



Delaware Residential Market Segmentation



Prepared For: Delaware Governor's Energy Advisory Council - Energy Efficiency & Electrification Workgroup

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Introduction



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Evaluation, Measurement & Verification

Improve your program processes and ensure robust savings claims.

Market Assessment

Understand your market today, assess potential for change in the future.

Implementation

Increase customer engagement and satisfaction while navigating the changing energy landscape.

Program Planning & Design

Support that feels like an extension of your team.

VisionDSM Data Management & Analytics

Powerful and cost-effective solution for data management, workflow processing, reporting, and analytics. Manage the full lifecycle of DSM portfolios.



Market Characterization





Delaware Residential Market Characterization Objectives

- Provide information to help DNREC understand the opportunities for, and inform implementation of, Inflation Reduction Act Home Energy and High-Efficiency Electric Home Rebate Programs.
- Combine publicly available national, regional, and state-specific data sources to provide the most accurate view of Delaware households possible.
- Characterize residential households by:
 - ✓ Dwelling type
 - ✓ Income level
 - ✓ Average annual electric consumption
 - ✓ Saturation and fuel share of energy-consuming equipment
 - ✓ Disadvantaged community designations
- Develop a flexible framework that can be updated and expanded over time.
- Provide results in accessible formats to inform program opportunities and other use cases.

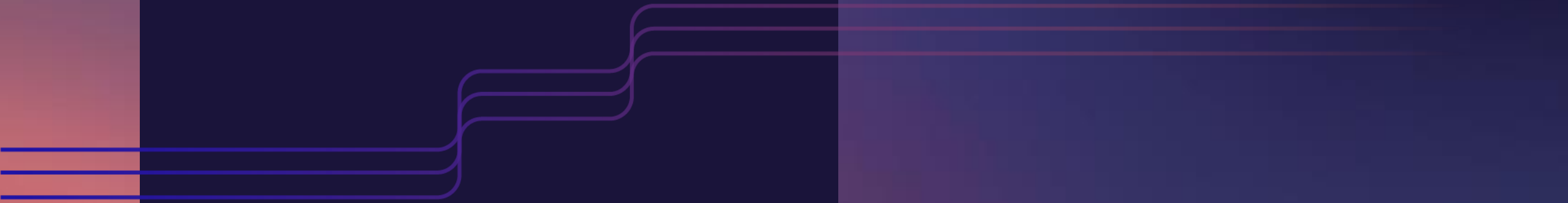


Key Data Sources

Data Elements	Source	Notes
Residential Customer Count and Electricity Consumption	2021 EIA Form 861	Data also available by utility
Income Thresholds	HUD FY 2021 Area Median Income Limits*	80% and 150% AMI for threshold parameters
Household Distribution by Income	American Community Survey 2021 5-Year Estimates	Data differentiated by census block group
Equipment and Fuel Saturations, by Dwelling Type and Income Level	EIA 2020 Residential Energy Consumption Survey (RECS) – Delaware Microdata	For certain segments, supplemented with regional data
Disadvantaged Community Designation by Census Tract	Climate and Economic Justice Screening Tool	Create boundaries for areas identified as disadvantaged
Spatial Feature Layer of Delaware Municipalities	State of Delaware FirstMap	Geospatial boundaries for selected municipalities (<i>DEMEC members & Dover</i>)

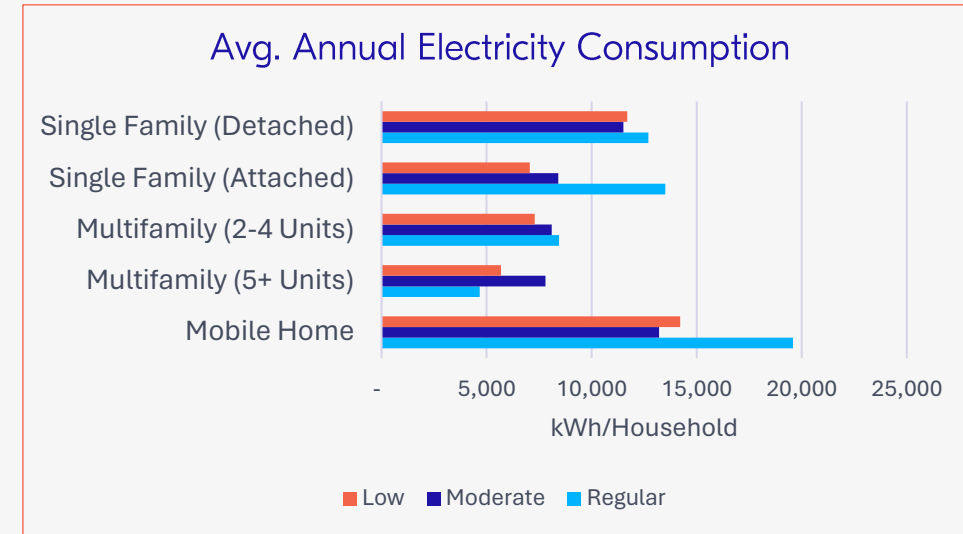
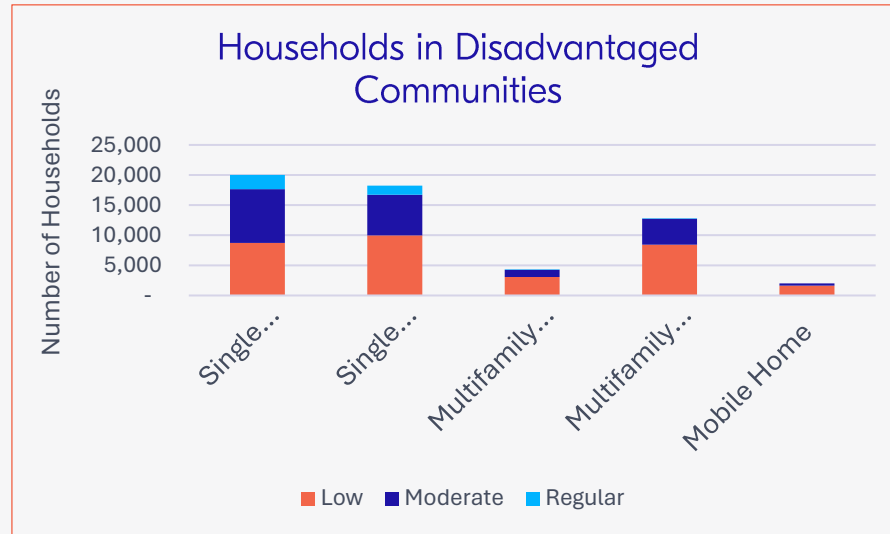
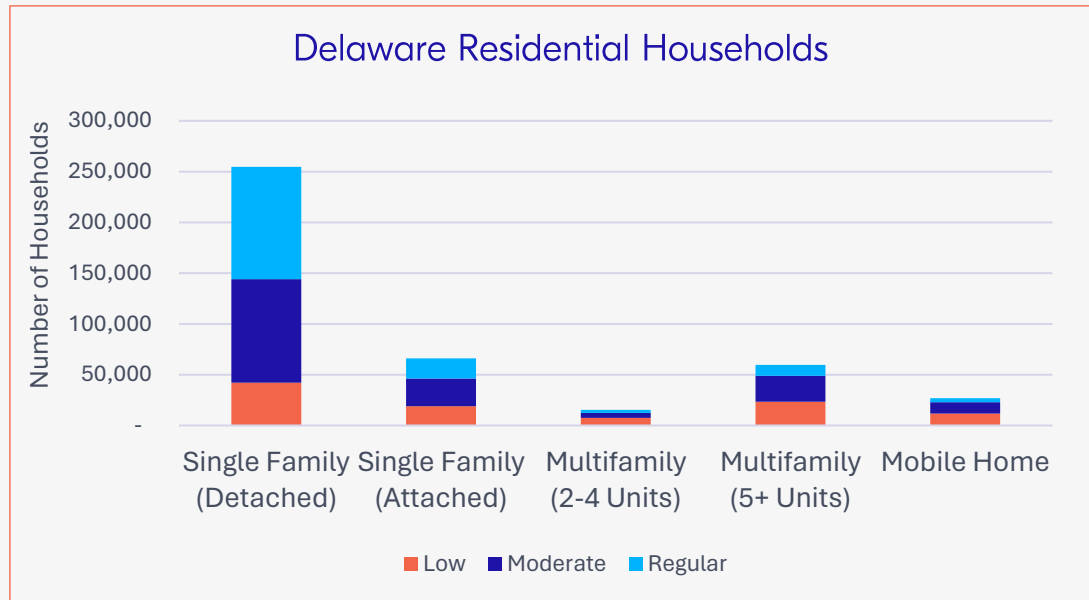
**We are using 2021 AMI data for alignment with the 2021 American Community Survey (ACS) data, which remains the most current and reliable dataset available for our analyses.*

Findings





Delaware State-Level Results



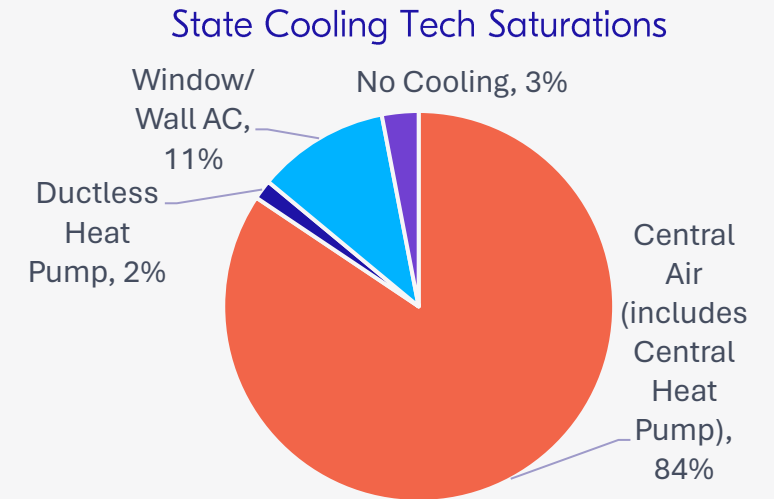
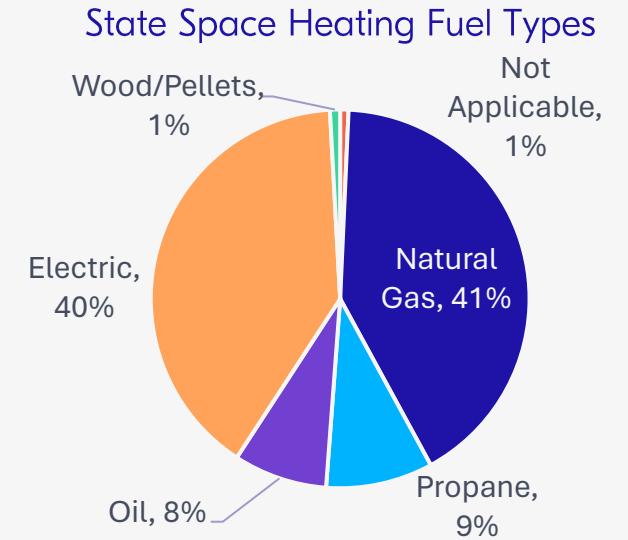


Delaware Heating and Cooling Technology Saturations

RECS identifies technology saturations for the following housing types:

- ✔ Single Family Detached
- ✔ Single Family Attached
- ✔ Multifamily 2-4 Units
- ✔ Multifamily 5+ Units
- ✔ Mobile Homes

RECS data can also identify saturations by fuel type and income level based on AMI thresholds





Additional Technology Saturation

RECS provides saturation information on the following technologies and measures:

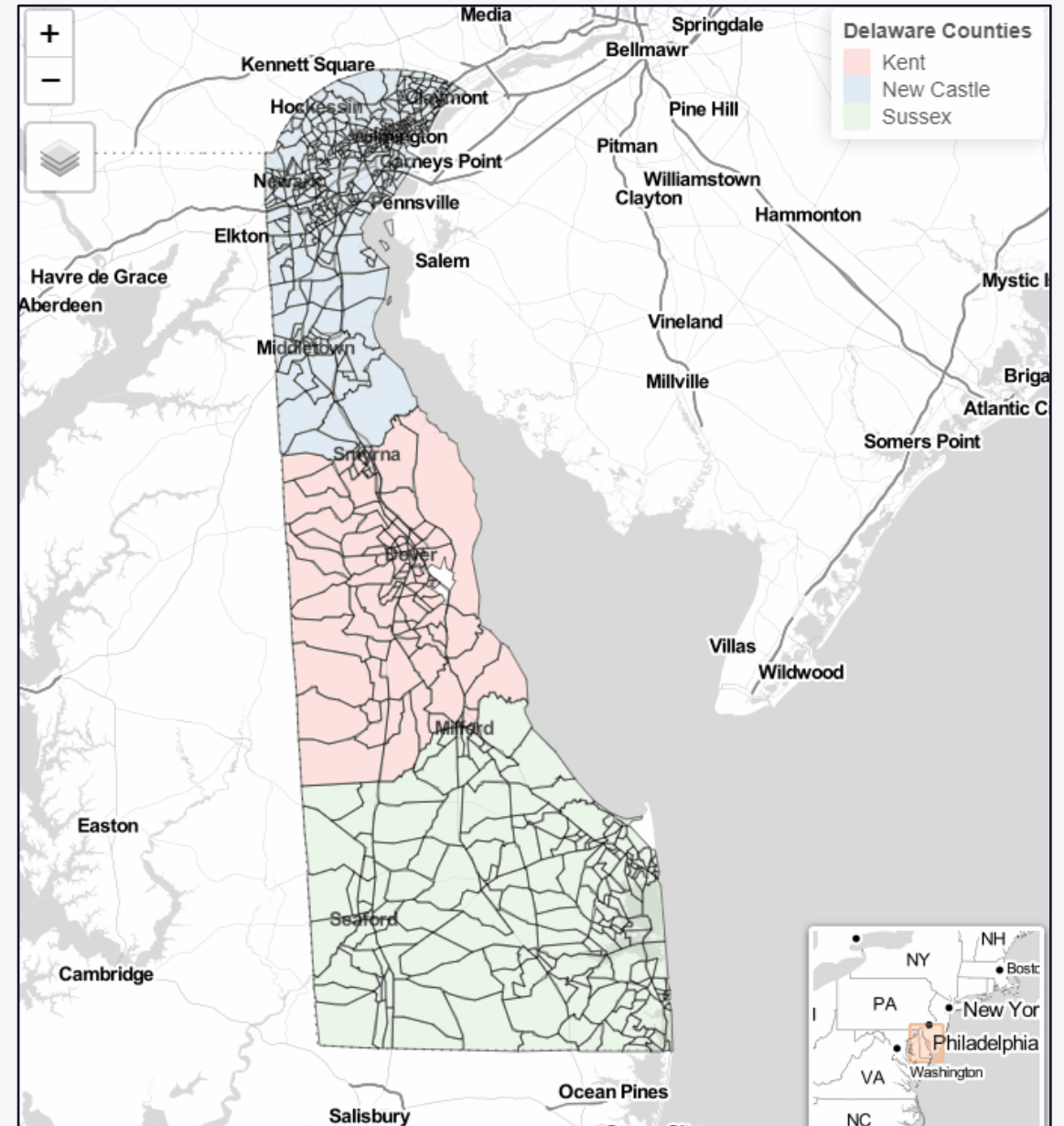
- ✔ **Cooling** (DHPs, window ACs, portable ACs, central air, etc.)
- ✔ **Space Heating** (built-in, central furnace, HPs, portable, stove, etc.)
- ✔ **Water Heating** (<50 gals, >=50 gals, tankless, on-demand)
- ✔ **Thermostats**
- ✔ **Appliances** (clothes dryers/washers, dishwasher, refrigerators)
- ✔ **Electronics** (TVs, monitors, personal computers, etc.)
- ✔ **Lighting**
- ✔ **Insulation**

Mapping Output

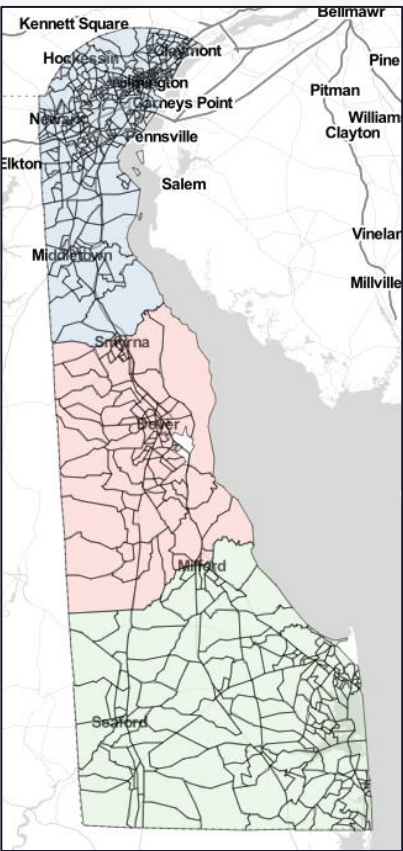
AEG used shapefiles and census block group-level data to create interactive maps to display data geospatially.

Maps currently display:

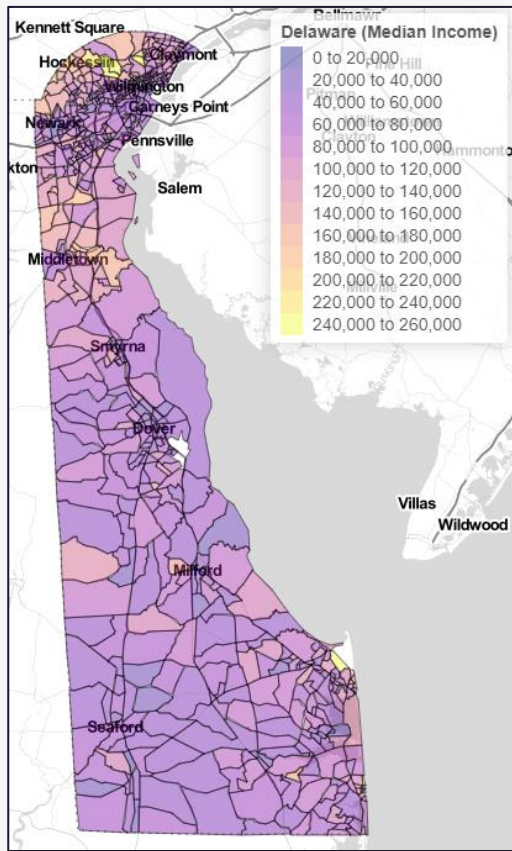
- ✔ Household counts
- ✔ Distribution of building types
- ✔ Median household income
- ✔ Disadvantaged community designations
- ✔ Layers by county and municipality



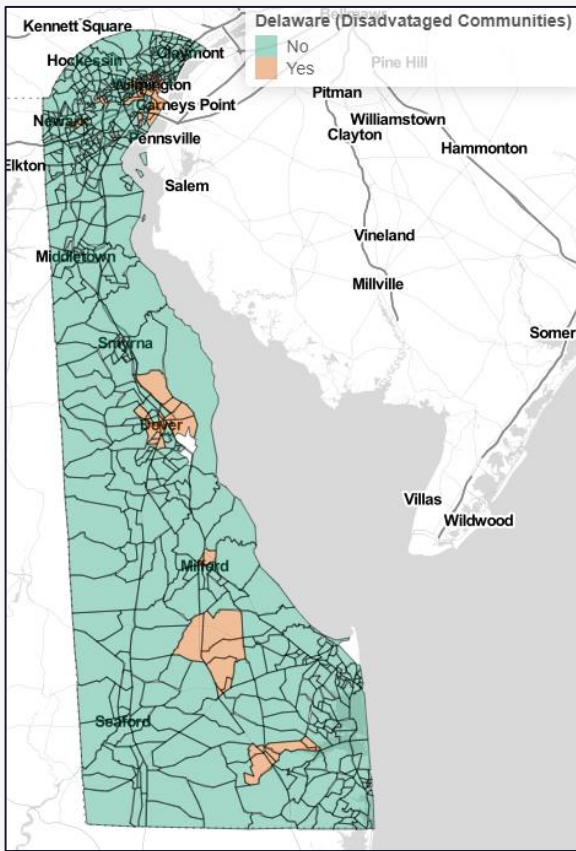
Mapping Examples



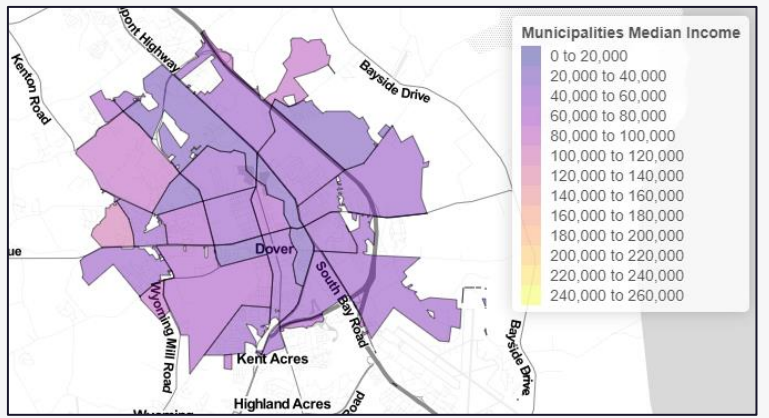
County



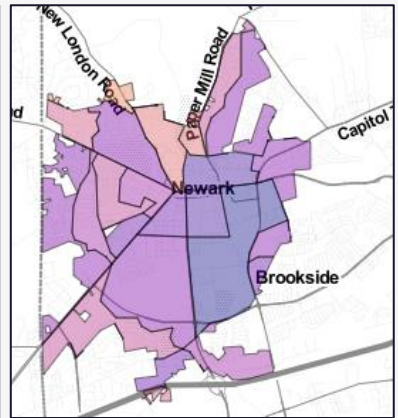
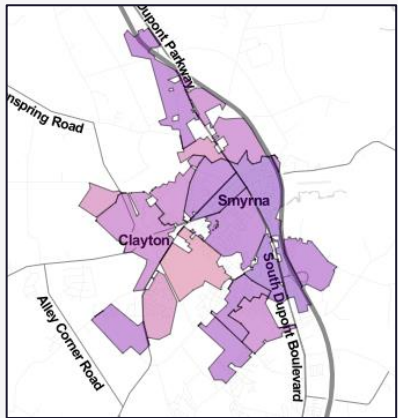
Median Income



Disadvantaged Communities



Specific Municipalities



Interested in
learning how we
can assist in your
state?

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