CADMUS

Puget Sound Energy: Low-Income Household Needs Assessment

Draft Findings Presentation

August 2020

OVERVIEW

STUDY OBJECTIVES

APPROACH / ASSUMPTIONS

KEY TAKEAWAYS

PARTICIPATION GAPS:
- HIGH % ELIGIBLE & LOW PARTICIPATION

CHARACTERIZE UNDERSERVED COMMUNITIES:
- NEED SCORE (including Energy Burden and Demographics)
- POTENTIAL SAVINGS

NEXT STEPS

QUESTIONS / DISCUSSION

Study objectives

Identify participation gaps

Characterize underserved communities (“need score”)

Provide PSE and partners a set of tools

DATA SOURCES

Data Sources	
	• PSE Historical Participation Data (LIW and EA*) • PSE Territory Shapefiles • Census and PUMS data on income, demographics, energy burden (PUMS only) • Average LIW kWh and Therm household savings (Cadmus Evaluation, 2017)

* Includes HELP and other assistance tracked by PSE

APPROACH / ASSUMPTIONS

Historical PSE Programs	**Low-Income Weatherization (LIW)** • Period: multiple program years (2012-2020) • Historical participation: 8,547 households **Energy Assistance (EA)** • Period: one program years (Oct 2018-Sept 2019) • Historical participation: 34,167 households

Income Eligibility	• **200% FPL for LIW and 150% for EA programs**
	• **Approx. eligible households at each FLP:**
	  • 150% FPL: 202k households
	  • 200% FPL: 292k households

STUDY COVERAGE

Geographies

PUMA

Larger geographies

n=37

~40-90k households per PUMA

Census Block Groups

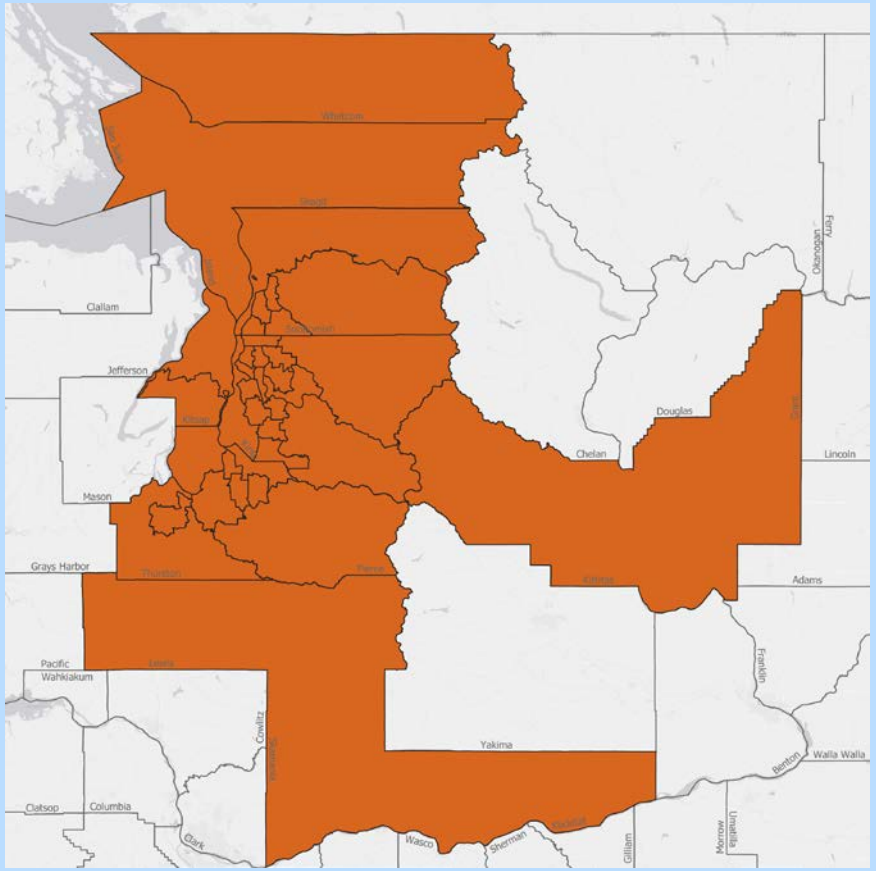
Smaller geographies

n=3,066

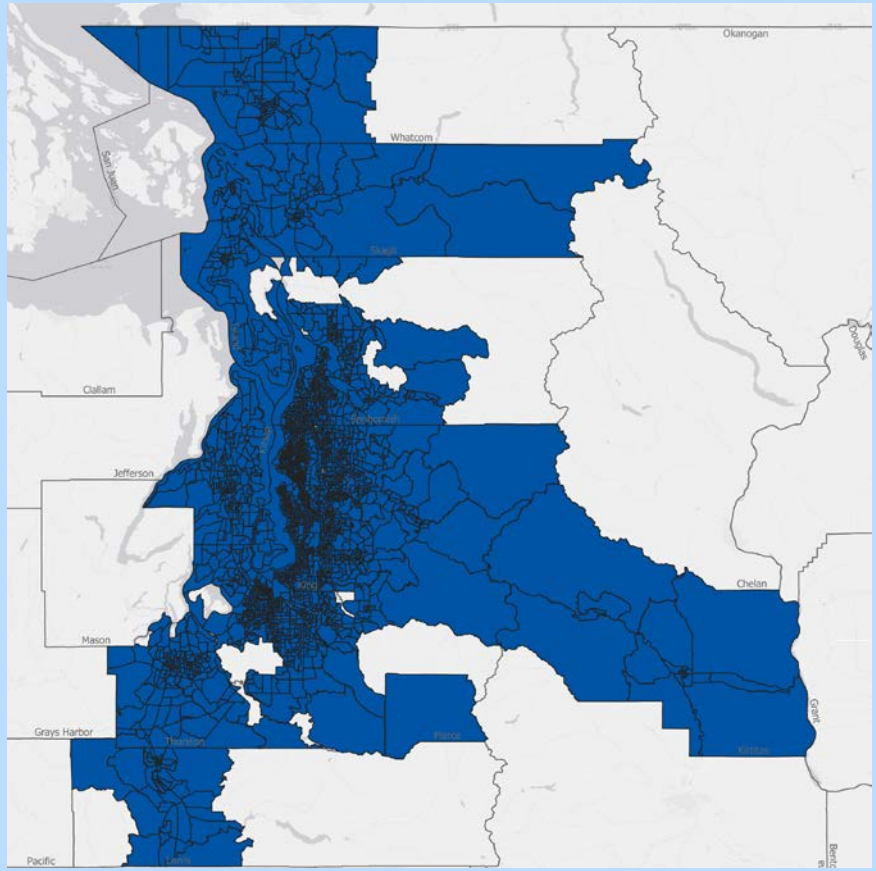
~600-1000 households per Census Block Group

STUDY COVERAGE

PUMAs



Census Block Groups



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METRICS

Metric	Used to Identify	Value
Count of eligible, unserved households	Areas with largest number of potential participants not yet served	**Efficiency** potential for targeted delivery; sense of magnitude
Percentage of eligible, unserved households	Areas of low historical delivery/participation relative to the eligible population within a given geography	**Equity** potential for geographic targeting in regions with relatively lower historical delivery

COMPOSITE NEED SCORE

Use: To characterize underserved areas.

What it is: A way to pinpoint areas with greatest need. Combines percentages of eligible households with four high need variables.

High Need Variables

Income-Eligible Households with:

- Children under 18 years of age
- People over 65
- People with a disability
- High Energy Burden

Aligns with DOE priority criteria

How we scored

1) Use the decile as the score for each of the 4 indicators for each PUMA (ranking percentages of eligible households)

2) Sum the scores for all 4 indicators to produce a composite score for each PUMA

KEY TAKEAWAYS

KEY TAKEAWAYS

Opportunities for prioritizing future program targeting include areas with:

- **Low historical delivery (underserved populations)**
- **High energy burden**
- **High energy savings / carbon impacts**

Several ways to consider underserved areas:

- **Opportunity for efficient targeting:** areas with high concentration of eligible/unserved customers
- **Opportunity for equitable delivery:** areas with high proportion of eligible/unserved customers

With these data, PSE can direct research:

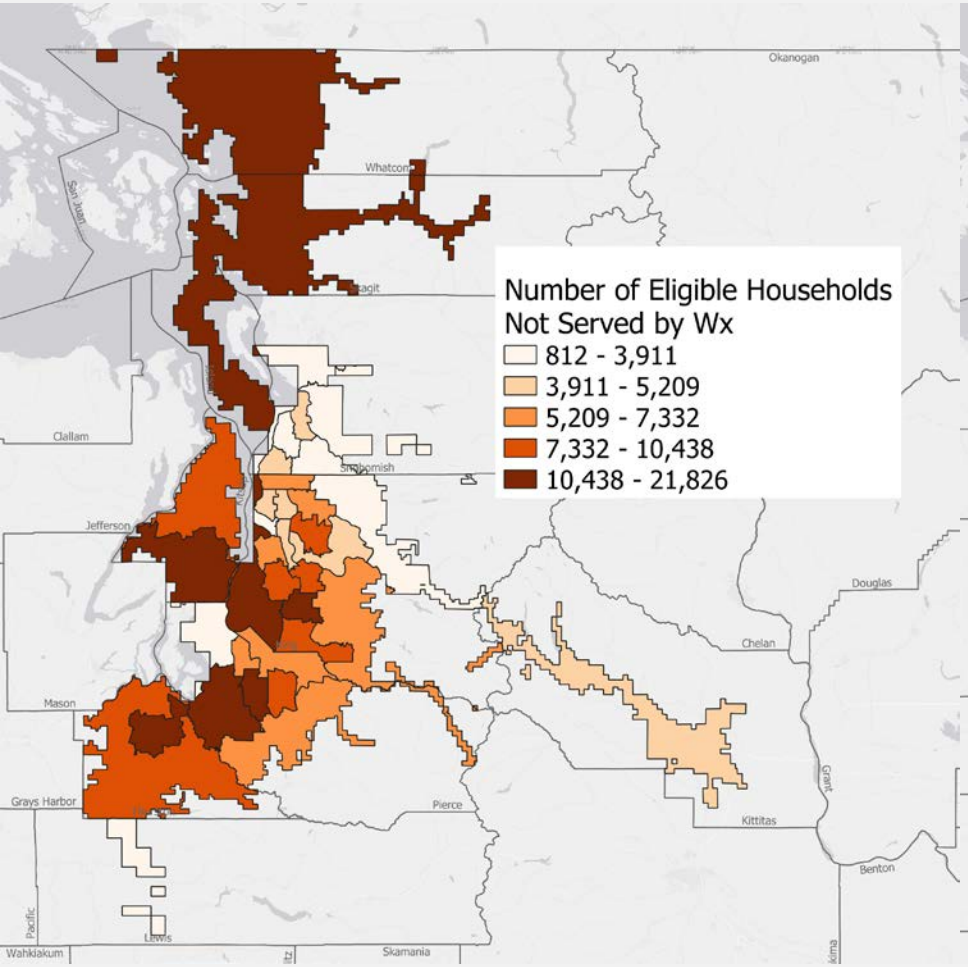
- **Deeper analysis and customer segmentation to better understand underserved communities**
- **Inform targeted outreach strategy**
- **Influence program design considerations**

PARTICIPATION GAPS

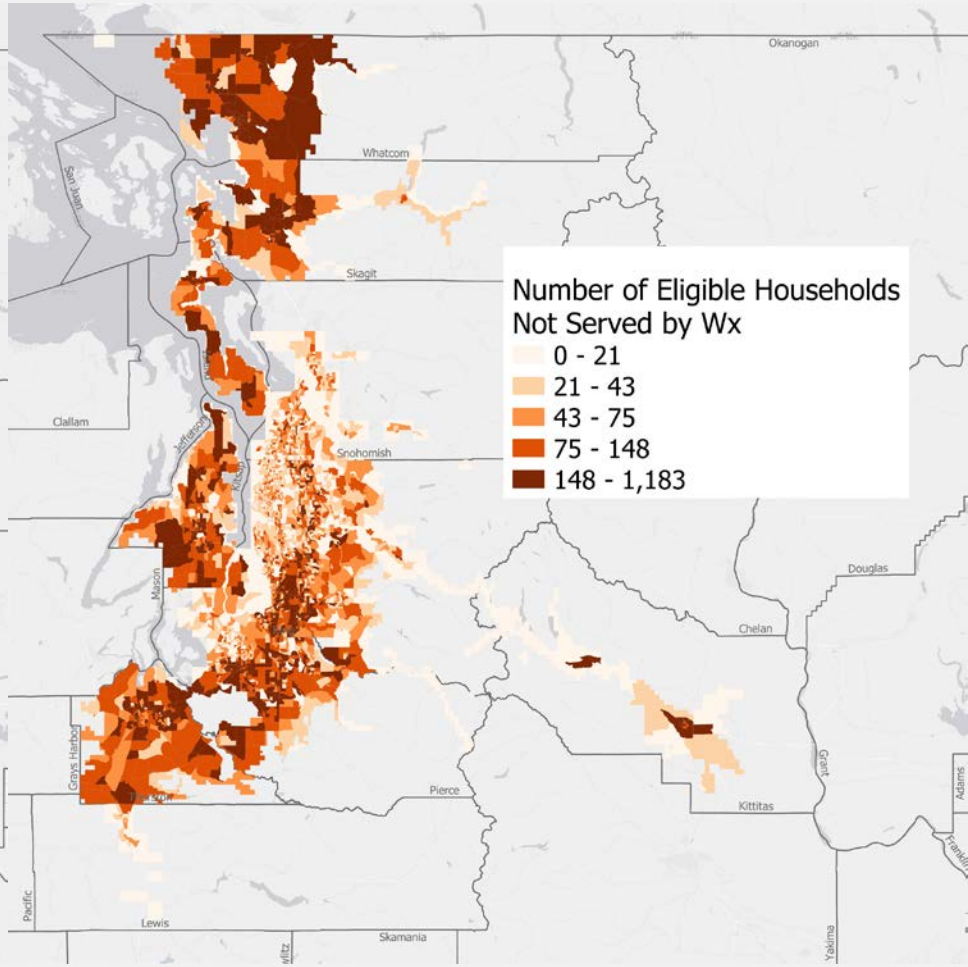
LIW: UNSERVED HOUSEHOLDS

High Number of Households Not Served: Full Distribution

PUMA



Census Block Group



Breaks: Quantiles

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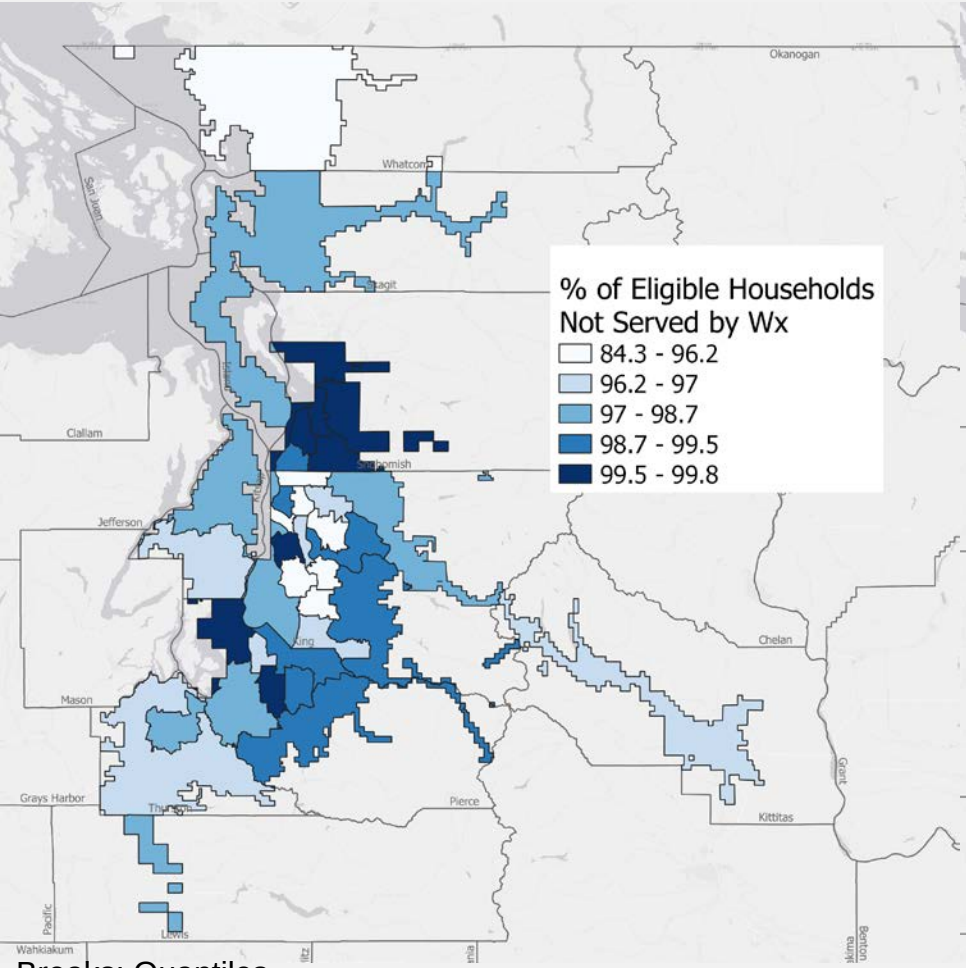
LIW: UNSERVED HOUSEHOLDS %

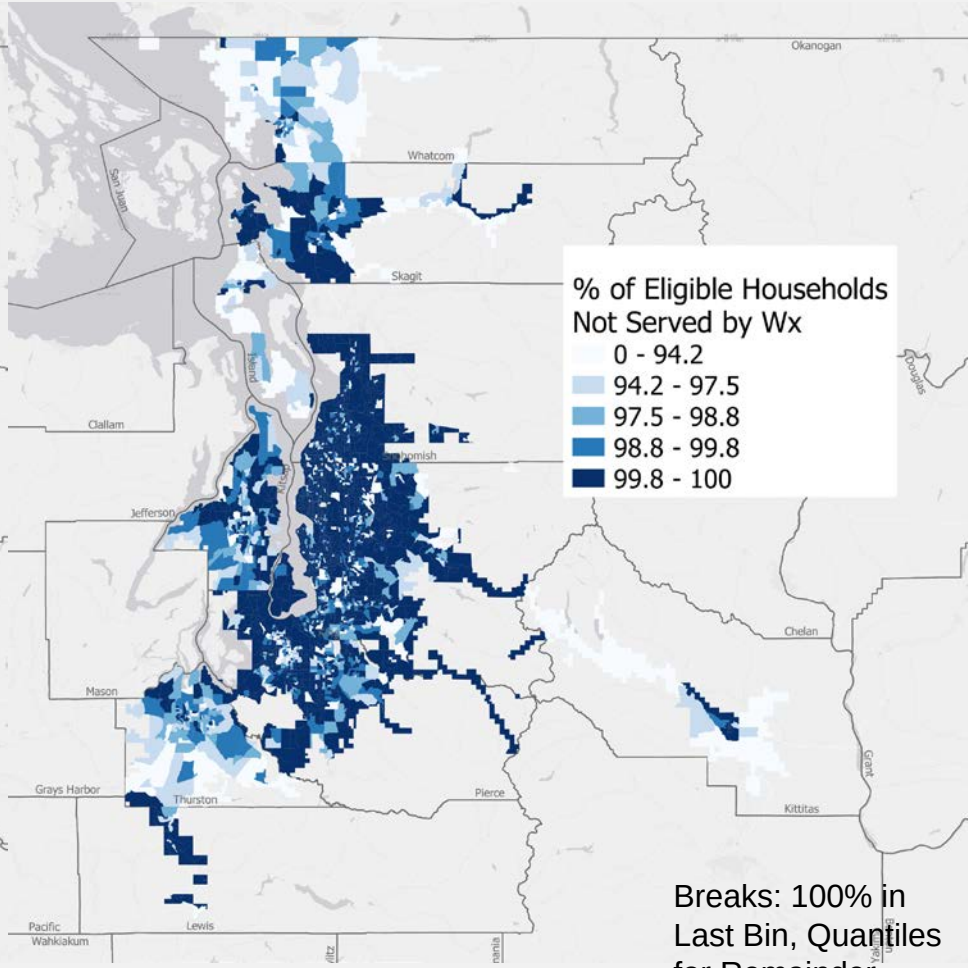
High % of Households Not Served

PUMA



Breaks: Quantiles

Census Block Group



Breaks: 100% in Last Bin, Quantiles for Remainder

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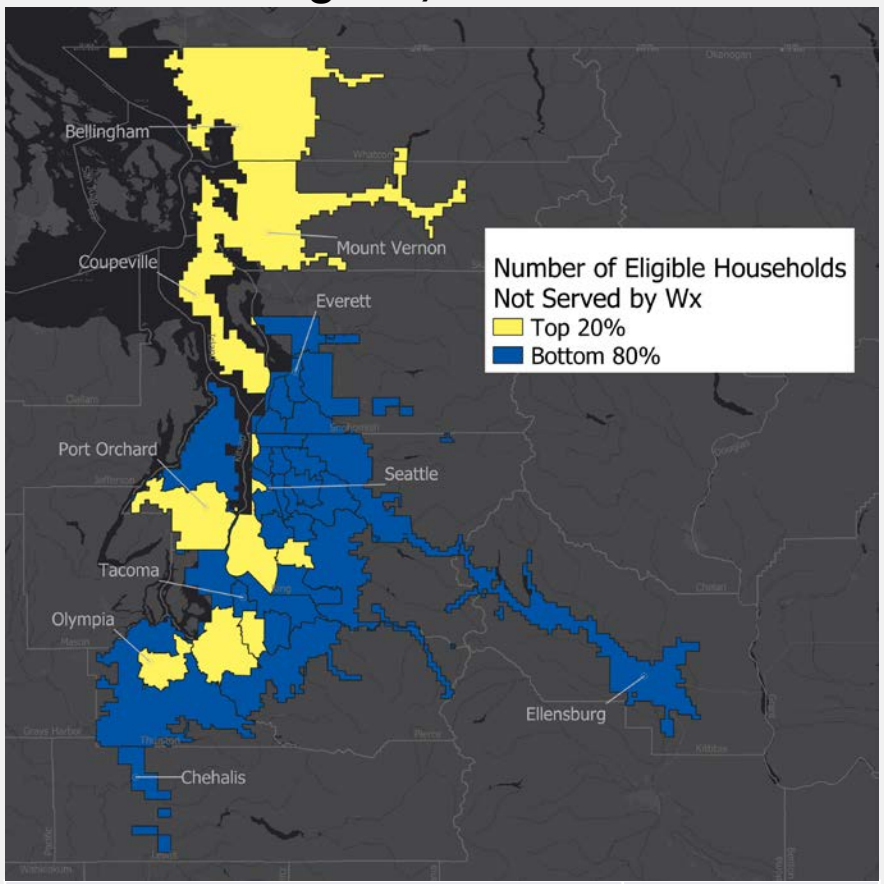
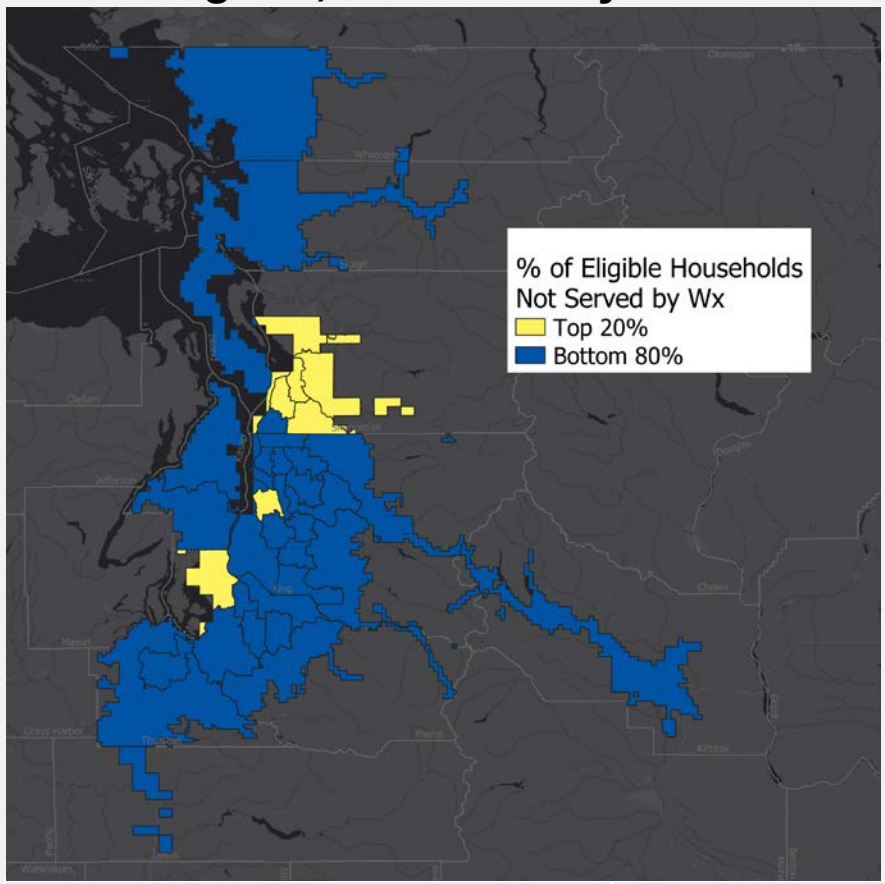
TOP AREAS TO TARGET: LIW

eligible, unserved



PUMA Name	Households
Whatcom County – Bellingham	21,826
Skagit, Island & San Juan Counties	17,235
Thurston County - Olympia	16,260
Pierce County - Tacoma (South)	12,914
Kitsap County (South)	12,721

% eligible, unserved by PUMA

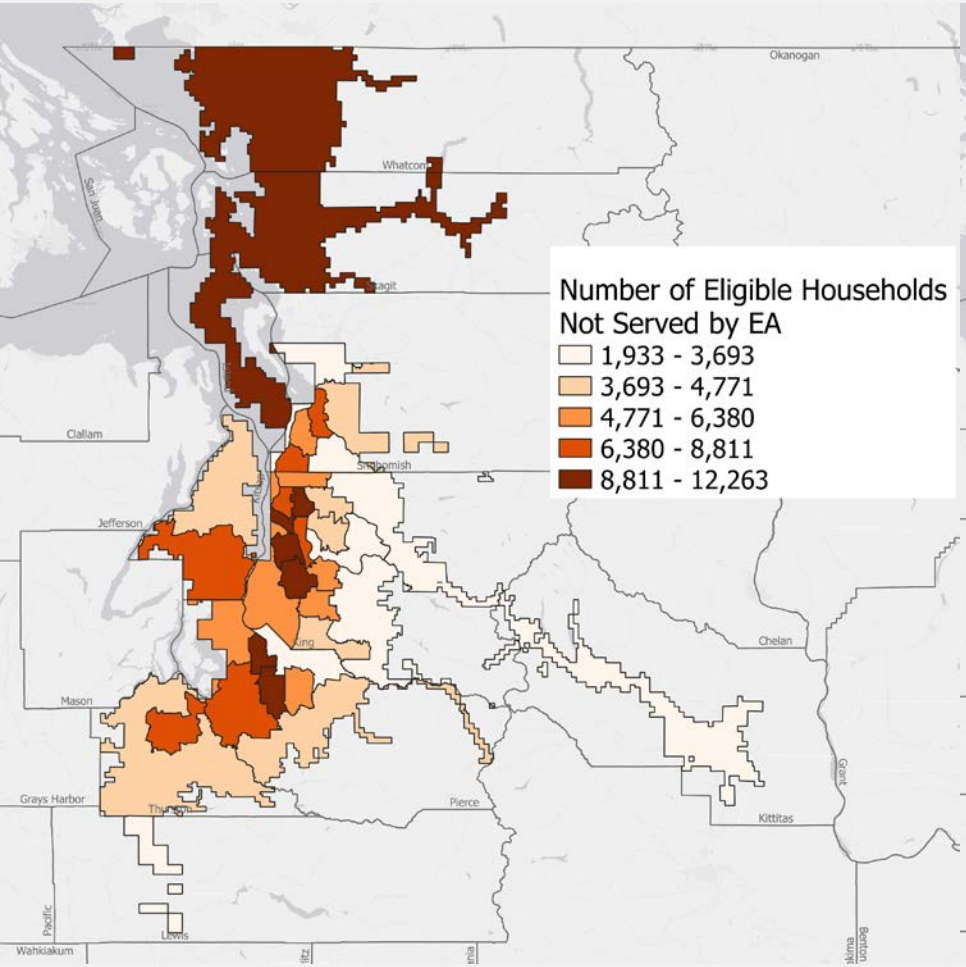


PUMA Name	% Households
Snohomish County (West Central)	99.8
Snohomish County (Central & Southeast)	99.8
Seattle (West)	99.7
Snohomish County (North)	99.7
Snohomish County (Central)	99.7

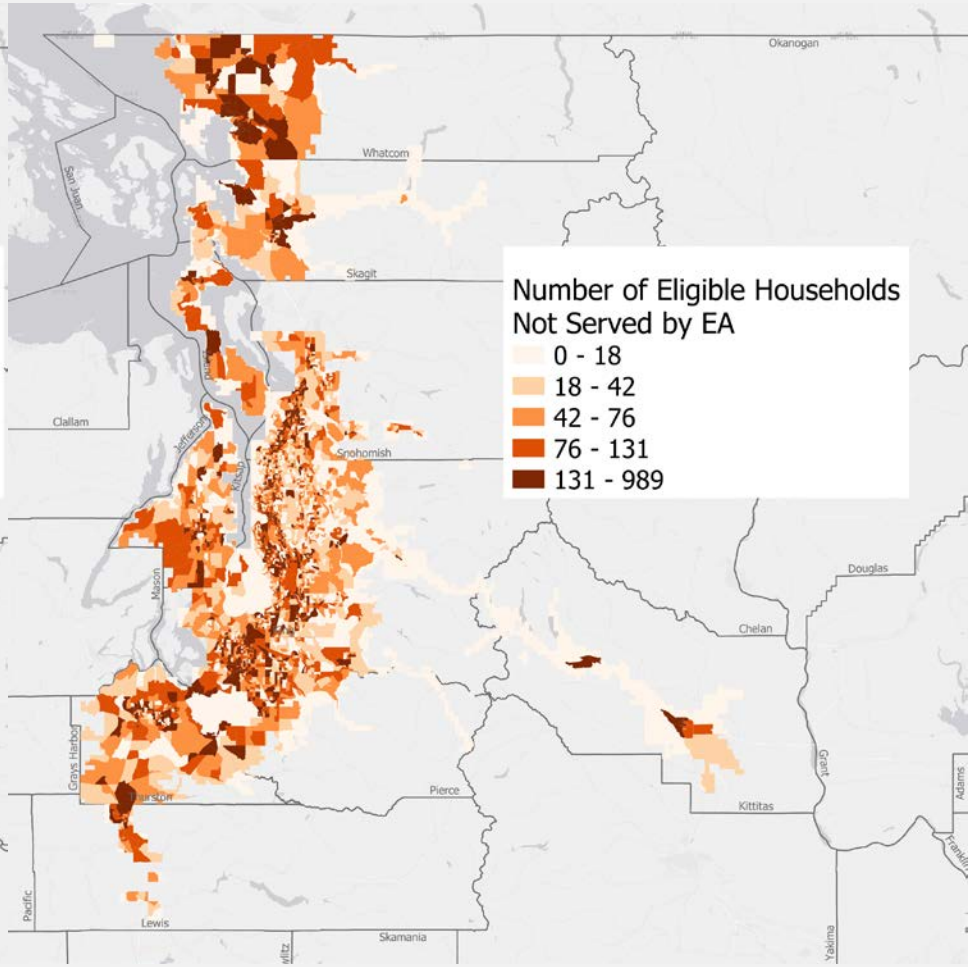
EA: UNSERVED HOUSEHOLDS

Number of eligible unserved households by geography

PUMA



Census Block Group



Breaks: Quantiles

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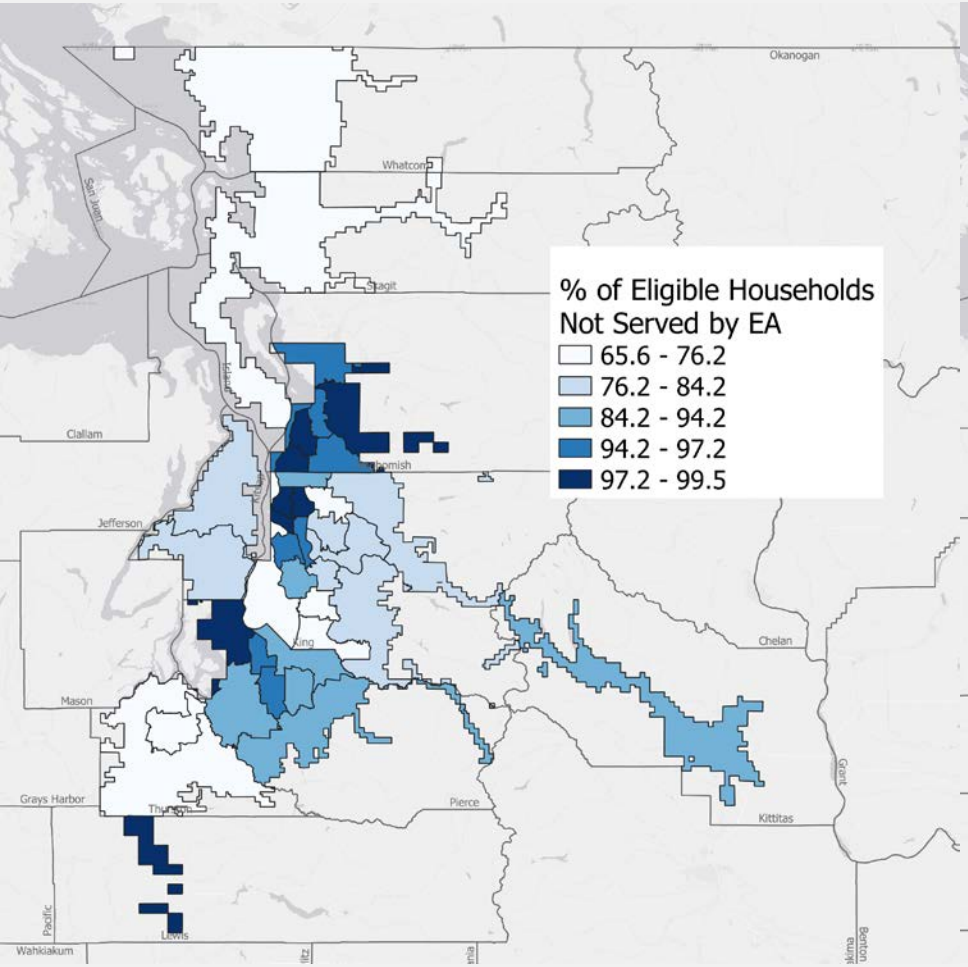
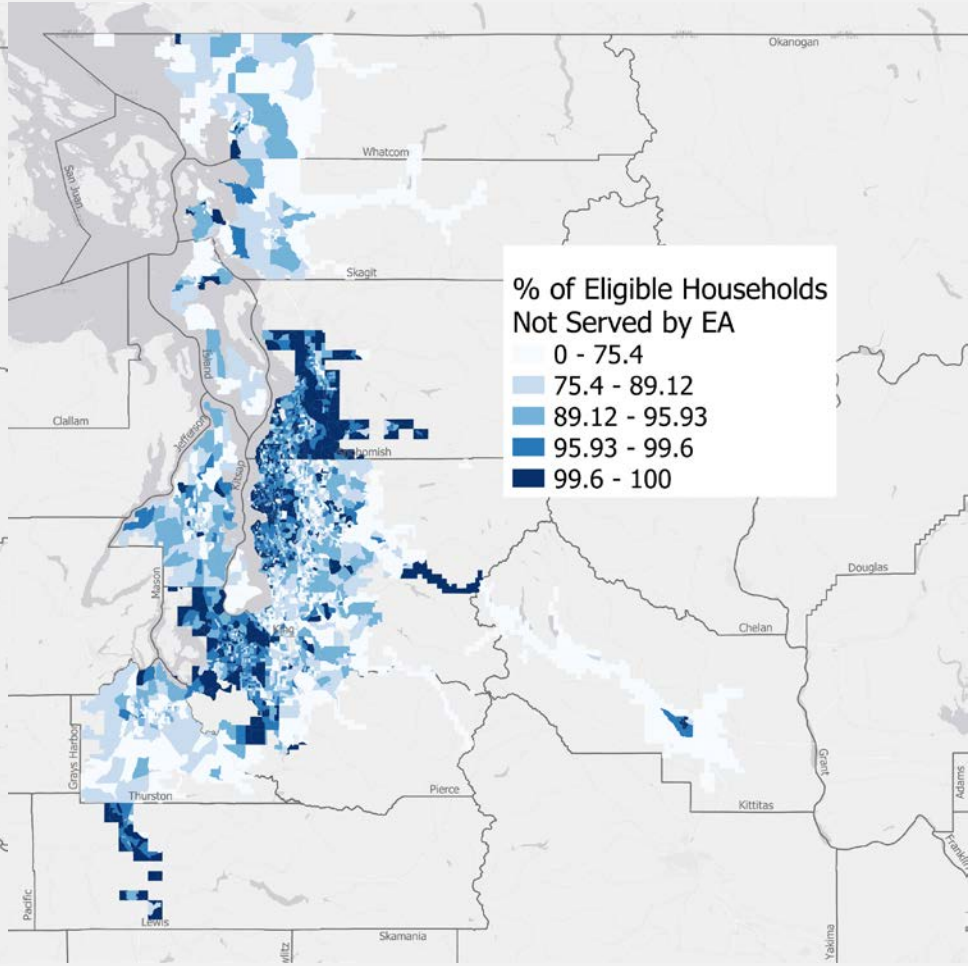
EA: UNSERVED HOUSEHOLDS %

Percentage of eligible unserved households by geography

PUMA



Census Block Group



Breaks: Quantiles

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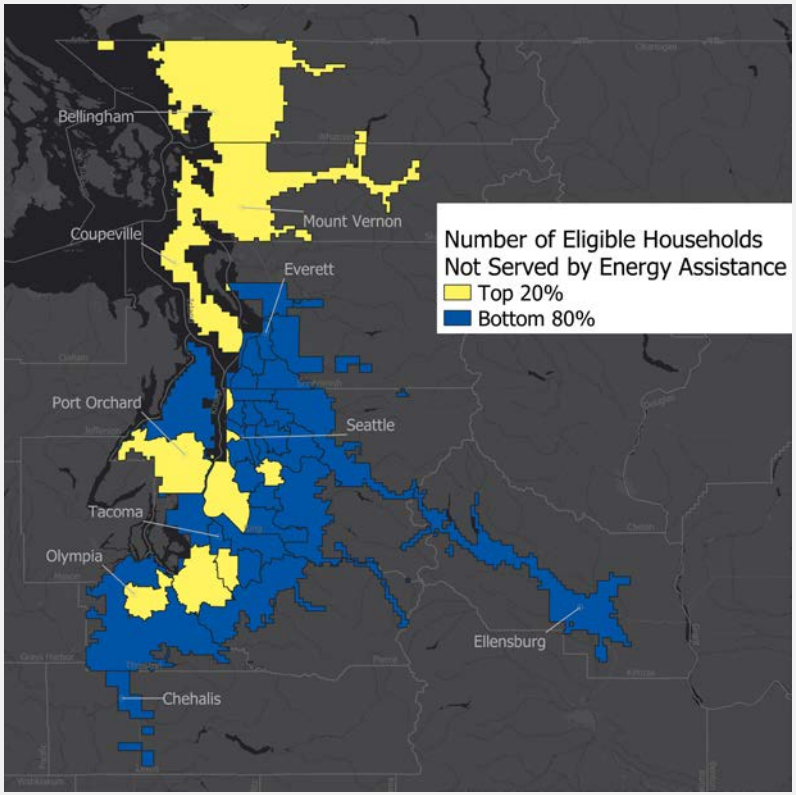
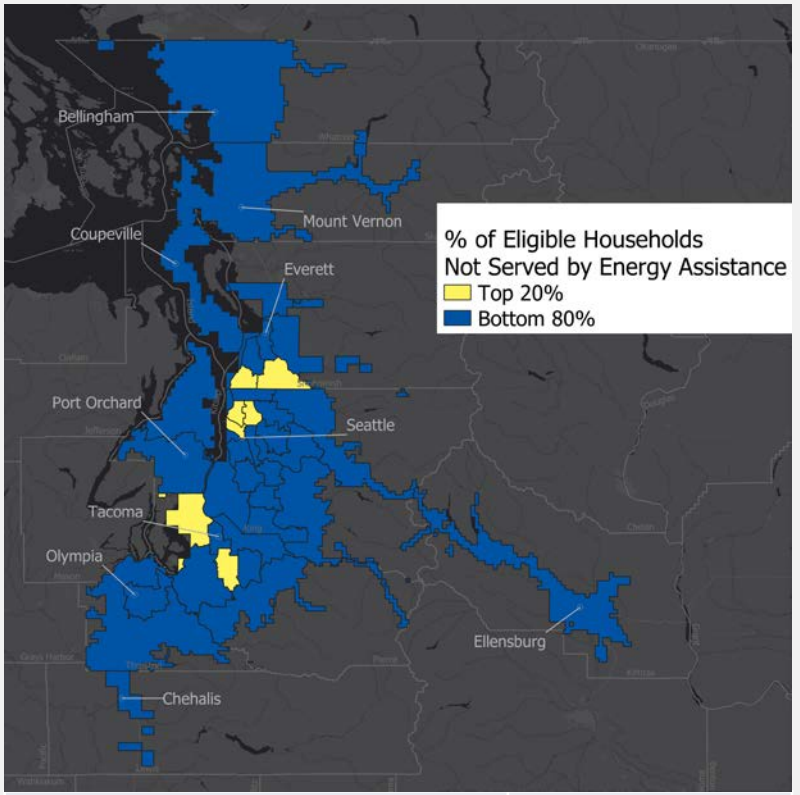
TOP AREAS TO TARGET: EA

eligible, unserved



PUMA Name	Households
Whatcom County - Bellingham	12,263
Skagit, Island & San Juan Counties	9,160
Thurston County - Olympia	8,579
Pierce County - Tacoma (South)	8,254
Kitsap County (South)	7,332

% eligible, unserved by PUMA



PUMA Name	% Households
Seattle (Northeast)	98.1
Seattle (Downtown) – Queen Anne & Magnolia	98.1
Seattle (Northwest)	97.0
Pierce County (Northwest)	96.0
Pierce County - Tacoma (South)	95.6

COMPOSITE NEED SCORE:

HIGHEST “NEED” AND LOWEST HISTORICAL PARTICIPATION

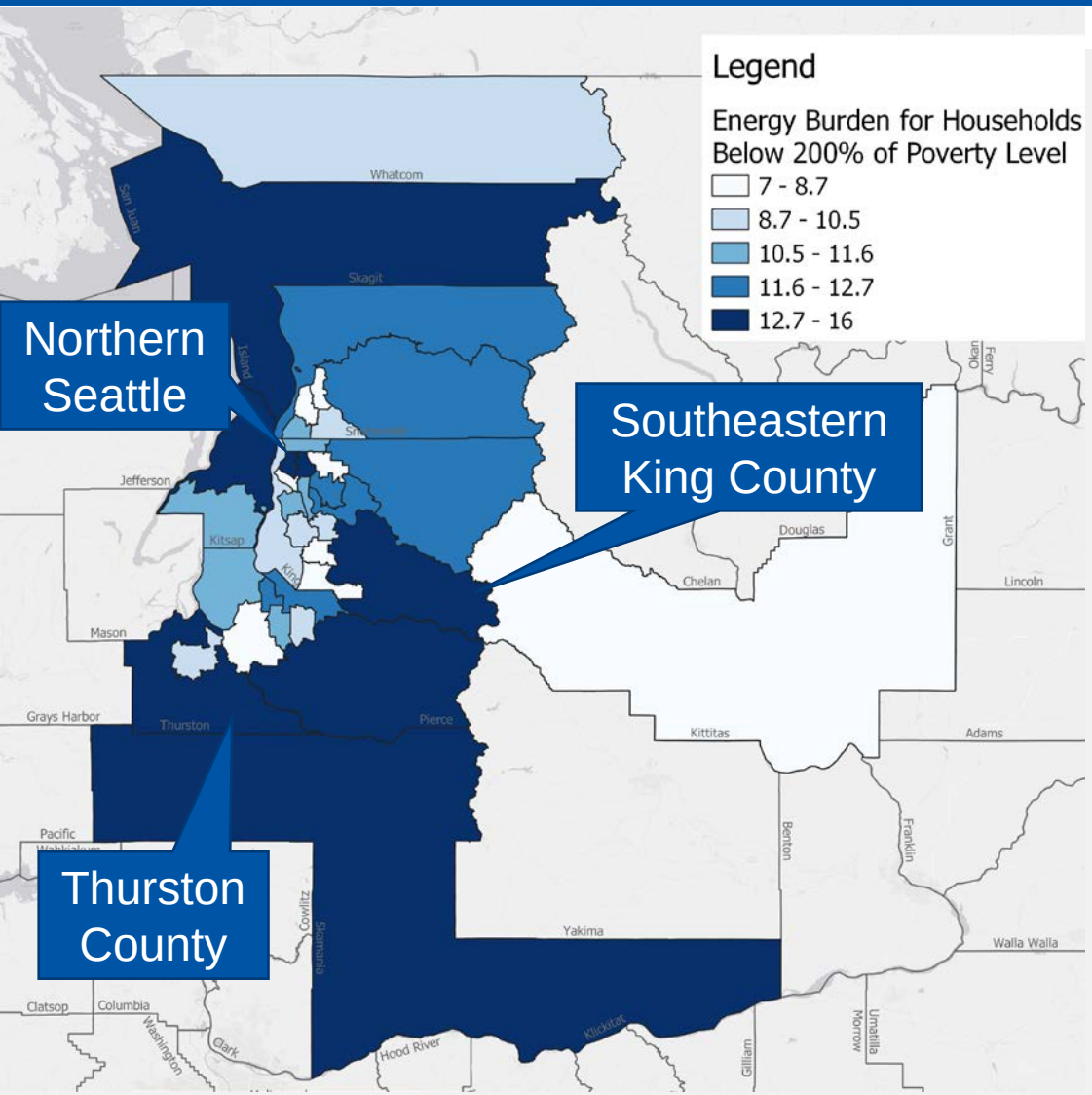
ENERGY BURDEN CALCULATION

Household Energy Burden

$$\frac{\text{Annual fuel cost for all heating fuel types (electricity, gas, \& other)}}{\text{Annual household income}}$$

Took the average of this for each PUMA

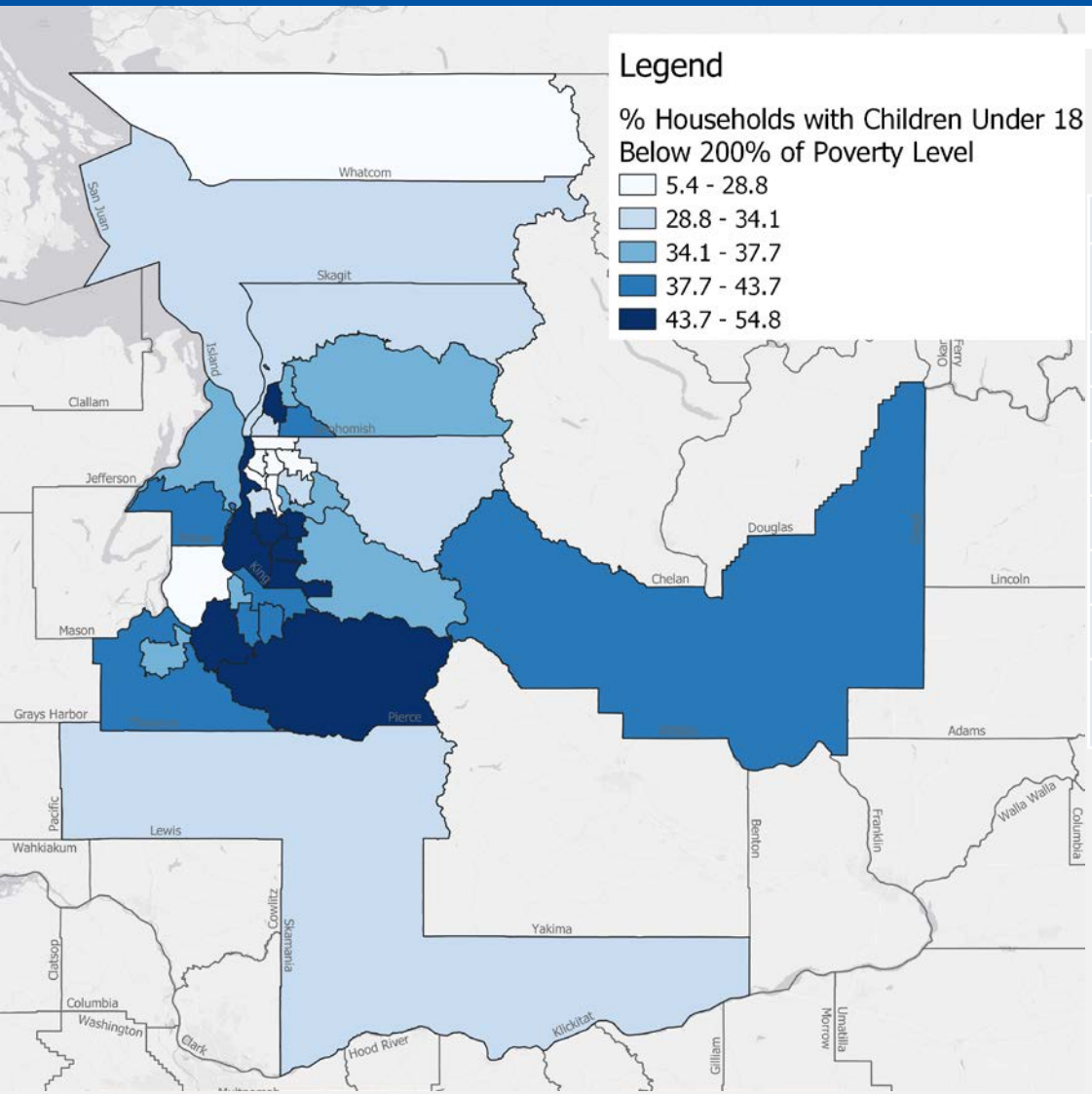
HIGH NEED VARIABLE: ENERGY BURDEN



PUMA Name	Average Energy Burden (% Income)
Seattle (Northeast)	16.0
King County (Southeast)	16.0
Thurston County (Outer)	14.0
Seattle (Northwest)	13.6
Pierce County (Southeast)	13.4
Skagit, Island & San Juan Counties	13.2
Lewis, Klickitat & Skamania Counties	13.0

Breaks: Quantiles

HIGH NEED VARIABLES: CHILDREN UNDER 18



PUMA Name	% Households
King County (Southwest Central)	54.8
Pierce County (West Central)	49.6
King County (Far Southwest)	47.6
King County (Southwest)	47.0
Pierce County (Southeast)	45.5
King County (West Central)	44.1
King County (Central)	43.9
Snohomish County (West Central)	43.8

Breaks: Quantiles

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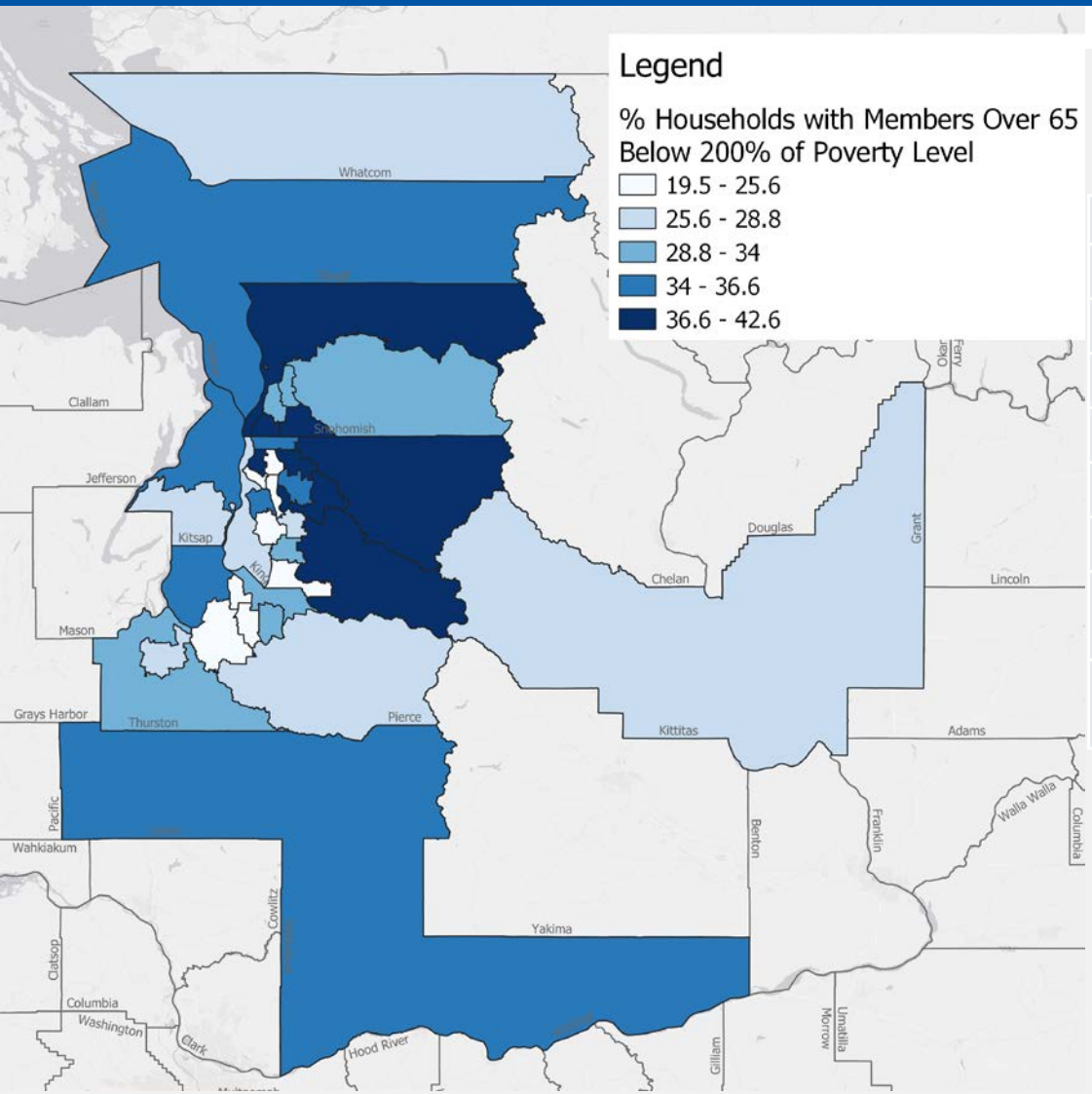
HIGH NEED VARIABLE: ADULTS OVER 65



PUMA Name	% Households
King County (Southeast)	42.6
Seattle (Northwest)	39.0
King County (Northeast)	38.8
Snohomish County (North)	37.9
King County (Central)	37.9
King County (Northwest)	37.1
Snohomish County (South Central)	37.0
Snohomish County (Southwest)	36.7

Breaks: Quantiles

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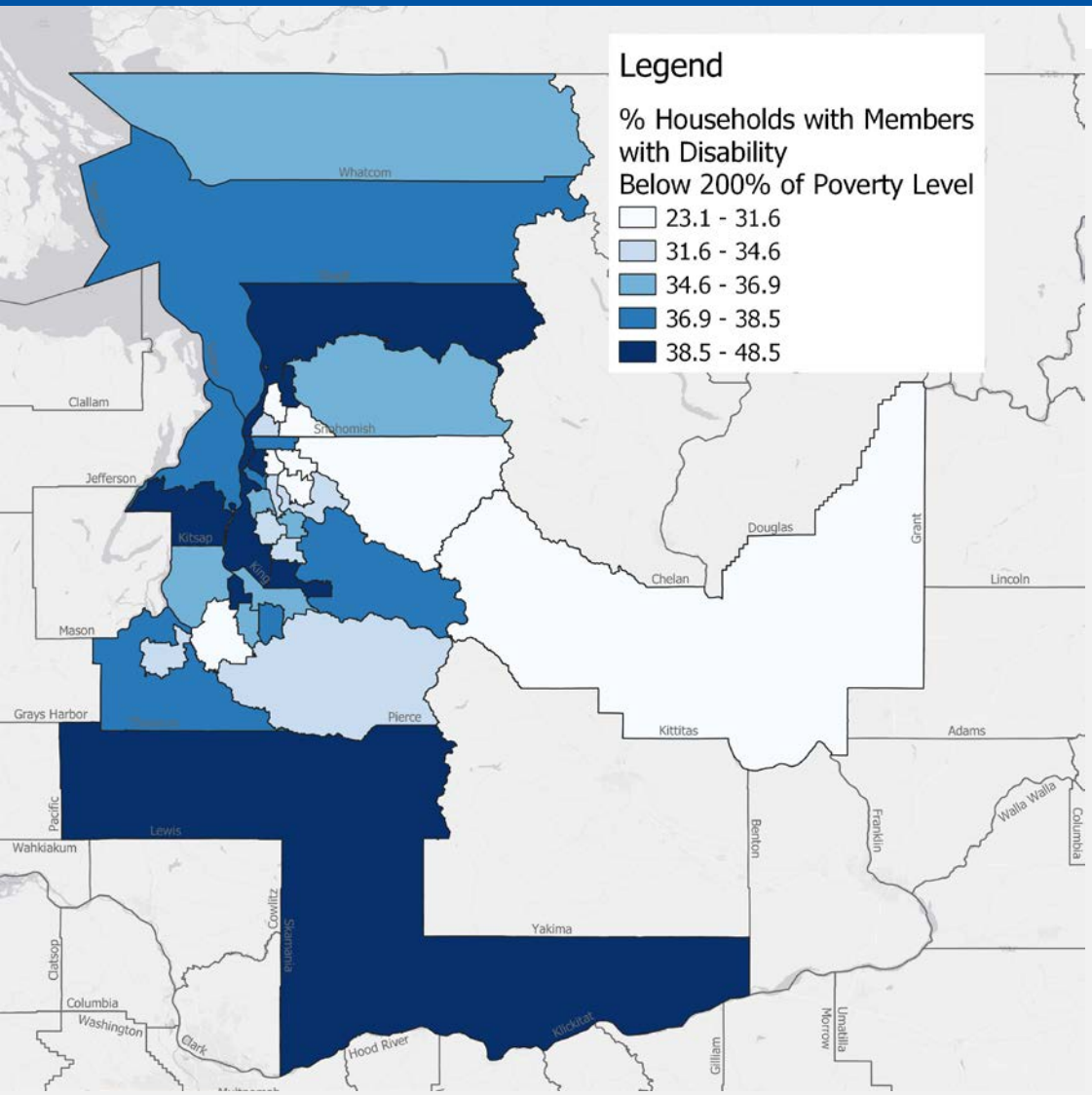
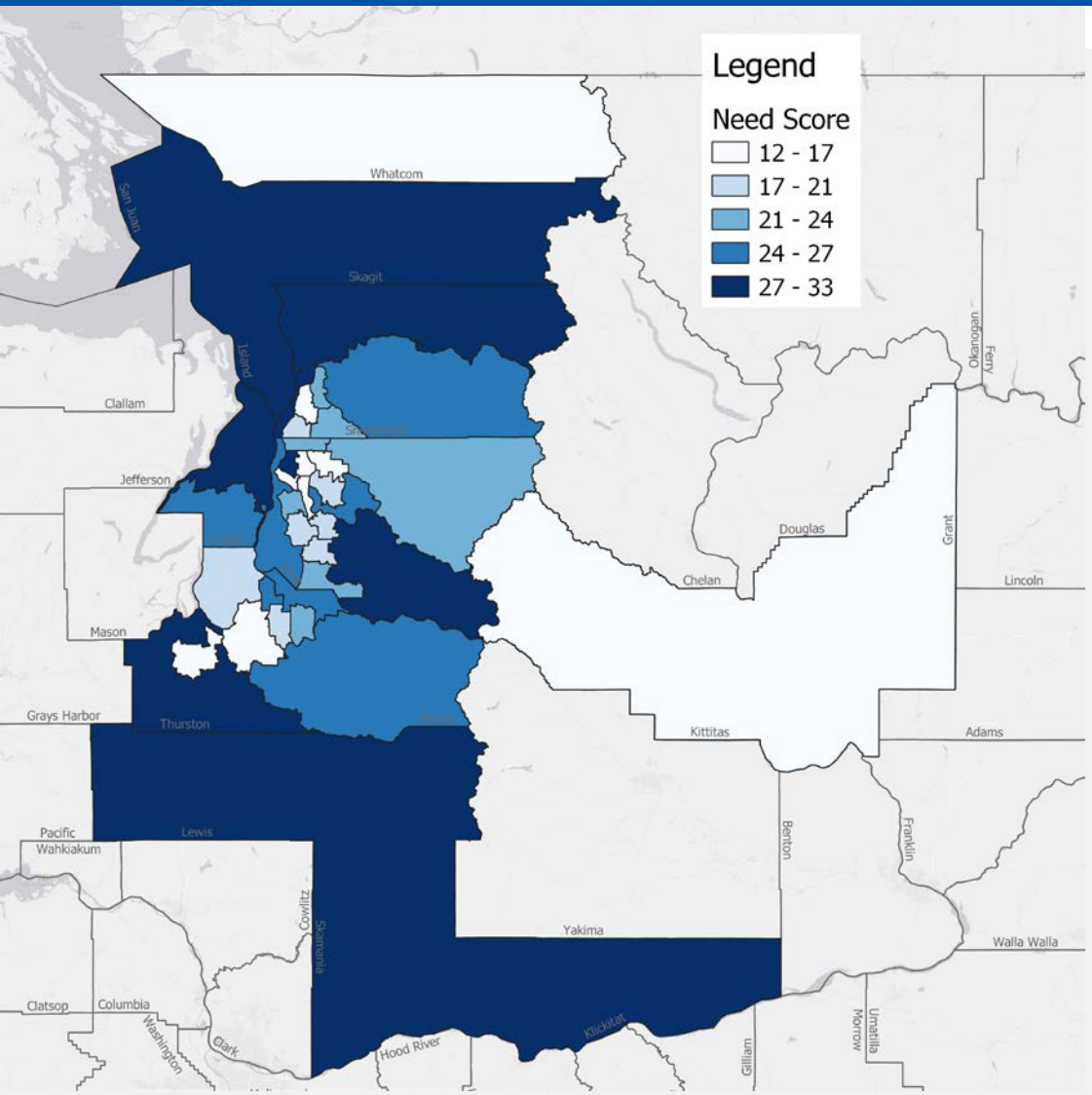
HIGH NEED VARIABLE: DISABILITY



PUMA Name	% Households
Snohomish County (North)	48.5
Kitsap County (South)	48.0
Lewis, Klickitat & Skamania Counties	45.1
Snohomish County (Central)	42.0
Pierce County - Tacoma (Central)	41.2
King County (Southwest)	39.7
Seattle (Northwest)	39.3
King County (Far Southwest)	38.5

Breaks: Quantiles

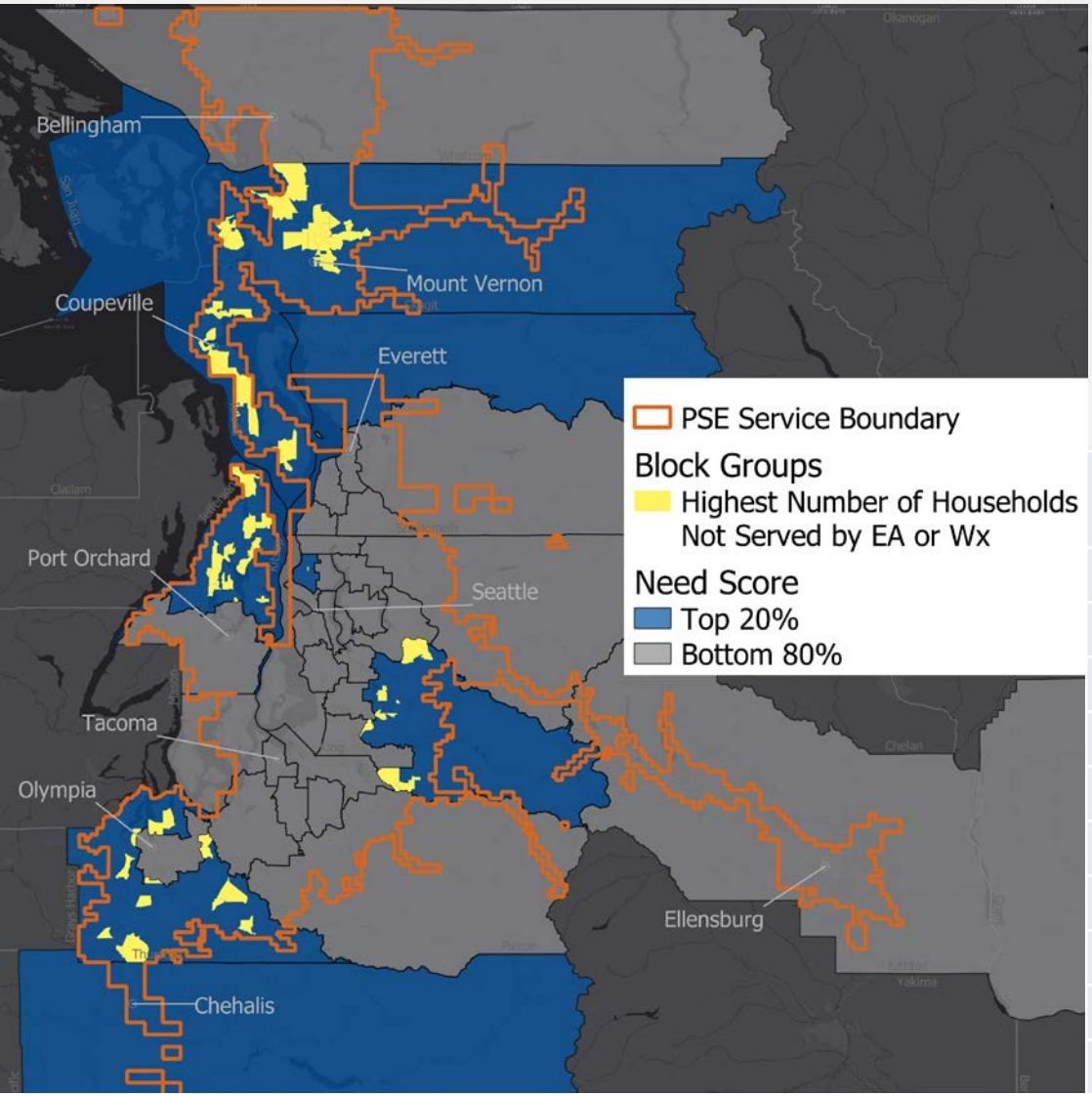
COMPOSITE SCORE: AREAS WITH HIGHEST NEED



PUMA Name	Need Score
King County (Southeast)	33
Thurston County (Outer)	32
Snohomish County (North)	31
Kitsap County (North)	30
Lewis, Klickitat & Skamania Counties	30
Seattle (Northwest)	30
Skagit, Island & San Juan Counties	30

Breaks: Quantiles

UNDERSERVED BLOCK GROUPS WITH HIGHEST NEED



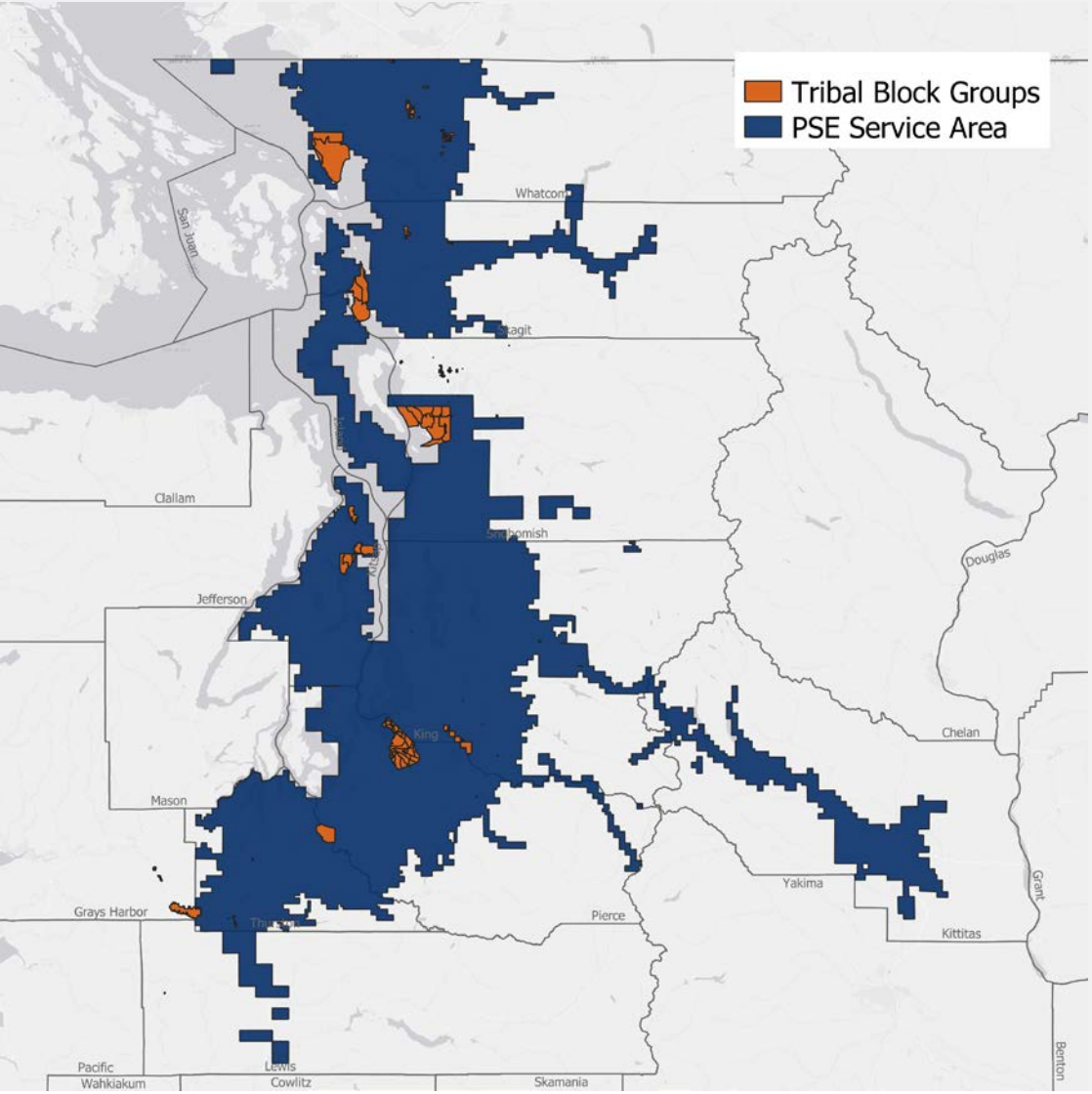
Criteria

- Top 20% of number of households not served
- Top 20% of need score
- 95 Census Block Groups meet these criteria

Top 10 Census Block Groups by Households Not Served

Block Group	County	Households Not Served	Need Score
530579524023	Skagit	524	30
530579523011	Skagit	501	30
530670120002	Thurston	465	32
530299709002	Island	457	30
530670124121	Thurston	428	32
530579518001	Skagit	415	30
530579523021	Skagit	407	30
530579522002	Skagit	391	30
530579523022	Skagit	339	30
530670124113	Thurston	322	32

UNDERSERVED BLOCK GROUPS TRIBAL AREAS



- Within PSE territory, there are 59 tribal block groups

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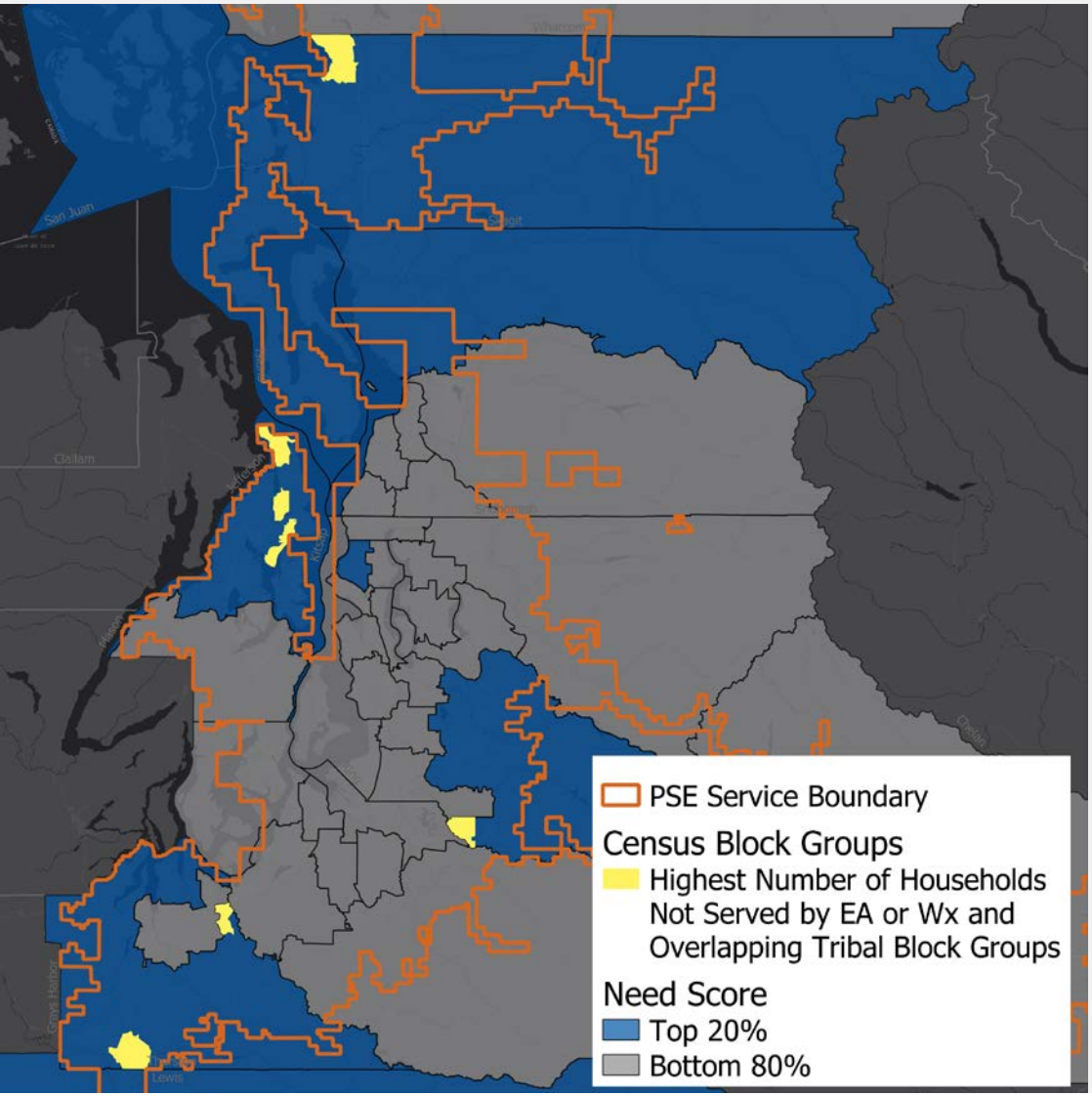
UNDERSERVED BLOCK GROUPS TRIBAL AREAS



- Within PSE territory, there are 59 tribal block groups
- Of the 95 Census Block Groups identified for targeting, 10 overlap with tribal block groups

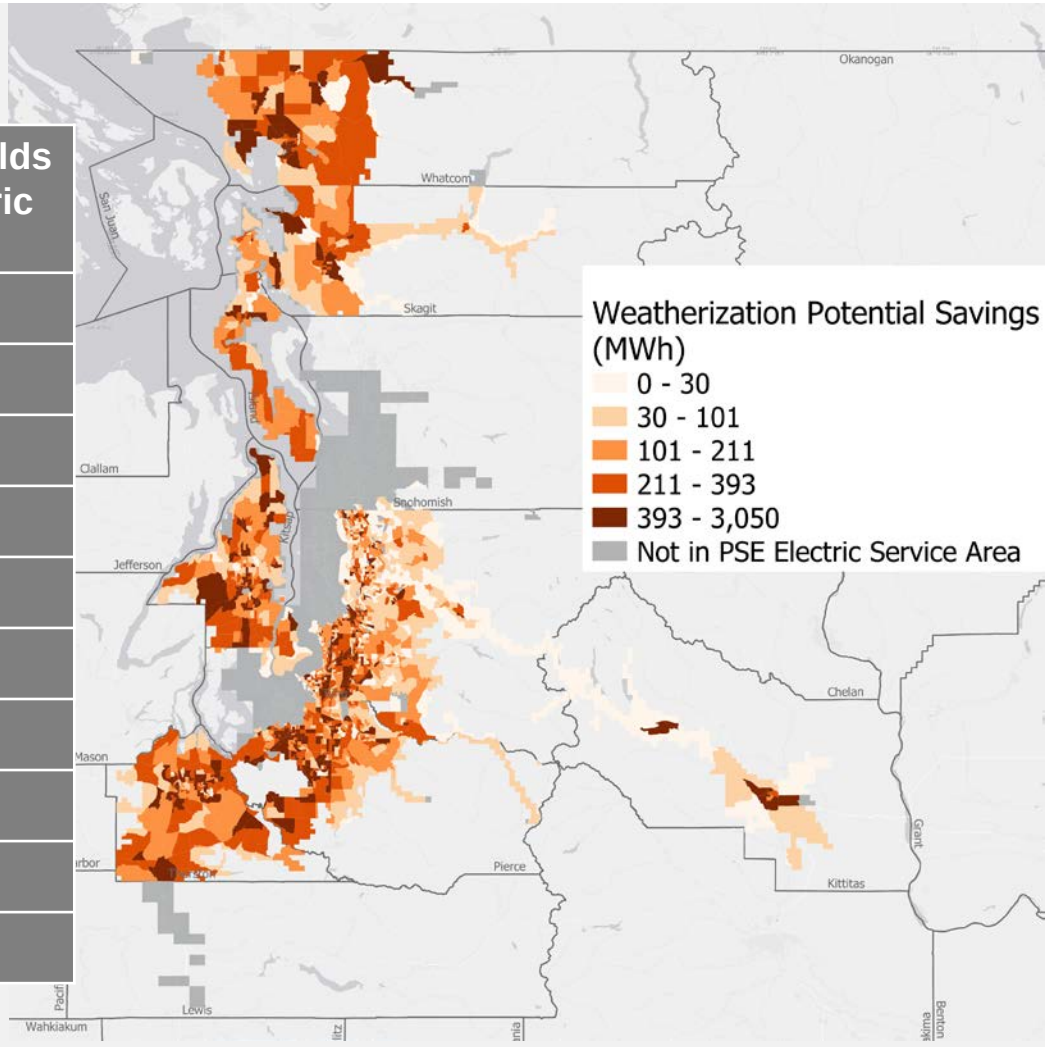
WEATHERIZATION POTENTIAL SAVINGS

POTENTIAL SAVINGS: ELECTRIC SERVICE TERRITORY

Top 10 Block Groups

Block Group	County	Potential Savings (MWh)	% Households with Electric Heat
530730012013	Whatcom	3,050	81%
530379754011	Kittitas	2,737	86%
530530718061	Pierce	2,222	96%
530730001003	Whatcom	2,193	60%
530730012011	Whatcom	2,133	83%
530530716011	Pierce	1,922	85%
530670105101	Thurston	1,907	94%
530330292062	King	1,801	96%
530530717041	Pierce	1,769	99%
530330260021	King	1,607	97%

Annual savings per household: 2,021 kWh



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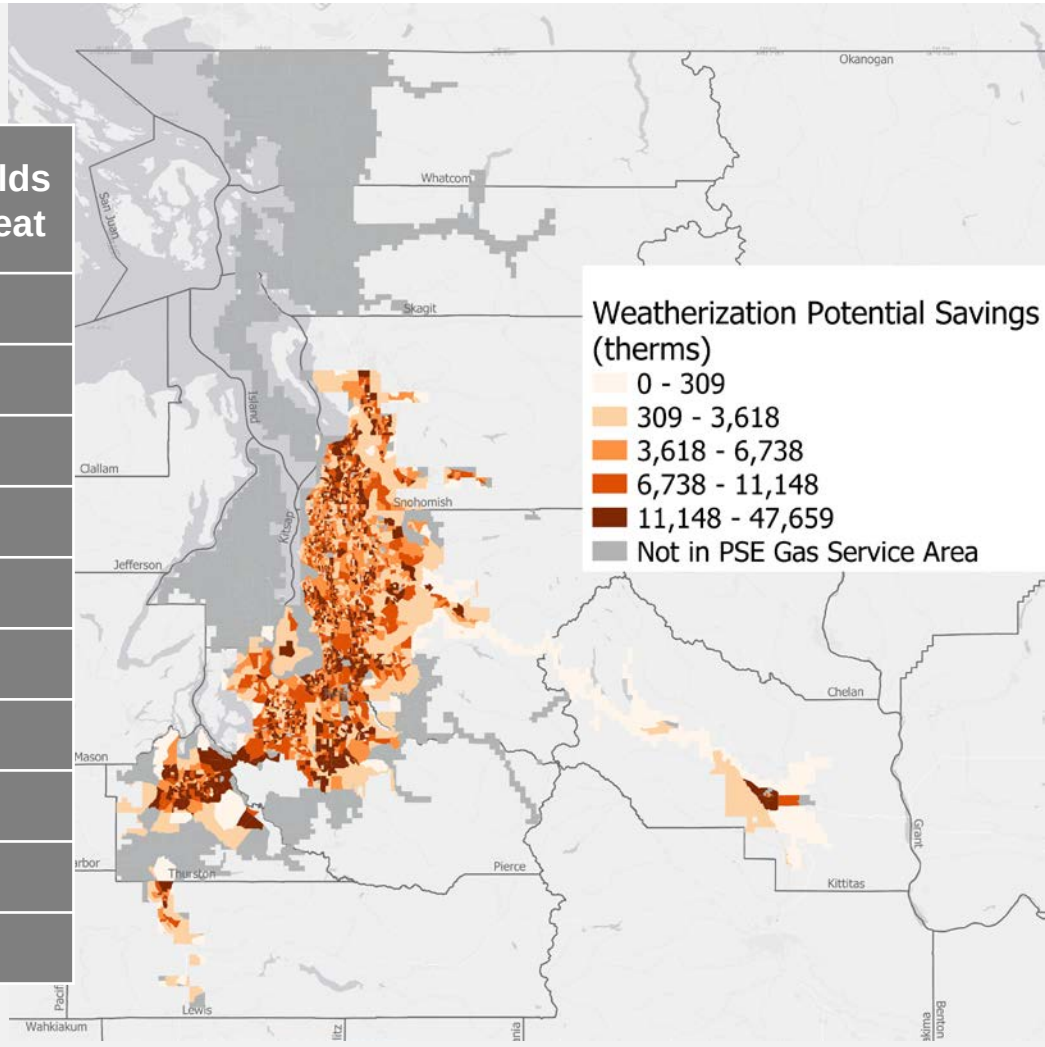
POTENTIAL SAVINGS: GAS SERVICE TERRITORY

Top 10 Block Groups

Block Group	County	Potential Savings (therms)	% Households with Gas Heat
530330302022	King	47,659	83%
530670120002	Thurston	46,994	51%
530330295021	King	45,860	67%
530330110022	King	43,456	50%
530610418121	Snohomish	42,921	46%
530330276002	King	41,876	69%
530530731261	Pierce	39,686	50%
530670122222	Thurston	38,660	66%
530330298026	King	36,769	75%
530610418122	Snohomish	36,040	43%

Annual savings per household: 188 therms



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NEXT STEPS

SUGGESTED NEXT STEPS

- Identify list of known barriers and demographic trends
- Coordinate with agencies
- Utilize tools to conduct customer segmentation
- Analyze relationships of underserved populations
- Prioritize and target high-need areas with appropriate marketing and outreach
- Develop messaging based on demographic profiles
- Determine how LINA can support forthcoming CETA reporting requirements
- Identify additional potential research needs

QUESTIONS & DISCUSSION