Achieving Energy Justice: The Importance of Place and a Community-based Approach

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SEAS

URBAN ENERGY JUSTICE LAB

Lee County, SC

N.J. Wants to Outsource Radioactive Garbage to South Carolina

TOPICS: Brandon Turbeville

JULY 26, 2012

Lee County prison killings: A look at the nation's deadliest prison riot in a quarter-century

The Greenville News and Independent Mail Reports Published 11:02 a.m. ET April 23, 2018 | **Updated 2:32 p.m. ET April 25, 2018**


County Rd 57

Is energy a basic human right?

What is Energy Justice?

- Seeks to apply basic principles of justice… to the injustices evident among the **energy oppressed poor**
- Ensures that everyone can afford the energy they need for **health and well-being**
- Like, *environmental justice,* energy justice allows us to frame energy disparities across **race, class, and place.**
- Requires **recognition** of the unique characteristics and needs of both people and place

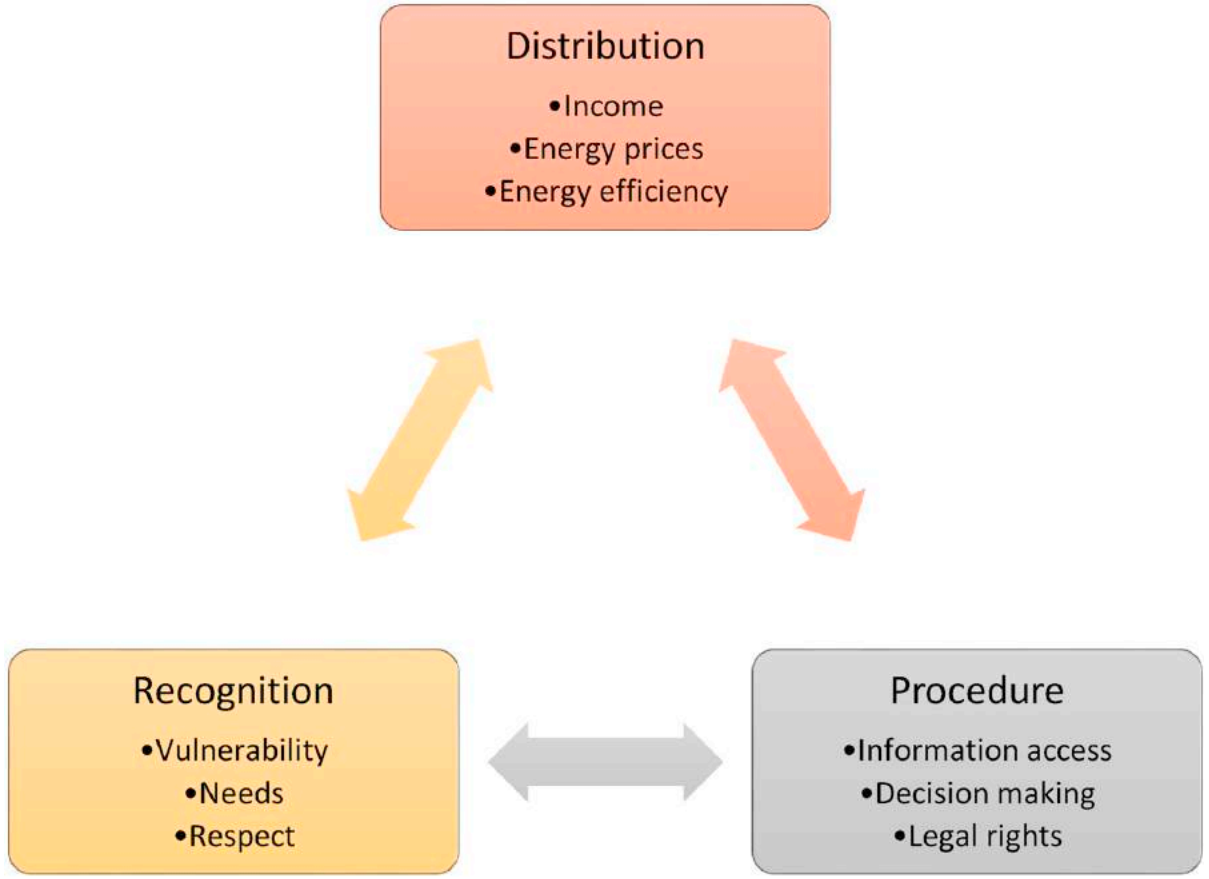
A Call for Energy Justice (4 Basic Rights)

1. Right to healthy, sustainable energy **production**
2. Right to best available energy **infrastructure**
3. Right to **affordable** energy
4. Right to **uninterrupted** energy service

Hernández, D. (2015). Sacrifice along the energy continuum: a call for energy justice. *Environmental Justice*, *8*(4), 151-156.

Moving Towards Energy Justice

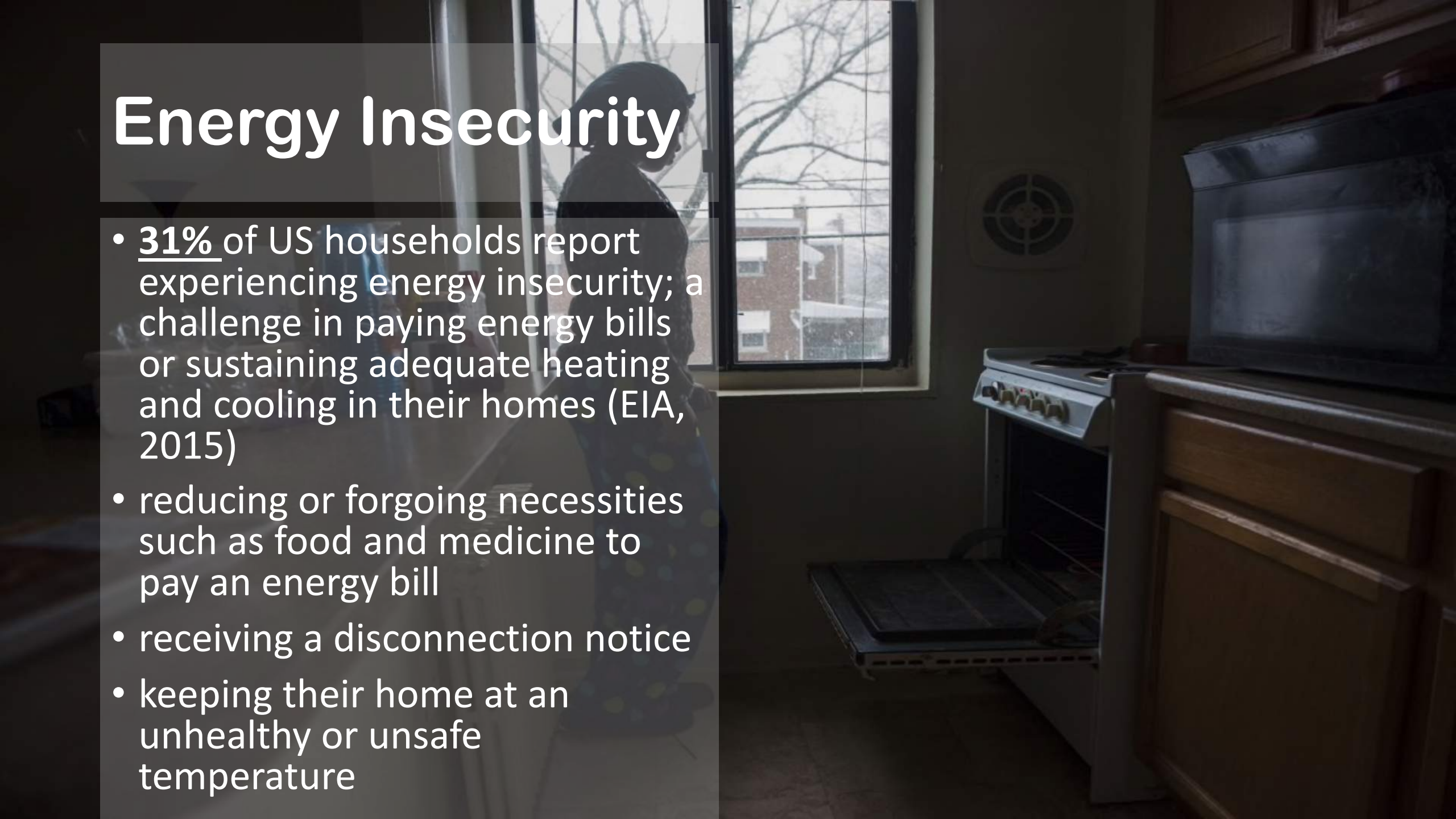
- **A Just Energy System**– fairly disseminates both the benefits and costs of energy services, and has representative and impartial energy decision-making
- Involves understanding the following key elements:
  - **Costs**, or how the hazards and externalities of the energy system are imposed on communities unequally, often the poor and marginalized;
  - **Benefits**, or how access to modern energy systems, technologies, and services are highly uneven;
  - **Procedures**, or how many energy projects proceed with exclusionary forms of decision-making that lack due process and representation.



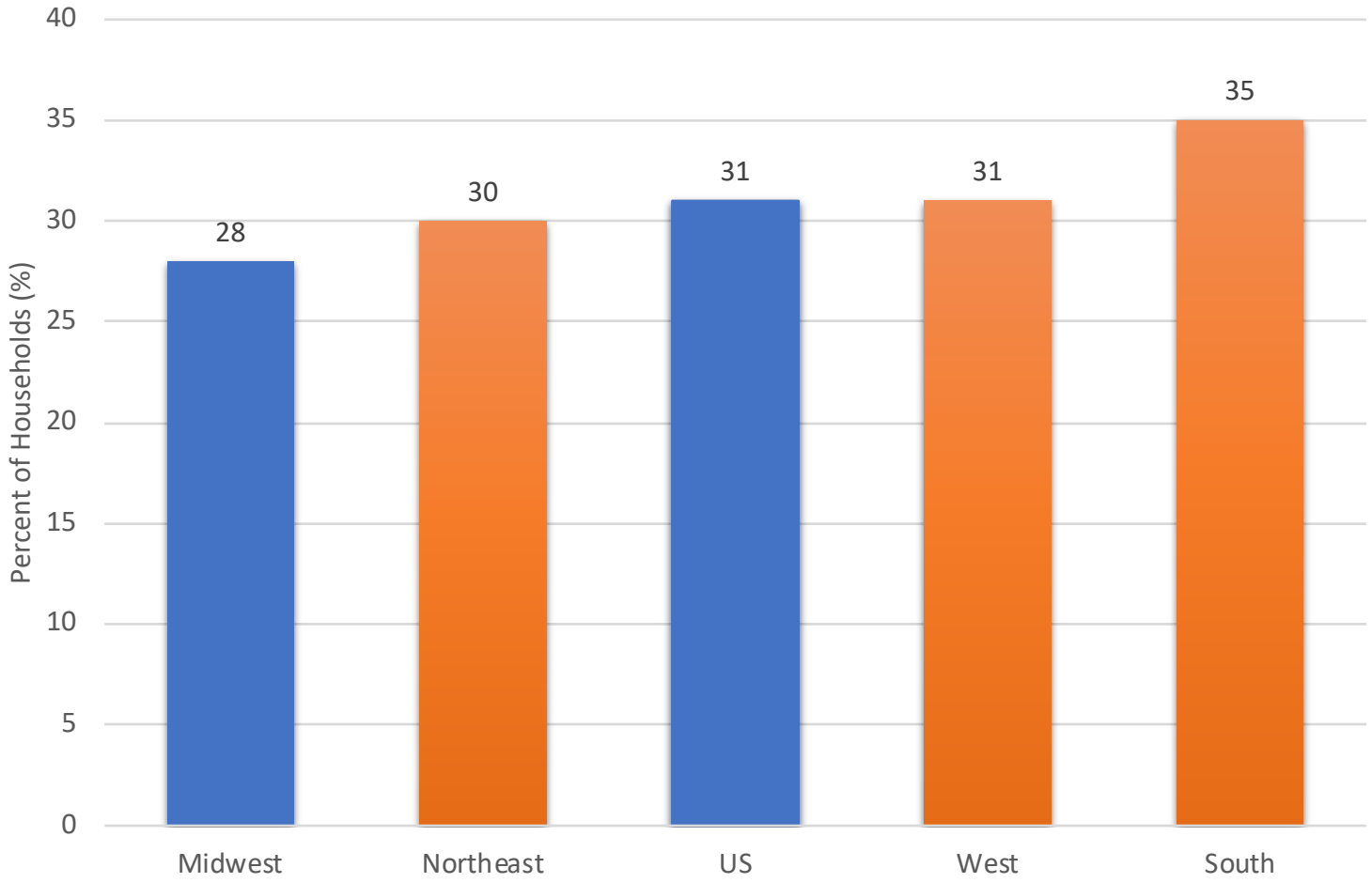
Source: Gillard, R., Snell, C., & Bevan, M. (2017). Advancing an energy justice perspective of fuel poverty: Household vulnerability and domestic retrofit policy in the United Kingdom. *Energy research & social science*, *29*, 53-61.

Energy Insecurity

- **31%** of US households report experiencing energy insecurity; a challenge in paying energy bills or sustaining adequate heating and cooling in their homes (EIA, 2015)
- reducing or forgoing necessities such as food and medicine to pay an energy bill
- receiving a disconnection notice
- keeping their home at an unhealthy or unsafe temperature



Distribution of Energy Insecurity (Census Region)



No. of Energy Insecure Households

- US 37M
- Northeast 6.2M
- Midwest 7.4M
- West 8.1M
- South 15.4M

Source: EIA, Residential Energy Consumption Survey 2015

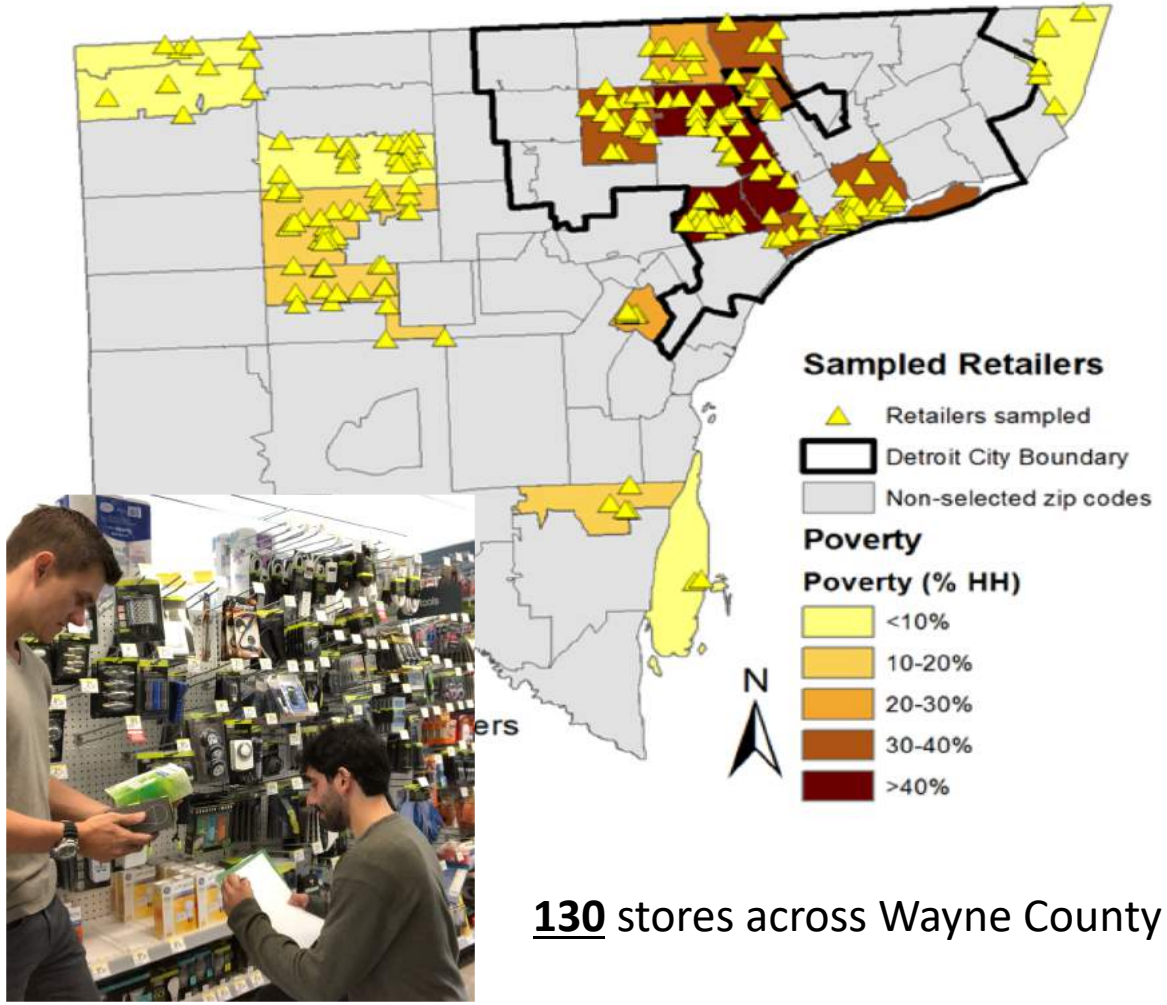
Distribution of Energy Insecurity (Census Division)

Source: EIA, Residential Energy Consumption Survey 2015

An incandescent truth: Disparities in energy-efficient lighting availability and prices in an urban US county

Reames, T. G., Reiner, M. A., & Stacey, M. B. 2018. *Applied Energy*, *218*, 95-103.

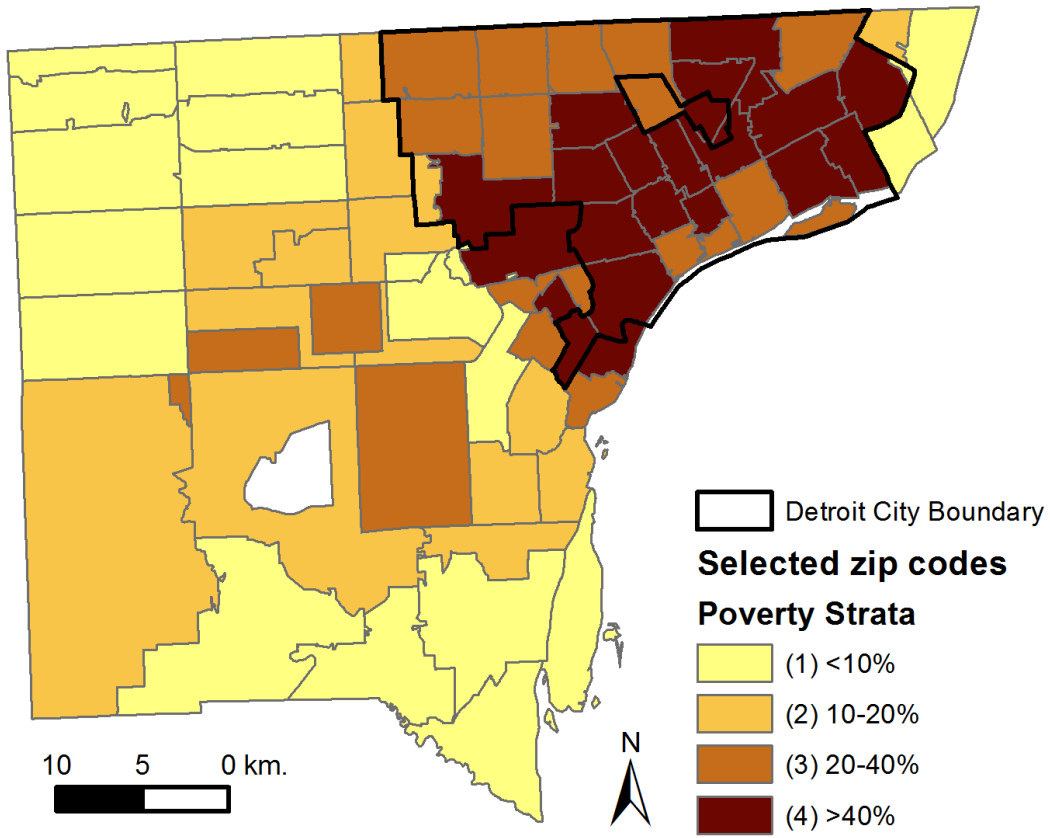
- Only 29% of U.S. households use at least one LED bulb in their home (US EIA 2015)
- Low-income households (<$50k) are less likely than higher income households to purchase LED bulbs (Sylvania 2016).



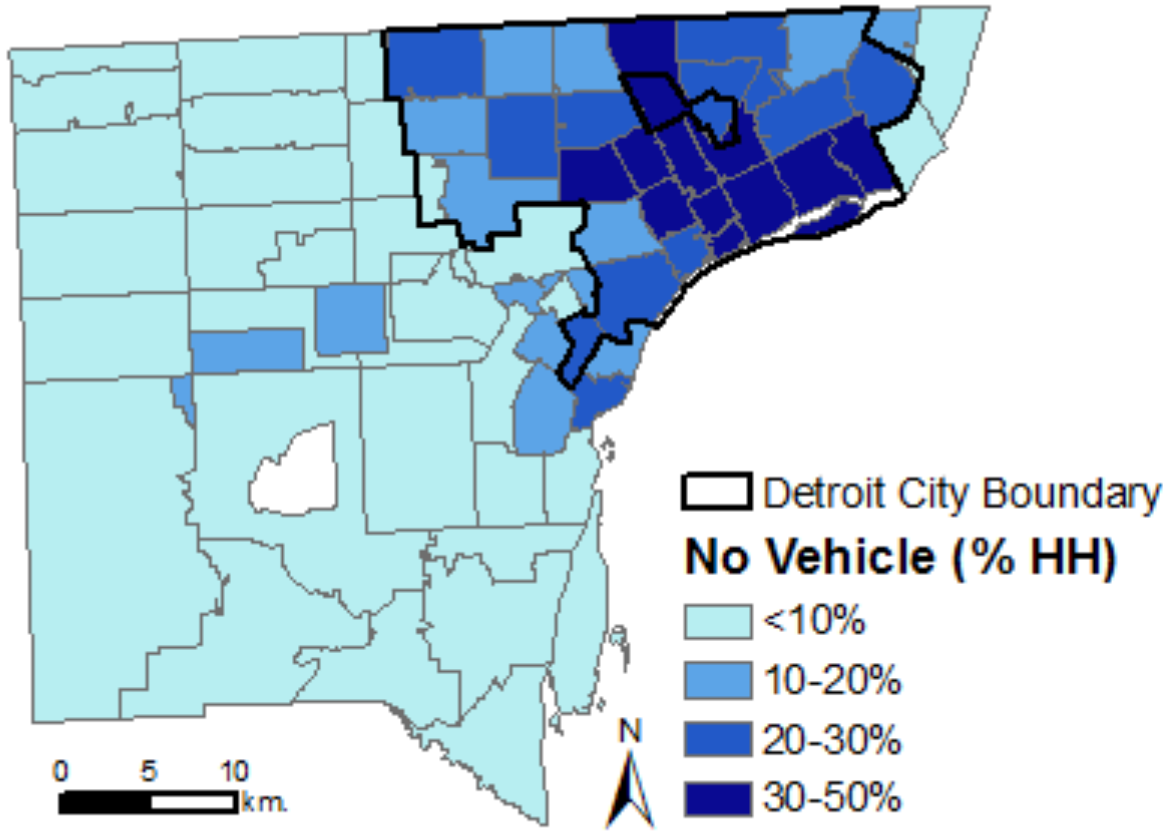
130 stores across Wayne County

Poverty & Vehicle Access

% Households in Poverty by Zip Code

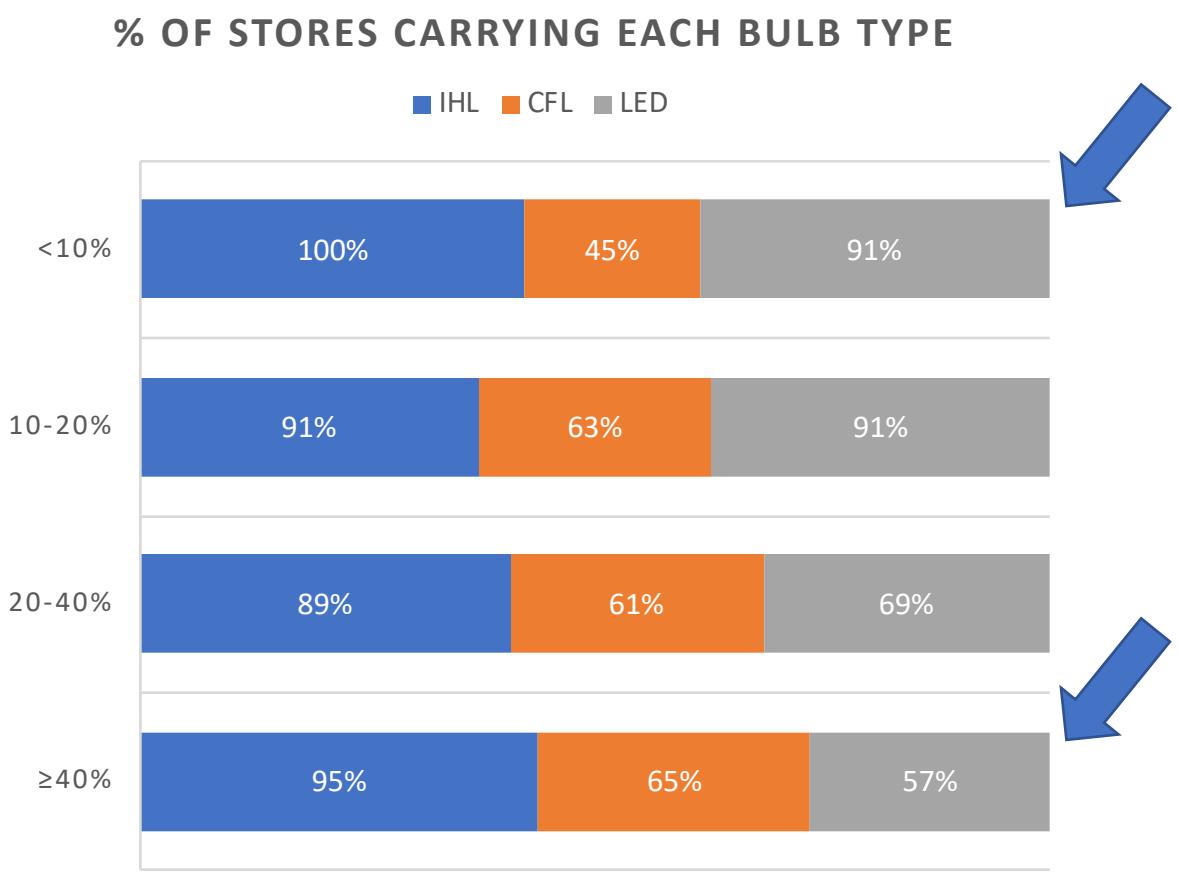


Lack of Private Vehicle Access by Zip Code

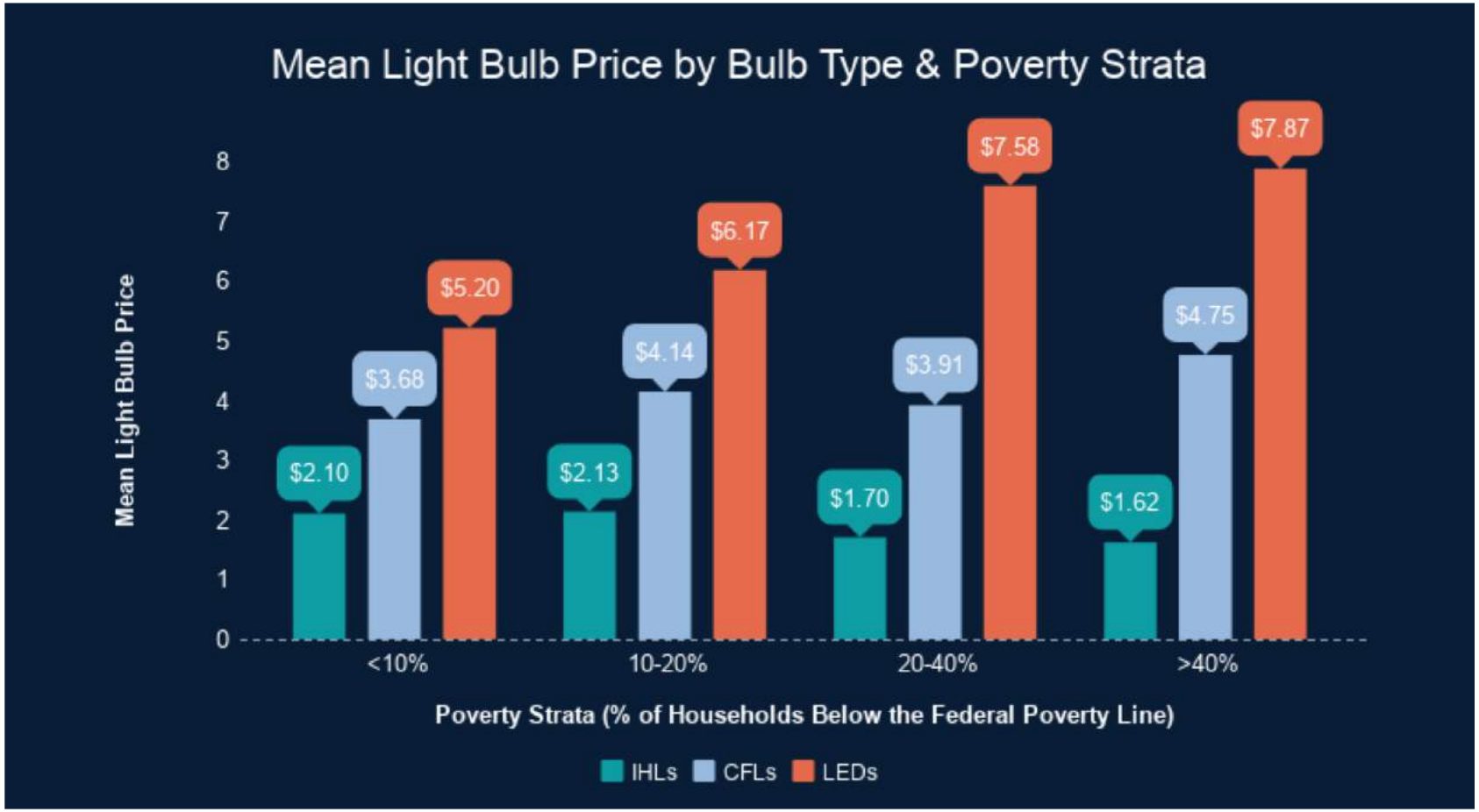


Bulb Availability

- Nearly all sampled stores carried incandescent bulbs
- The majority of samples stores carried CFLs
  - Except in the lowest poverty strata; only 45% of sampled stores
- There was a significant difference in the availability of LEDs
  - 91% of stores in the two lowest poverty strata carried LEDs
  - Only 57% of sampled stores in the highest poverty strata carried at least one LED option.



Bulb Costs

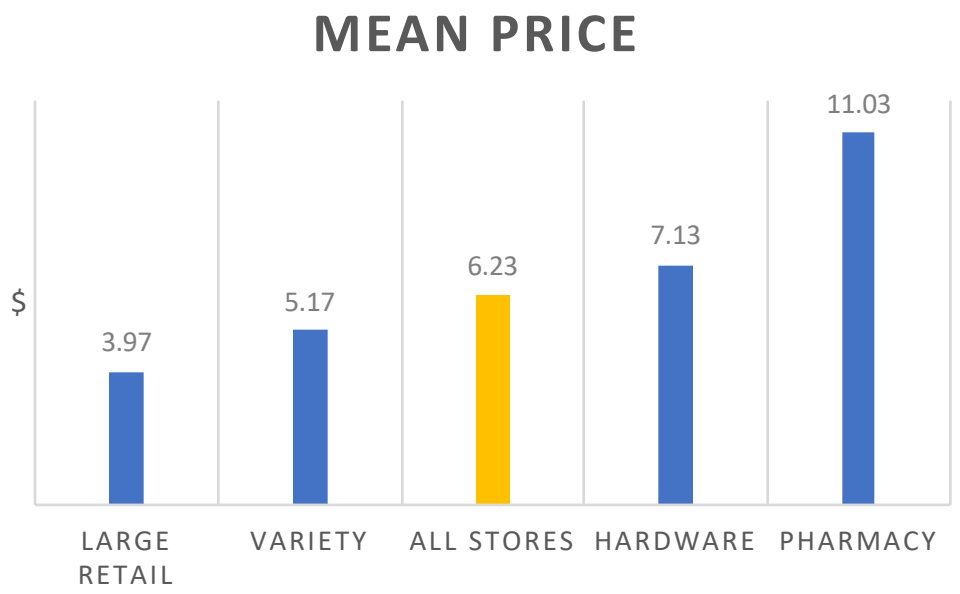


- **$2.67** difference in cost of LED bulbs between poorer and less poor areas
- Cost to upgrade from INC to LED is **2 times** greater in poorer areas than in less poor areas ($6.25 v. $3.10)

Other Observations

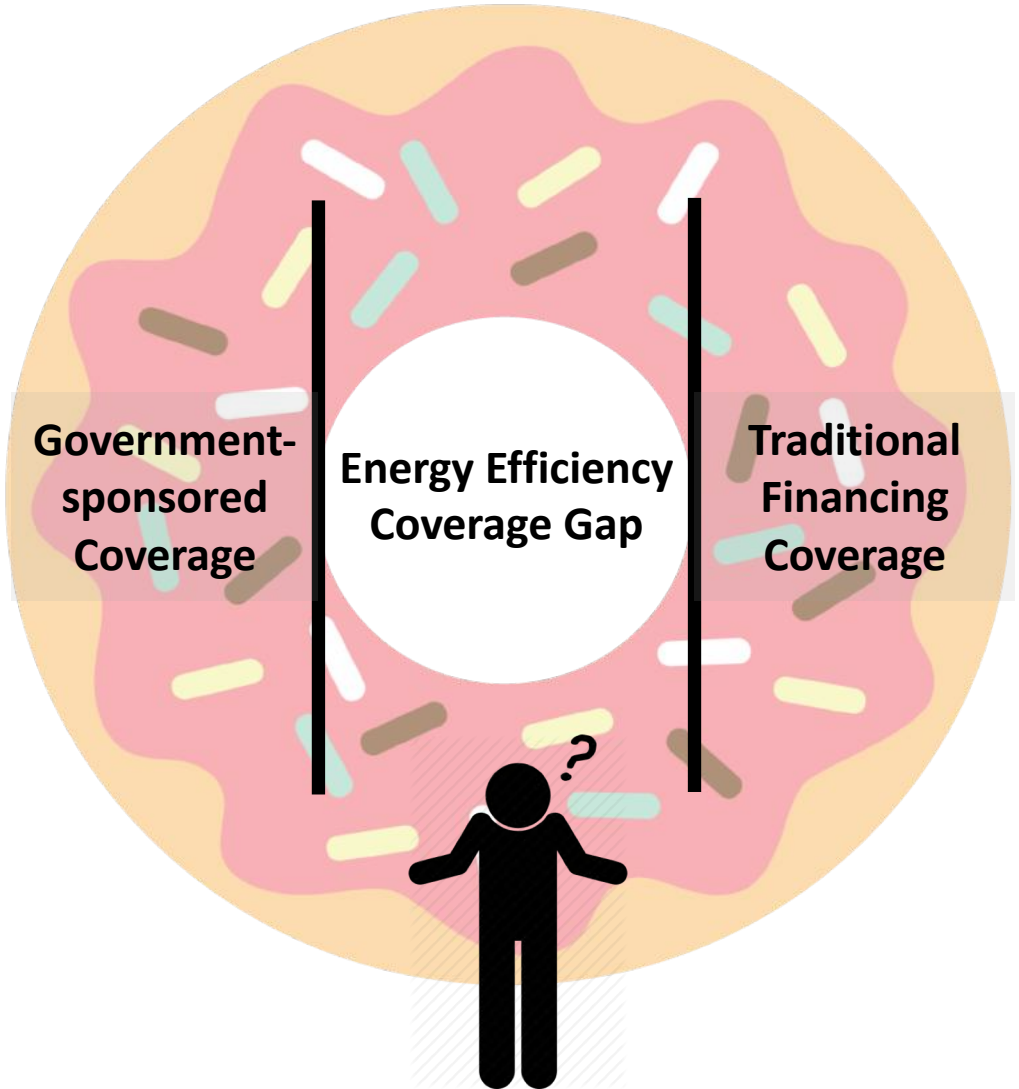
Information asymmetry

- Consumers' **main source** of light bulb info is **at the retailer** (Sylvania, 2016)
- **Big-box stores**: knowledgeable clerks; bright displays; easy to read signage
- **Dollar stores**: Items difficult to find; lack of signage; products poorly labeled (different brands)



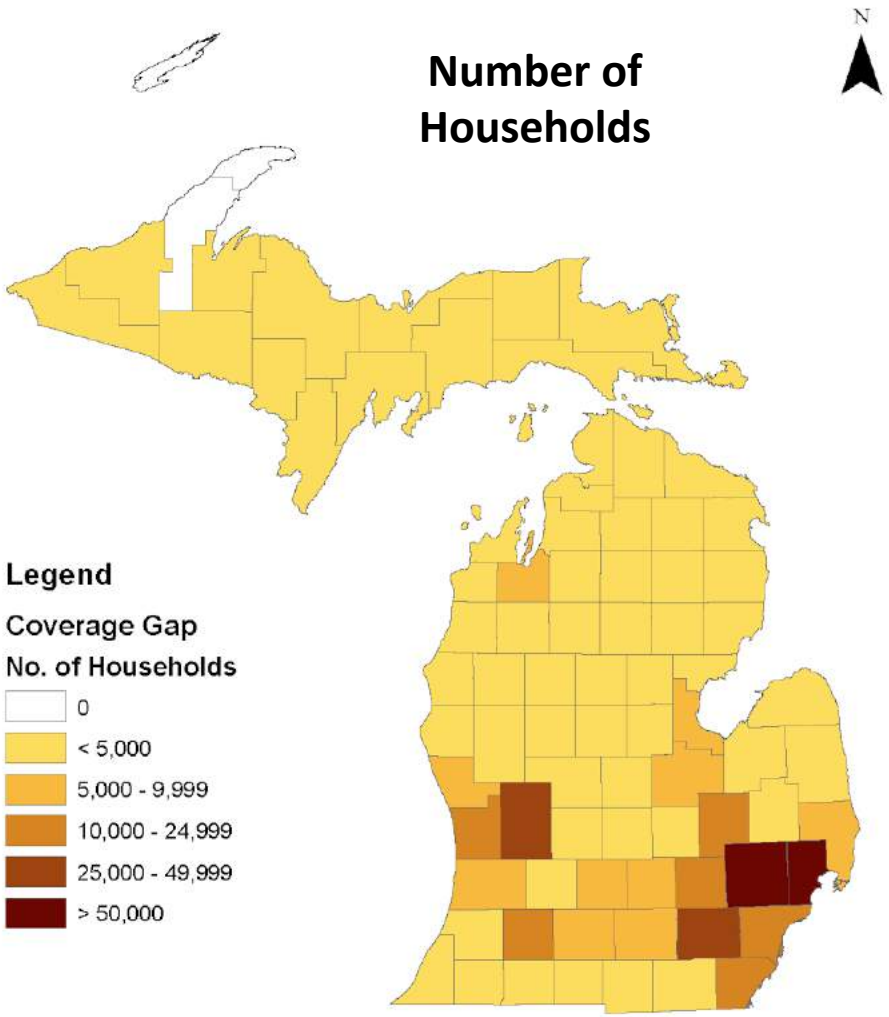
The Energy Efficiency Donut Hole

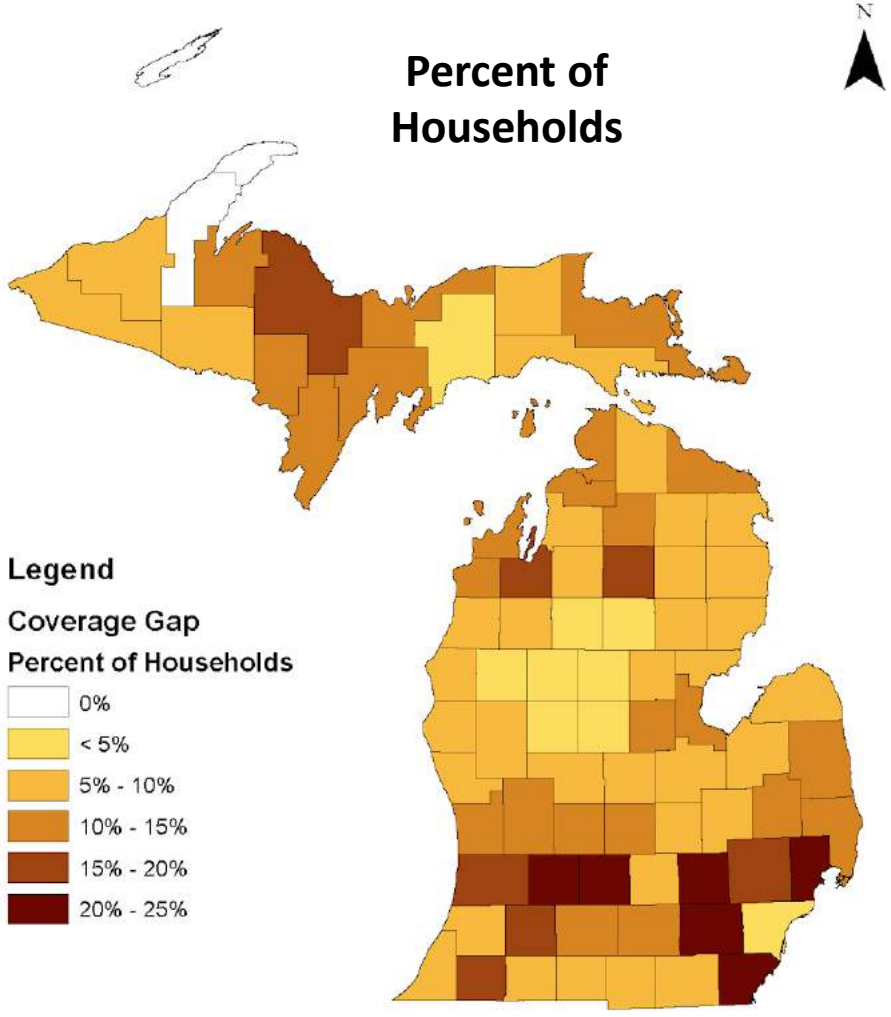
200% FPL



Credit Worthy

Donut Hole Market Potential in Michigan





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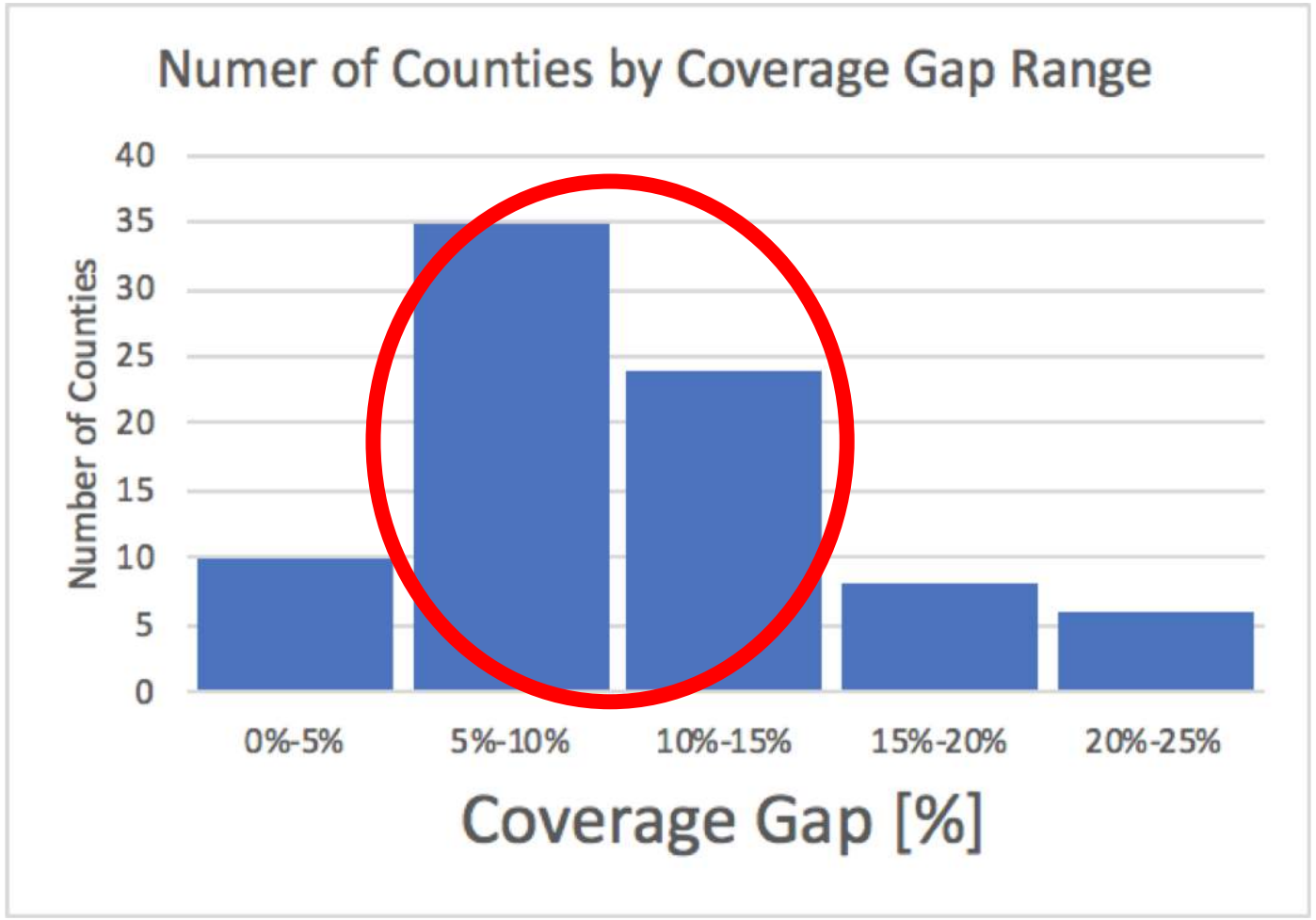


A community-based approach to low-income residential energy efficiency participation barriers

Reames, T. G. 2016 Local Environment: The International Journal of Sustainability

Case study exploring community-based approach to implementing the Weatherization Assistance Program

Research Questions

1. What barriers to energy efficiency participation continue to manifest in the absence of financial impediments?
2. Can a community-based approach effectively identify and overcome those barriers?

Data

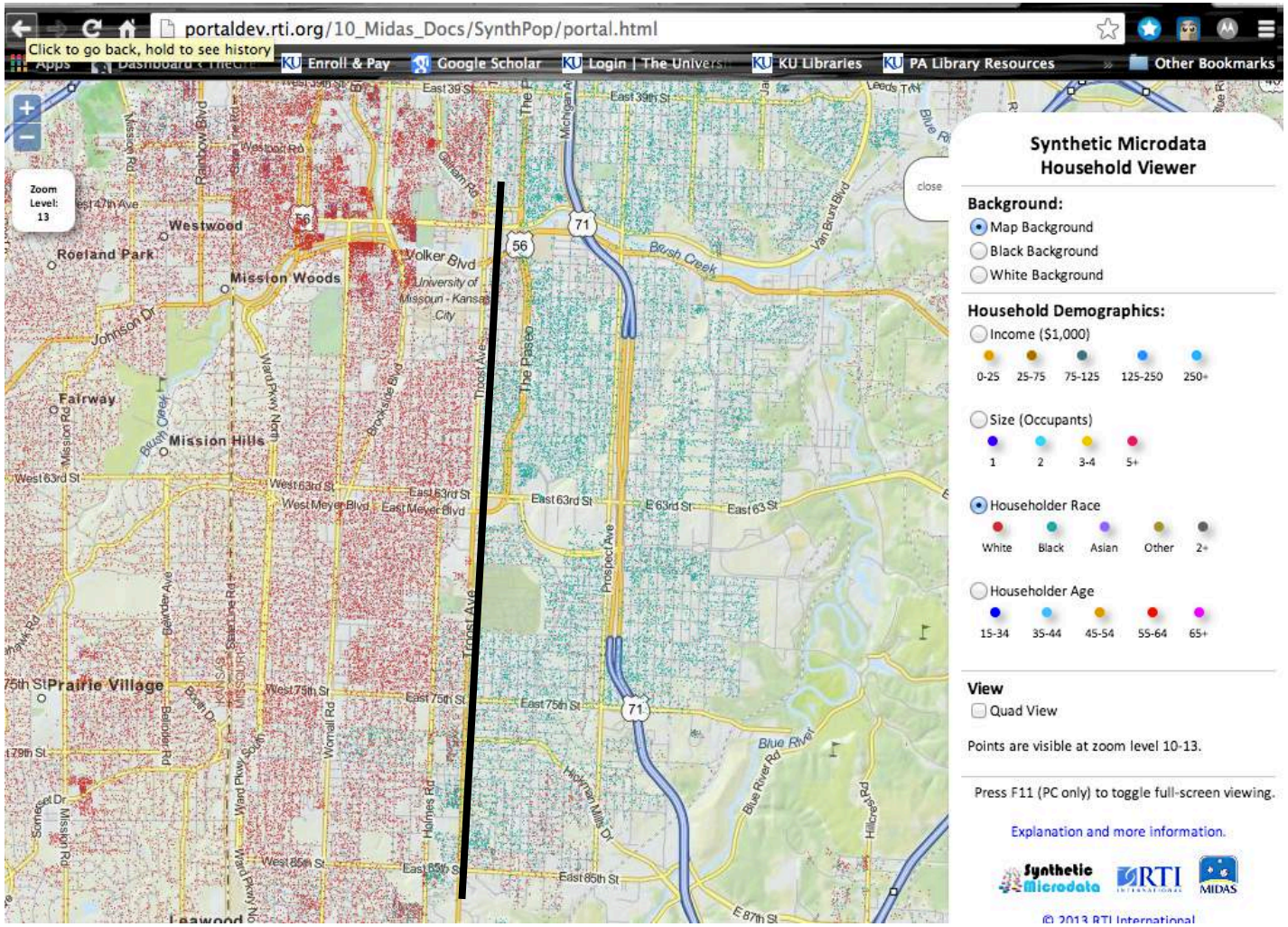
21 walk-along and semi-structured interviews (and follow up) with neighborhood association leaders and other stakeholders

Community-based Approach

- **Distributional injustices:** the spatial concentration of need supports implementing targeted, place-based, community approaches
- **Support** equity and justice
- **Acknowledge** that complex decision-making processes guide energy choices and cannot be described using a simple rational-economic model
- **Foster** social connectedness to transform the way people consume energy – relying on group interaction, peer support, and communal resolve to impact behavior (Wisconsin Energy Conservation Corp.)
- **Create** institutional capabilities to effectively deliver services, and recognize and respond to fluid conditions; **empower**

The Troost Wall, Kansas City, MO

Majority White



Majority Black

Troost Avenue

Source: US Census 2010

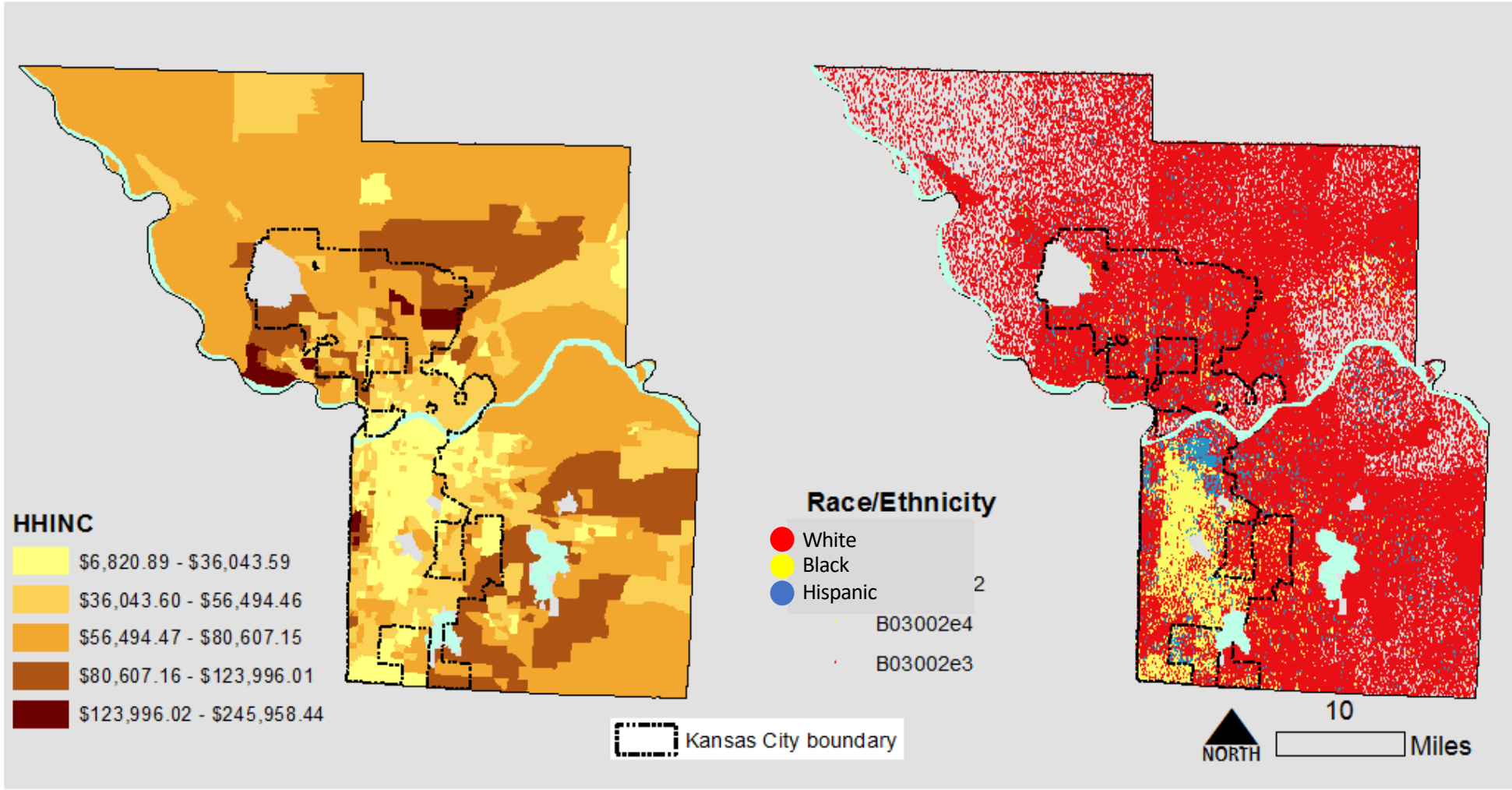
Housing Consumption Disparities

Housing west of Troost Ave. (Kansas City)

Housing east of Troost Ave. (Kansas City)

Kansas City's Residential Segregation

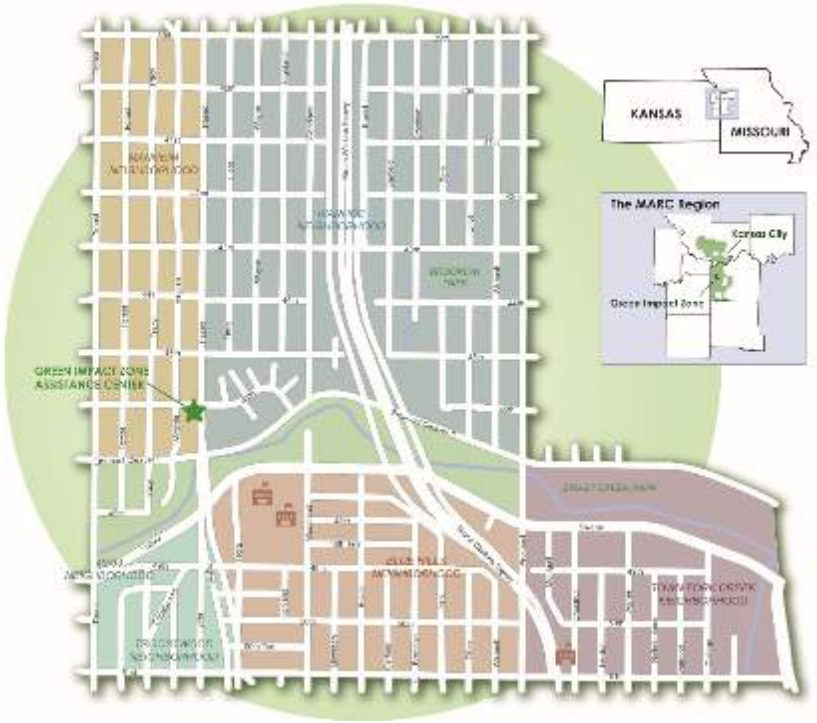
Income **Race/Ethnicity**



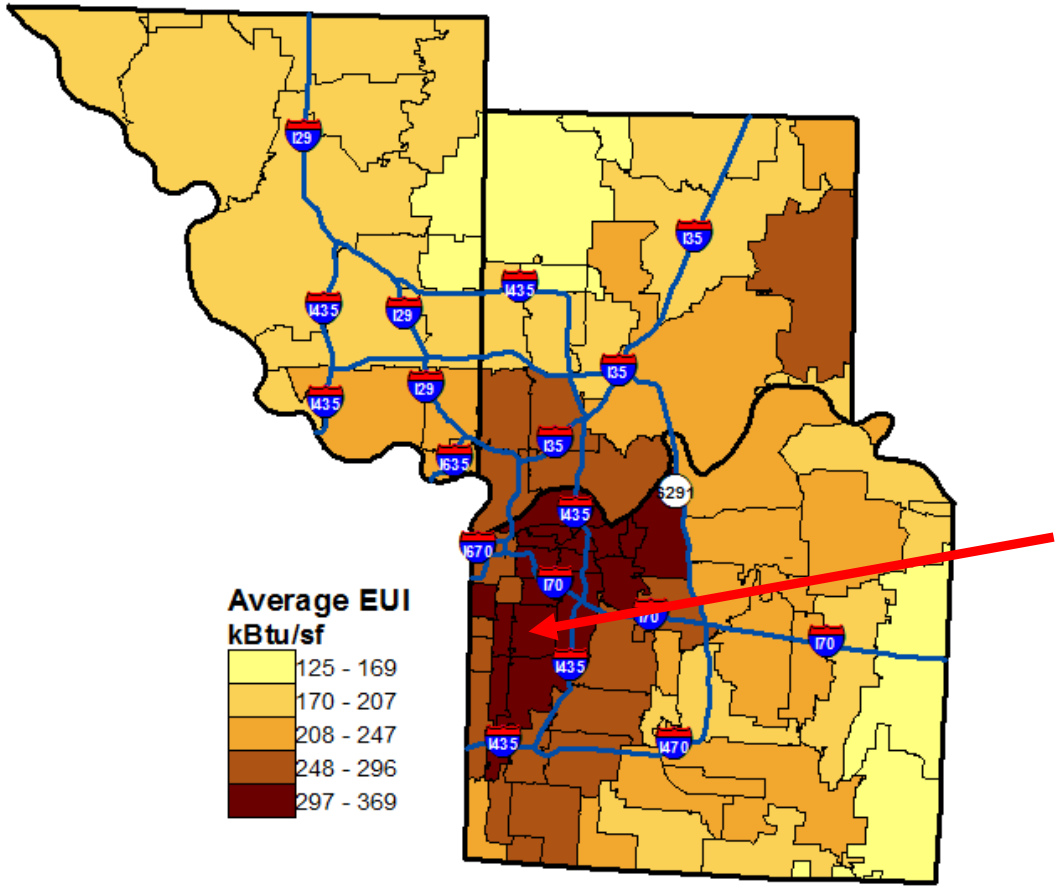
green impact zone® of MISSOURI

	Green Impact Zone	Kansas City
Population	10,742	474,396
% Black	**86.2**	**28.1**
% White	9.5	57.7
Housing units	5,810	225,569
% Built before 1980	**91.4**	**48.3**
% Vacant	27.8	13.3
% Home ownership	**49.1**	**61.4**
Median HH Inc.	$24,125	$44,436
% Below poverty	**35.2**	**19.1**
Unemployment	16.3	7.7

- $200M public-private, 150-block “green” urban renewal project during ARRA
- September 2009-January 2014
- $4.5 million to weatherize 659 homes
- Completed 329 homes



Mapping Energy Efficiency for Targeting



Green Impact Zone

Category	Description	High Risk Odds (*10% increase*)
Economic Status	% HH below poverty	x 3%
Education	% Less HS diploma	x 5%
Age	% Head of HH 65+	x 2%
Race/Ethnicity	% African Americans HH	x 1.4%
	% Hispanic HH	x 8%

HH= Household

Reames, T. G. (2016). Targeting energy justice: Exploring spatial, racial/ethnic and socioeconomic disparities in urban residential heating energy efficiency. *Energy Policy*, *97*, 549-558.

Identified Barriers to Weatherization

- Social/Cultural
  - Public priorities
  - **Public distrust**
- Market
  - Lack of information
  - **Split incentive**
- Regulatory
  - **Pre-weatherization**
  - Previous weatherization

Social barrier – Public Distrust

- Pursuing energy equity requires recognition of social characteristics that impede participation
- Distrust in government
  - Fear of energy audit
- Distrust in others
  - Fear of unknown individuals
- To overcome; used known, trusted messengers (e.g. community-based social marketing)
  - African American implementation staff
  - Neighbors (Neighborhood associations, block captains)

"Let's be honest, I'm a blue-eyed, white woman... Now I've got a lot of cred with those neighborhood leaders, but they needed a strong African American presence and leadership..."

*"... I am very happy...I can recommend it to anybody, everybody,
they won't have anything to worry about".*

https://www.youtube.com/watch?v=HI5jNAnN0mc

Market barriers: Split-incentive

- GIZ magnified a major barrier to targeted, community-based implementation of WAP
- **82%** of WAP benefits owner-occupied units
- **51%** of houses in the GIZ were renter-occupied
- WAP required **landlords pay** up to **50%** of costs
- **86%** of renters pay own energy costs, retrofitting is an unprofitable proposition for landlords
- To overcome barrier, GIZ requested reduction in **landlords' share** to **5%** for dwellings with less than five units

Regulatory barriers: Pre-weatherization Repairs

- Older homes often require repairs before weatherization improvements can be made
- Older housing stock **+** low household incomes increased likelihood of deferred maintenance
- Increased walkaways (deferrals)
- Lack of integration between programs limited participation
- Community-based approach facilitated coordination with Kansas City's minor home repair program

*"Ok you're not doing it because you're afraid when they come in the house and see that you have a hole in the roof... the **minor home [repair] program**, you're probably eligible for that."*

Family Energy Nights – Ypsilanti, MI

M SEAS

UEJL URBAN ENERGY JUSTICE LAB

THANK YOU!

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