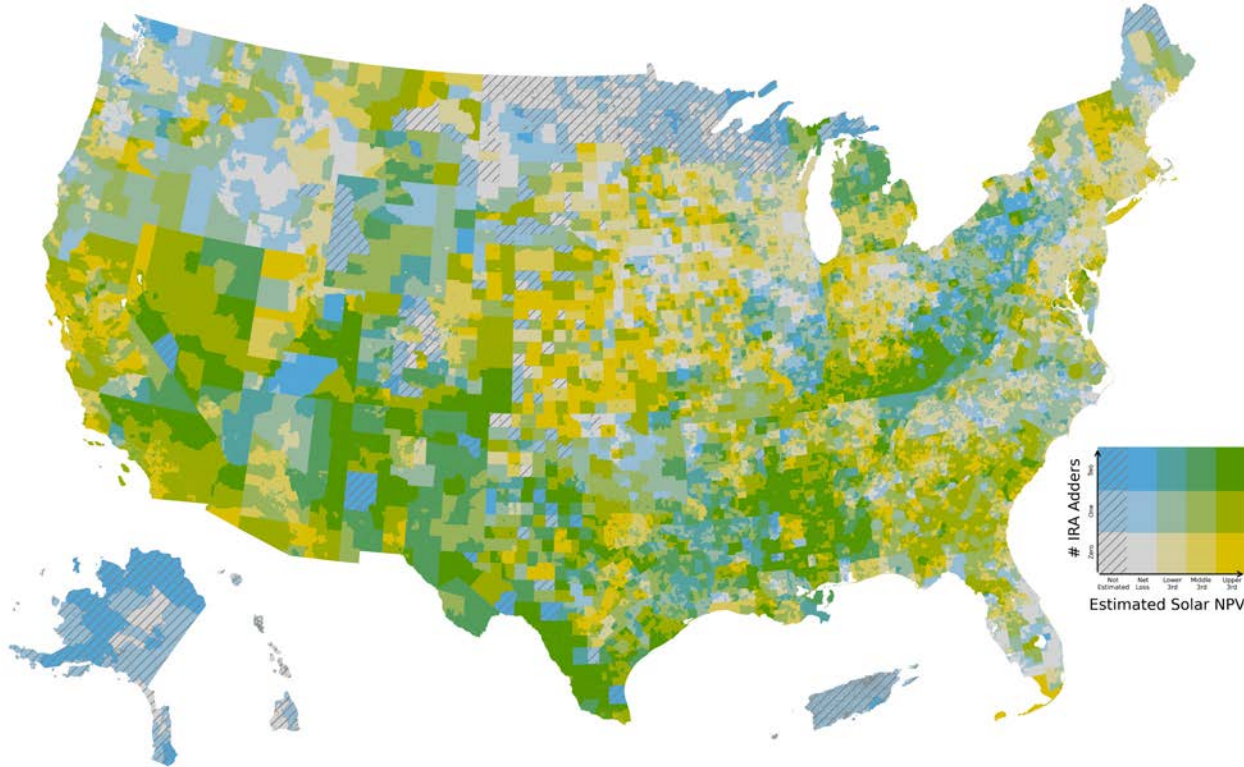


Locating Equitable Solar Opportunities by Census Tract:

A Guide to the Screening Tool for Equitable Adoption and Deployment of Solar (STEADy Solar)



Isa Ferrall-Wolf, Ph.D. and Joyce McLaren, Ph.D.
National Renewable Energy Laboratory (NREL)
April 2024



**SOLAR ENERGY
INNOVATION
NETWORK**

U.S. DEPARTMENT OF ENERGY

Origin of the STEADy Solar Dataset

STEADy Solar was originally developed in response to requests from teams participating in the [Solar Energy Innovation Network \(SEIN\)](#).



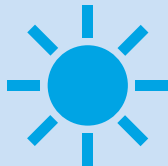
- SEIN is led by the National Renewable Energy Laboratory and funded by the U.S. Department of Energy Solar Energy Technologies Office.
- SEIN provides targeted technical assistance to communities developing transformative approaches to solar energy projects across the nation.
- [Round 3](#) of SEIN supported underserved communities in exploring new approaches to the equitable adoption of solar energy in residential and commercial-scale settings.
- A Round 3 team led by [RE-volv](#) focused on increasing [solar adoption in houses of worship led by Black, Indigenous, and people of color \(BIPOC\)](#). STEADy is the result of a technical assistance request to help the team identify communities across the country in which to focus their efforts.

STEADy Solar originated from a need expressed by underserved communities and is designed to support them.

STEADy Solar: The Screening Tool for Equitable Adoption and Deployment of Solar



The Inflation Reduction Act of 2022 includes new Investment Tax Credit adders for clean energy **in energy justice communities** based on geographical factors, such as demographics and land use. These incentives open doors to a more equitable distribution of solar across our country by encouraging solar projects in lower-income communities and communities impacted by the closure of coal mines and generation plants.

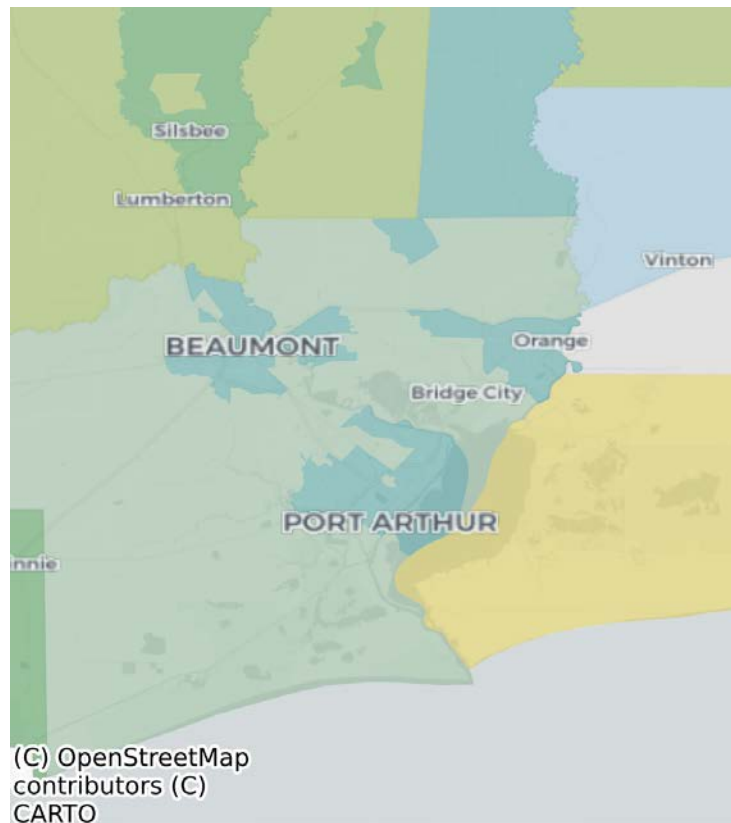


STEADy Solar helps identify specific locations where solar projects may be economical, allowing stakeholders to focus limited resources and deploy solar more equitably.

Audiences and Use Cases

STEADy Solar helps states, municipalities, community-based organizations, and developers identify opportunities for solar deployment and potential eligibility for solar tax incentives. The tool helps:

- Identify where federal funds from solar tax credit bonuses may be available
- Locate new projects to support the equitable adoption of solar
- Identify census tracts with specific building use types and favorable solar economics
- Understand how to allocate state or local funding to complement or compensate for federal incentives.



Sample STEADy map of Port Arthur, Texas – the location of another SEIN Round 3 Team. The color legend is described on slides 7-15.

What Is the STEADy Solar Tool?

- STEADy is a *dataset* that combines *publicly available information* relevant to *residential and commercial solar economics*.
- Data is available at the *census tract level* for the 50 U.S. states, Puerto Rico, and Washington, D.C.
- STEADy combines publicly available data on:
 - *Demographics*
 - *Solar technical potential*
 - *Solar economic potential (modeled net present value)*
 - *Building count by use type*
 - *Eligibility for the geospatially defined Inflation Reduction Act (IRA) Investment Tax Credit (ITC) adders.*

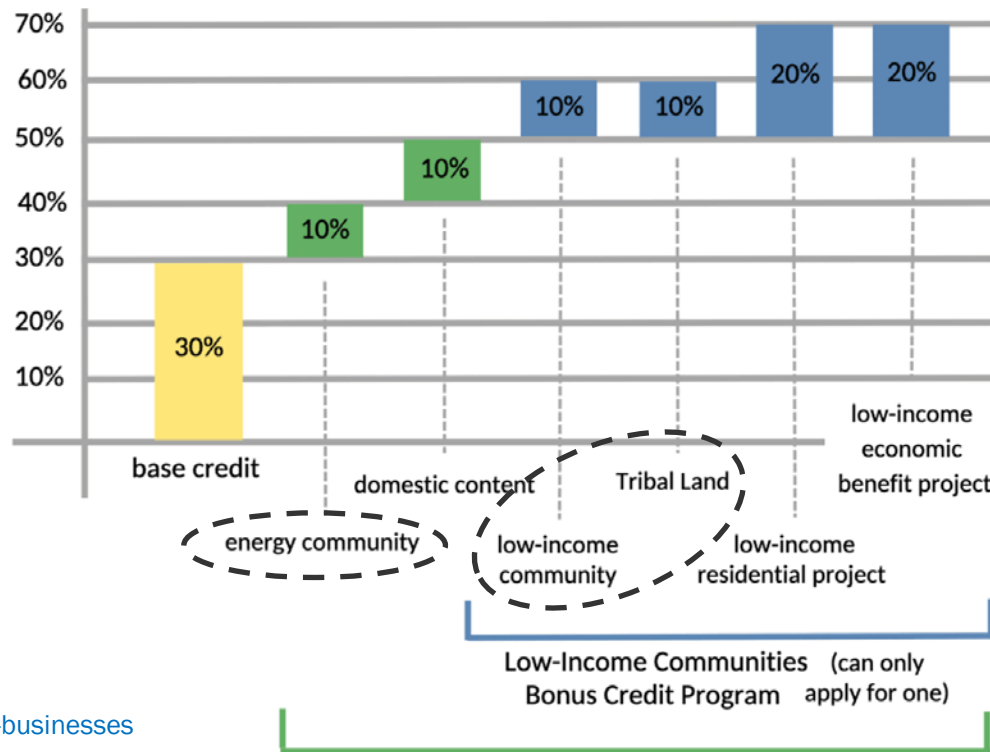
STEADy Solar Combines the Eligibility Maps for the Low-Income Community and the Energy Community ITC Adders

These bonus credits are available for commercial solar projects or residential solar projects that are owned by a commercial entity. They cannot be taken by individuals. A direct-pay option is available for nonprofit organizations.

<https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses>

Neither this publication nor the STEADy tool constitute professional tax advice or other professional financial guidance. They should not be used as the only source of information when making purchasing decisions, investment decisions, or tax decisions, or when executing other binding agreements.

Bonus Credits available within the Investment Tax Credit



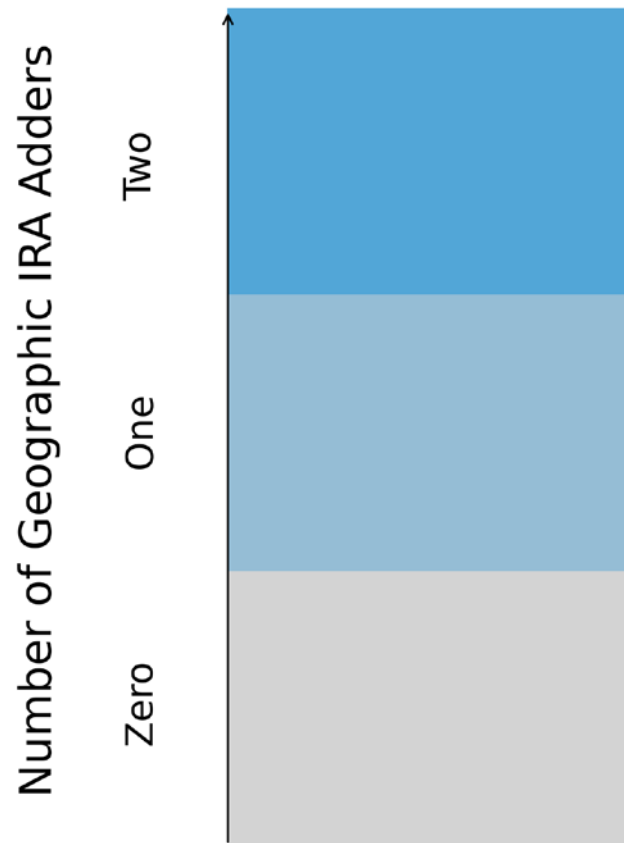
Bonus Credits Available for Projects that Qualify

Illustration from Clean Energy Group; [Source: What Nonprofits Need to Know about the Investment Tax Credit | Clean Energy Group](#)

ITC Adder Eligibility in BLUE

In the STEADy multidimensional legend:

- **Darker blue shading** indicates that more than 50% of the census tract meets the geographic eligibility criteria for two ITC adders.
 1. The Energy Communities Bonus Credit, AND
 2. In the Low-Income Communities Bonus Credit, either the:
 - a) Low-Income Category, or
 - b) Tribal Lands Category
- **Light blue shading** indicates geographic eligibility criteria for one ITC adder (either 1 or 2 above)
- **Grey shading** indicates that the census tract (as a whole) may not meet the geographic criteria for parts of these Bonus Credit Programs. Other parts of these programs do not require geographic eligibility.



Note: Geographic eligibility shapefiles were sourced in April 2024 from the relevant programs. See Slides 6, and 22-23 for more detail.

STEADy Identifies Census Tracts That May Be Eligible for One or More Geographically Defined Investment Tax Credit Adders for Solar



Energy
Communities



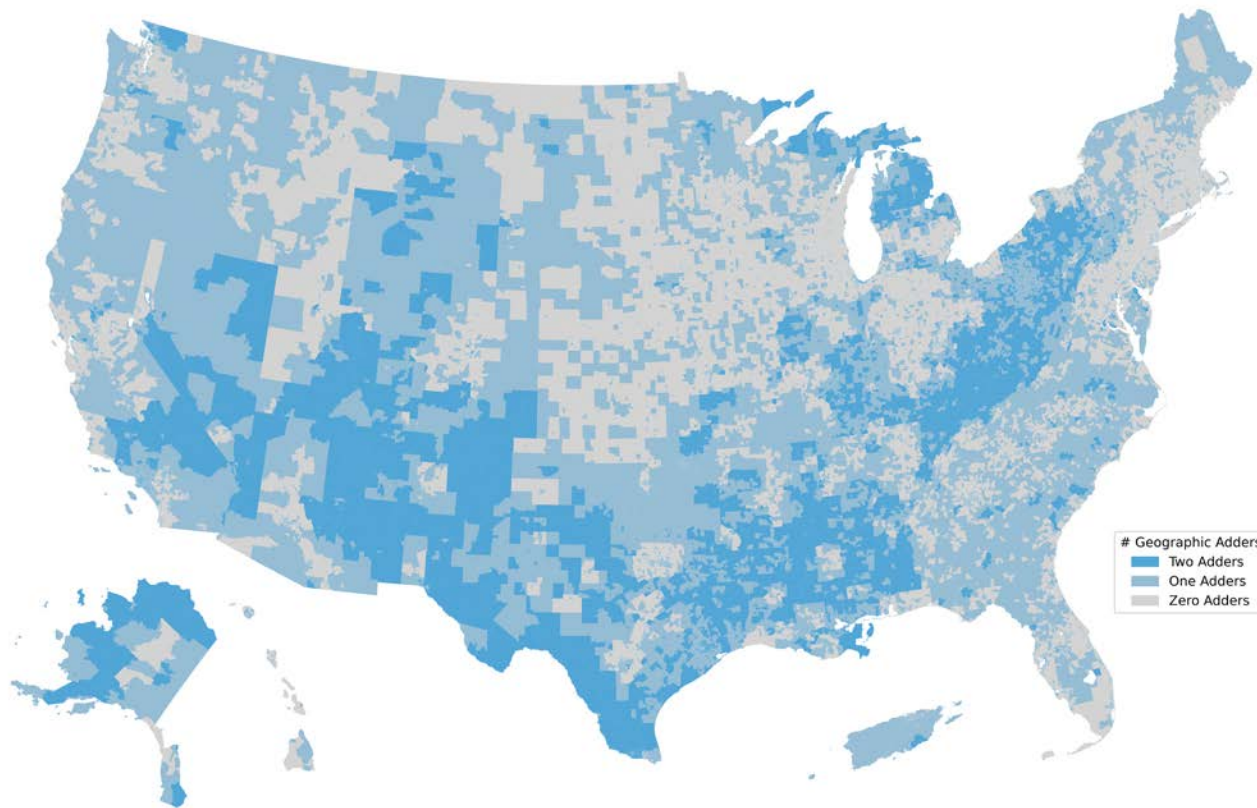
Low Income
Communities



Native
Reservation
and Trust Lands

Projects that are eligible for, apply for, and receive allocations for both of these geographic adders could receive a tax credit of up to 50%.

See Slides 6, 7 and 22–23 for more detail.

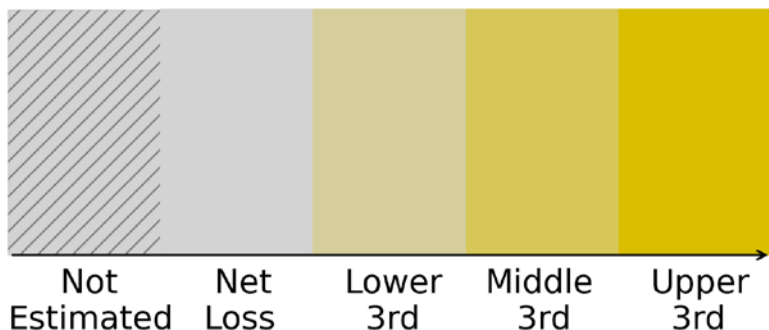


Solar Economic Potential in STEADy

STEADy incorporates outputs from NREL's Distributed Generation Market Demand ([dGen™](#)) model, which predicts the economic potential of commercial and residential rooftop solar.

- Economic calculations are based on the predominant utility rate for each customer class in each utility territory.
- Commercial electricity rates are typically demand-based rates and are lower (on a per-kWh basis) than residential rates.
- Residential rates are energy based and are typically higher on a per-kWh basis than commercial rates.
- Federal and state-level policy incentives are included in the dGen calculations and are primarily based on data available from the [Database of State Incentives for Renewables and Efficiency \(DSIRE\)](#).
- ITC bonus adders are NOT included in the dGen economic potential calculations. The availability of the adders is a separate data layer within STEADy.
- Financial assumptions are based on standard assumptions within the NREL [System Advisor Model™](#).
- Solar technology and cost assumptions within dGen are based on NREL's [2023 Electricity Annual Technology Baseline](#).
- Ground-mounted solar potential is not included in dGen.

Solar Economics (Net Present Value) in YELLOW



Estimated Solar Net Present Value

In the STEADy multidimensional legend:

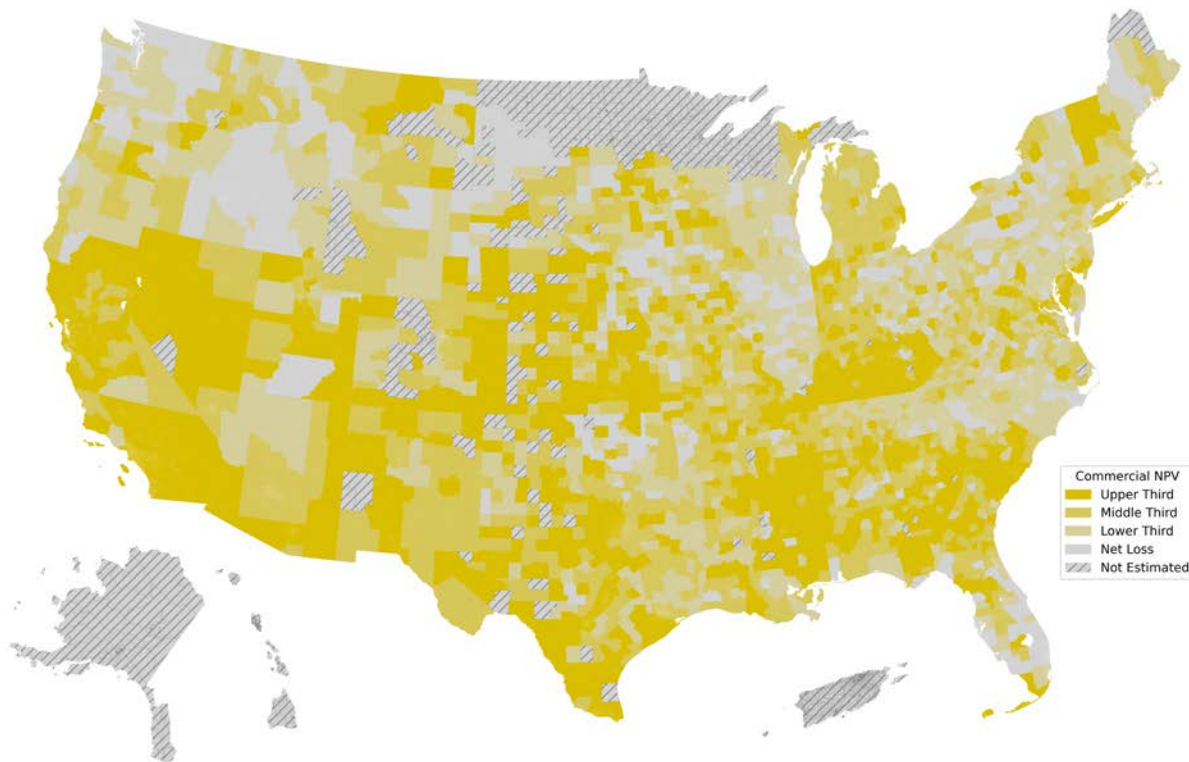
- **Darker yellow shading** indicates more positive solar economics (higher relative mean net present values (NPVs) in the county), according to modeling.
- Tracts shown in the **deepest yellow** have NPVs that rank in the top third in the country (i.e. 66.6th-99th percentiles of census tracts with positive NPV).
 - Note that positive NPV is shown as **relative to other tracts**
- Tracts with negative solar NPVs (net loss) are shown in **grey shading**.
- The NPVs of **grey-shaded and hashed (striped) areas** were not calculated by dGen due to a lack of data.
- NPV calculates are irrespective of ITC adder eligibility.

*Note: Solar economics data was calculated by the dGen model.
See Slides 9 and 25 for more detail.*

STEADy Users Can Explore the Economic Potential of Solar on Commercial Building Rooftops, Independent of Tax Credit Adders ...

Commercial Solar Net Present Value via dGEN

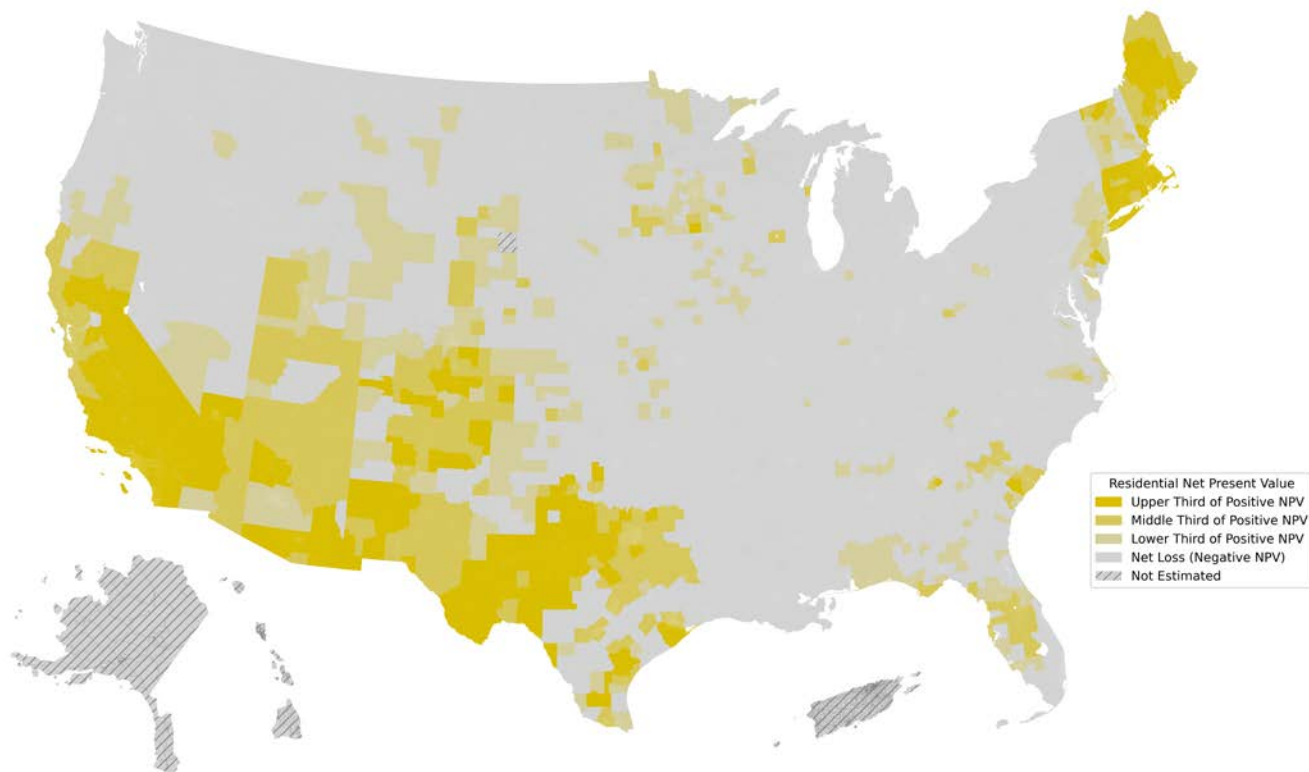
The net present value (NPV) of commercial solar is calculated at a county level for 2023 and is shown relative to other parts of the country. Hashed areas were not calculated due to a lack of building data. Grey areas had negative NPV calculations, indicating a projected net loss investment for new solar projects, not accounting for the Investment Tax Credit (ITC) bonus adders. Darker yellow shading indicates locations that have favorable NPV projections under the modeling assumptions, independent of ITC adders. See Slides 9, 10, and 25 for more information on the NPV calculations and assumptions.

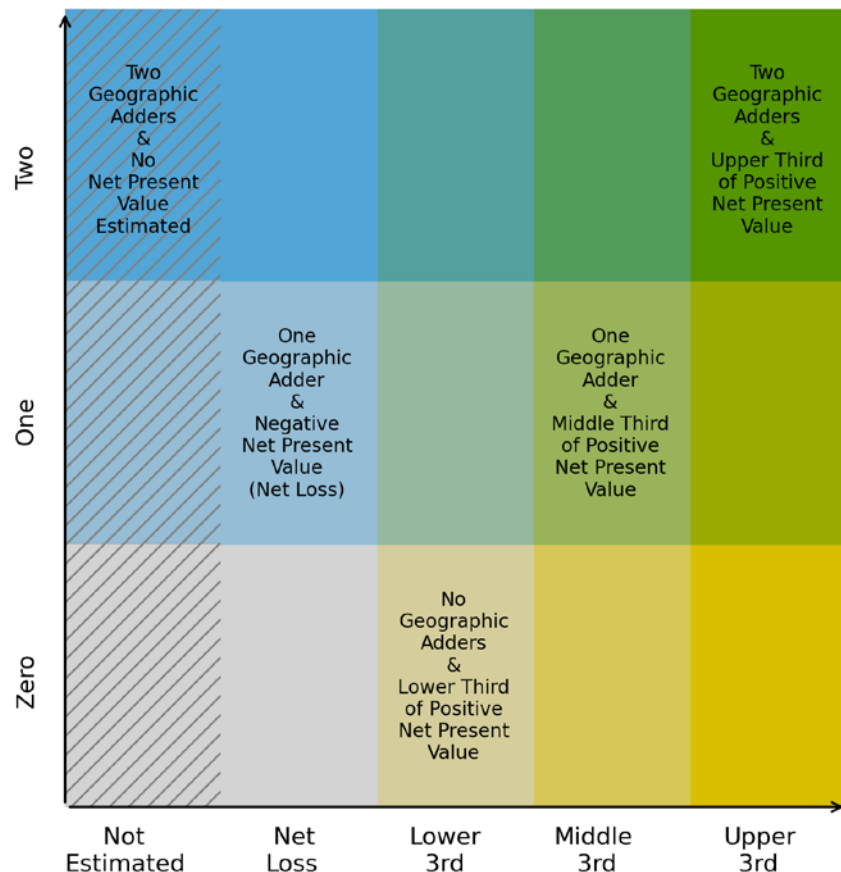


... And Residential Building Rooftops Independent of Tax Credit Adders

Residential Solar Net Present Value via dGEN

The net present value (NPV) of residential solar is calculated at a county level for 2023 and is shown relative to other parts of the country. Hashed areas were not calculated due to a lack of building data. Grey areas had negative NPV calculations, indicating a projected net loss investment for new solar projects, not accounting for the Investment Tax Credit (ITC) bonus adders. Darker yellow shading indicates locations that have favorable NPV projections under the modeling assumptions, independent of ITC adders. See Slides 9, 10, and 25 for more information on the NPV calculations and assumptions.





Estimated Solar Net Present Value

Combining our legends,
green shading indicates
 positive solar economics
 and
 ITC adder eligibility

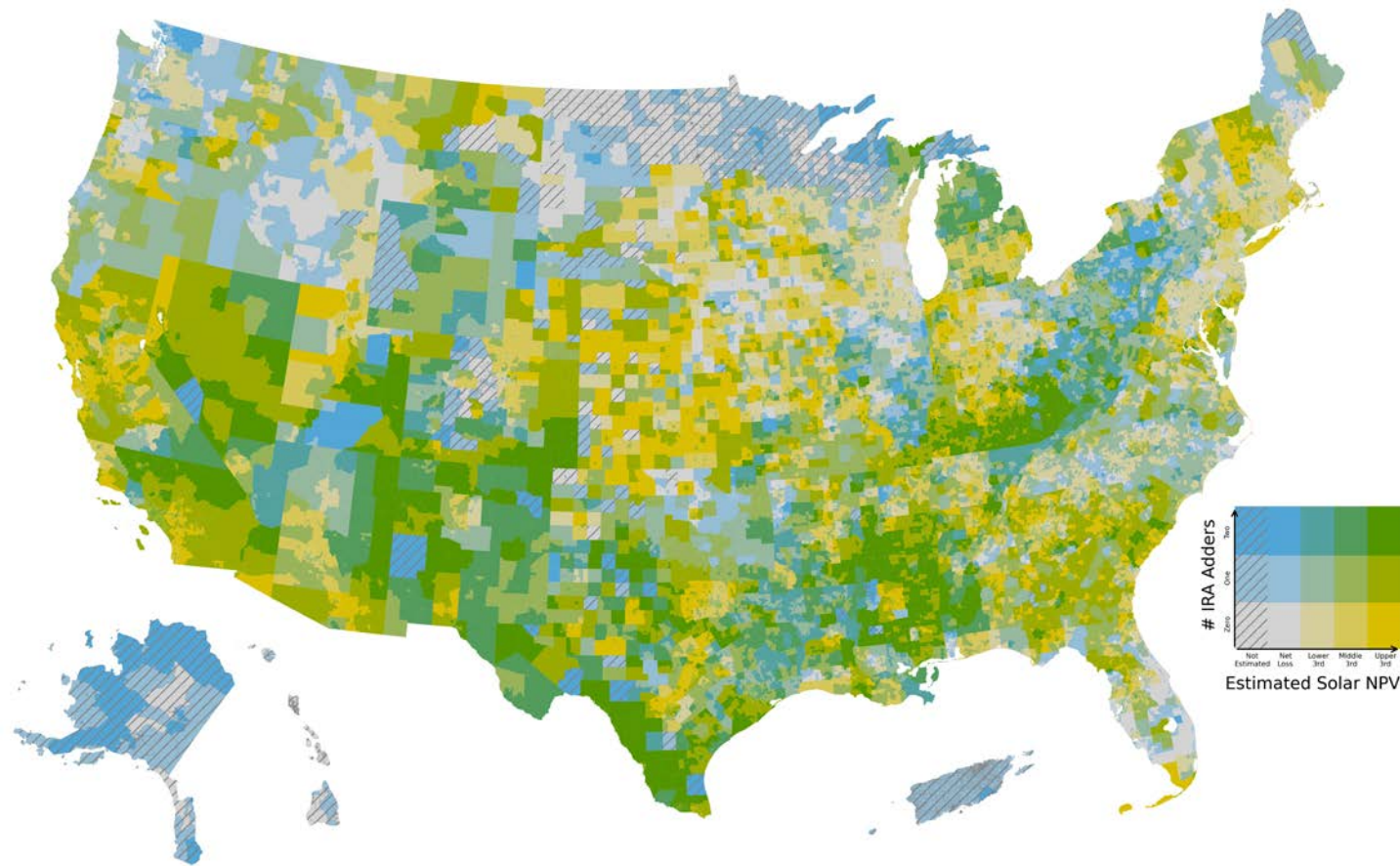
[Blue + Yellow = Green]

Tracts that are shown with **dark green shading**:

- Have solar economics (NPV) in the top third of the country
- and
- Are eligible for two geographic adders (are federally defined energy communities and low-income communities).

The data does *not* indicate where adders push the economics of solar from negative to positive NPV.

Commercial Solar Economic Potential and ITC Adder Eligibility

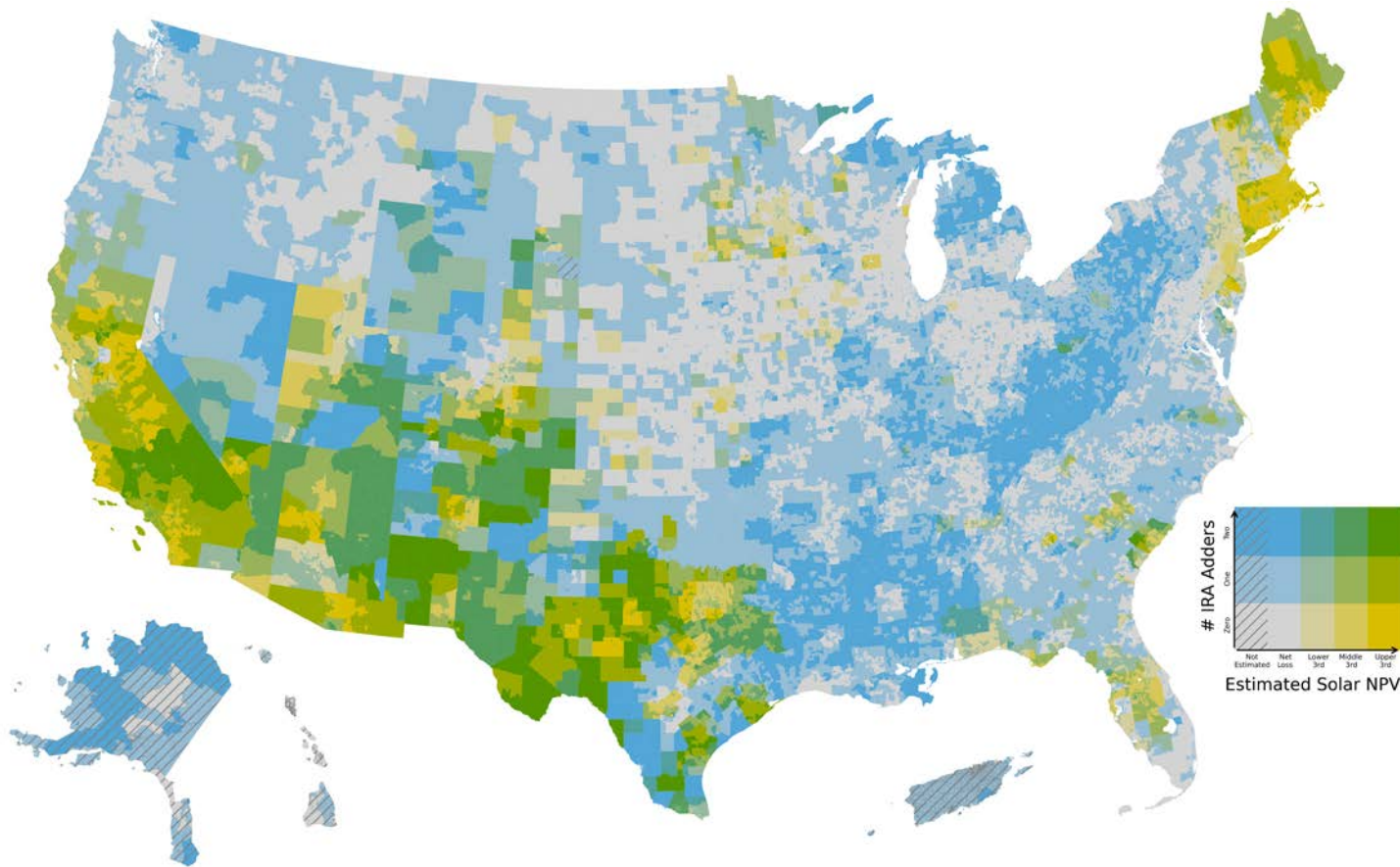


YELLOW areas have positive commercial solar economics (NPV).

BLUE areas may be eligible for one or two geographically defined ITC adders, further improving the economics for solar projects in those locations.

GREEN areas are census tracts where commercial solar projects have BOTH positive NPVs *and* are eligible for ITC adders.

Residential Solar Economic Potential and ITC Adder Eligibility



YELLOW areas have positive residential solar economics (NPV).

BLUE areas may be eligible for one or two geographically-defined ITC adders, further improving the economics for solar projects in those locations.

GREEN areas are census tracts where residential solar projects have BOTH positive NPVs *and* are eligible for ITC adders.

Building Counts and Estimated Solar Potential

The STEADy Solar data includes building counts by use type, alongside the total estimated rooftop solar capacity (kW) and annual production (kWh), for each census tract. Currently supported building types from the National Structures Inventory include:



*Government
General Services*



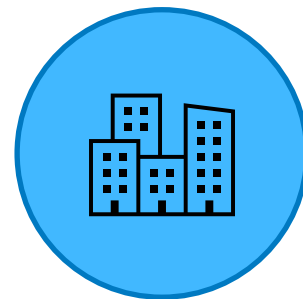
*Government
Emergency Response*



*Education
Grade Schools*



*Education
Colleges/Universities*



Low-Income Housing
**Solar Potential not
currently calculated*

Examples of How STEADy Solar Has Been Used

Stakeholder teams working with NREL through the Solar Energy Innovation Network have already used STEADy in the following ways:

- A community-based organization in Minnesota used the data to inform local minority-owned small businesses about potential cost-effective opportunities to install solar.
- A city government in Utah integrated the dataset into their own GIS tool set to identify and prioritize locations for solar on minority-owned businesses.
- A national nonprofit organization used the dataset to identify states and counties with BIPOC houses of worship that may have interest in collaborating to install solar.

STEADy was originally developed as part of technical assistance to teams participating in the [Solar Energy Innovation Network Round 3](#). STEADy Solar (version 2) contains the latest available data as of April 2024.

Need Assistance Using STEADy Solar?



Solar Energy Innovation Network staff help stakeholders apply the products that were developed during previous rounds of the program to their own contexts.

Contacts:

Isa.Ferrall-Wolf@nrel.gov

Joyce.McLaren@nrel.gov

Scott.Belding@nrel.gov



The National Community Solar Partnership provides no-cost assistance to stakeholders that are developing community solar projects. To apply for help using STEADy to deploy community solar, see:

<https://www.energy.gov/communitysolar/technical-assistance>

or contact:

community.solar@ee.doe.gov

STEADy Solar Database User Guide

The following slides describe the columns in the STEADy dataset and provide source links.

What Data Is Included in STEADy Solar?

- STEADy Solar provides a *snapshot* of census tract socio-demographics, solar economics, building counts, and other characteristics as of its release date (April 2024).
- Each row in the dataset represents a census tract (2023 vintage) in the United States (defined as 50 states, D.C., and Puerto Rico).
- Columns in the dataset represent the different census tract characteristics, including solar economics, ITC adders, demographics, etc.
- The STEADy Solar dataset is downloadable in .csv format from [NREL's Data Catalog](#).

The following slides describe each column within the STEADy dataset and provide the original source of the data. All data included in STEADy is publicly available.

Geographic Identifier (GEOID)

Description: One column representing the unique GEOID of each census tract

- Geographic identifiers, or GEOIDs, are numeric codes that identify different geographic entities for use by the Census Bureau and other state and federal agencies.
- The 11-digit GEOIDs represented here identify census tracts.
 - The first two digits represent the state.
 - The next three digits represent the county.
 - And the final six digits represent the tract.
- This dataset uses the 2023 vintages of census tracts from the U.S. Census TIGER/Line Shapefiles FTP Archive
 - TIGER = Topologically Integrated Geographic Encoding and Referencing system
 - FTP = File Transfer Protocol client

Source: <https://www2.census.gov/geo/tiger/TIGER2023/TRACT/>

Inflation Reduction Act – Energy Community Tax Credit Bonus

Description: One column representing the percent of tract area located in an energy community

- This column uses official shapefiles provided by the Interagency Working Group on Coal and Power Plant Communities and Economic Revitalization for:
 - Metropolitan Statistical Areas and Non-Metropolitan Statistical Areas that meet the Fossil Fuel Employment Threshold (0.17%) and the unemployment requirements, and
 - Coal Closure Energy Communities (tracts and directly adjoining tracts that have had coal mine closures since 1999 or coal-fired electric generating unit retirements since 2009).
- This column calculates the percent area of the census tract located within either of the above eligibility paths.
- This column does not include brownfield locations, which confer another potentially qualifying path.
- Files last updated May 31, 2023.

Source: <https://edx.netl.doe.gov/dataset/ira-energy-community-data-layers>

Inflation Reduction Act – Low-Income Communities Bonus

Description: Three columns representing:

- Percent of tract area in a low-income community (needed for Category 1 applicants)
 - Percent of tract area on American Indian/Alaska Native/Native Hawaiian areas (one eligibility pathway for Category 2 applicants)
 - Percent of tract area meeting additional geographic selection criteria (Prioritized for Category 1, 3, and 4 applicants)
-
- Two columns use official shapefiles provided by DOE's Low-Income Community Bonus Credit Program for:
 - Census tracts that meet the threshold for “low income” established by the New Market Tax Credit Program (NMTC) within the Treasury’s Community Development Financial Institutions (CDFI) Fund. Eligible projects in these areas can apply to Category 1 of the Tax Credit Bonus Program. This considers both 2015 and 2020 eligibility files.
 - Census tracts that meet Geographic Additional Selection Criteria. Eligible projects in these areas can apply to allocation carve-outs in the Tax Credit Bonus Program for Categories 1, 3, and 4. These include meeting the:
 - Threshold in the White House's Climate and Economic Justice Screening Tool for disadvantage in the “Energy” category (last updated November 2022), or
 - The USDA's threshold for persistent poverty (last updated December 2023).
 - One column uses nonprogrammatic shapefiles from the U.S. Census Bureau for current, national, American Indian, Alaska Native, and Native Hawaiian Areas. Physical location on reservation or trust land is one of several ways that eligible projects can apply for Category 2 of the Tax Credit Program.
 - These columns calculate the percent area of the census tract located within either of the above eligibility paths.
 - See <https://www.energy.gov/justice/low-income-communities-bonus-credit-program> for full eligibility and application guidelines.

Sources: <https://data.nrel.gov/submissions/222>, <https://catalog.data.gov/dataset/tiger-line-shapefile-current-nation-u-s-american-indian-alaska-native-native-hawaiian-areas-ai>

Disadvantaged Communities - CEJST

Description: One column representing the percent of tract area categorized as disadvantaged under Justice40 by the Climate and Economic Justice Screening Tool (CEJST)

- This column uses official shapefiles provided by the White House's CEJST. CEJST designates certain census tracts (across all 50 states, D.C., and U.S. territories) as “disadvantaged” for the Justice40 Initiative.
- Communities are considered disadvantaged if:
 - They are in census tracts that meet the thresholds for at least one of the tool's eight categories of burden (climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development), or
 - They are on land within the boundaries of Federally Recognized Tribes.
- Projects in disadvantaged communities under Justice40 may be eligible for additional funding opportunities through the Justice40 Initiative, the Bipartisan Infrastructure Law (BIL), and the Inflation Reduction Act (IRA).
- This column calculates the percent area of the census tract designated as “disadvantaged.”
- Source files were last updated November 2022.

Source: <https://screeningtool.geoplatform.gov/>

Solar Economics

Description: Four columns representing the mean values for the county for:

- Residential solar NPV
 - Residential solar payback period
 - Commercial solar NPV
 - Commercial solar payback period
-
- [NREL's dGen](#) model calculates mean net present value (NPV, in USD) and mean payback period (in years) for both commercial and residential rooftop solar. Payback periods are limited to a maximum of 30.1 years. The resolution is at a county level.
 - dGen's calculations are based on marginal electricity costs from NREL's Regional Energy Deployment System ([ReEDS™](#)), solar technology cost assumptions from the [2023 Electricity Annual Technology Baseline](#), and other financial assumptions in line with those documented in the solar model of NREL's [System Advisor Model](#).
 - The NPV and payback period values in STEADy are the same as the mid/reference case for NREL's [2023 Standard Scenarios](#).
 - The ITC was assumed to be 30% for residential and commercial solar projects. Other state incentives, as indicated in the [DSIRE](#) database, were also assumed to apply, as appropriate.

Sources: <https://www.nrel.gov/docs/fy24osti/87724.pdf>, <https://scenarioviewer.nrel.gov/>

Census Demographics

Description: Nine columns representing:

- The total population
- Percent of the population that is Hispanic, non-Hispanic (NH) white, NH Black, NH Asian, NH Native, and NH other
- Median household income
- Tenure (% owner-occupied households)

- All census demographics are downloaded from the U.S. Census Bureau's portal for all census tracts in the United States, using the American Community Survey's 5-Year Estimates Detailed Tables for 2022 (the most recent available year at the time of analysis).
- Population, race, and ethnicity estimates are sourced from Table B03002.
- Median household income in the past 12 months (in 2022 inflation-adjusted dollars) is sourced from Table B19013.
- Tenure (% owner-occupied households) is sourced from Table B25003.

Source: <https://data.census.gov/>

Low-Income Multifamily Housing Projects

Description: One column representing the number of U.S. Department of Housing and Urban Development (HUD) subsidized multifamily housing properties

- This dataset denotes HUD subsidized multifamily housing properties, excluding insured hospitals with active loans.
- HUD's multifamily housing property portfolio consists primarily of rental housing properties with five or more dwelling units, such as apartments or townhouses, but can also include nursing homes, hospitals, elderly housing, mobile home parks, retirement service centers, and occasionally vacant land.
- The three largest assistance programs for multifamily housing are Section 8 – Project Based Assistance, Section 202 – Supportive Housing for the Elderly, and Section 811 – Supportive Housing for Persons with Disabilities.
- These properties (among others) may be eligible for the 20% tax credit adder through the Low-Income Communities Bonus Credit Program under Category 3, as described [here](#).

Source: https://hudgis-hud.opendata.arcgis.com/datasets/f4721da932a94b218bdb5a861fd7429e_13/explore?location=39.738876%2C-105.021683%2C11.74

Counts of Building Types and Estimated Technical Solar Capacity

Description: For each chosen building type, three columns representing:

1. The number of buildings of that type in the tract
2. The total (sum) of developable rooftop solar capacity (kWdc)
3. The total (sum) of annual energy production (kWh)

Chosen building types include:

- Government – general services
- Government – emergency response
- Grade schools
- Colleges/universities

- Counts of different building types from the National Structures Inventory (NSI) and the total estimated solar capacity and production calculated by the Renewable Energy Potential (reV) model
 - The [NSI](#) is a system of databases containing structure inventories of varying quality and spatial coverage. The purpose of the NSI databases is to facilitate storage and sharing of point-based structure inventories used in the assessment and analysis of natural hazards. Temporary and mobile dwellings were omitted from consideration (2022).
 - Capacity factors were calculated using the [reV](#) model for resource year 2020 assuming configurations for a roof-mounted unifacial PV array with monocrystalline modules and an efficiency of 20.8%. Capacity density was assumed to be 183 W/m^2 , which is most representative of residential behind-the-meter systems. Nonresidential arrays may be recalculated using 180 W/m^2 capacity density with the same ground cover ratio (0.7) to account for slightly larger panels with slightly lower efficiency.

Sources: <https://www.hec.usace.army.mil/confluence/nsi/technicalreferences/2022/technical-documentation>, <https://www.nrel.gov/docs/fy16osti/65298.pdf>

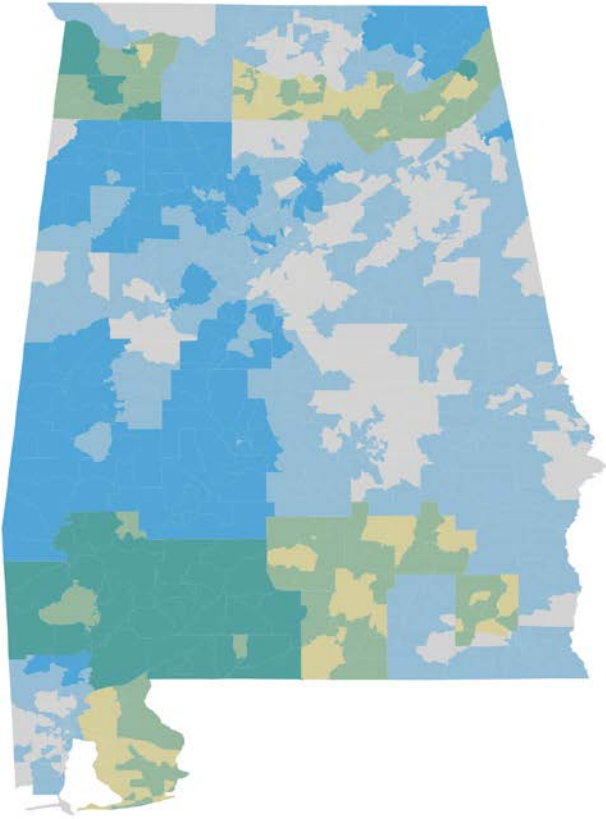
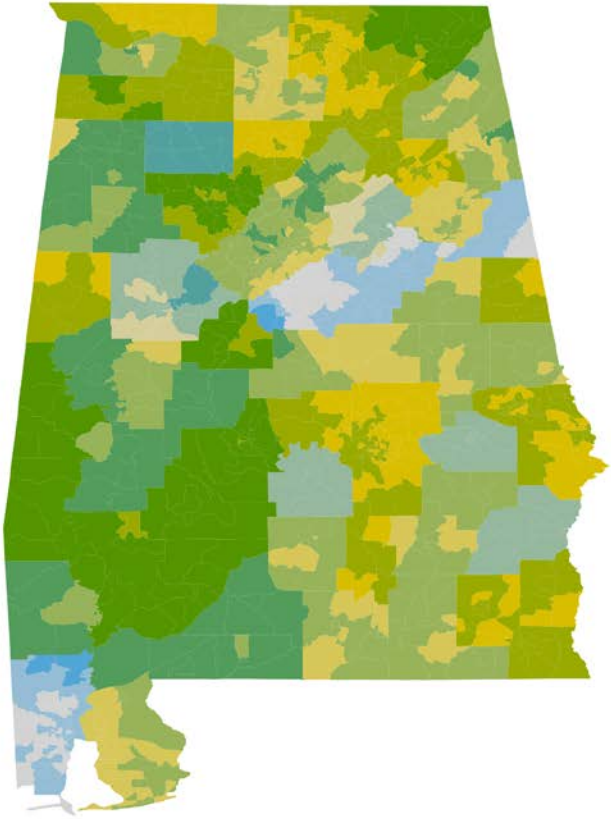
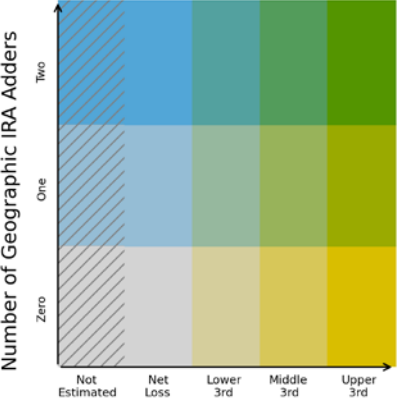
State-by-State Maps

Indicating Census Tracts

Alabama

Commercial

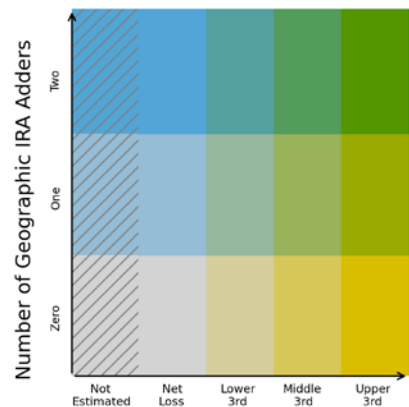
Residential



Alaska

Commercial

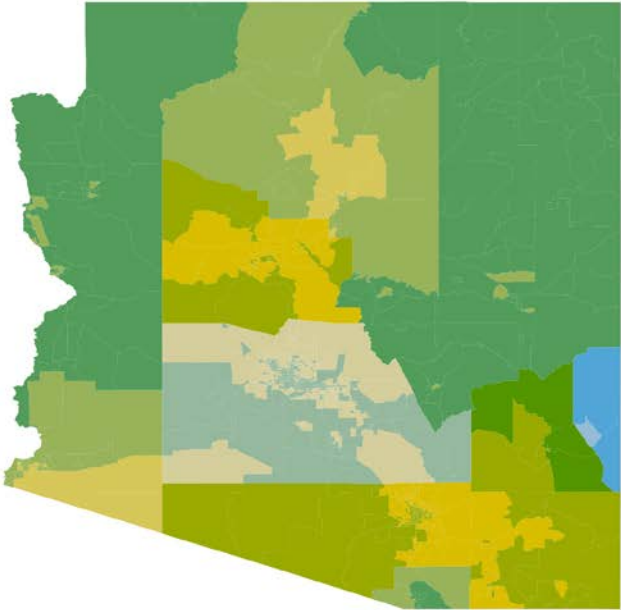
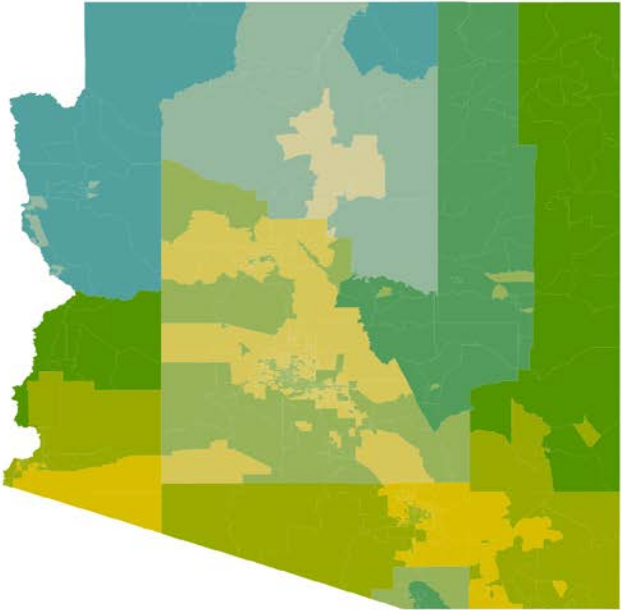
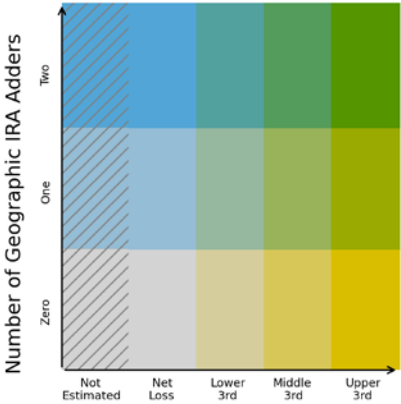
Residential



Arizona

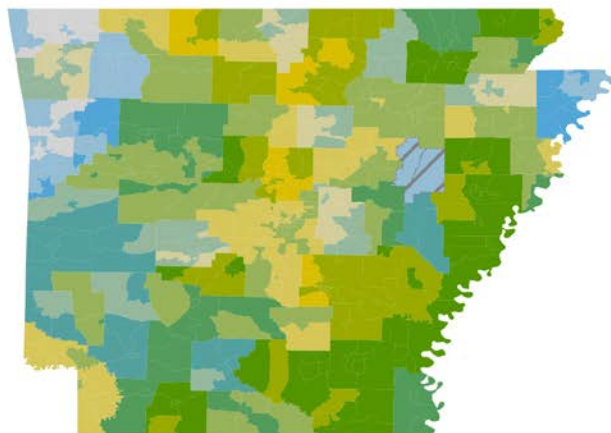
Commercial

Residential

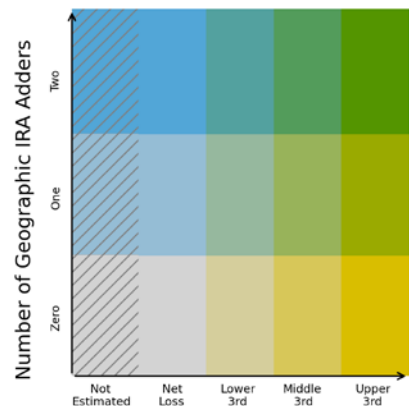
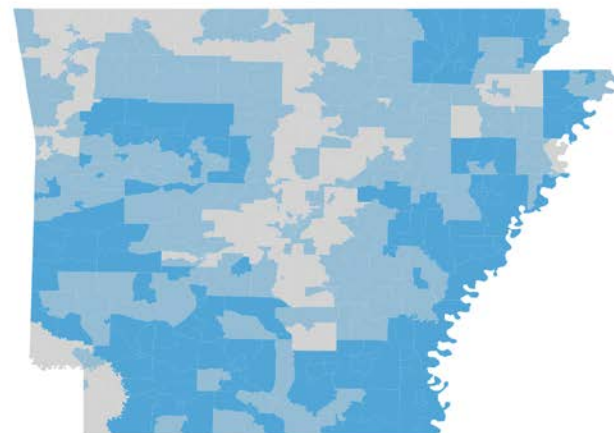


Arkansas

Commercial

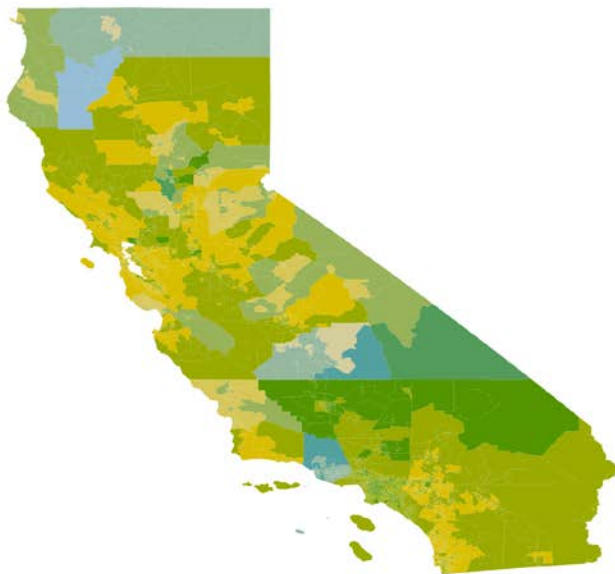


Residential

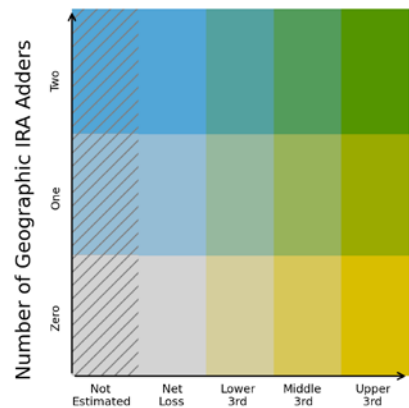
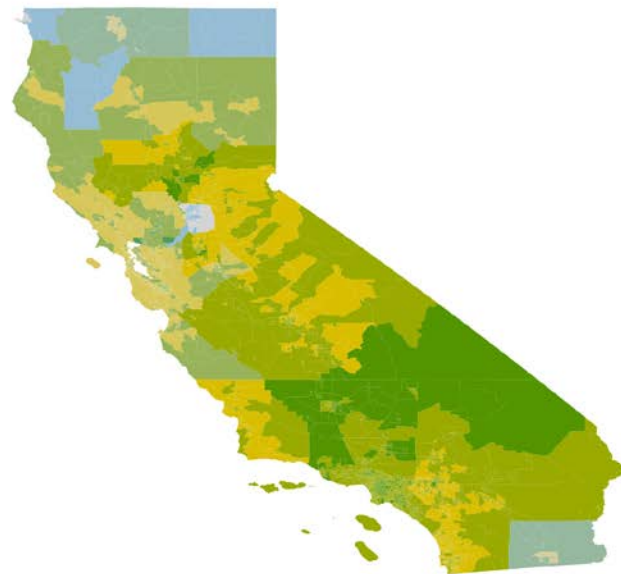


California

Commercial

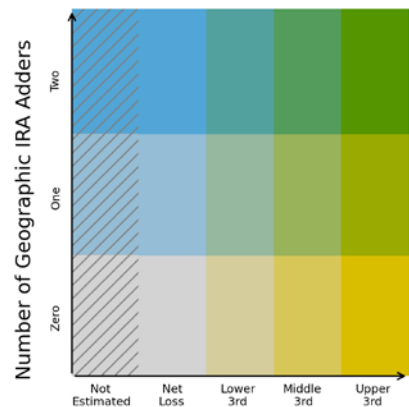


Residential

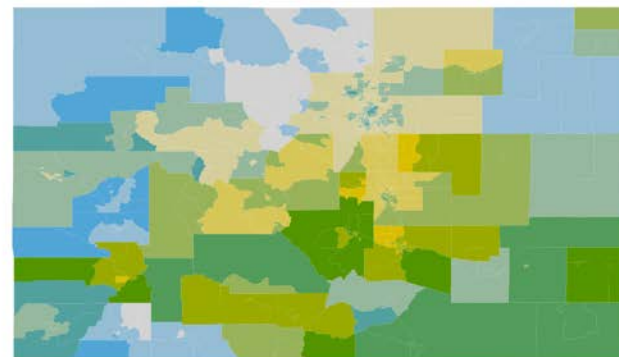


Colorado

Commercial



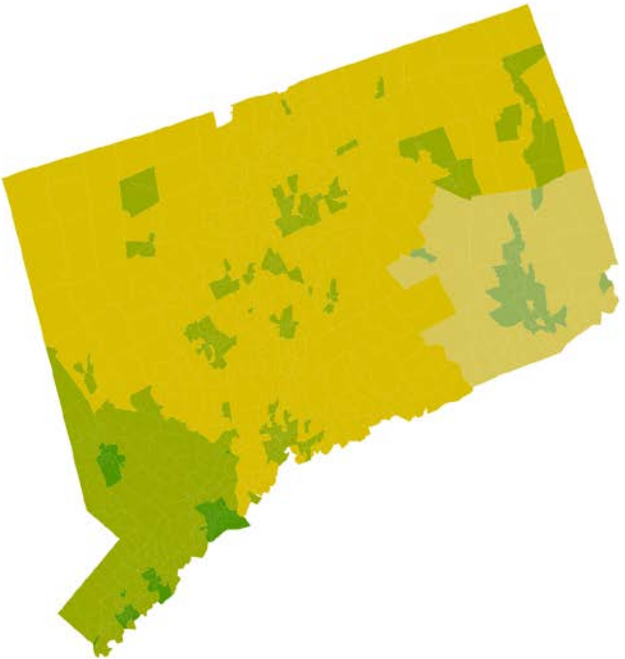
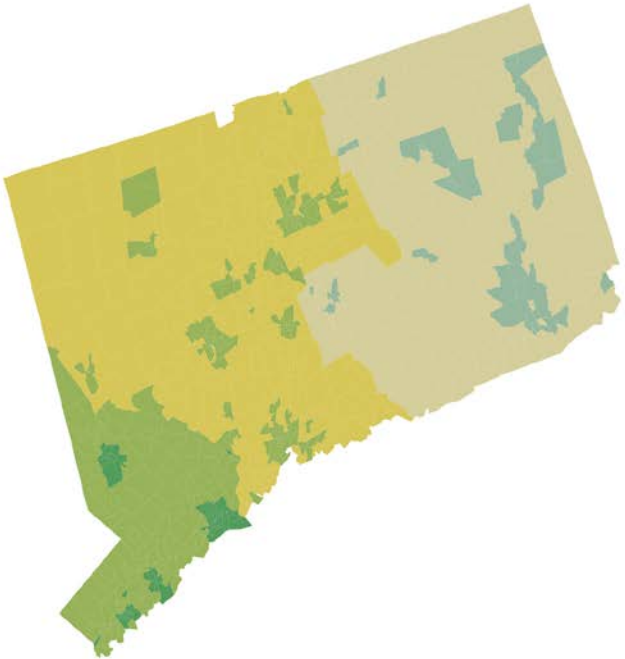
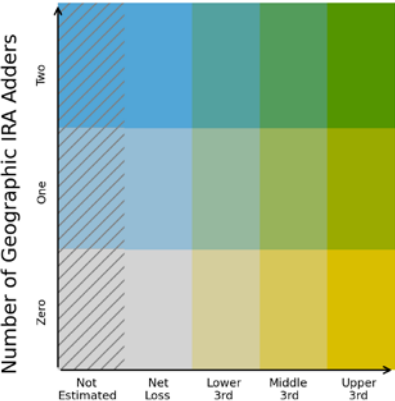
Residential



Connecticut

Commercial

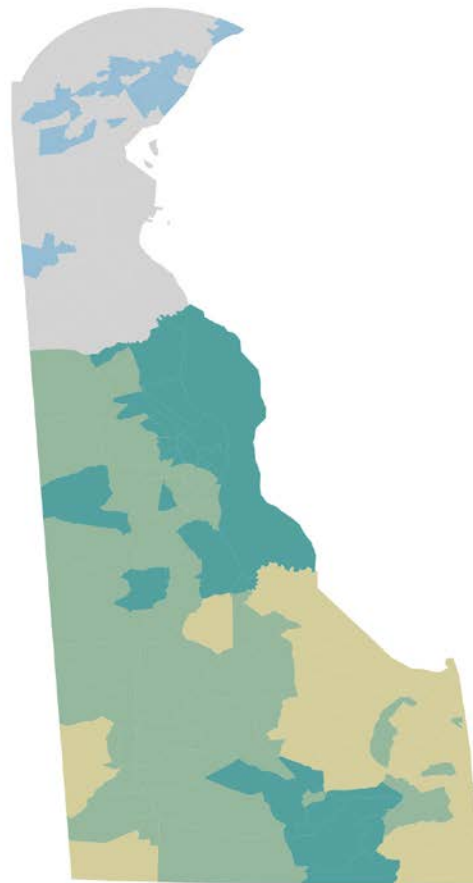
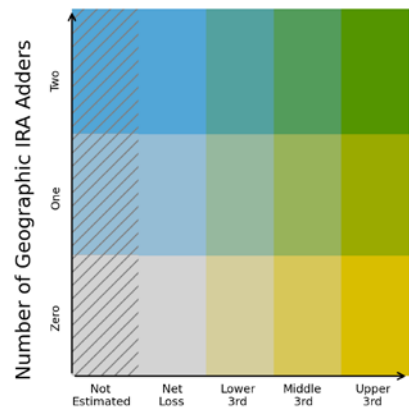
Residential



Delaware

Commercial

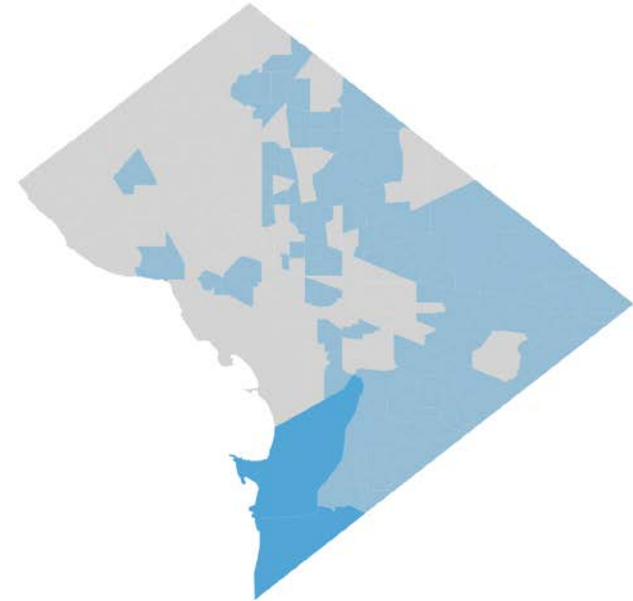
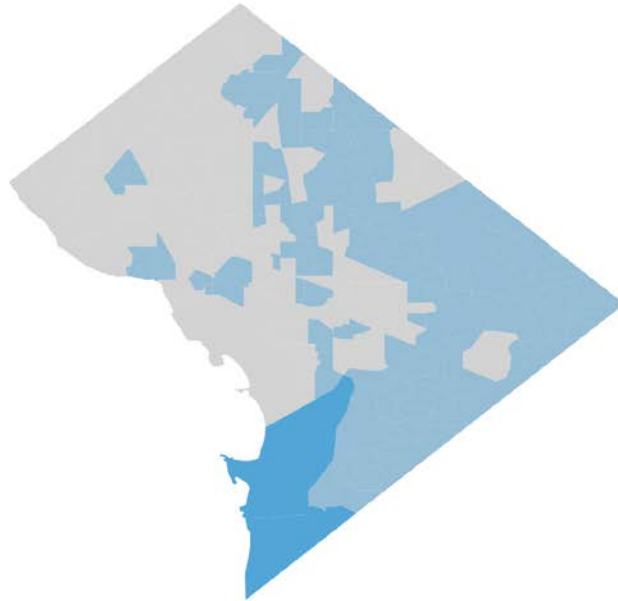
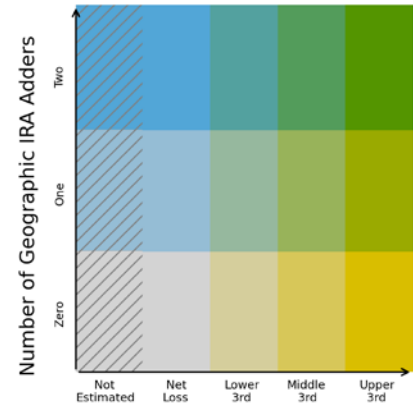
Residential



District of Columbia

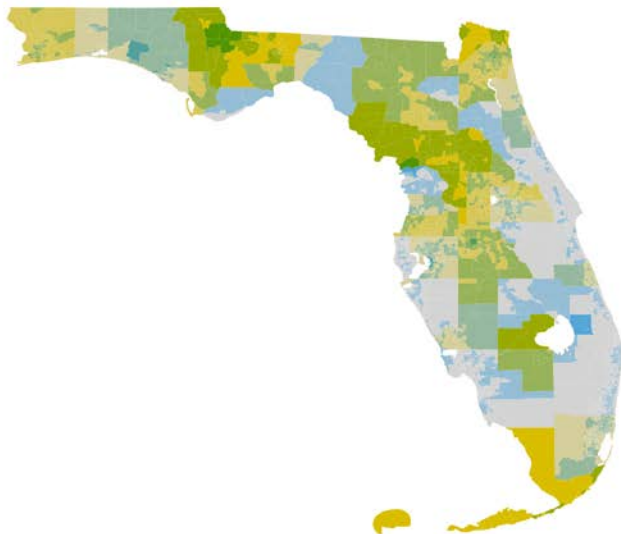
Commercial

Residential

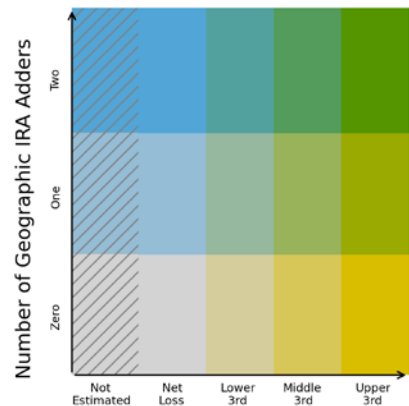
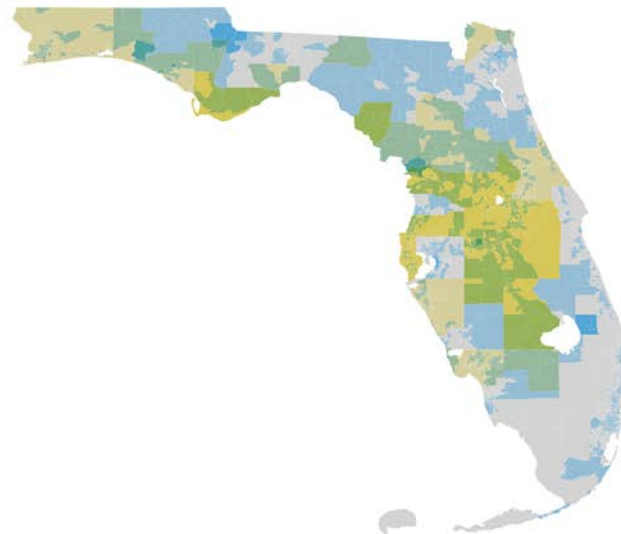


Florida

Commercial

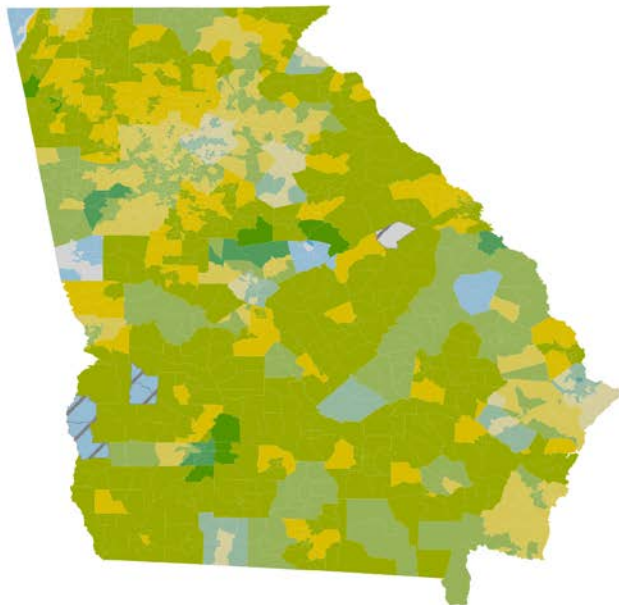


Residential

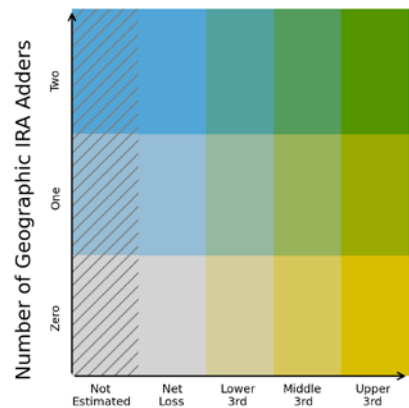
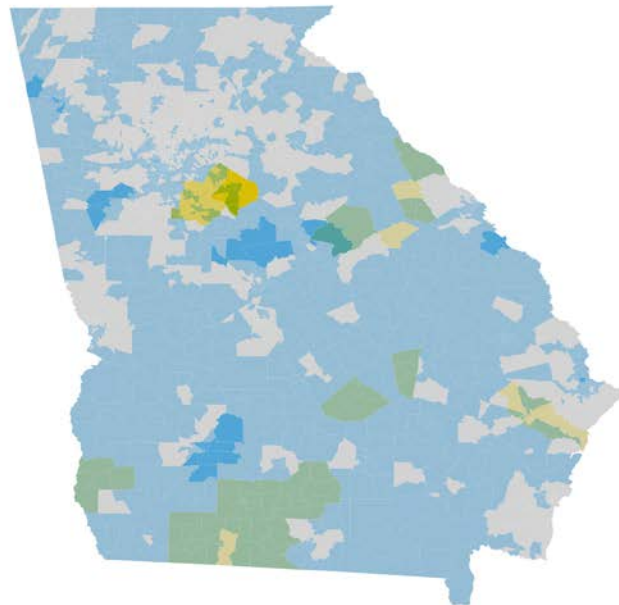


Georgia

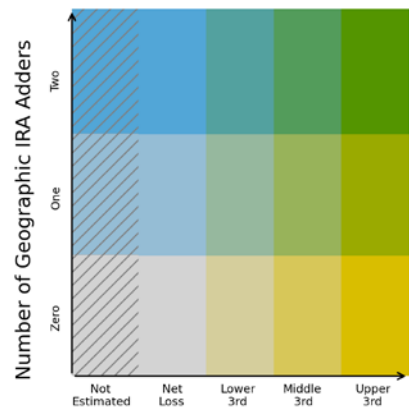
Commercial



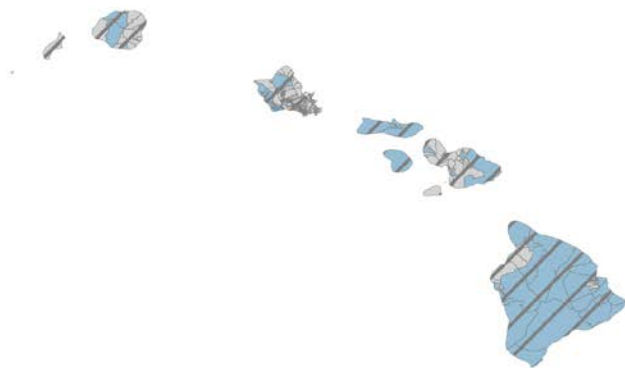
Residential



Hawaii



Commercial



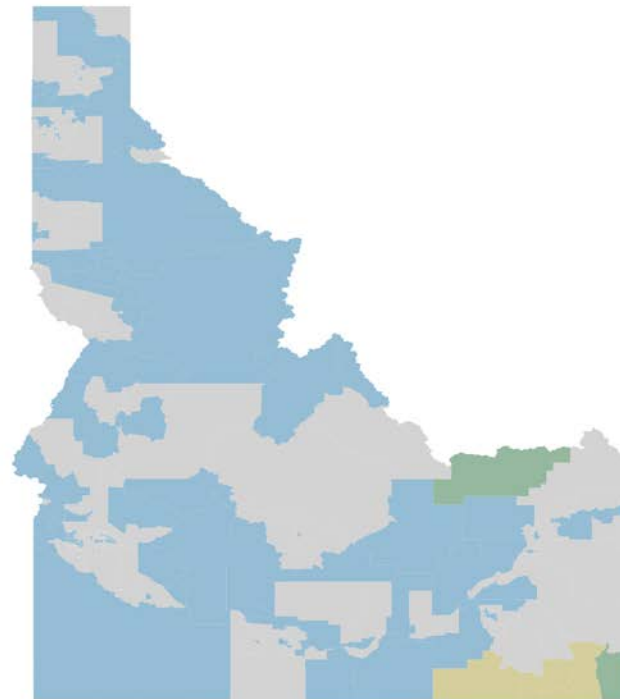
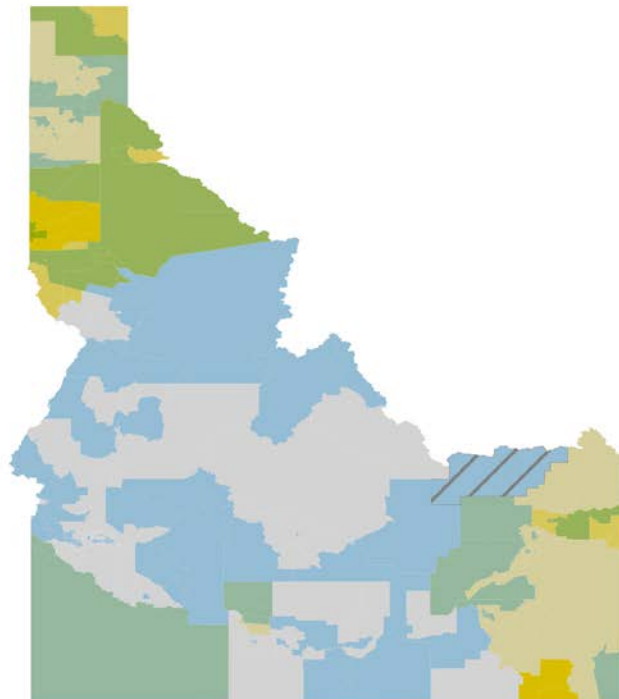
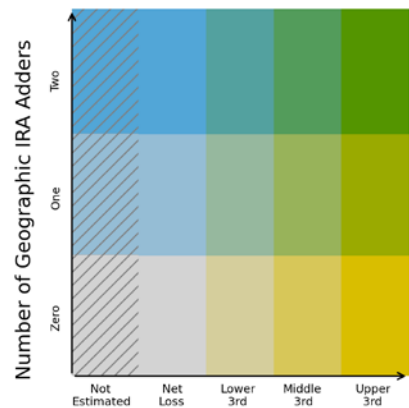
Residential



Idaho

Commercial

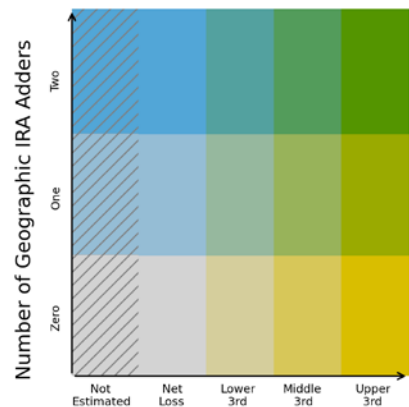
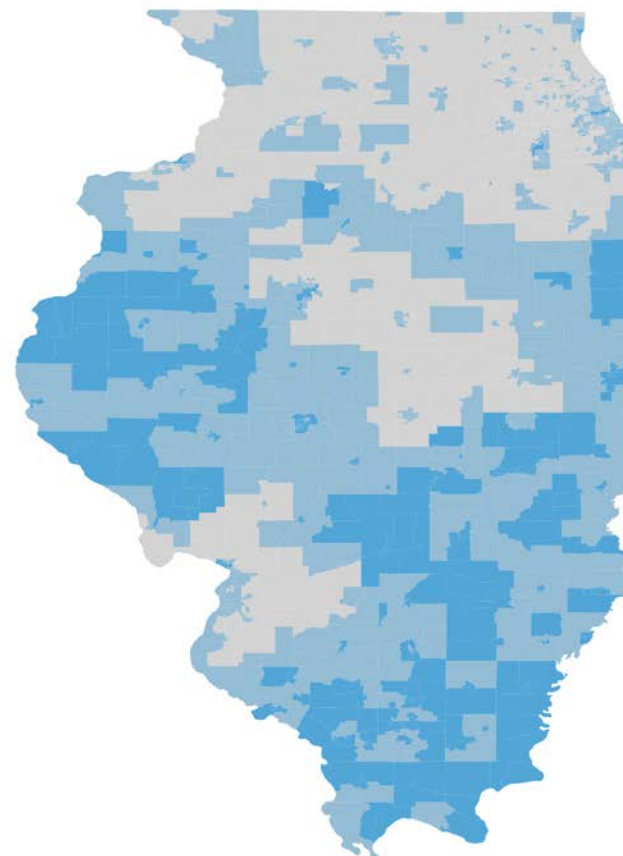
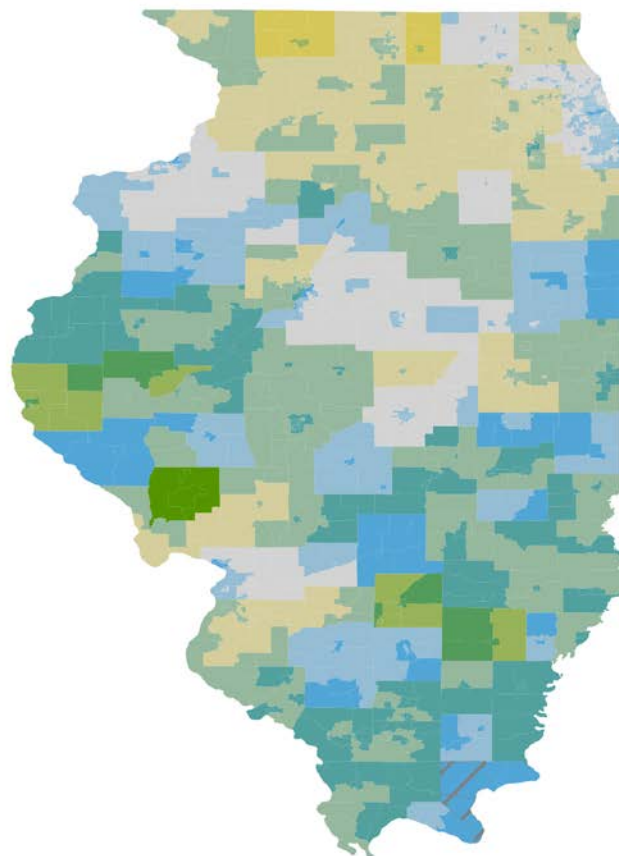
Residential



Illinois

Commercial

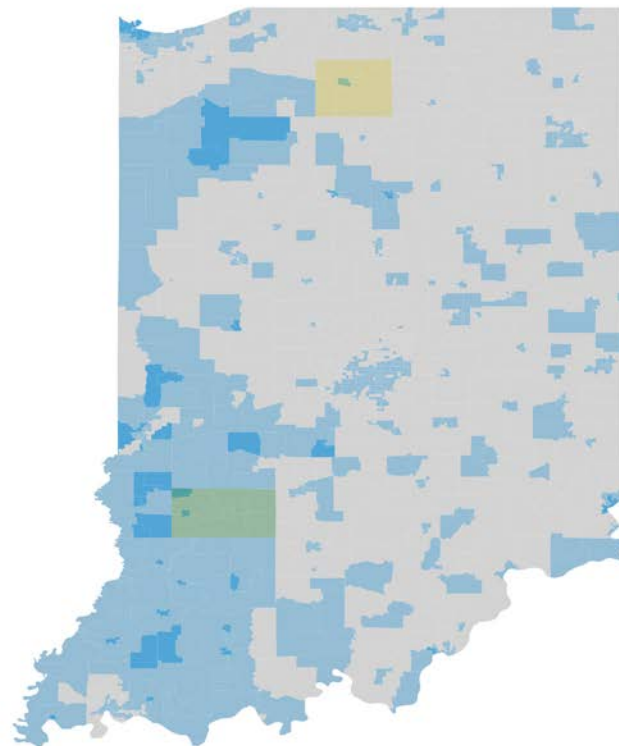
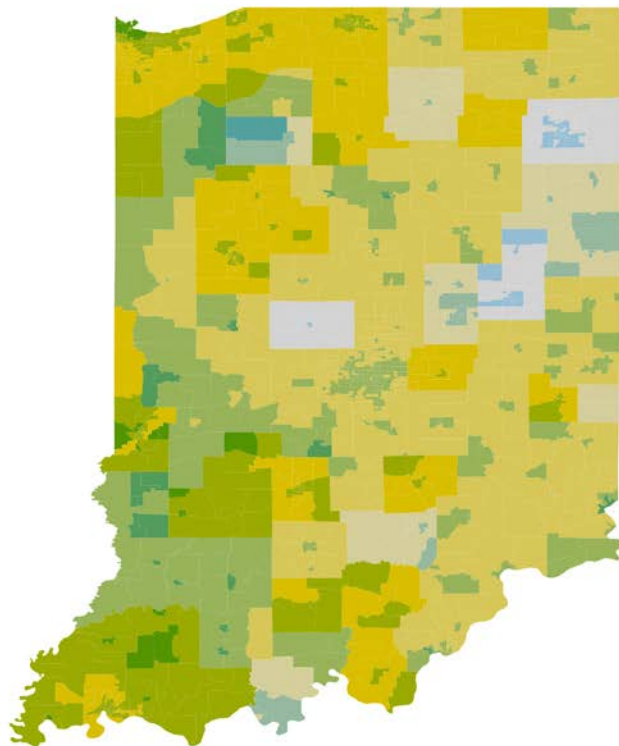
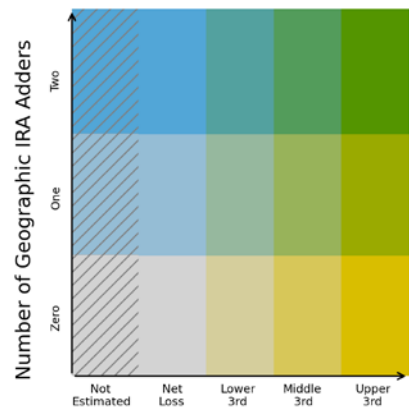
Residential



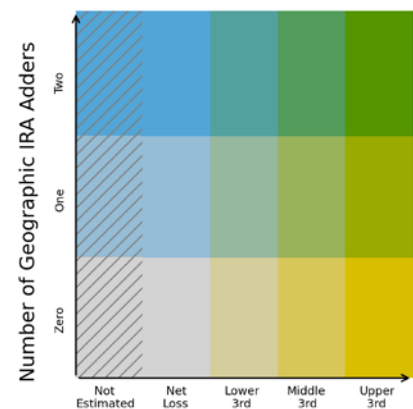
Indiana

Commercial

Residential



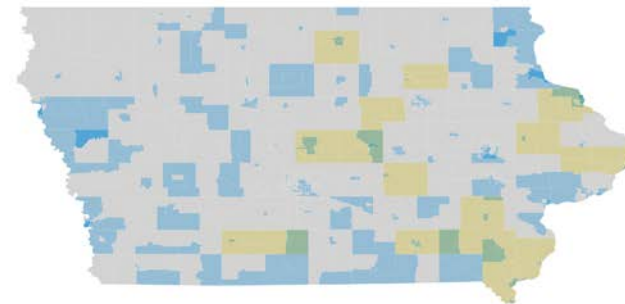
Iowa



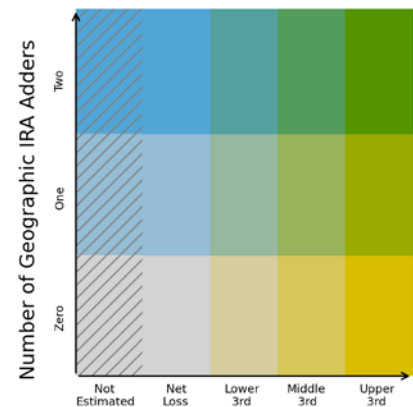
Commercial



Residential



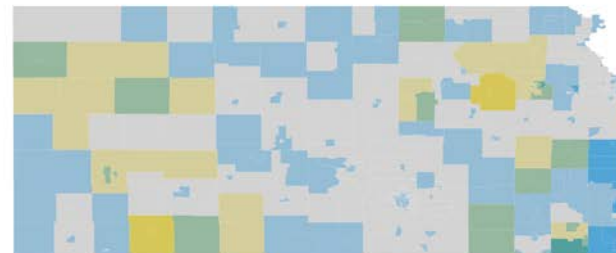
Kansas



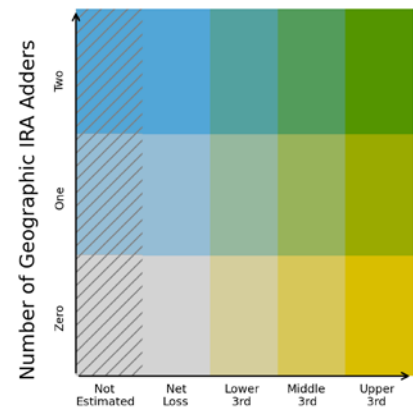
Commercial



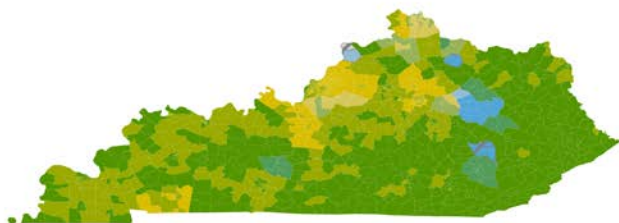
Residential



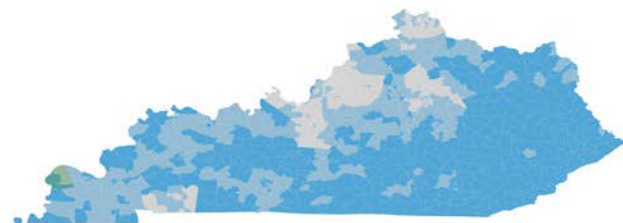
Kentucky



Commercial

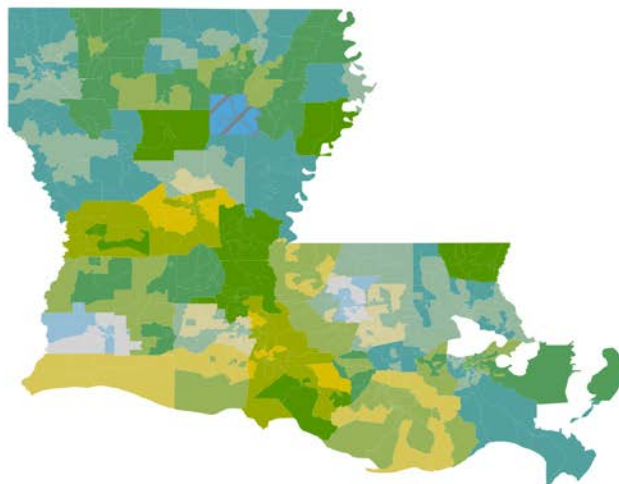


Residential

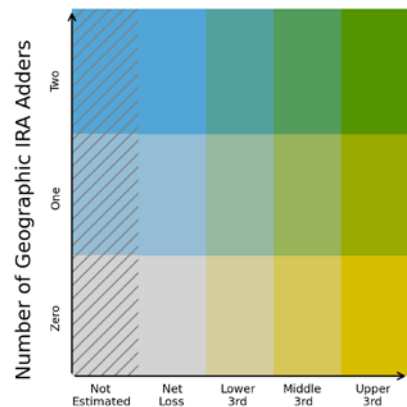
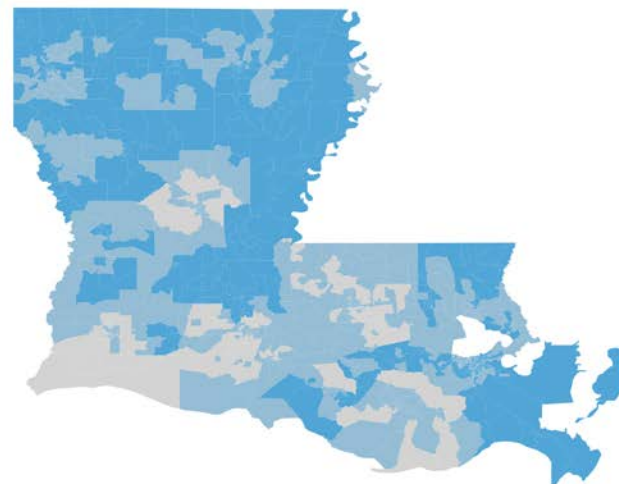


Louisiana

Commercial



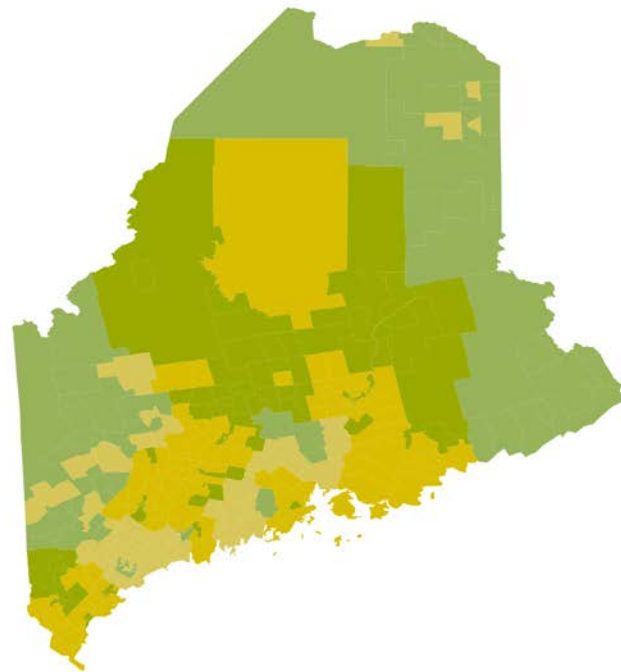
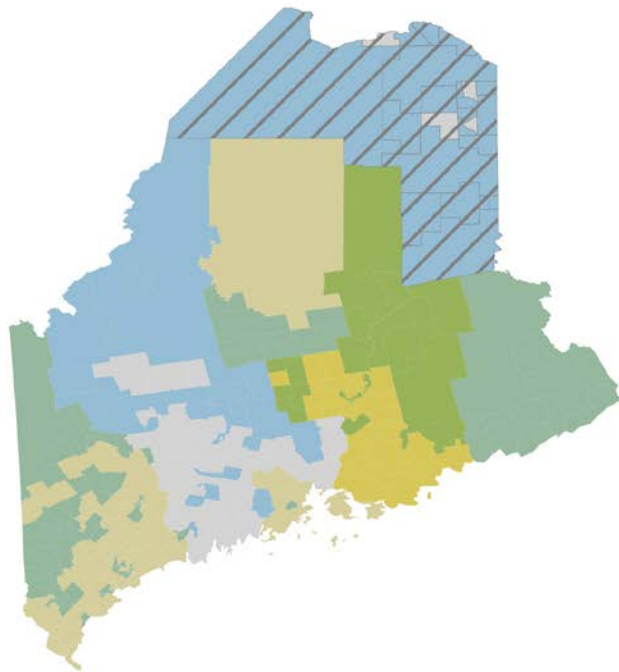
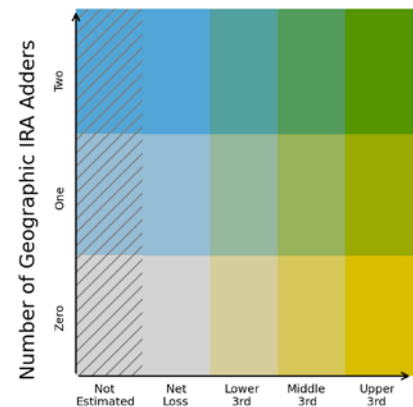
Residential



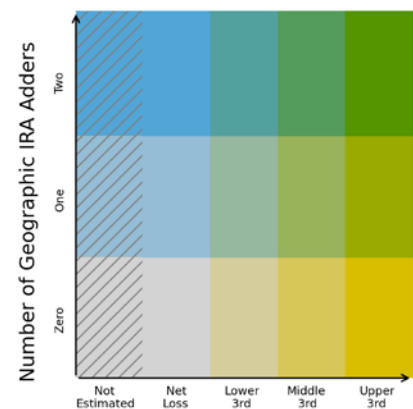
Maine

Commercial

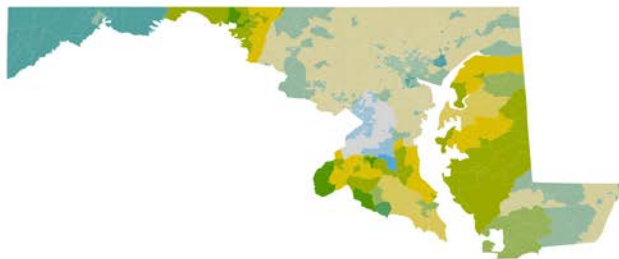
Residential



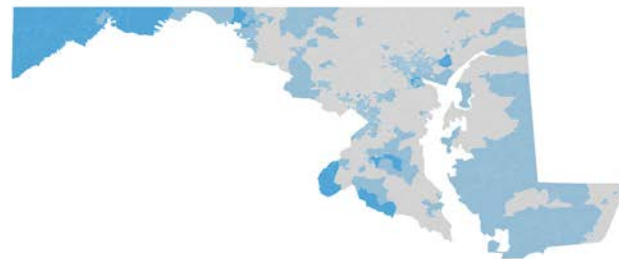
Maryland



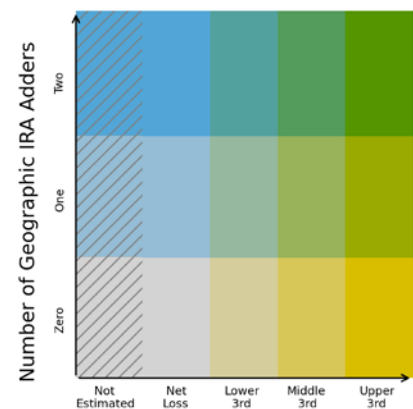
Commercial



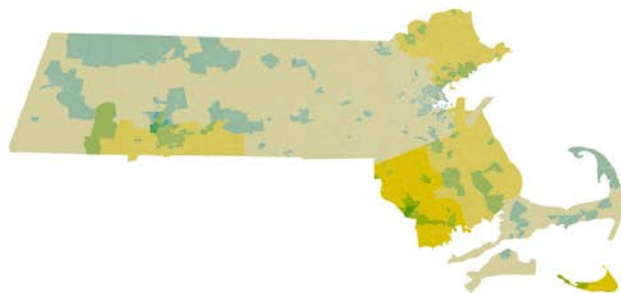
Residential



Massachusetts



Commercial

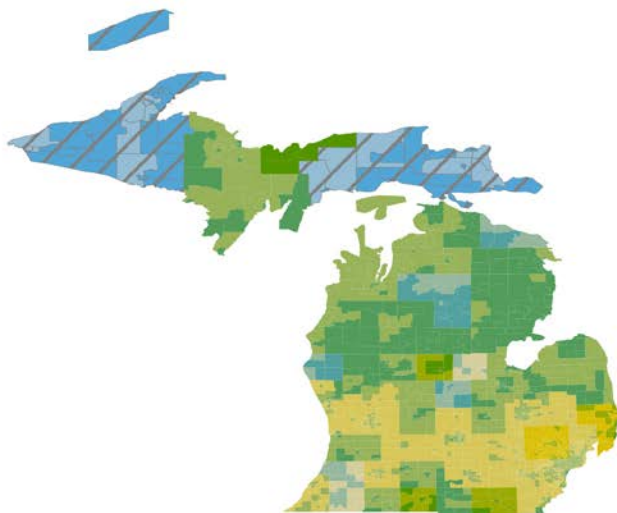


Residential

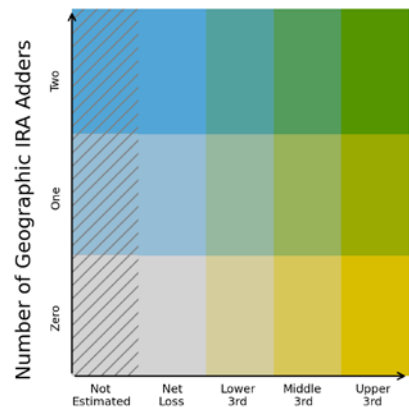
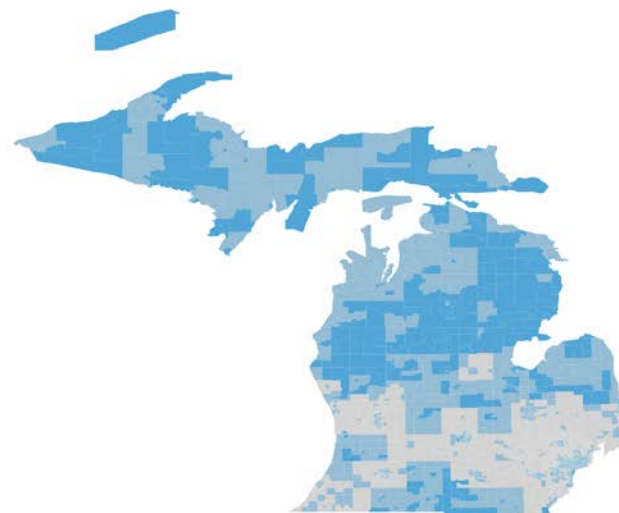


Michigan

Commercial

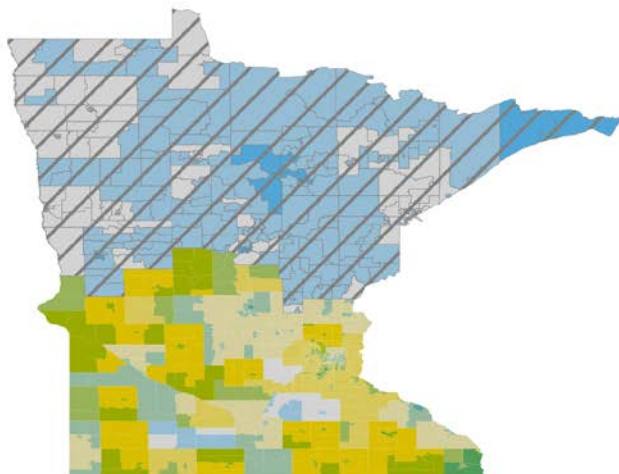


Residential

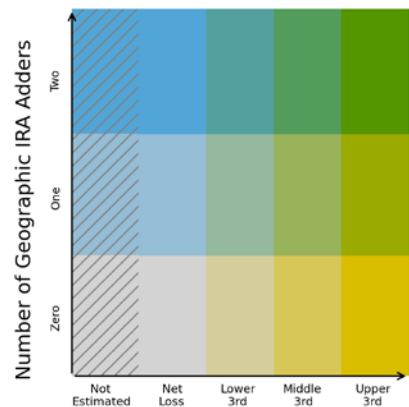
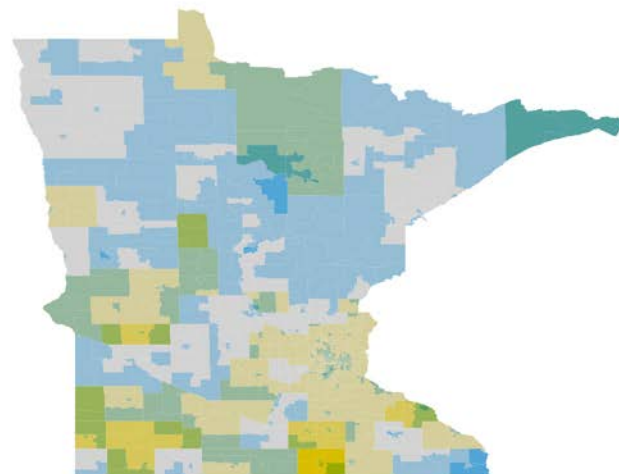


Minnesota

Commercial

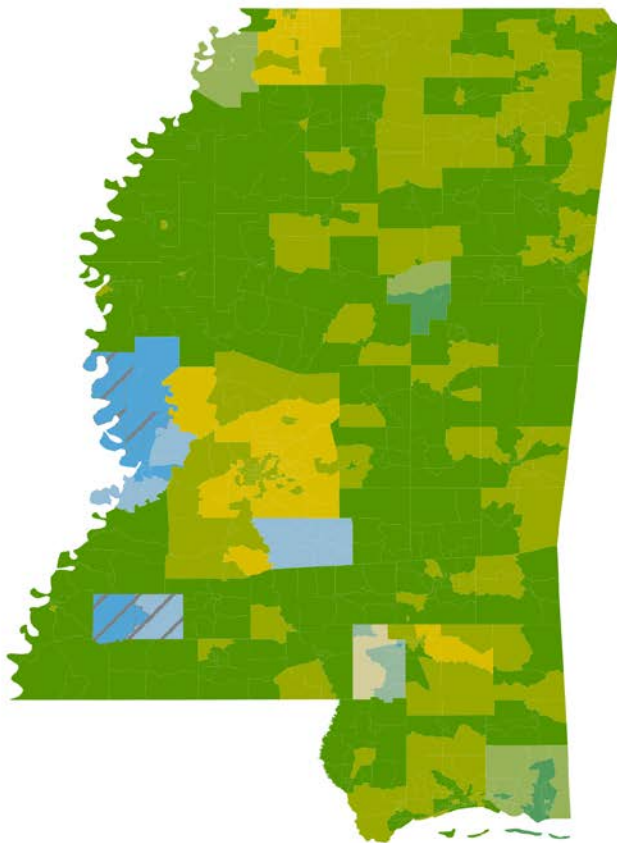


Residential

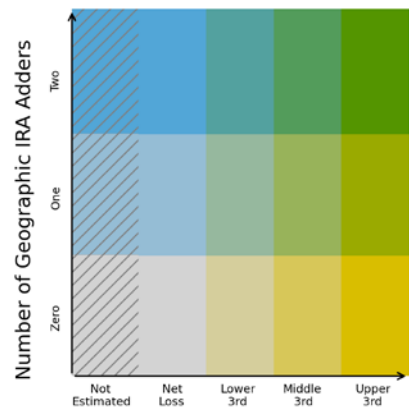
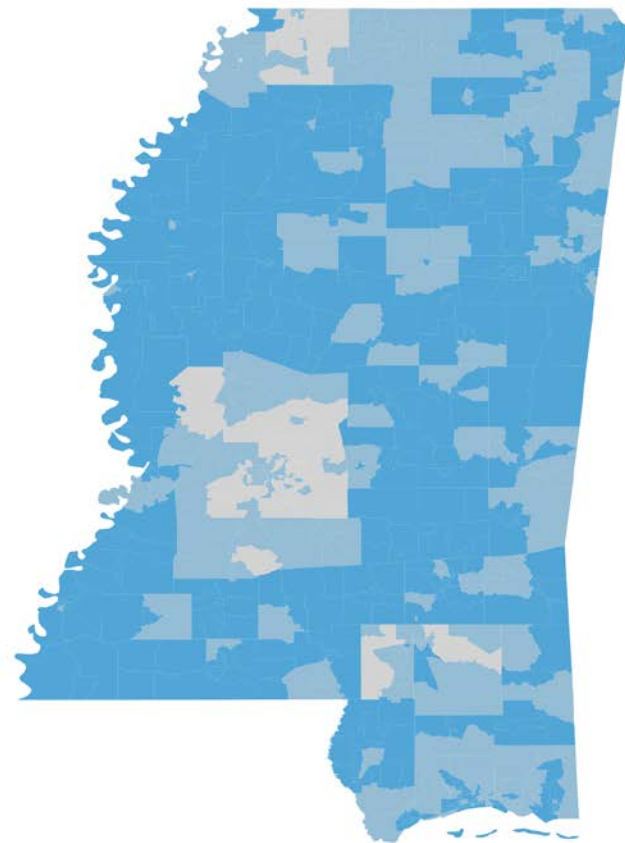


Mississippi

Commercial

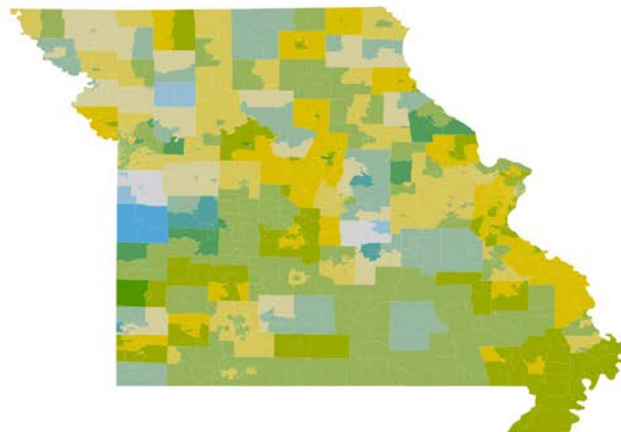


Residential

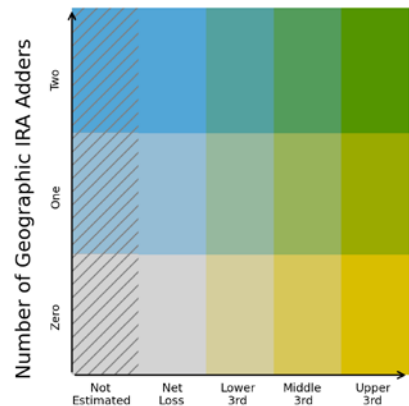
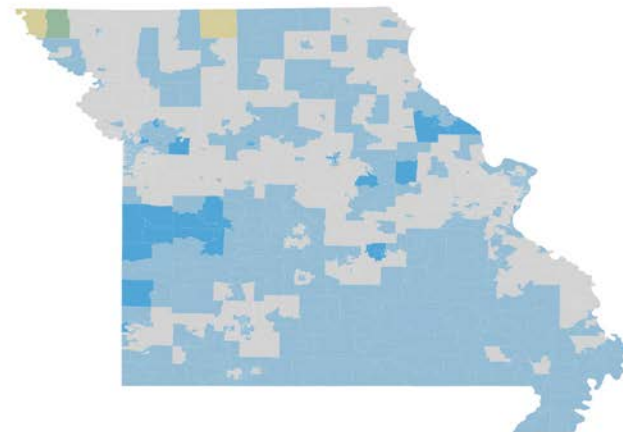


Missouri

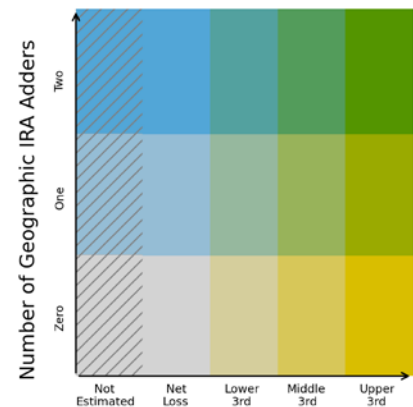
Commercial



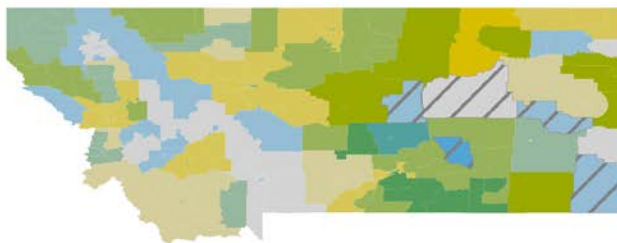
Residential



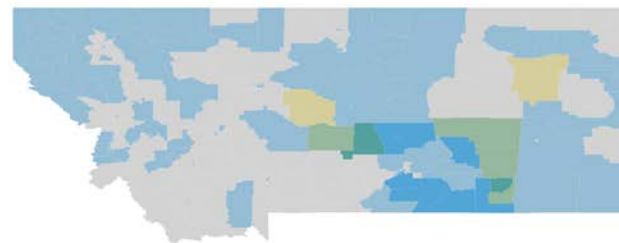
Montana



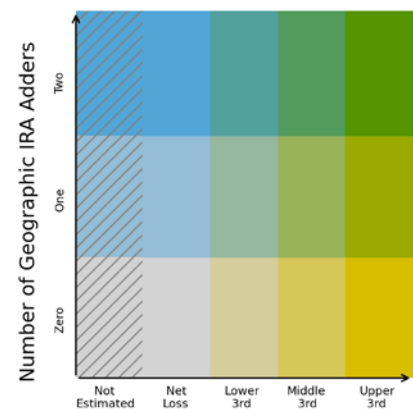
Commercial



Residential



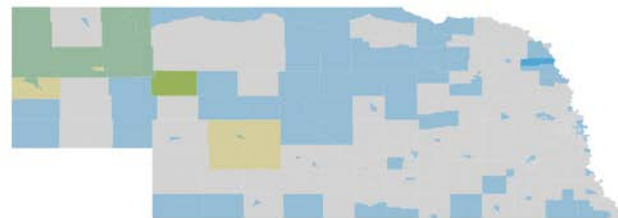
Nebraska



Commercial



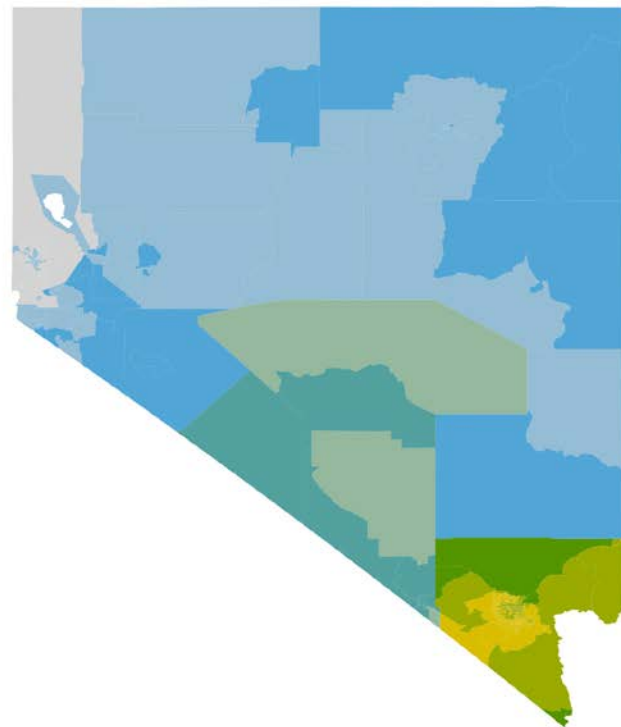
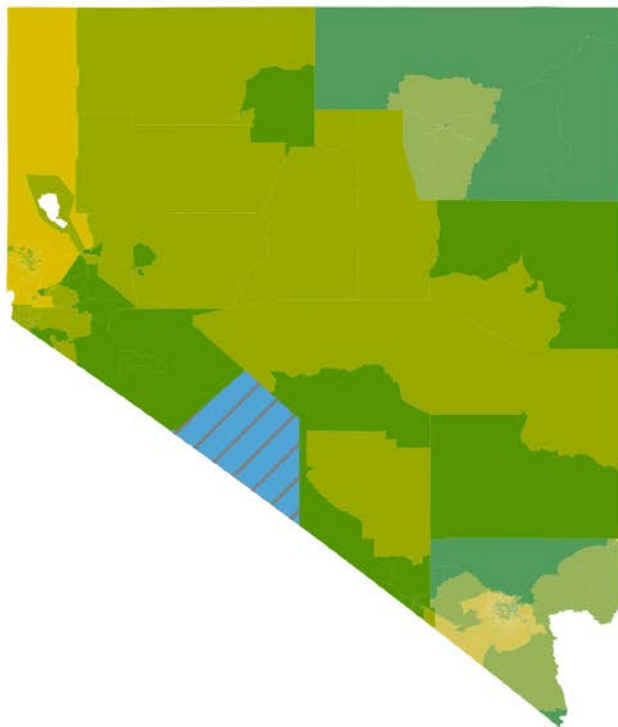
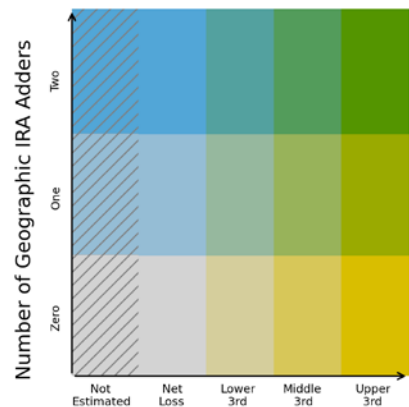
Residential



Nevada

Commercial

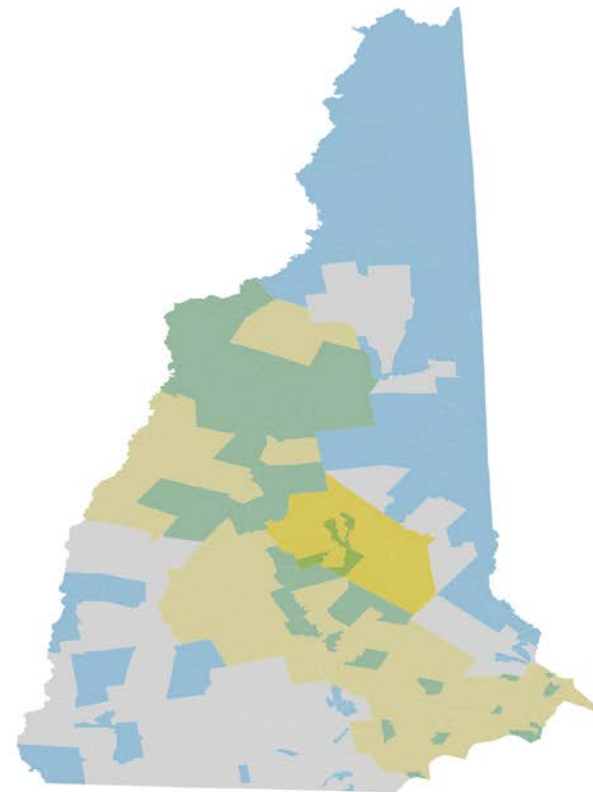
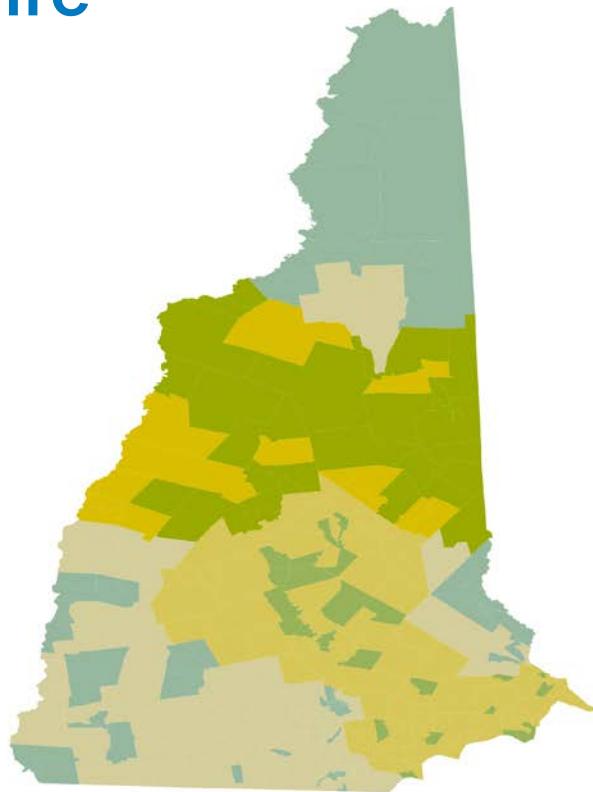
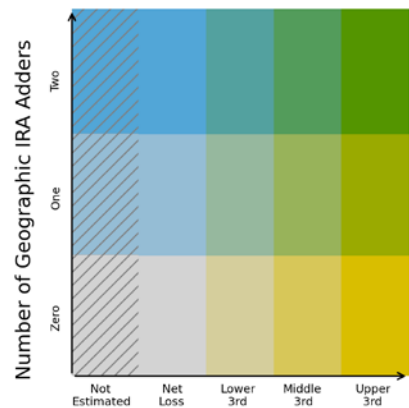
Residential



New Hampshire

Commercial

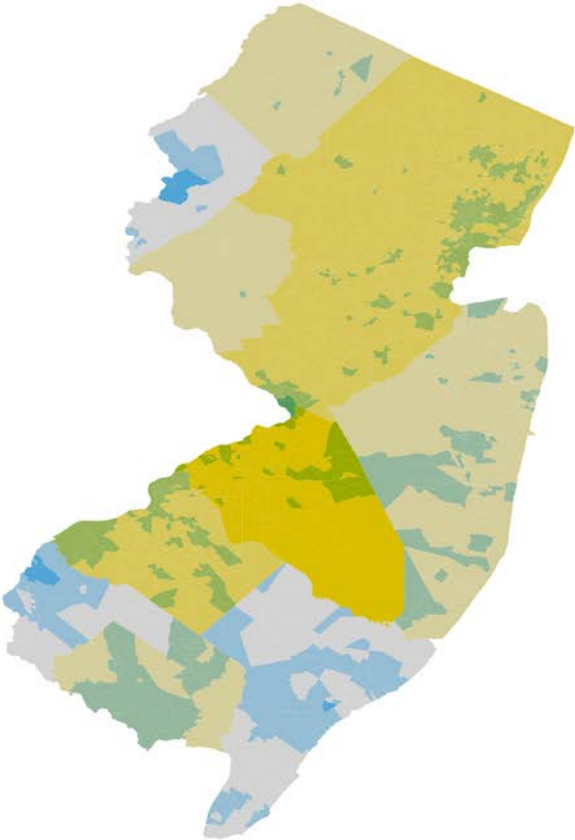
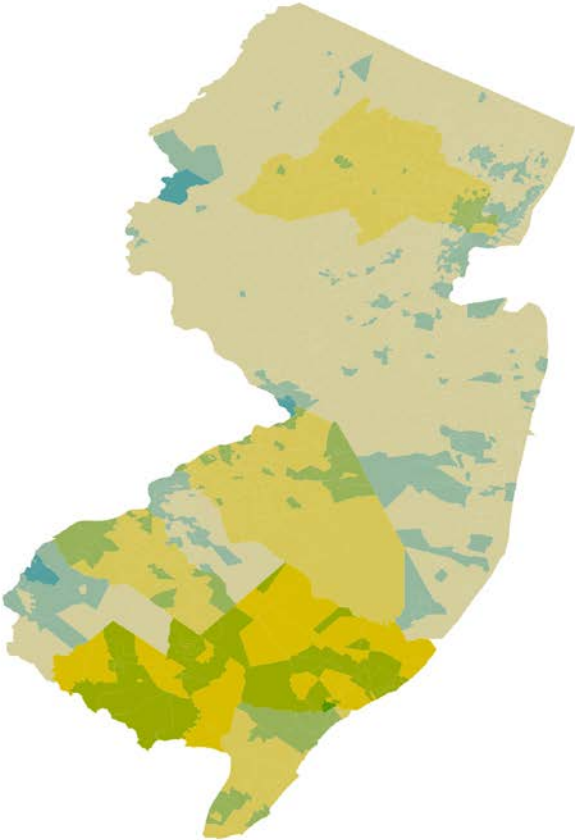
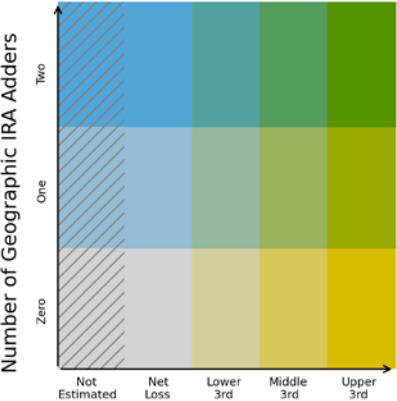
Residential



New Jersey

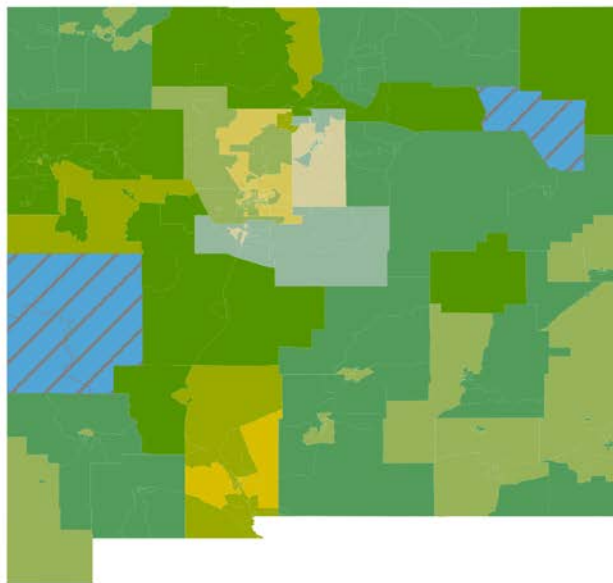
Commercial

Residential

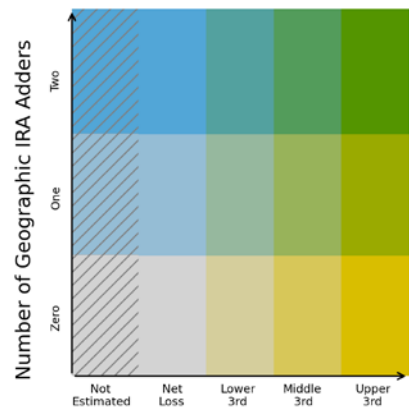
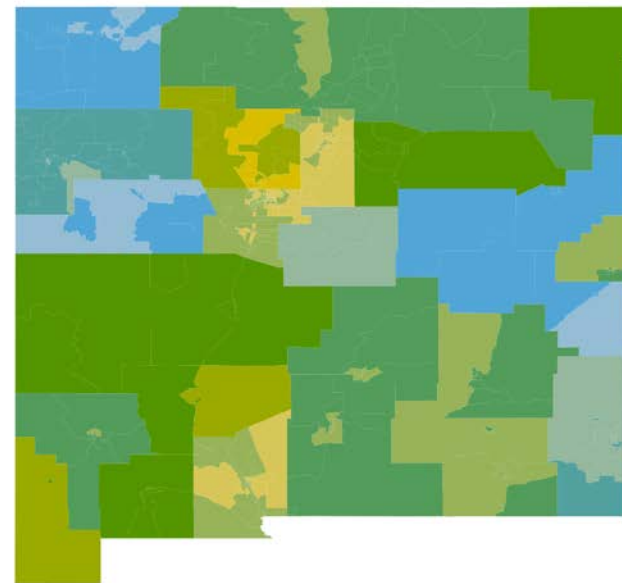


New Mexico

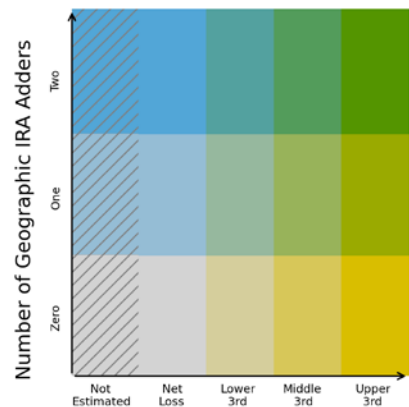
Commercial



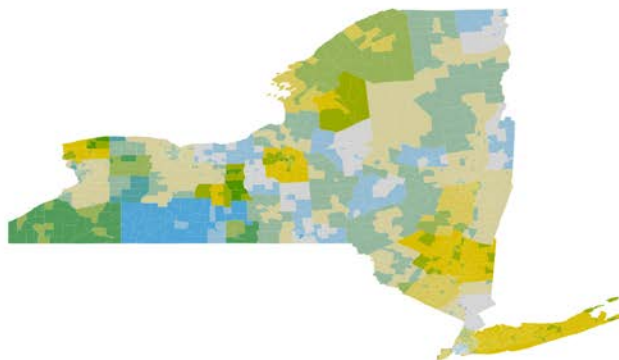
Residential



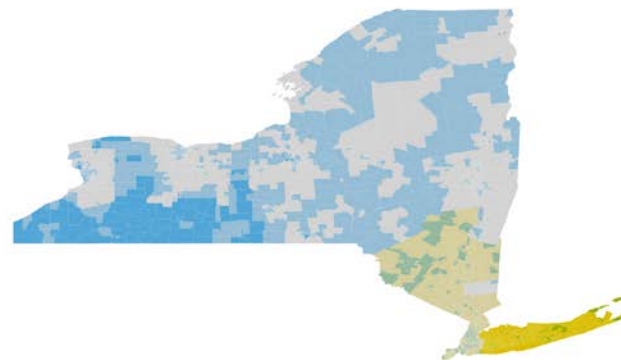
New York



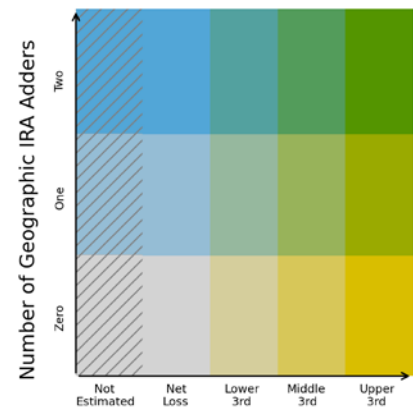
Commercial



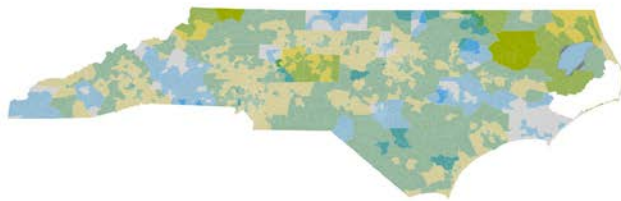
Residential



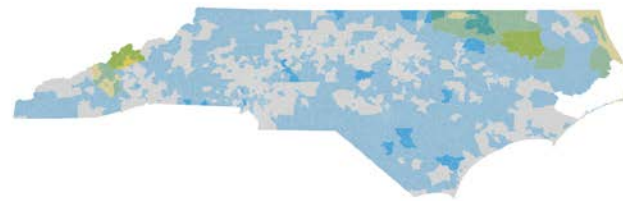
North Carolina



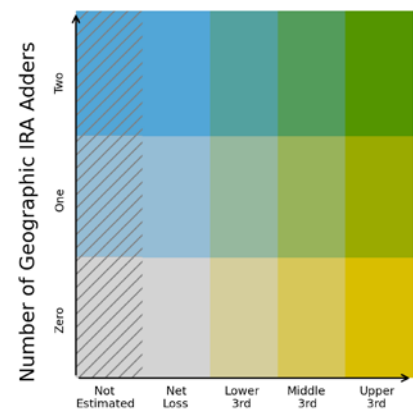
Commercial



Residential



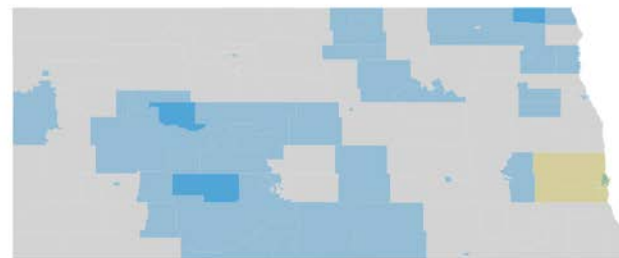
North Dakota



Commercial



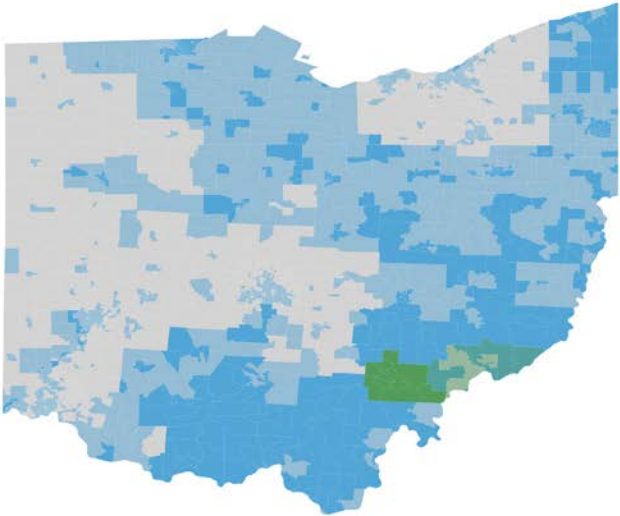
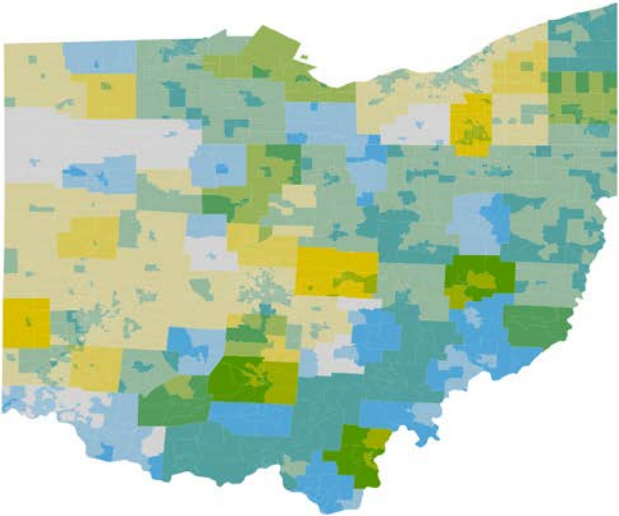
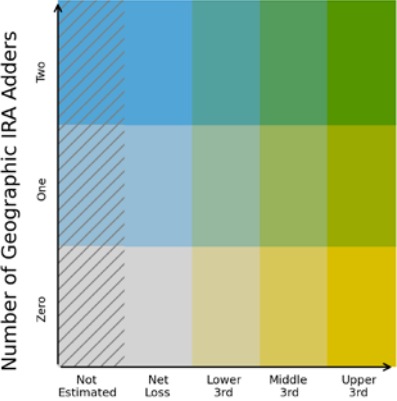
Residential



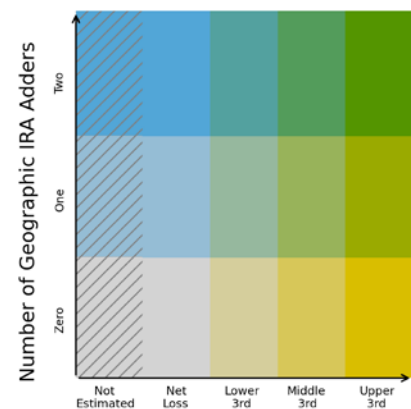
Ohio

Commercial

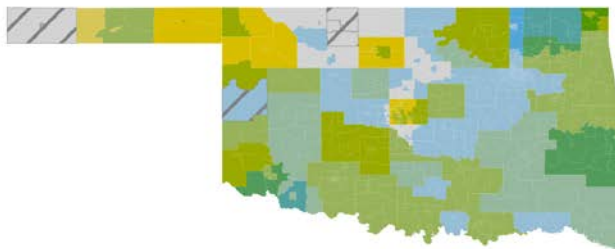
Residential



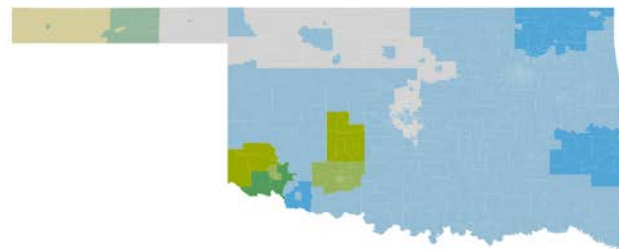
Oklahoma



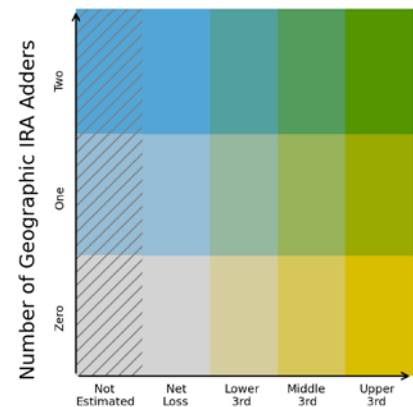
Commercial



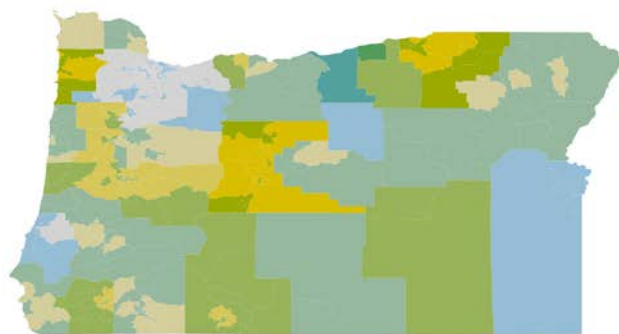
Residential



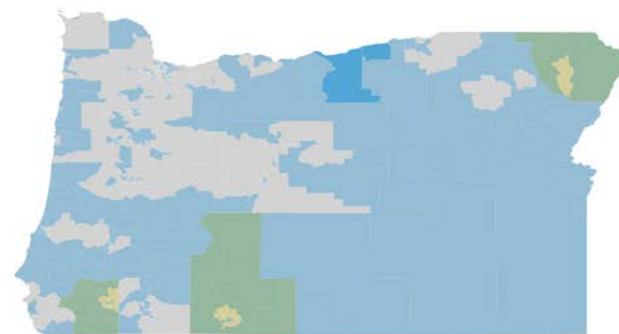
Oregon



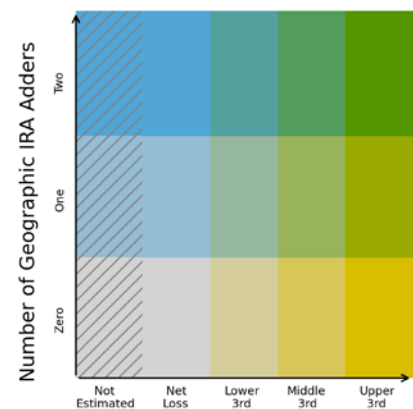
Commercial



Residential



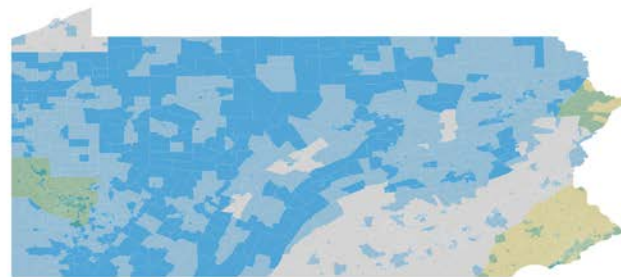
Pennsylvania



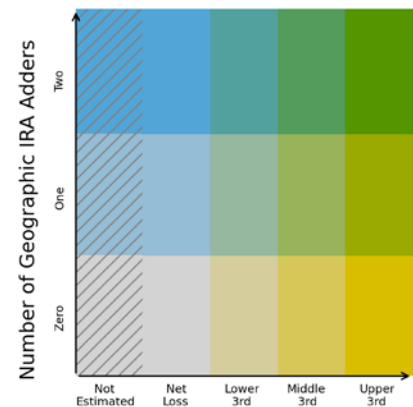
Commercial



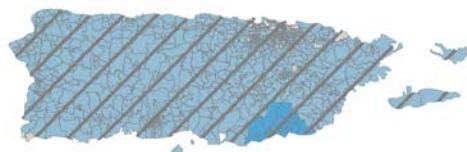
Residential



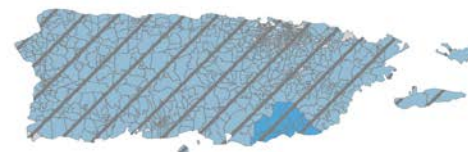
Puerto Rico



Commercial



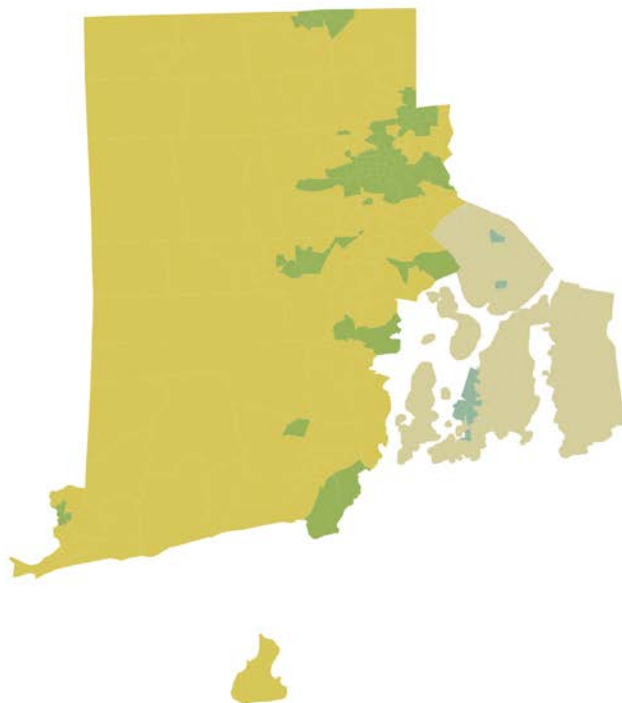
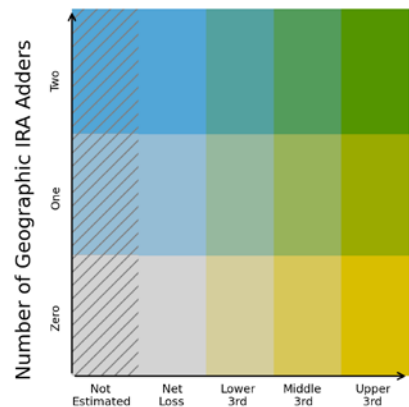
Residential



Rhode Island

Commercial

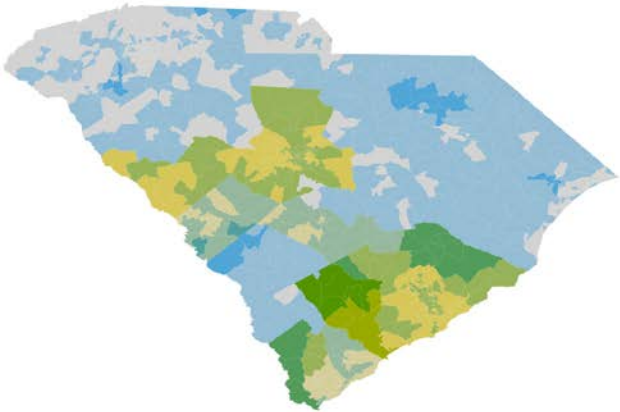
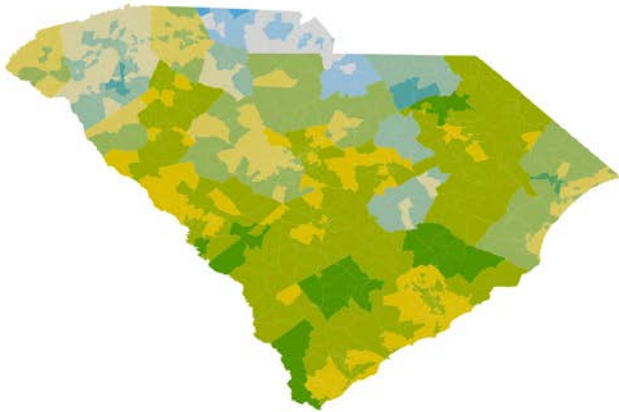
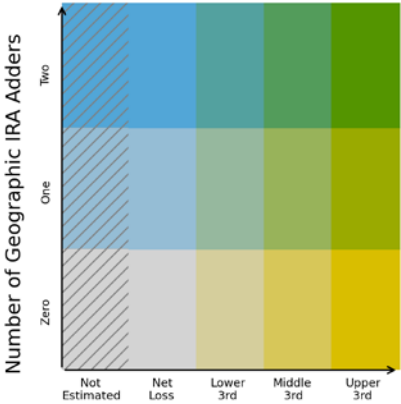
Residential



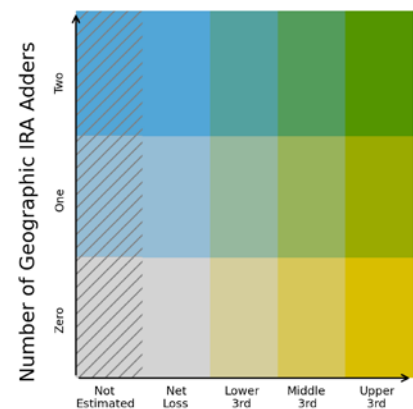
South Carolina

Commercial

Residential



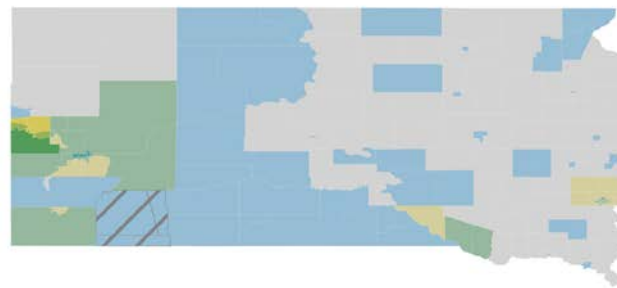
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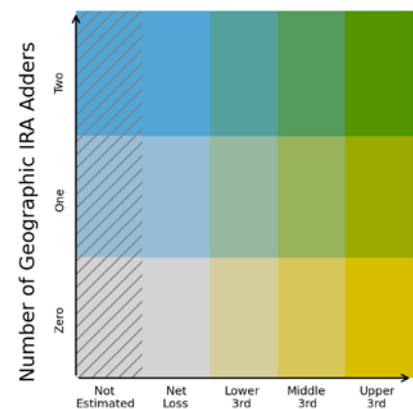
Commercial



Residential



Tennessee



Commercial



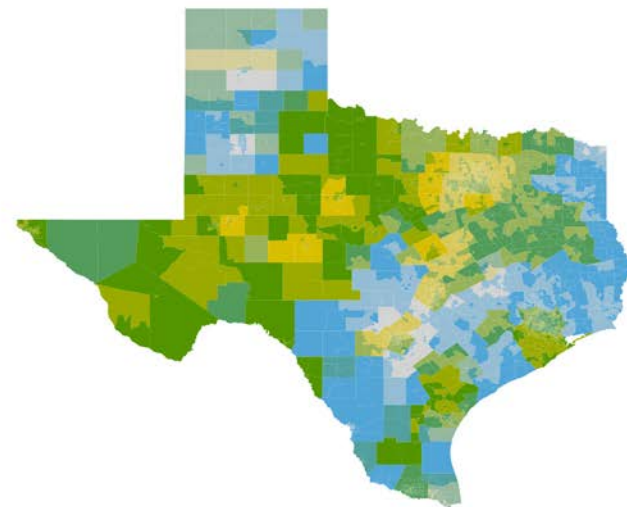
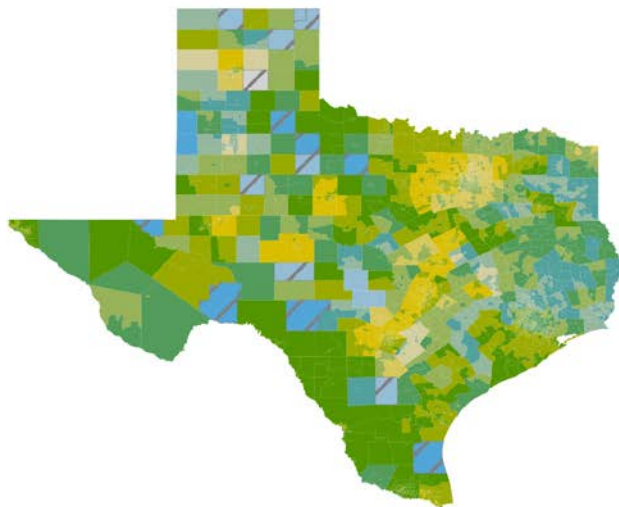
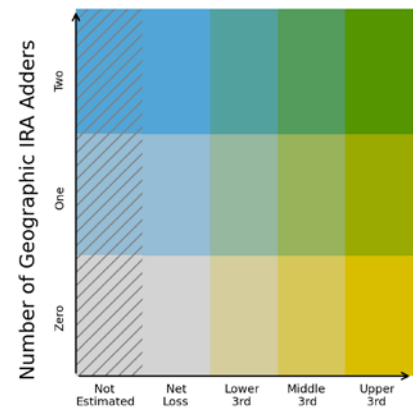
Residential



Texas

Commercial

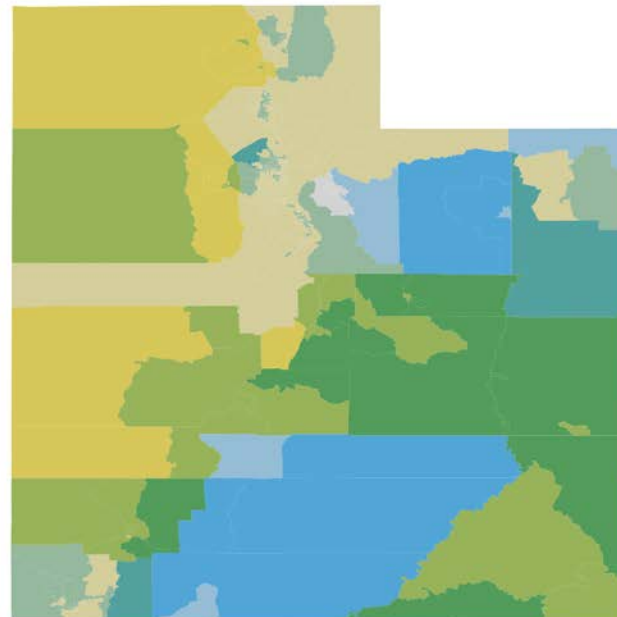
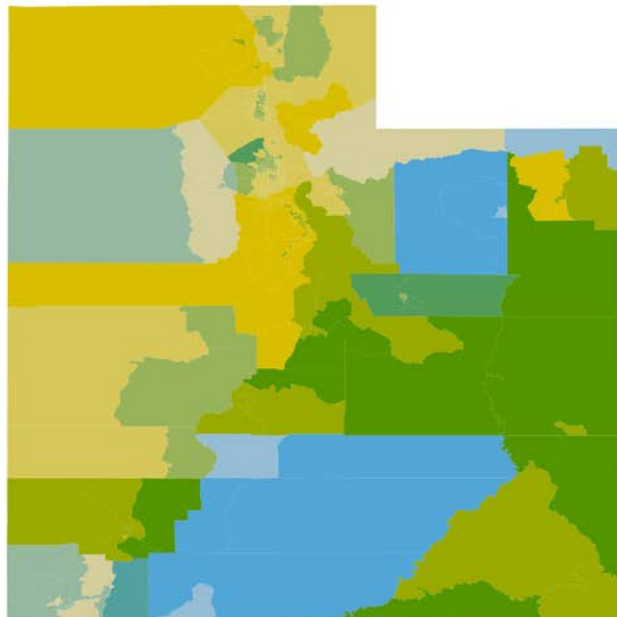
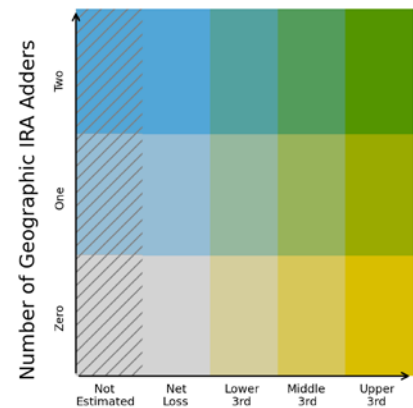
Residential



Utah

Commercial

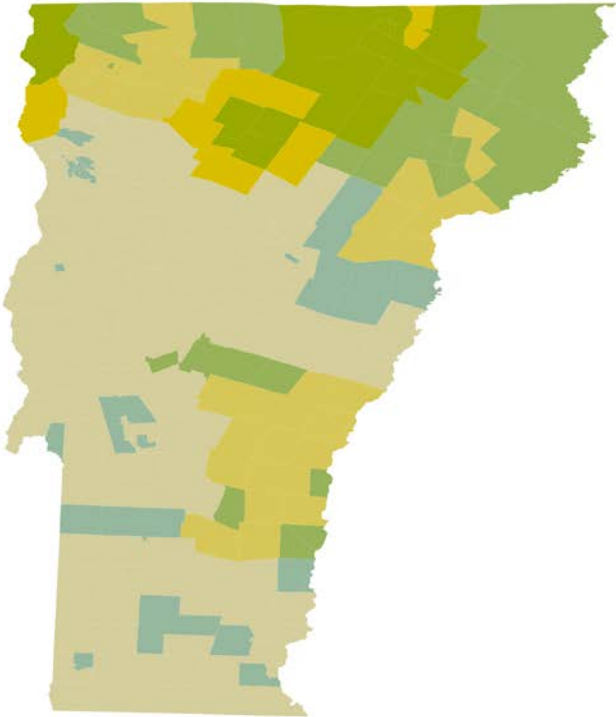
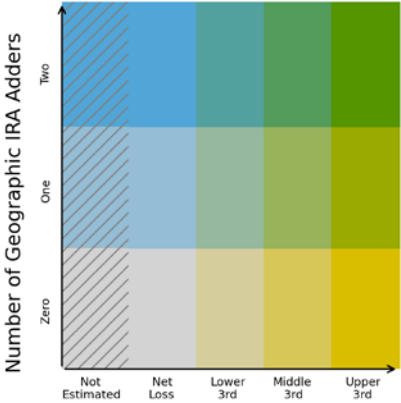
Residential



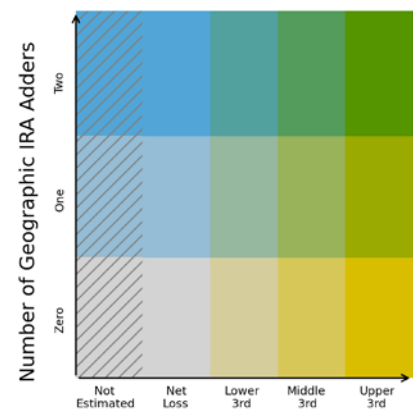
Vermont

Commercial

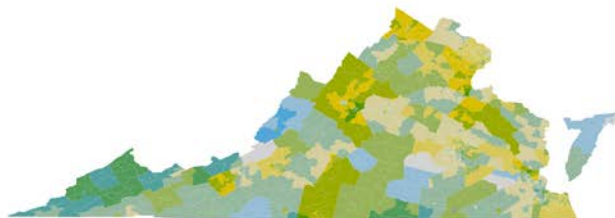
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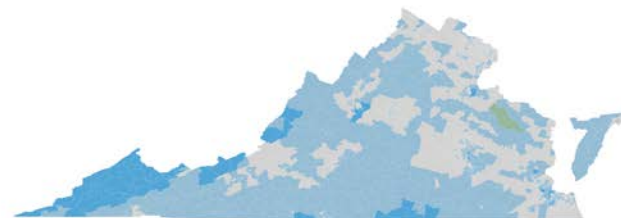
Virginia



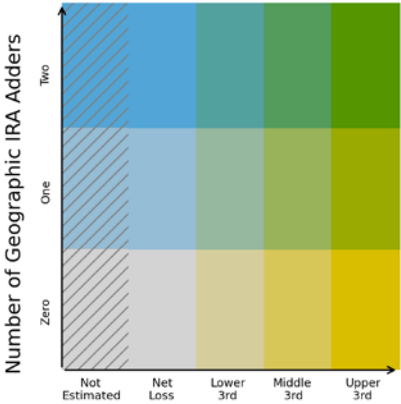
Commercial



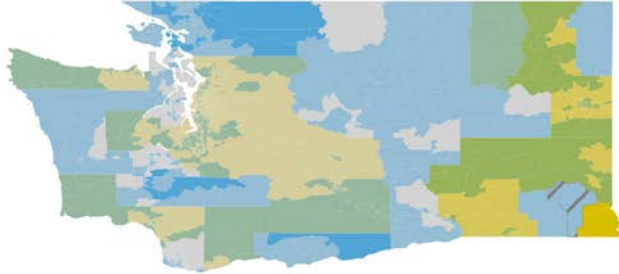
Residential



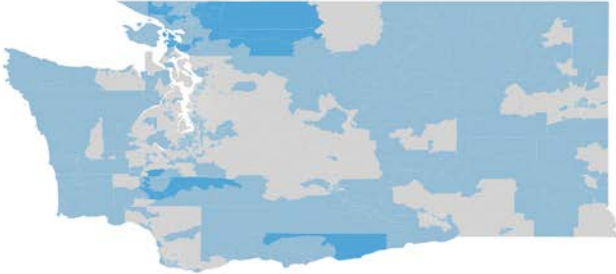
Washington



Commercial

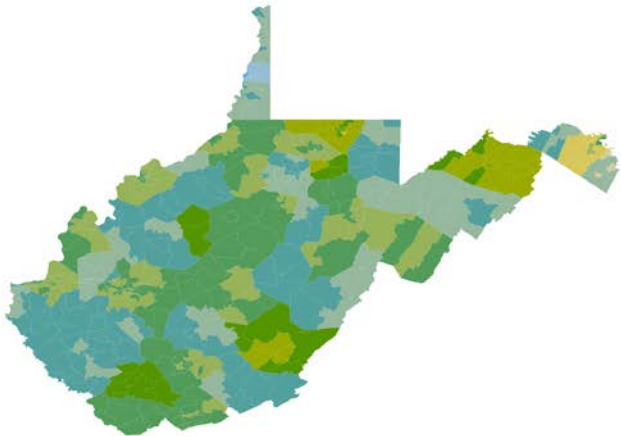


Residential

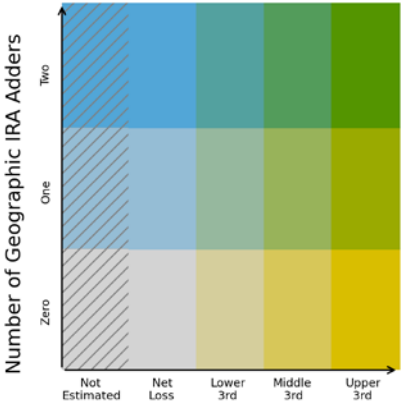


West Virginia

Commercial



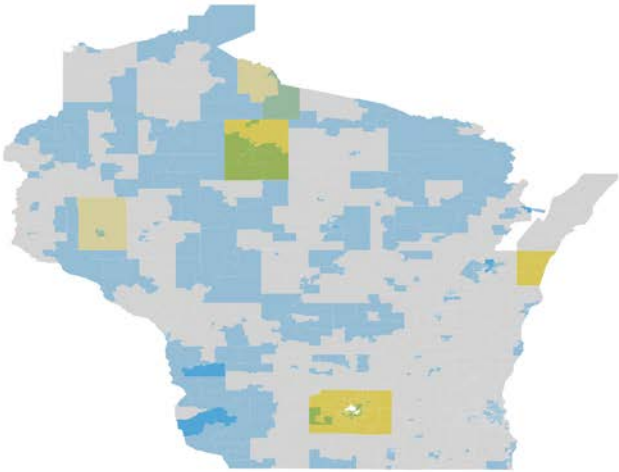
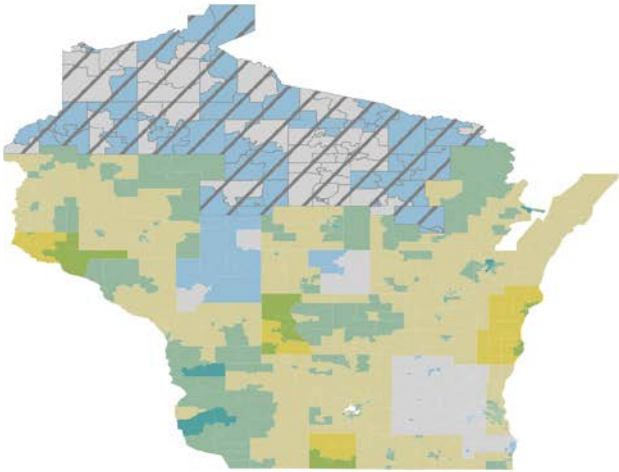
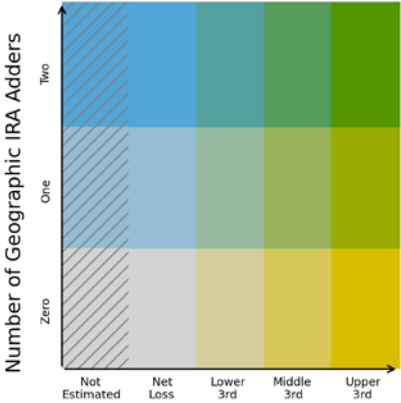
Residential



Wisconsin

Commercial

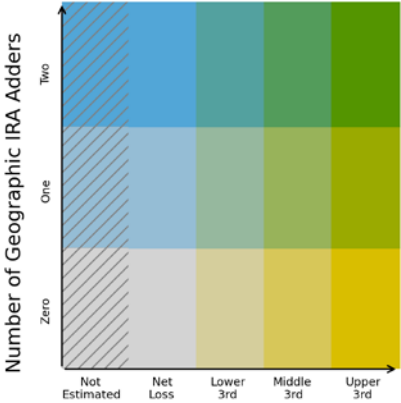
Residential



Wyoming

Commercial

Residential



Additional Resources

- The U.S. Department of the Treasury is the authority on how the tax credits are implemented.
- Internal Revenue Service's website contains detailed information about Inflation Reduction Act Provisions: [Inflation Reduction Act of 2022 | Internal Revenue Service \(irs.gov\)](#).
- [CleanEnergy.gov](#) has helpful links maintained by the White House on the IRA, including:
 - [The Inflation Reduction Act Guidebook](#)
 - [A Summary of the Clean Energy Tax Provisions in the Inflation Reduction Act](#).

The Solar Energy Technologies Office (SETO) has published several resources that provide overviews of the federal tax credits within the IRA. They do not constitute professional tax advice or other professional financial guidance and may change based on additional guidance from the Treasury Department.

- [Federal Tax Credits for Solar Manufacturers | DOE SETO](#)
- [Federal Solar Tax Credits for Businesses | DOE SETO](#)
- [Homeowner's Guide to the Federal Tax Credit for Solar Photovoltaics | DOE SETO](#).



Author Contacts:

Isa Ferrall-Wolf, Ph.D. | isa.ferrall-wolf@nrel.gov

Joyce McLaren, Ph.D. | joyce.mclaren@nrel.gov

www.nrel.gov

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