



Revitalizing Manufactured Housing: Strategies for Enhancing Efficiency, Affordability, and Resilience

Andrew Rumbach, James Cowan, Amy Shyers, Sam Rashkin



Southeast Energy Summit 2024

Manufactured Housing and Climate Resilience: Opportunities and Challenges



Andrew Rumbach, PhD - *Senior Fellow*
Co-Lead, Climate and Communities Program

Manufactured Housing & Climate Resilience

Manufactured housing is...

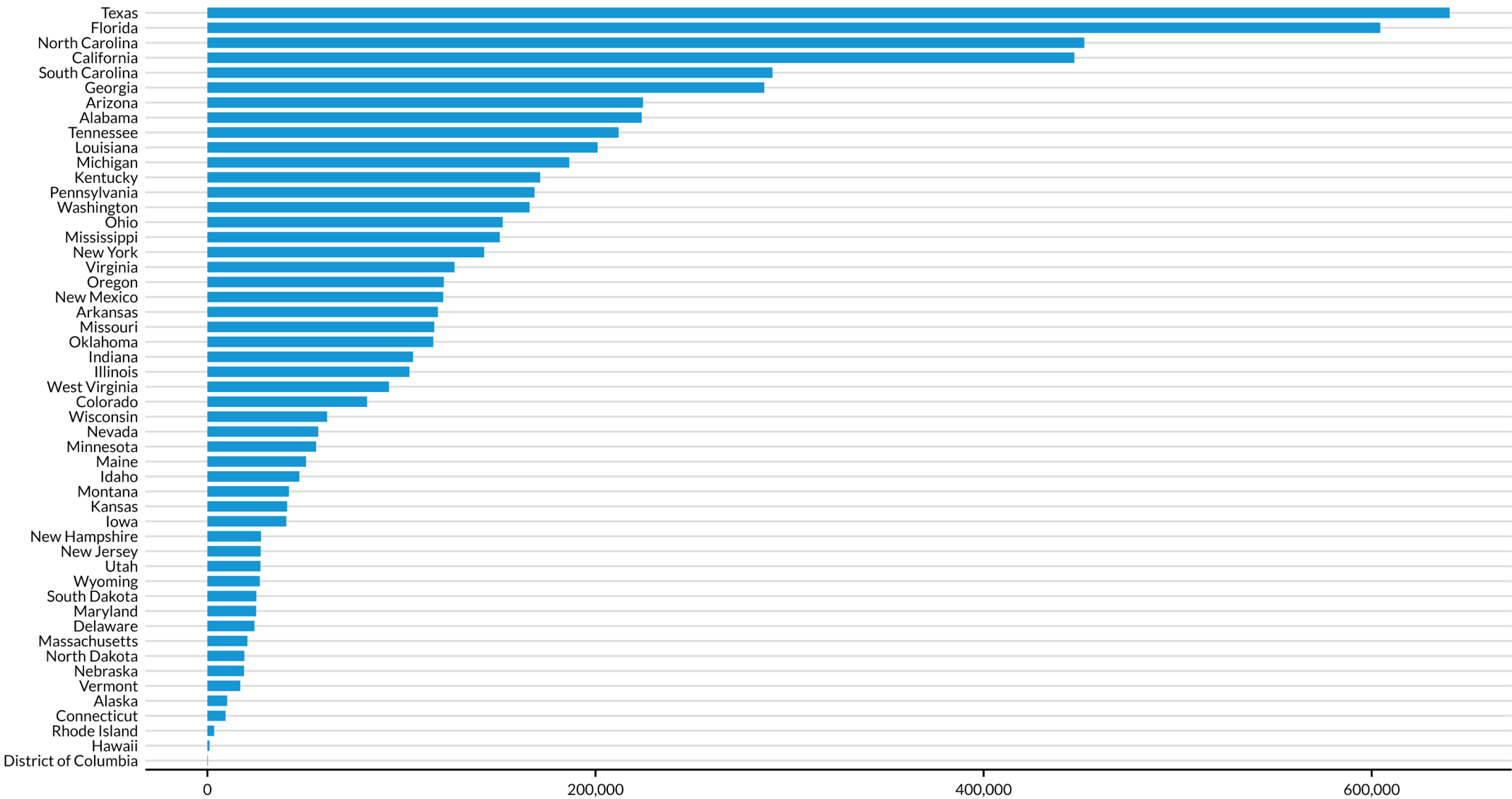
- An essential part of our affordable housing stock
- An important technology for boosting our housing supply

And yet...

- Substantial challenges with existing stock
- Disproportionate exposure to climate hazards
- Important homeowner and community vulnerabilities
- Limited discussion of climate resilience

Manufactured Housing is Concentrated in the South/East

Manufactured housing units by state

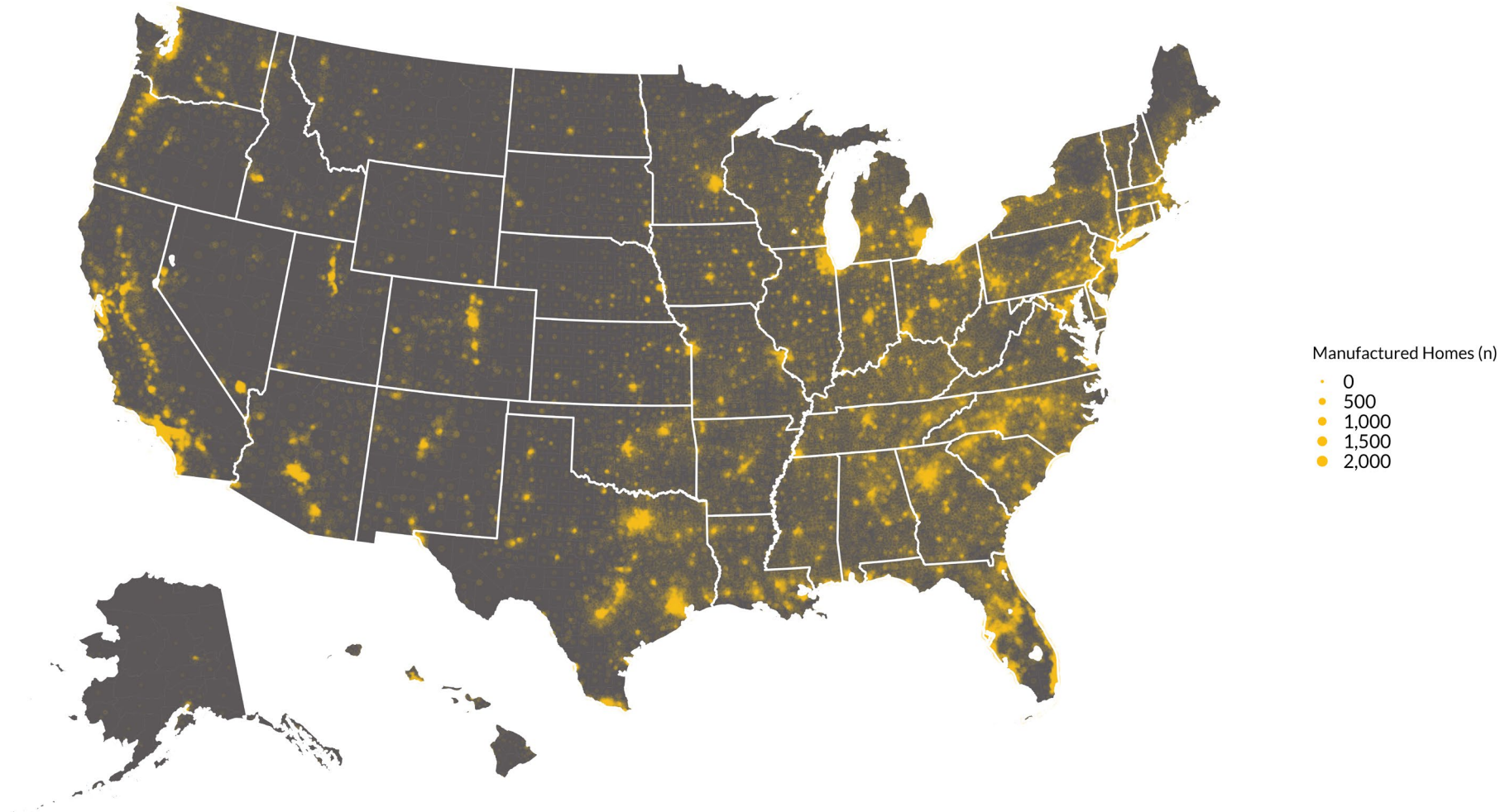


Source: American Community Survey 5-year estimates, 2018-2022.

Manufactured homes (count)

Manufactured Housing is Concentrated in the South and Southeast

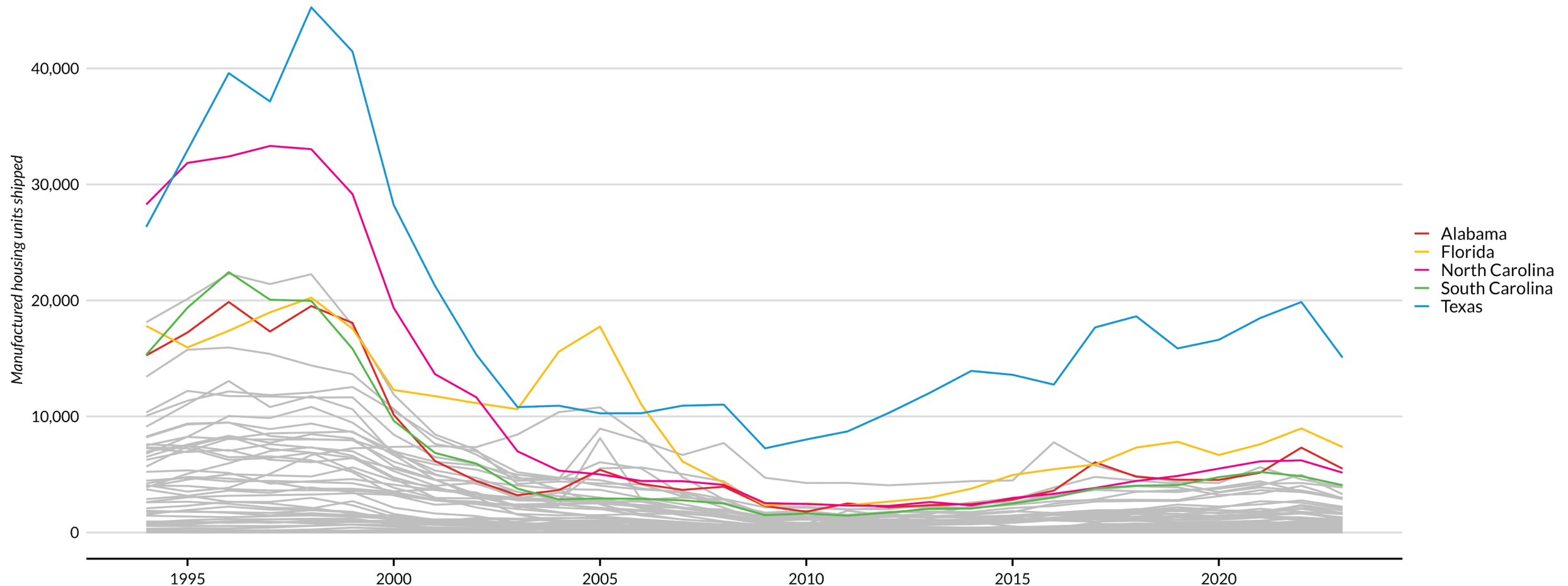
Manufactured housing units by tract



Source: American Community Survey 5-year estimates, 2018-2022.

States in the South and Southeast Lead in Recent Manufactured Housing Shipments

Manufactured housing shipments by state, 1994-2023.



Manufactured Housing Stock and Environmental Hazards

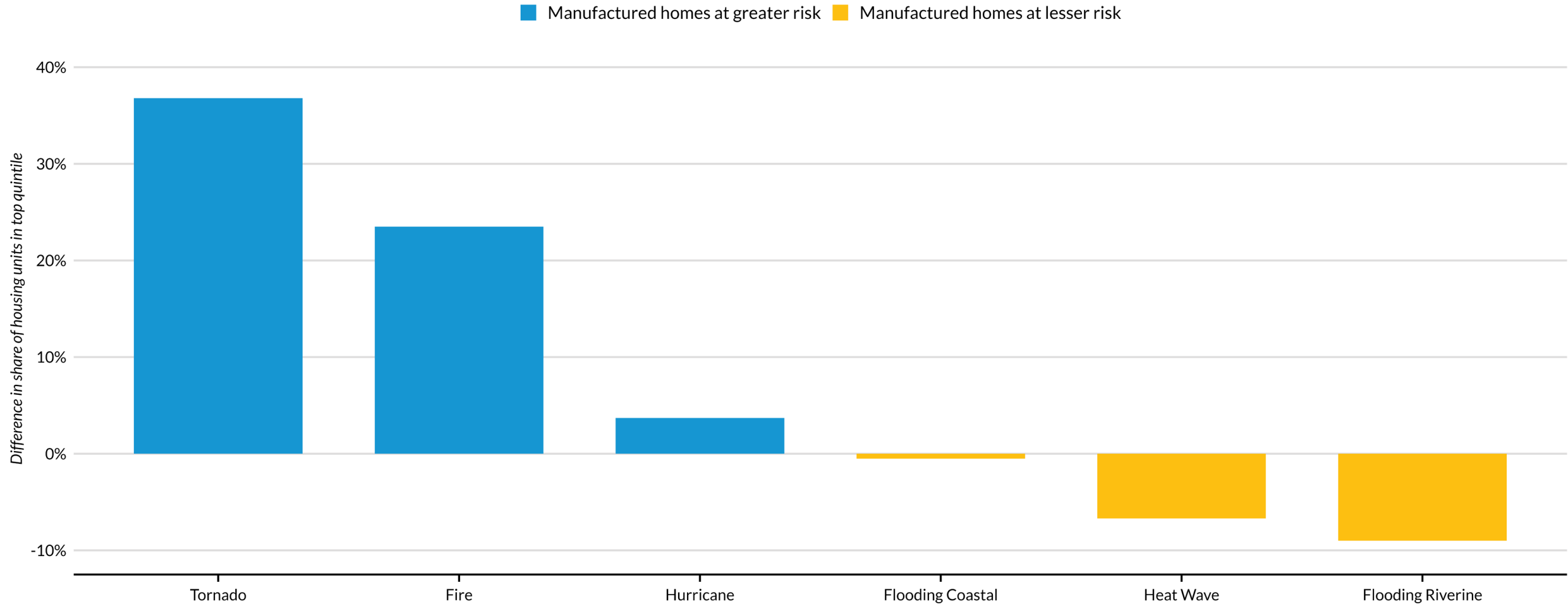
- 5.8 million manufactured housing units in census tracts with top quintile of hazard exposure
 - Substantial number exposed to multiple hazards
- Only one view of the larger challenge, i.e., extensive exposure versus intensive exposure

Hazard	MH Stock
Tornado	3.8 million
Wildfire	3.1 million
Hurricane	1.5 million
Heat Wave	1.3 million
Riverine Flood	1.2 million
Coastal Flood	.7 million

Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Manufactured Housing is Disproportionately Likely to Experience Tornado, Fire, and Hurricane Events

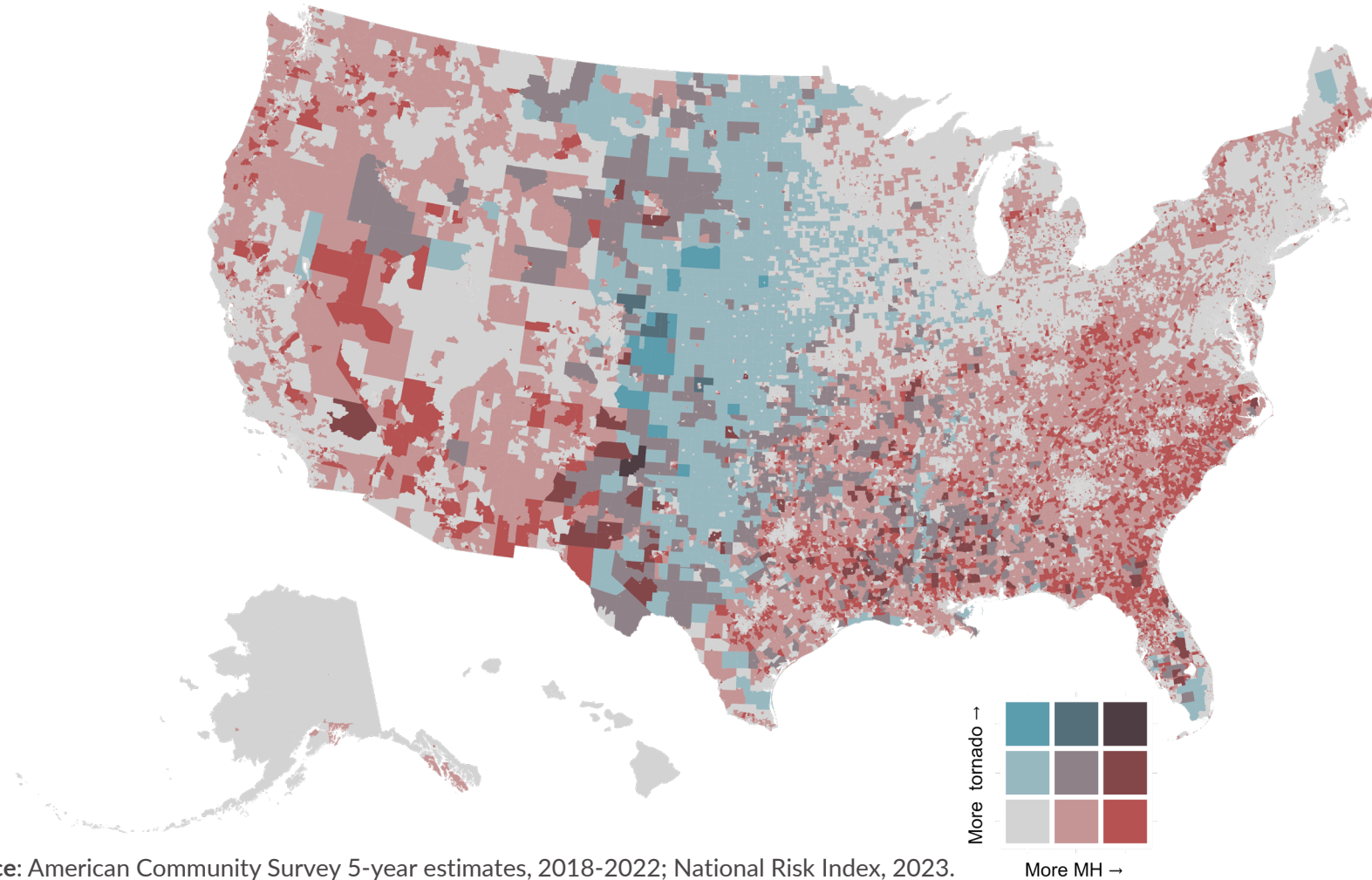
Difference in share of manufactured vs. other housing in the top quintile of annualized hazard frequency



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Expected Tornado Events and Manufactured Housing Stock Overlap in Tornado Alley and Parts of the Southeast

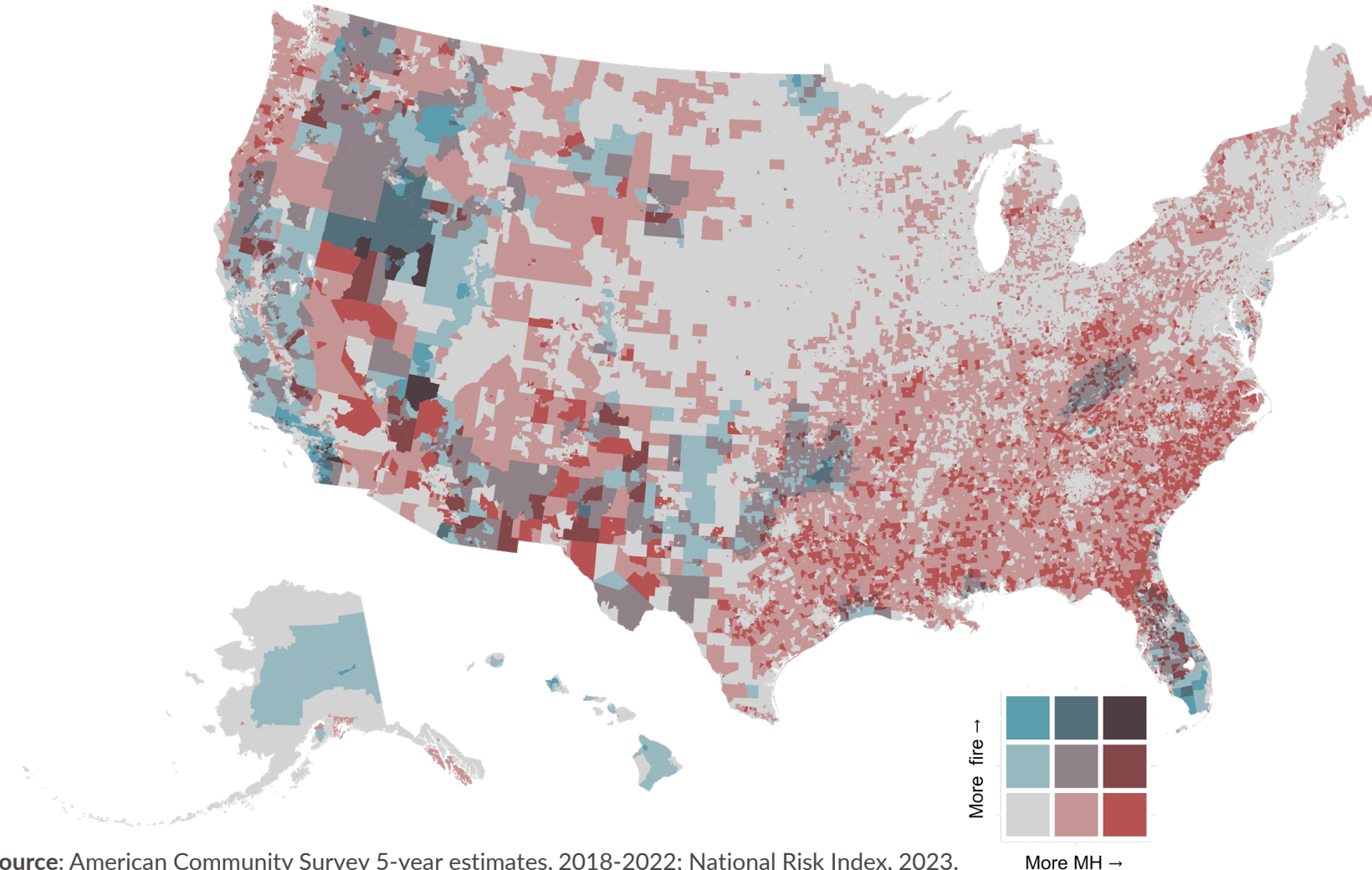
Tract-level manufactured housing stock and annualized expected frequency of tornado events



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Expected Fire Events and Manufactured Housing Stock Overlap Most in the West, Southwest, and Florida

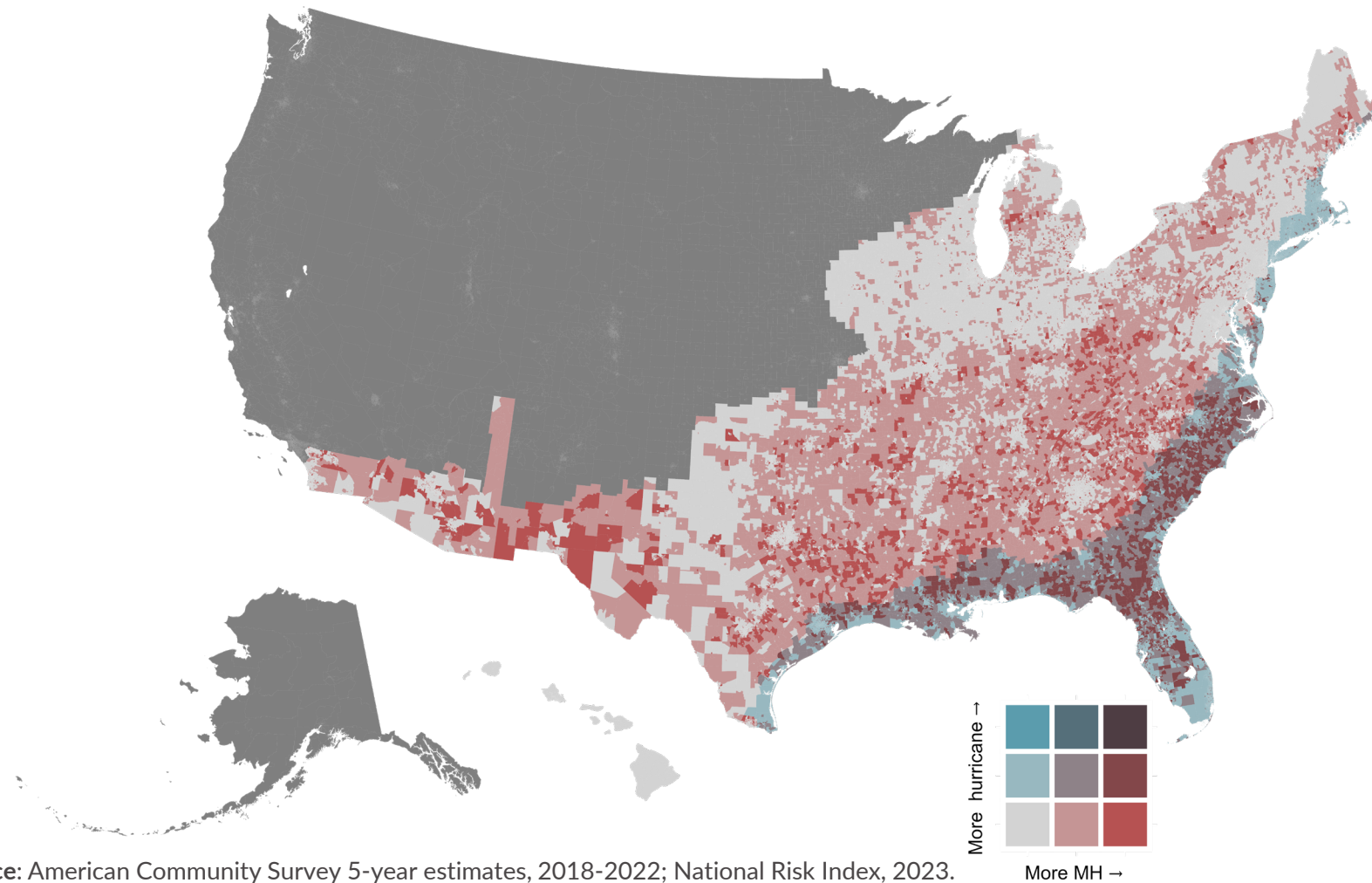
Tract-level manufactured housing stock and annualized expected frequency of fire events



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Expected Hurricane Events and Manufactured Housing Stock Overlap along the Gulf Coast and South Atlantic

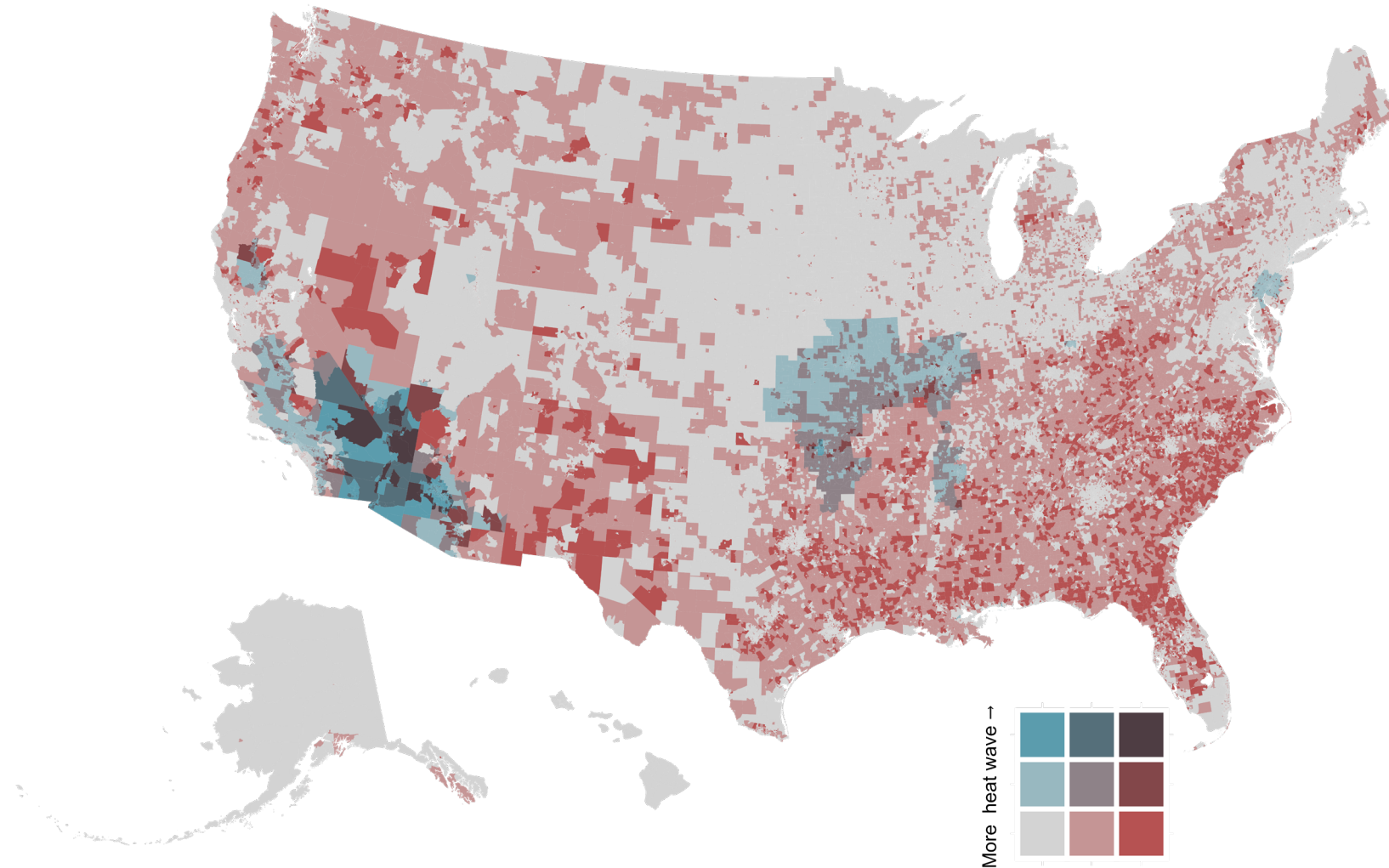
Tract-level manufactured housing stock and annualized expected frequency of hurricane events



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Expected Heat Wave Events and Manufactured Housing Stock Overlap Most in California and Arizona

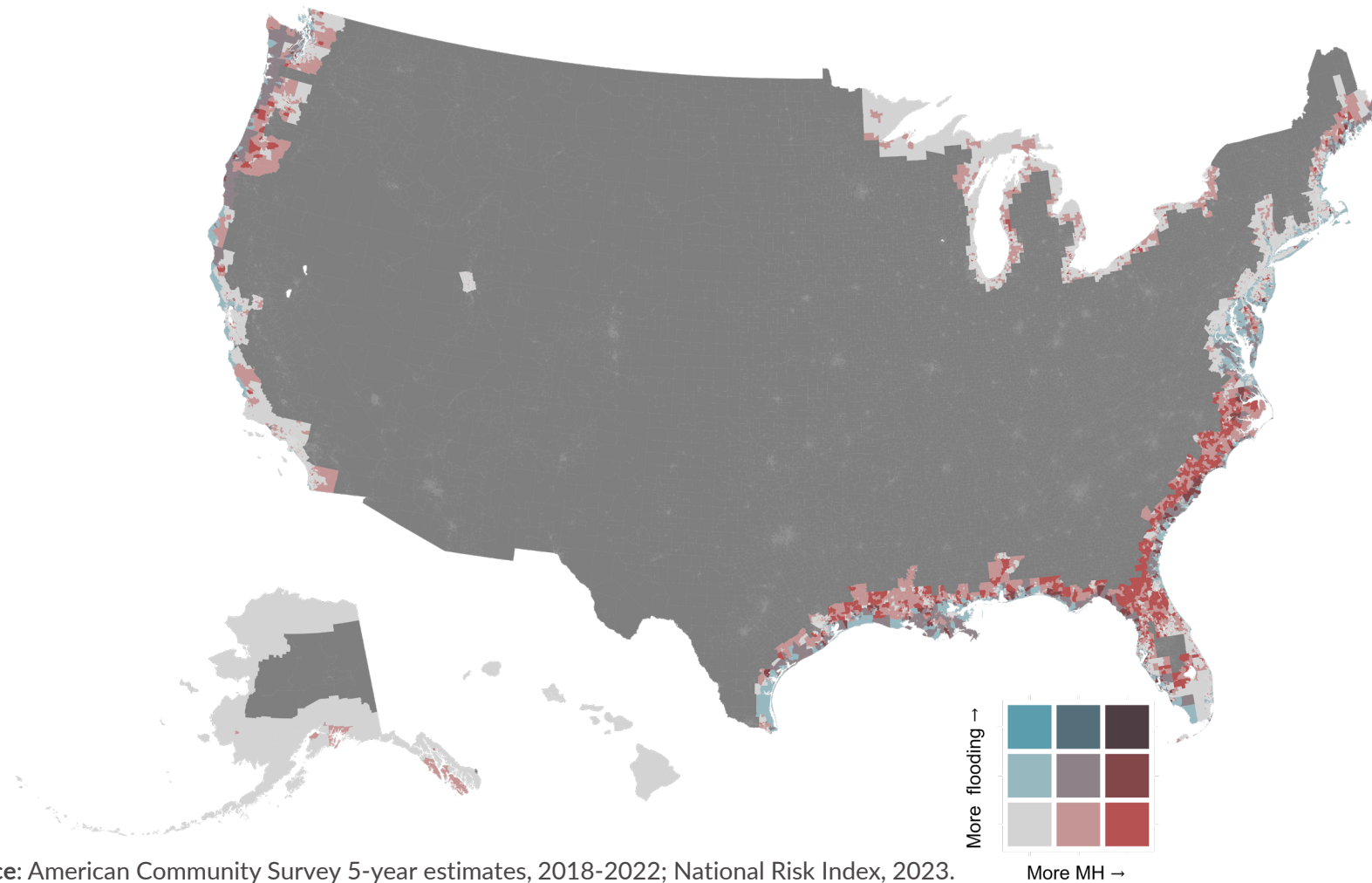
Tract-level manufactured housing stock and annualized expected frequency of heat wave events



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Expected Coastal Flooding Events and Manufactured Housing Stock Overlap Relatively Little

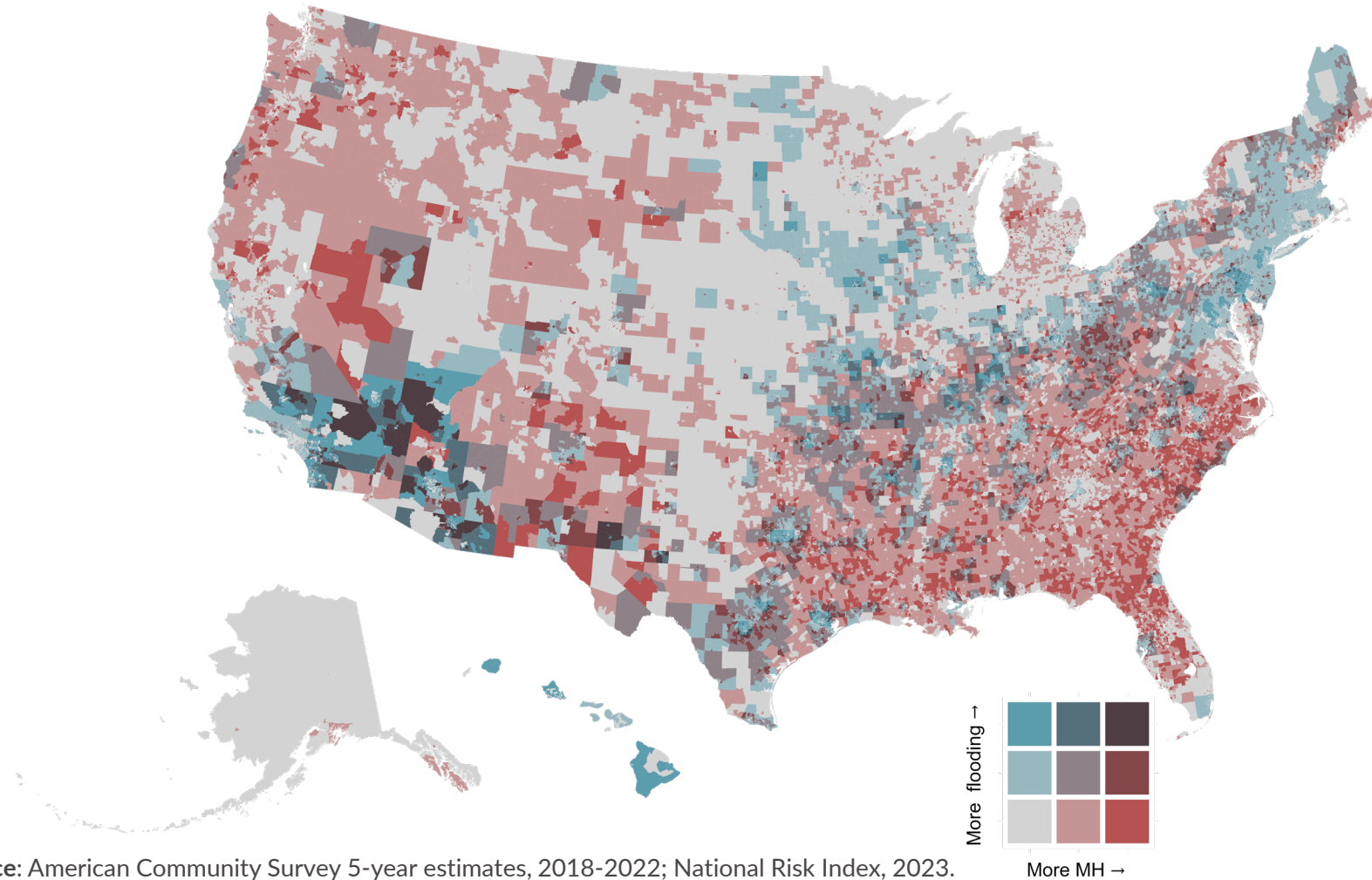
Tract-level manufactured housing stock and annualized expected frequency of coastal flooding events



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Expected Riverine Flooding Events and Manufactured Housing Stock Overlap Sporadically

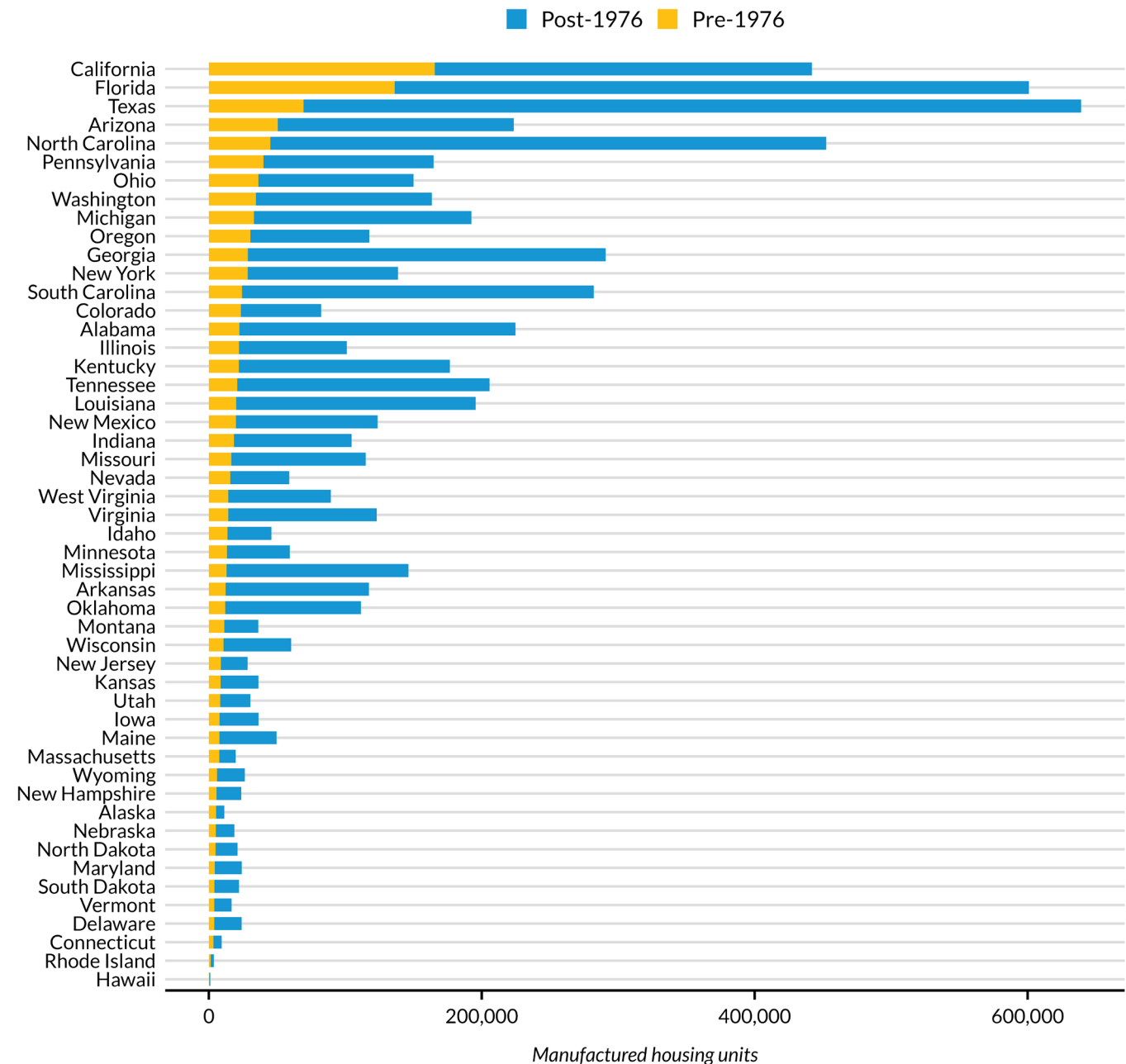
Tract-level manufactured housing stock and annualized expected frequency of riverine flooding events



Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

Manufactured housing is a diverse resource

- Pre-HUD code, early HUD code, and contemporary housing units
- Located on private land, in land-lease communities, and other contexts



Source: [Ruggles et al. IPUMS USA: Version 15.0. Minneapolis, MN: IPUMS, 2024.](#)

Note: Year of construction is available by decade; units built in the 1970s are proportionally allocated to pre/post-1976.

Manufactured housing is located in diverse communities

- Community context matters for climate resilience
- Range of capacities and resources
- Range of opportunities and restrictions

MH Stock (quintile)	Community Resilience (mean percentile)
1 (least)	47
2	63
3	52
4	51
5 (most)	39

Source: American Community Survey 5-year estimates, 2018-2022; National Risk Index, 2023.

How To Get In Touch



arumbach@urban.org



andrewrumbach.com



@andrewrumbach



ELECTION 2024 TOPICS STORIES, DATA TOOLS, BLOGS EVENTS

Climate change, disasters, and community resilience

Climate extremes like floods and wildfires are becoming more frequent and severe in the US and threaten the health, safety, and prosperity of American families and communities. Climate-focused policies can help mitigate this while enhancing sustainability and advancing equity and environmental justice. Urban examines how climate change is affecting people and communities and identifies policies and programs with the greatest potential for impact.

Policymakers, community leaders, and philanthropists rely on our research to ensure climate interventions are equitable and lasting for all people and communities.

[Home](#) [About](#) [Staff](#)



URBAN WIRE

Three Ways to Equitably Advance Local Climate Action and Economic Development

April 3, 2024

BRIEF

Evaluating EDA's Role in Disaster Recovery and Resilience

March 13, 2024

URBAN WIRE

The Texas Panhandle Wildfires and Four Keys for Equitable Recovery

March 6, 2024

URBAN WIRE

Equitable Climate Migration Planning Requires New Evidence and Investments

Three things climate migration researchers, planners, and funders need to know to meet climate migrants' diverse needs and prepare communities to receive them.

Revitalizing Manufactured Housing:

Strategies for Enhancing, Affordability and Resilience

Amy Shyers - Georgia Power

James Cowan - Utility Energy Services



Georgia Power

Who?



Any residential Georgia Power customer in a manufactured home



Not an IQ Program



40-50% are Spanish as Primary Language



One of fastest growing segments in the housing market, due to affordability and rapid deployment



Heavily fragmented by owners

Single Unit and Multi-Unit Operators
Independent Community Operators
Corporate Multi-site Community Operators



State of Georgia Manufactured Housing Facts

Nearly 400,000 MFH in Georgia. 5th in the Nation.
70,000 in Atlanta Metro
8% of all new home permits

What?

- Free assessment and direct install measures:

- Smart thermostat
- LEDs
- Outdoor sensor LEDs
- Advanced power strips (APS)
- Low flow faucet aerators
- Low flow showerheads



Why?



Georgia Power is focused on equity with our energy efficiency programs; this is an underserved segment.



Customers in manufactured homes have low participation in EE programs; lack overall programmatic knowledge.



Free direct install energy efficiency measures can help reduce customers utility expenses, freeing up funds for other priorities.



The program acts as an entry point for customers to build a relationship with Georgia Power outside of billing questions.

Barriers



Impacts of Hurricane Helene



Leave Behind and Promotional Materials



Bill Inserts



 Georgia Power

Want free improvements?

Your prefab home may qualify for free energy efficiency improvements through Georgia Power's Home Energy Improvement Program. All of these improvements could be yours at no cost to you:

-  Advanced power strips
-  Faucet aerators
-  LED lighting
-  Low flow shower-heads
-  Smart thermostats



Get started today!
Scan this QR code or visit
[Georgiapower.com/eeprefab](https://georgiapower.com/eeprefab)

Questions? email GPCMFH@utility-energyservices.com

Terms and conditions apply. Must be a Georgia Power residential customer. All measures must be completed at a residence with Georgia Power residential service. Valid January 1, 2023–December 31, 2025. Full details available online.



 Georgia Power

¿Quieres mejoras gratuitas?

Tu casa prefabricada podría calificar para mejoras gratuitas en eficiencia energética a través del Programa de Mejoras Energéticas para el Hogar de Georgia Power. Todas estas mejoras podrían ser tuyas sin ningún costo para ti:

-  - Regletas de enchufes avanzadas
-  - Aireadores de grifo
-  - Iluminación LED
-  - Cabezales de ducha de bajo flujo
-  - Termostatos inteligentes



¡Empieza hoy mismo!
Escanea este código
QR o visita
[Georgiapower.com/eeprefab](https://georgiapower.com/eeprefab)

¿Preguntas? Envía un correo a
GPCMFH@utility-energyservices.com

Se aplican términos y condiciones. Deben ser cliente residencial de Georgia Power. Todas las medidas deben completarse en una residencia con servicio residencial de Georgia Power. Válido del 1 de enero de 2023 al 31 de diciembre de 2025. Todos los detalles disponibles en línea.

Door Hanger

Double-Sided, English/Spanish Door Hanger



The English side of the door hanger features a photograph of a smiling family (a man, a woman, and a young girl) at the top. A pink circle highlights the girl's face. Below the photo is the Georgia Power logo. The main heading is "Want free improvements?". The text below states: "Your home may qualify for free energy efficiency improvements through Georgia Power's Home Energy Improvement Program. All of these improvements could be yours at no cost to you." A list of improvements follows, each with an icon: Advanced power strips (power strip icon), Faucet aerators (faucet icon), LED lighting (light bulb icon), Low flow shower-heads (shower head icon), and Smart thermostats (thermostat icon). At the bottom, it says "Get started today! Scan this QR code or visit georgiapower.com/prefab" next to a QR code. The footer contains contact information for Flavio Romero, Community Outreach Coordinator, and a disclaimer about terms and conditions.

Georgia Power

Want free improvements?

Your home may qualify for free energy efficiency improvements through Georgia Power's Home Energy Improvement Program. All of these improvements could be yours at no cost to you.

- Advanced power strips
- Faucet aerators
- LED lighting
- Low flow shower-heads
- Smart thermostats

Get started today!
Scan this QR code or visit
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Questions?
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470-755-7652 or email GPCMFH@utility-energyservices.com

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The Spanish side of the door hanger features the same photograph of a smiling family at the top, with a pink circle highlighting the girl's face. Below the photo is the Georgia Power logo. The main heading is "¿Quieres mejoras gratis?". The text below states: "Tu hogar podría calificar para mejoras gratuitas de eficiencia energética a través del Programa de Mejoramiento de Energía Doméstica de Georgia Power. Todas estas mejoras podrían ser tuyas sin costo alguno." A list of improvements follows, each with an icon: Regletas de enchufes avanzadas (power strip icon), Aireadores de grifos (faucet icon), Iluminación LED (light bulb icon), Duchas de bajo flujo (shower head icon), and Termostatos Inteligentes (thermostat icon). At the bottom, it says "¡Emplece hoy! Escanea este código QR o visita georgiapower.com/prefab" next to a QR code. The footer contains contact information for Flavio Romero, Community Outreach Coordinator, and a disclaimer about terms and conditions.

Georgia Power

¿Quieres mejoras gratis?

Tu hogar podría calificar para mejoras gratuitas de eficiencia energética a través del Programa de Mejoramiento de Energía Doméstica de Georgia Power. Todas estas mejoras podrían ser tuyas sin costo alguno.

- Regletas de enchufes avanzadas
- Aireadores de grifos
- Iluminación LED
- Duchas de bajo flujo
- Termostatos Inteligentes


¡Emplece hoy!
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georgiapower.com/prefab

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470-755-7652 o GPCMFH@utility-energyservices.com

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Promo Flyer/Cross Promotion



[Double-Sided, English/Spanish Promotional Flyer](#) (featuring information about Georgia Power Marketplace, installation checklist, advanced power strip guidance, and information about Georgia Power's Refrigerator Recycling+ Program's small appliance savings)



Make Your Home More Energy Efficient

Thank you for taking the first step toward greater energy efficiency with Georgia Power's Home Energy Improvement Program. Visit the Georgia Power Marketplace for energy-efficient products that will also help you lower your electricity consumption, including dehumidifiers, lightbulbs, and more.

Visit the Georgia Power Marketplace at georgiapowermarketplace.com



What We Installed Today


- Advanced Power Strips**
Advanced power strips can provide a convenient, efficient and safe way to power your electrical devices to save you energy.
- Faucet Aerator**
A simple and efficient method to conserve water and save energy.
- LED Light Bulbs**
A more energy-efficient, durable, and versatile lighting solution that lasts 10-25 times longer and uses up to 90% less energy than traditional bulbs.
- Low-Flow Showerhead**
Offers a simple and effective way to reduce water consumption and save energy.
- Smart Thermostat**
Allows you to control your home's heating and cooling through a smartphone app, while maximizing energy savings.

Advanced Power Strip Installation

Stop paying for energy you're not using with a power strip that knows when to turn off idle devices.


Follow these simple steps to install an advanced power strip and start saving on your electric bill:

- Plug your advanced power strip into an open outlet.
- Plug your primary device (PC or TV) into the "control outlet." When the device plugged into the "control outlet" goes into a standby mode or is turned off, the APS will register the change in power and automatically reduce or eliminate the power to all the "switched outlets."
- Plug the devices that always need to have power (router, modem, or cable box) into the outlets labeled "always-on" or "constant outlets."
- Plug remaining peripheral devices into the "switched outlets." For TVs, peripheral devices may include a soundbar, game console, DVD or Blu-ray player, or AV receiver. For PCs, peripheral devices may include speakers, a printer, or monitor. These devices only become energized when the primary device (in the master outlet) is powered on.




Additional Savings with Georgia Power's Free Refrigerator Recycling+ Program


Residential customers can clear out space in their homes, lower monthly bills, earn a rebate, and receive an energy saving kit by recycling their dehumidifiers and room A/Cs.



Receive a \$20 rebate for each room AC unit or dehumidifier recycled.*
*Maximum of 4 units per year.



Scan the QR code to schedule your free pick-up.



To sign up by phone, contact our Refrigerator Recycling+ Program team at 1-888-594-8596 or visit georgiapower.com/fridge.

Learn more about Georgia Power's energy efficiency program at georgiapower.com/residential



Haga su hogar más eficiente energéticamente

Gracias por dar el primer paso hacia una mayor eficiencia energética con el Programa de Mejoras Energéticas en el Hogar de Georgia Power. Visita el Georgia Power Marketplace para encontrar productos eficientes en el consumo de energía que te ayudarán a reducir tu consumo de electricidad, incluyendo deshumidificadores, bombillas y más.

Visita el Georgia Power Marketplace en georgiapowermarketplace.com



Qué Instalamos Hoy

- Regletas de Alimentación Avanzadas**
Las regletas de alimentación avanzadas pueden proporcionar una forma conveniente, eficiente y segura de alimentar tus dispositivos eléctricos para ahorrar energía.
- Aireador de Grifo**
Un método simple y eficiente para conservar agua y ahorrar energía.
- Bombillas LED**
Una solución de iluminación más eficiente en el consumo de energía, duradera y versátil que dura de 15 a 25 veces más y utiliza hasta un 90% menos de energía que las bombillas tradicionales.
- Ducha de Bajo Flujo**
Ofrece una forma simple y efectiva de reducir el consumo de agua y ahorrar energía.
- Termostato Inteligente**
Te permite controlar la calefacción y refrigeración de tu hogar a través de una aplicación en tu smartphone, maximizando el ahorro de energía.

Instalación de regleta avanzada

Deja de pagar por la energía que no estás utilizando con una regleta que sabe cuándo apagar los dispositivos en reposo.

Sigue estos sencillos pasos para instalar una regleta de alimentación avanzada y comenzar a ahorrar en tu factura de electricidad:

- Conecta tu regleta de alimentación avanzada en una toma de corriente abierta.
- Conecta tu dispositivo principal (PC o TV) en la "toma de control." Cuando el dispositivo conectado a la "toma de control" entre en modo de espera o se apague, la regleta avanzada registrará el cambio de potencia y reducirá o eliminará automáticamente la energía a todas las "tomas conmutadas."
- Conecta los dispositivos que siempre necesitan tener energía (enrutador, módem o decodificador de cable) en las tomas etiquetadas como "siempre encendidos" o "tomas constantes."
- Conecta los dispositivos periféricos restantes a los "tomacorrientes con interruptor." Para televisores, los dispositivos periféricos pueden incluir una barra de sonido, consola de juegos, reproductor de DVD o Blu-ray, o receptor AV. Para computadoras, los dispositivos periféricos pueden incluir altavoces, una impresora o un monitor. Estos dispositivos solo se energizarán cuando el dispositivo principal (en el tomacorriente maestro) está encendido.



Ahorros adicionales con el programa gratuito de reciclaje de refrigeradores de Georgia Power

Los clientes residenciales pueden liberar espacio en sus hogares, reducir sus facturas mensuales, ganar un reembolso y recibir un kit de ahorro de energía al reciclar sus deshumidificadores y aires acondicionados de habitación.



Recibe un reembolso de \$20 por cada aire acondicionado de habitación o deshumidificador reciclado.*
*Máximo de 4 unidades por año.



Escanee el código QR para programar su recogida gratuita.



Para inscribirse por teléfono, comuníquese con nuestro equipo del Programa de Reciclaje de Refrigeradores+ al 1-888-594-8596 o visite georgiapower.com/fridge.

Obtenga más información sobre los programas de eficiencia energética de Georgia Power en georgiapower.com/residential

Community Engagement

Double-Sided, English/Spanish Incentive Promotional Flyer





Implementation Partner of



Earn Rewards for Improving your Home's Energy Efficiency

Win a \$100 Gift Card!

How to Participate:

- 1 Sign Up:**
Join the Direct Installation program for energy-efficient improvements.
- 2 Complete the Installation:**
Have your technicians complete the energy-saving upgrades in your home.
- 3 Enter to Win:**
Each week, all participants who complete their installations will be entered into a raffle.

Why Participate?

-  **Save Money:**
Reduce your energy bills with efficient home improvements.
-  **Stay Comfortable:**
Enjoy a more comfortable living environment year-round.
-  **Contribute to a Greener Future:**
Help reduce energy consumption and environmental impact.

The incentive program will run for 90 days from July 15 through October 13, 2024.
Sign up and complete your installation by October 13 to maximize your chances of winning!

For More Information:

- Contact our team at gpcmfh@utility-energyservices.com
- Visit our website: www.utility-energyservices.com

Scan the QR code to schedule your installation or visit utility-energyservices.my.site.com/s/gp-mh-scheduler.



Let's work together to make your home more energy-efficient and win great prizes along the way!





Implementation Partner of






Obtenga recompensas por mejorar la eficiencia energética de su hogar

¡Gana una tarjeta de regalo de \$100!

Como participar:

- 1 Inscribirse:**
Únase al programa de instalación directa para mejorar la eficiencia energética de su hogar.
- 2 Complete la instalación:**
¿Han completado el servicio de mejora de eficiencia energética los técnicos en tu hogar?
- 3 Participa para ganar:**
Cada semana, todos los participantes que completen sus instalaciones entran en el sorteo.

¿Por qué participar?

-  **Ahorrar dinero:**
Reduzca sus facturas de energía con mejoras de energía eficiente en el hogar.
-  **Manténgase cómodo:**
Disfrute de una vida y medio ambiente más cómodos durante todo el año.
-  **Contribuir a un futuro más verde:**
Ayuda a reducir el consumo de energía e impacto medioambiental.

El programa de incentivos tendrá una duración de 90 días, del 15 de Julio al 13 de Octubre de 2024. ¡Regístrese y complete su instalación antes del 13 de octubre para maximizar sus posibilidades de ganar!

Para más información:

- Comuníquese con nuestro equipo en gpcmfh@utility-energyservices.com
- Visite nuestro sitio web: www.utility-energyservices.com

Escanea el código QR para programar su instalación o visite utility-energyservices.my.site.com/s/gp-mh-scheduler



¡Trabajemos juntos para hacer que su hogar sea más energéticamente eficiente y ganemos grandes premios en el camino!

Community Events

[Double-Sided, English/Spanish Community Event Flyer](#) (customized per event)



Interested in saving energy?
Join us

Eagle Creek
Mobile Home
Community

Saturday,
September 7, 2024

10:30 a.m. - 2:30 p.m.



If you can't make
it, scan to schedule
your appointment
at a later date.

Georgia Power's Home Energy Improvement Program offers and installs free energy-saving products to customers.

At no cost to you, your home may be retrofitted with energy-saving items, such as:



Advanced Power Strips



Faucet Aerators



LED Lighting



Low Flow Shower-Heads



Smart Thermostats

¿Interesado en ahorrar energía?
Únete a nosotros

Eagle Creek
Mobile Home
Community

sábado,
7 de septiembre de 2024

10:30 a.m. - 2:30 p.m.



Si no puedes
asistir, escanea
para programar
tu cita en una
fecha posterior.

El Programa de Mejora de Energía en el Hogar de Georgia Power ofrece e instala productos para ahorrar energía de forma gratuita a los clientes.

Sin costo alguno para ti, tu hogar puede ser equipado con artículos ahorradores de energía, como:



Regletas de Enchufes Avanzadas



Aeradores de Grifo



Iluminación LED



Cabezales de Ducha de Bajo Flujo



Termostatos Inteligentes

Questions? Contact Flavio Romero, Community Outreach Coordinator, 470-755-7652

¿Preguntas? Contacta a Flavio Romero, Coordinador de Alcance Comunitario, 470-755-7652

In Field Activity



Community Photos



Community Events



Technicians in the Field



Metrics



Completed Direct Installs and Associated Savings

2023	
Number of Installs	626
kWh saved	963,578

2024 YTD	
Number of Installs	1,659
kWh saved	3,128,035



Completed Direct Installs and Associated Savings

Key Insights:

1. **Smart Thermostats (27.39%)** and **Interior LED Lighting (26.56%)** are the most significant contributors to our energy savings, accounting for over half of the total kWh saved. These measures have been highly effective in reducing energy consumption in the communities.
2. **Advanced Power Strips (18.86%)** also play a crucial role in our energy conservation efforts, highlighting the importance of managing standby power usage in reducing overall energy demand.
3. **Exterior LED Lighting (13.73%)** and **Low-Flow Showerheads (10.56%)** provide substantial energy savings, demonstrating their effectiveness in both lighting efficiency and water heating reductions.
4. **Faucet Aerators (2.89%)** and **Pipe Insulation (0.04%)** contribute to energy savings, albeit to a lesser extent. While these measures are beneficial, they represent smaller portions of the overall energy reduction.



Georgia
Power

Revitalizing Manufactured Housing: Enhancing Affordability, Efficiency and Resilience

Southeast Energy Summit | November 21, 2024

Sam Rashkin

Senior Researcher | Building Envelope Materials Research

ORNL is managed by UT-Battelle, LLC for the US Department of Energy



U.S. DEPARTMENT OF
ENERGY

Revitalizing Manufactured Housing: Outline

- Context: The Future of Housing
- Manufactured Housing Future:
 - Challenges
 - Opportunities
- Revitalizing Manufactured Housing Recommendations

Disruption Happens to Housing: The Problem

Problem:
5 Crises
Driving Pain

- UX Readiness
- Affordability
- Trades
- Productivity
- Regulation

Disruption Happens to Housing: The Solution

Problem:

5 Crises
Driving Pain

Solution:

4 Innovations
Relieving Pain

- UX Optimization
- Mass Customization
- Digitization
- Systems Built

Disruption Happens to Housing ... Finally

Problem:

5 Crises
Driving Pain

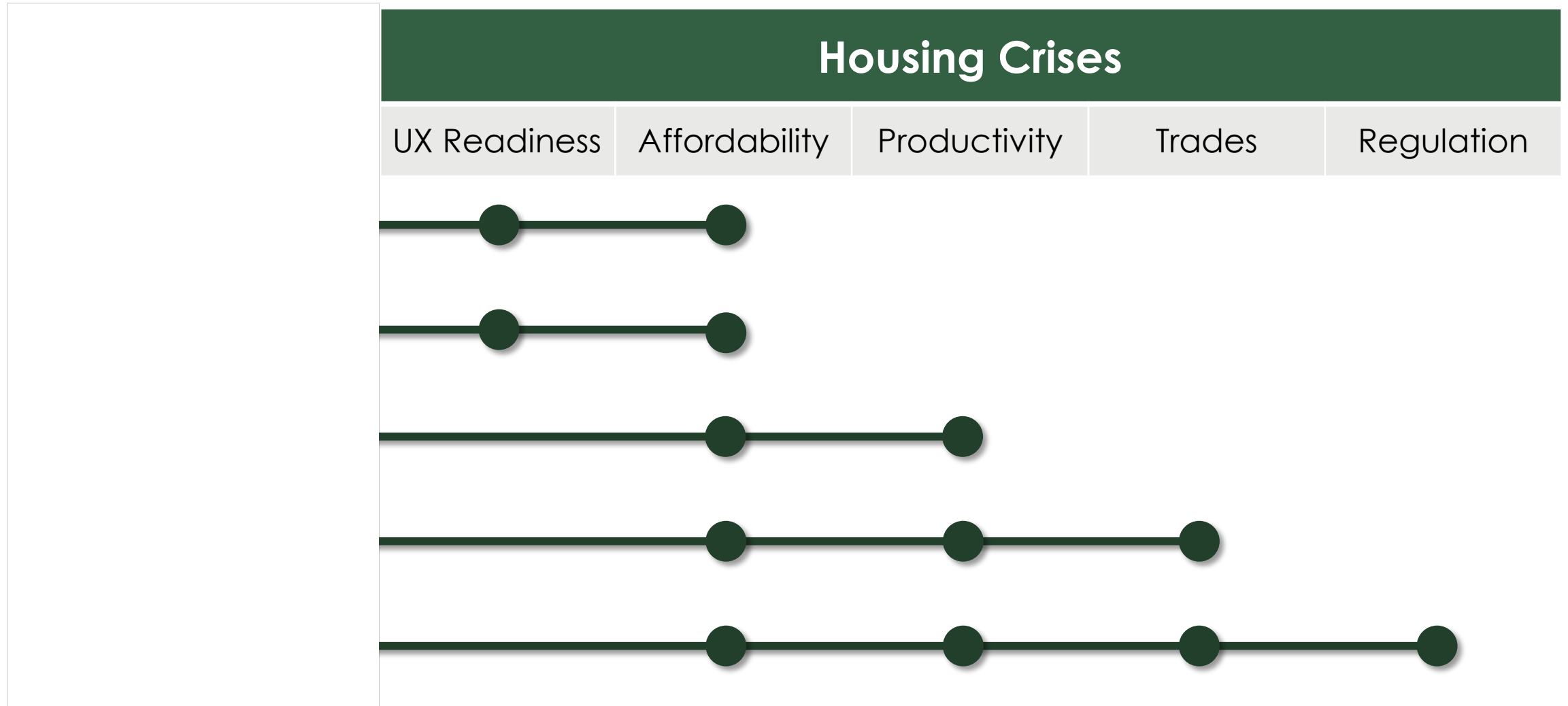
Solution:

4 Innovations
Relieving Pain

Disruption:

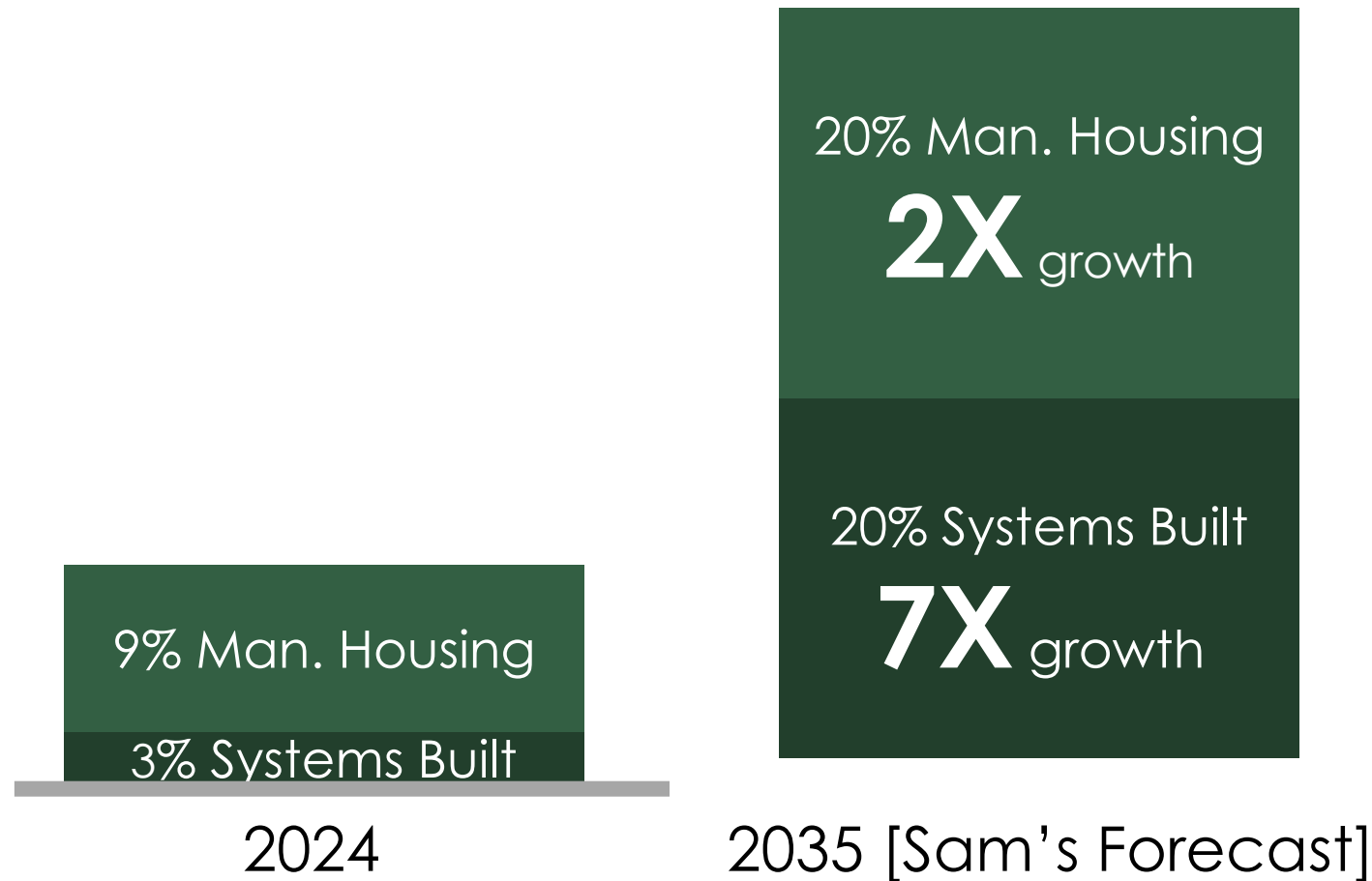
Better Homes for
Lower Cost

Disruption Happens to Housing: Connect the Dots



Future of Housing: Substantial Growth in Systems Built

Systems Built Market Penetration (%)

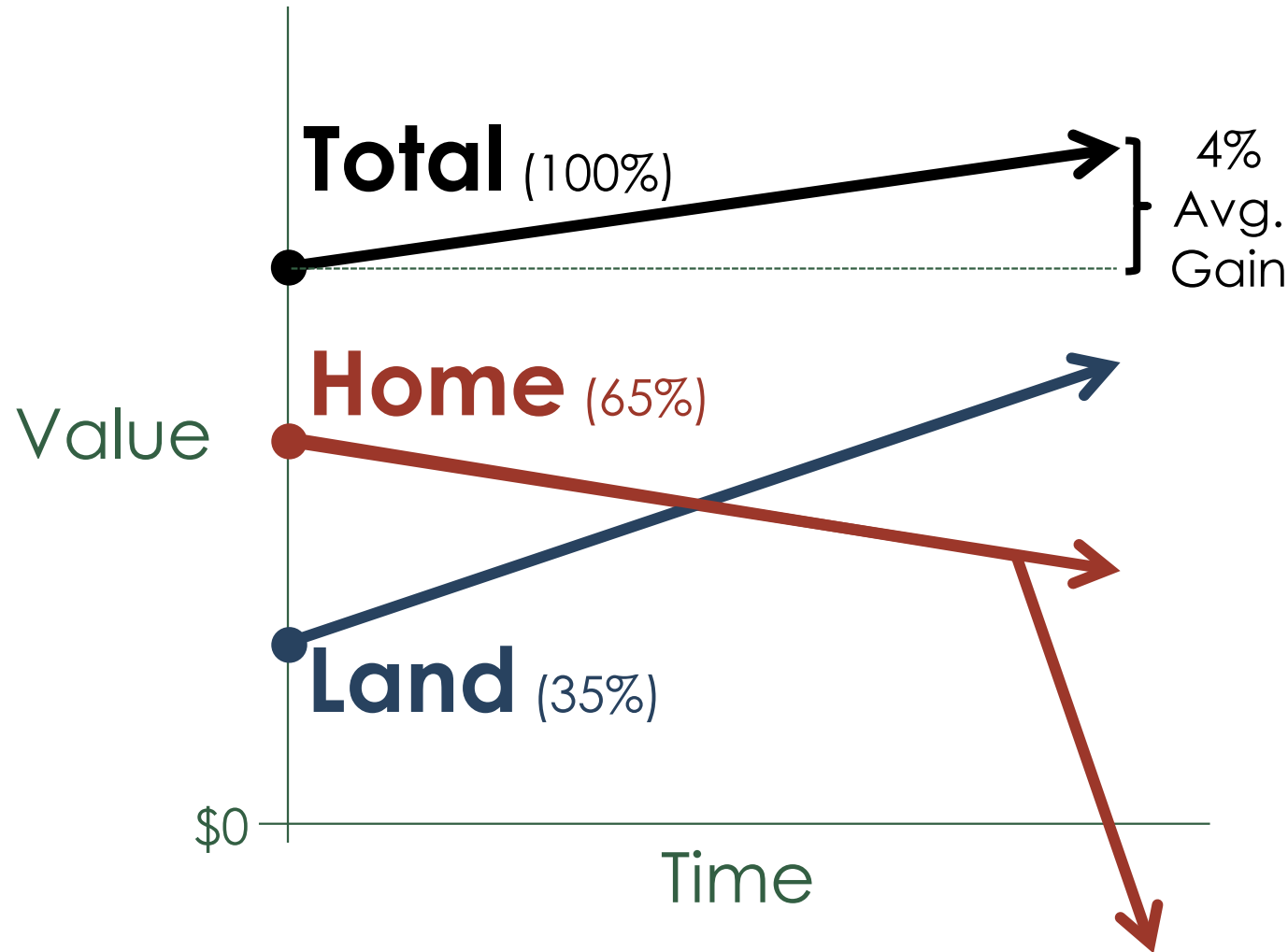


Winners:

Systems built and manufactured housing companies whose innovations:

- Solve problems and/or optimize UX
- Cross the chasm (minimize friction and uncertainty)

Myth: Homes Appreciate



42%

Of HUD-Code homes financed with chattel loans secured by the land but not the home ... the depreciating asset

Source: "Manufactured Housing Finance: New Insights from the Home Mortgage Disclosure Act," Consumer Financial Protection Bureau, 2021

Manufactured Housing Future: Challenges

Manufactured Housing vs. Traditional Homes (Site-Built and Systems Built)

Affordability	Transaction	<ul style="list-style-type: none">• Home-only Loans Higher Interest (~3% – 5%)• Retail Process Dominated by First-Cost
	Product	<ul style="list-style-type: none">• Lagging UX (e.g., garages, porches, roofs)• Density with Single-story Construction• Availability with Local Restrictions• Limited Advanced Manufacturing Methods
	Maintenance	<ul style="list-style-type: none">• Site Installation Quality Assurance• Service Accountability
Efficiency	Code	<ul style="list-style-type: none">• HUD-Code Lags Latest IECC National Codes
Resilience	Certification	<ul style="list-style-type: none">• HUD-Code not aligned with IRC

Manufactured Housing Future: Opportunities

Manufactured Housing vs. Traditional Homes (Site-Built and Systems-Built)

Affordability	Lower Cost	<ul style="list-style-type: none">• ~\$200,000 vs. ~\$440,000 median cost• 1 month vs. 8 months cycle time• Mass-Customization (10's vs. 100's of plans)
	Less Regulation	<ul style="list-style-type: none">• One vs. 100's Building Codes• 3 vs. 16 Climate Zones
Efficiency	45L Tax Credit	<ul style="list-style-type: none">• ENERGY STAR Certified Manufactured Home• Zero Energy Ready Manufactured Home
Resilience	Certification	<ul style="list-style-type: none">• IBHS Fortified Home

Revitalizing Manufactured Housing Recommendations

- **Increase Availability with Efficiency and Resilience:**
Offset local siting restrictions with certified efficiency and resilience.
- **Remove Friction/Uncertainty:**
Work with manufactured housing industry and HUD to align resilience and efficiency metrics with site-built homes.
- **Leverage Industry Investments:**
Engage with *Manufactured Housing Institute* and *Systems Building Research Alliance* efforts to improve manufacturing processes, product, quality, performance and retail process.

Discussion

Sam Rashkin, rashkinsd@ornl.gov

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