



Advancing Affordable Energy Investment in Low-Income Households

Thursday, July 11

11:00 AM – 12:30 PM



Speakers

- Kerry O'Neill, Inclusive Prosperity Capital
- Tammy Agard, EEtility
- Ruth Ann Norton, Green and Healthy Homes Initiative
- Moderator: Pam Mendelson, DOE

Kerry O'Neill

Inclusive Prosperity Capital



INCLUSIVE
PROSPERITY CAPITAL

FINANCING SOLUTIONS THAT FILL GAPS FOR LOW-INCOME COMMUNITIES

SCALING COMMUNITY DEVELOPMENT IN UNDERSERVED MARKETS
THROUGH CLEAN ENERGY AND SOCIAL IMPACT INVESTMENTS

JULY 11, 2019



spins out...



The “What” – \$400M Investment Track Record & Success

| Credit Enhance | Warehousing | Tax Equity Finance | | Project Finance | PRI | Tax Credit Bonds |
|--|--|--|--|--|---|---|
| \$55 MM OPEN 20:1 ¹  Residential Energy | \$50+ MM OPEN 9:1  C-PACE | \$105 MM CLOSED 7.5:1  Residential Solar Commercial Solar | \$60+ MM OPEN 6:1 ³  Green Bank Solar PPA | \$65 MM CLOSED 10:1  Grid-Tied | \$5 MM OPEN 100% ²  Multifamily Energy | \$9 MM CLOSED 9:1  Green Bank Solar PPA |
| \$6 MM CLOSED 6:1  Residential Solar | \$30 MM CLOSED 4:1  C-PACE | \$55 MM OPEN 4:1  Solar for All | | \$22 MM CLOSED 8:1 Colebrook Wind  5 MW Wind Project | \$3 MM OPEN 100% ⁴  Residential and Commercial Storage | \$3 MM CLOSED 3:1  Archimedes Screw Hydroelectric Project |

REFERENCES

1. LLR yields high leverage – and it is 2nd loss and thus with low defaults, we have used <\$25K to date. IRB’s not considered in the leverage ratio.
2. Foundation PRI is to HDF, guaranteed by the CGB in the case of MacArthur Foundation.
3. Onyx Partnership has no upper limit and CGB currently has authorization to commit up to \$15mm.
4. Foundation PRI’s are backed by CGB balance sheet

The “Why”



We believe everyone should have access to the **benefits** of clean energy:

- A cleaner, more resilient environment in the face of climate change
- Healthier communities & buildings that create **positive social externalities**
- **Sustainable economic value creation**: reduced energy burdens, increased household/business savings, and enhanced community productivity

We can **change the conversation** in underinvested neighborhoods and underserved markets, helping to deliver Inclusive Prosperity.

AFFORDABLE MULTIFAMILY HOUSING & NONPROFITS



East Meadow Condominium: Success Story

CASE STUDY 1



Holistic Approach: Unlocking Cash Flows for Sustainable Building

East Meadow Condo Association, Manchester, CT

| | |
|---------------------------|---|
| Description: | Lighting, boilers, roof replacement, insulation |
| Total Project Costs: | \$654,000 |
| Utility Incentives: | <u>\$34,000</u> |
| Financed: | \$620,000 |
| Estimated Annual Savings: | \$79,000 |
| Annual Debt Service: | \$53,000, 1.48 DSCR |
| Financing Terms: | 20 years, 6.00% |
| Payback Period: | 7.8 years |



www.ctgreenbank.com/our-stories/-multifamily

Energy improvements yield significant savings, unlocking cashflows that cover debt service – often for additional improvements such as needed structural, health or safety work.



Implementation Costs that Can Be Financed

- Any measure incented by utility EE programs
- Renewable energy systems (solar PV, ST, etc.)
- Efficient fuel conversions (oil or electric to gas)
- Combined heat & power systems
- Energy storage & EV fueling stations
- Qualified health and safety measures
- Performance monitoring





Pre-Development Costs that Can Be Financed

- Energy Benchmarking
- Opportunity assessments and audits – holistic look at all fuel and technology options
- Design, engineering and bidding work
- Assessments of energy-related health and safety barriers
- Green physical needs assessments
- Green Design & Charrettes (for new construction)
- Financial packaging



Pre-Dev financing can be used for assessment & design of measures incented by the utility companies as well as those that are not.



Pre-Development & Health & Safety Loans: Unlocking Cash Flows to Stabilize a Property

Success Village Coop: Bridgeport, CT

- ❖ 964 units, WW2 workers housing, central heating plant circa 1960's
- ❖ Annual heating costs: \$1.8M
- ❖ Technical Assistance: Governance support from UHAB, preliminary engineering and development TA from Green Bank team
- ❖ Pre-Development Loan: \$150K for engineering analysis, design, development and funding of new heating systems
- ❖ Health & Safety Loan:
\$165K for removal of asbestos for phase 1 pilot
- ❖ Implementation cost estimate:
\$15 Million





Bridge Financing for Contractors Working in Utility Energy Efficiency Incentive Programs

Problem: Lack of **working capital for smaller contractors** creates **barrier to entry** for firms that are **already serving low-income communities** and ideal candidates for becoming qualified vendors in utility incentive programs

Solution: Create a **bridge financing** program for qualified vendors to **cover the construction period until rebates are paid out**

Need to understand the ecosystem of players in your market and the financing gaps they are experiencing.

Parting Thoughts



- Look for gaps in the market and structure solutions to fill those gaps
 - Work across the project lifecycle – from pre-development to construction, working capital, and term financing
 - Best to be structure agnostic (don't lead with solutions in search of problems), and consider project finance vehicles (ESAs, PPAs, etc.)
- Don't work in silos! Marry renewables and efficiency, health & safety and structural work, water and energy, etc.

Together, we can [change the conversation](#) in underinvested neighborhoods and underserved markets, helping to deliver [Inclusive Prosperity](#).



INCLUSIVE
PROSPERITY CAPITAL

Kerry O'Neill, CEO

kerry.oneill@inclusiveteam.org

Tammy Agard

EEtility



EEtility

EFFICIENCY IS POWER



Basics of PAYS[®]:

“Pay As You Save”

- ▶ PAYS is NOT financed as a loan – it’s a tariff charge (and is considered an essential Utility service)
- ▶ PAYS is great for everyone but unlike most EE programs- PAYS is particularly helpful for lower income populations (Rural and Urban)
- ▶ The tariff charge on the bill is less than the estimated savings at a 80/20 split so people save money from day one
- ▶ The tariff charge is associated with the meter and survives homeownership/tenant changes
- ▶ PAYS requires no personal debt obligation; no credit check; no homeownership requirement!

What are the benefits of PAYS® To Participants?

- ▶ Immediate net savings (20% of estimated savings immediately accrue to participants)
- ▶ 100% of savings accrue to participant when Utility cost recovery is complete
- ▶ More comfortable and healthier homes/buildings
- ▶ No upfront cost for cost effective upgrades
- ▶ No credit check, debt to income ratios, homeowner requirements
- ▶ Non participants don't subsidize participants upgrades (unlike incentive or rebate programs)
- ▶ High, middle and low income ALL have equal access. No member left behind!

Thank You, Questions?

Ruth Ann Norton

Green and Healthy Homes Initiative

**Better Buildings, Better Plants Summit: Advancing
Affordable Energy Investment in Low-income Households**

**July 11, 2019
Arlington, VA**

Ruth Ann Norton, President & CEO
Green & Healthy Homes Initiative

The Burden of Sub-Standard Housing

Unaffordable, inefficient, and unhealthy



30M families live in unhealthy homes

Homes with environmental hazards are making their residents sick



14.4M missed days of school each year

Asthma is the top reason students miss school



14.2M missed days of work each year

Collateral burden of sick children is missed days of work for parents and caretakers



\$81B+ spent on asthma



\$31B+ spent on slip & fall injuries



\$43B+ spent on lead poisoning

Low income families spend 20% of monthly income on energy costs

VS.

3.5% in other households

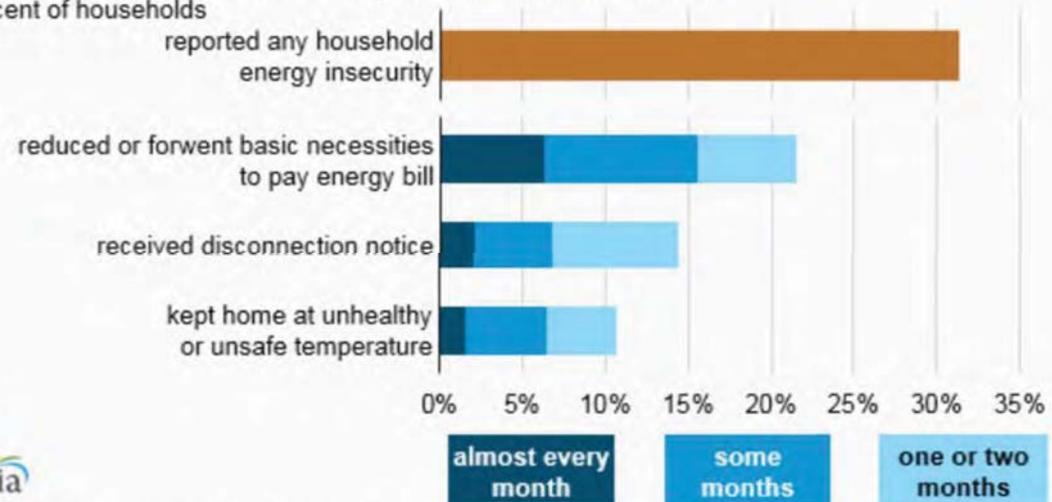
Family Impact of Energy Inefficiency

Subtitle Placeholder

- One in five households reduce or forgo necessities such as food and medicine to pay an energy bill
- 14% of households experience energy service disconnection annually
- 11% of households keep home at an unhealthy or unsafe temperature

One in three U.S. households faces a challenge in meeting energy needs

Households that experienced energy insecure situations, 2015
percent of households



Source: U.S. Energy Information Administration, Residential Energy Consumption Survey 2015

The GHI Solution: Address the whole home

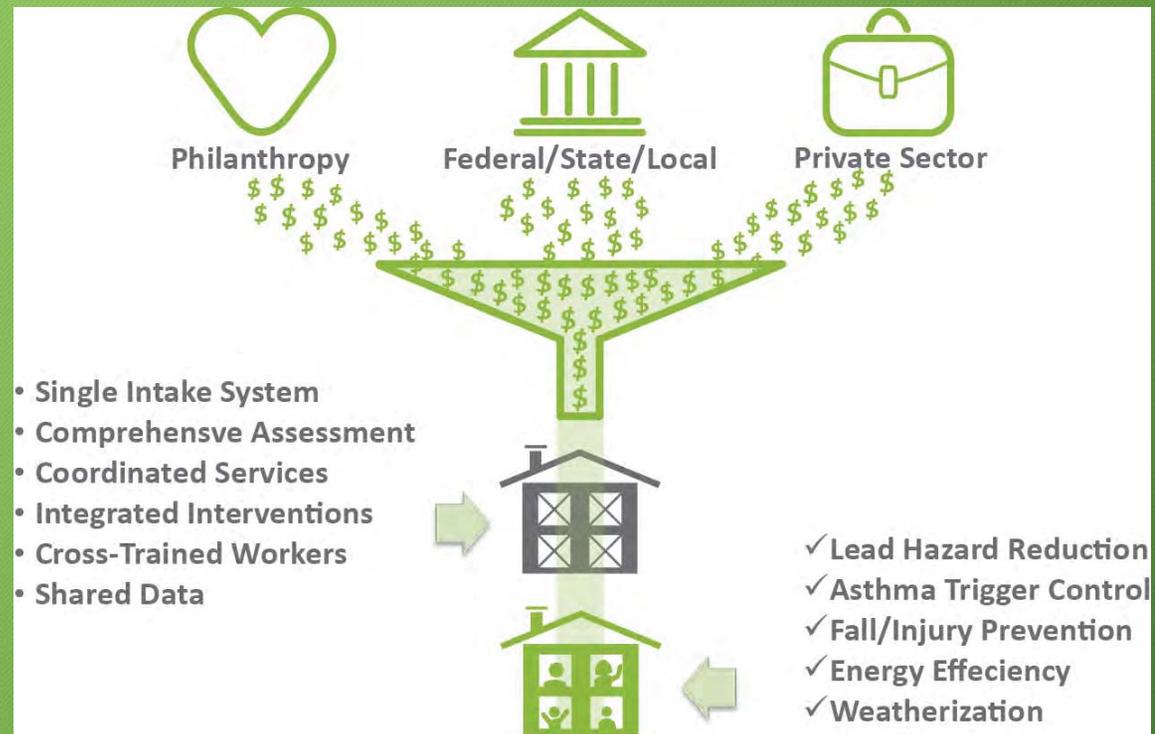
Align
services & funding



Braid
relevant resources



Coordinate
service delivery



The Differentiator: Cross-trained Teams

Environmental Health Educator

- Conduct in home resident education
- Coordinate pre and post client health surveys
- Coordinate follow up client services

Energy Auditor Environmental Assessor

- Conduct pre intervention environmental assessments
- Conduct energy audits
- Develop comprehensive scopes of work
- Conduct post intervention quality control

Multi-Functional Contractors

- Address the hazards identified on scopes of work
- Results in increased team capacity
- Exposes opportunity for job training and economic development for residents of low income communities



The Whole-Home Strategy:

Assessors, Educators, and Crews Address Housing Issues Holistically

- Energy efficiency and weatherization
- Elimination of Lead Hazards
- Asthma Trigger Reduction
- Integrated Pest Management
- Mold and moisture remediation
- Injury prevention measures, including:
 - Carbon monoxide and smoke detectors
 - Cabinet locks and electrical outlet covers
 - Trip and fall reduction measures
- Radon, asbestos, and home-based env. hazard remediation



The HUD Healthy Homes Technical Study

Investigating the impact of healthy housing across sectors

3 Focus Areas

Cost-Benefit Analysis

Looking at medical claims, utility bills, as well as school and work attendance.

Medical Claims

Health outcomes from Medicaid administrative claims

Evaluation

Matched-comparison group

Broad Research Partnerships



Tiers of Interventions

Tier 1 Interventions

Home Visiting, Resident Education, and Prevention Supplies

Tier 2 Interventions

In-Home Green & Healthy Homes Interventions

The Outcomes

Medical costs were reduced post-intervention

251 cases were matched to a potential control group based on:

- Contemporary asthma status per their Medicaid record
- Sex (i.e., reported “male” or “female”)
- Age within 0.25 years
- Geography based on 5-digit zip code
- Pre-intervention costs

Each potential case was ultimately matched to its nearest-neighbor control in relation to baseline (the 12 months before the intervention) total Medicaid expenditures

Medical Costs, Overall

| Group | Change (Total Cost) | Change (Mean) |
|---------------------|---------------------|---------------|
| Control | -\$214,622 | -\$898 |
| Treatment (Overall) | -\$396,262 | -\$1,658 |
| Tier 1 | -\$67,840 | -\$530 |
| Tier 2 | -\$328,449 | -\$2,959 |

GHHI Baltimore

- **66%** reduction in asthma-related hospitalizations
- **62%** increase in asthma-related perfect school attendance
- **88%** increase in never missing work due to their child's asthma
- **99%** decline in childhood lead poisoning in Baltimore City

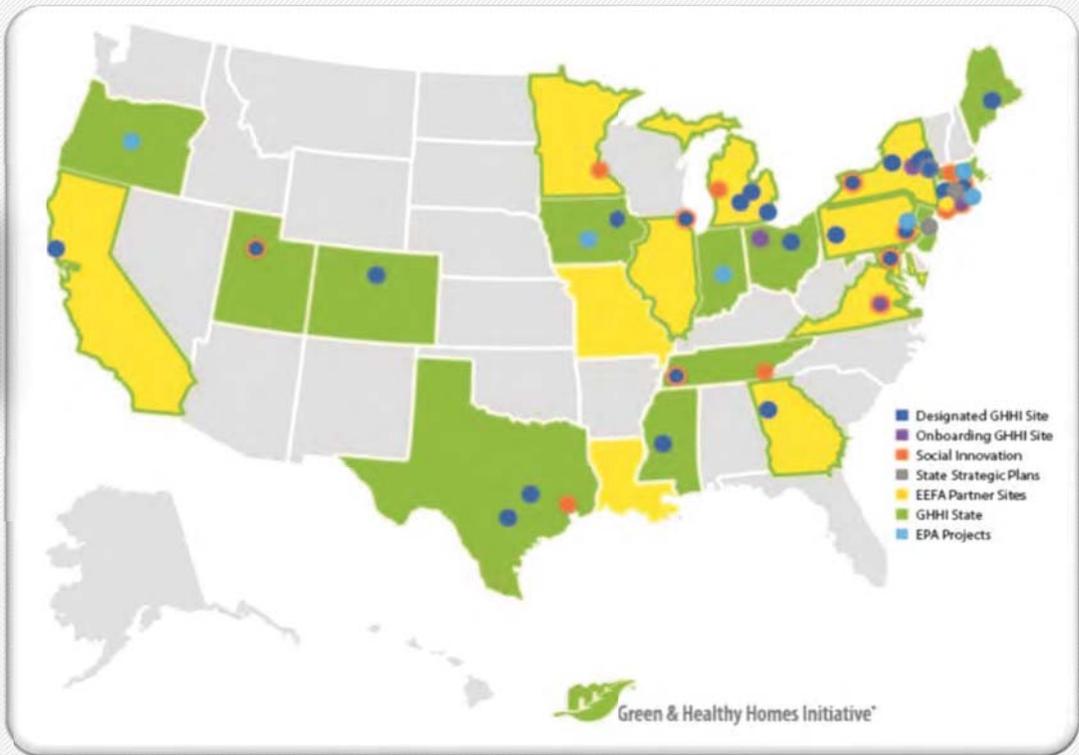
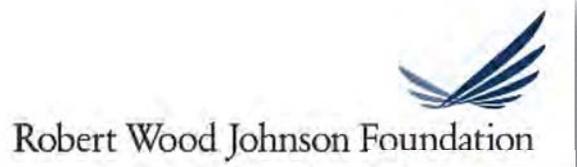
GHHI Philadelphia*

- **70%** fewer asthma-related client hospitalizations
- **76%** fewer asthma-related client ED visits

GHHI Cleveland**

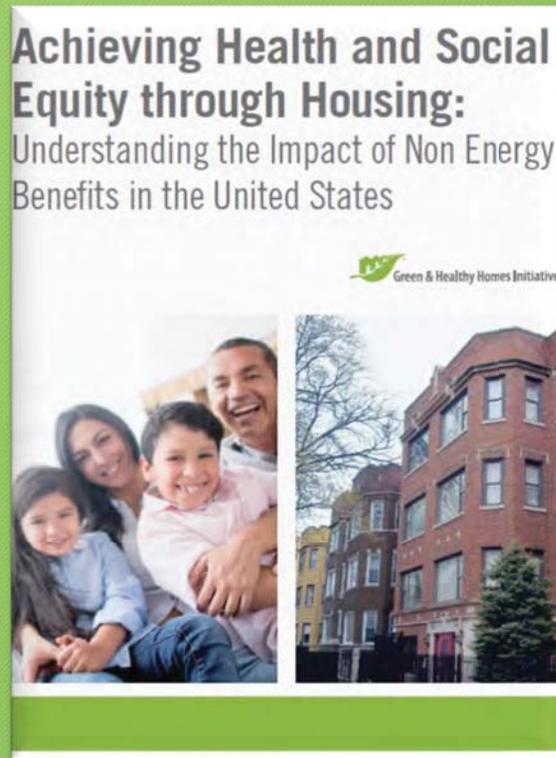
- **58%** reduction in asthma-related client hospitalizations
- **63%** reduction in asthma-related client ED visits

The Strategy in Action for Cities: National Results



The Strategy in Action Nationally: Scaling Best Practices and Innovation

Build Cross Sector Partners with Energy, Health and Housing - Mutual Benefits



ENERGY OUTPUTS

- reduced kWh consumed
- reduced energy demand

NON-ENERGY OUTPUTS

- improved air quality
- increased thermal comfort
- reduced toxins

ENERGY BENEFITS

- improved service reliability
- reduced system maintenance needs

NON-ENERGY BENEFITS

- environmental quality
- occupant health
- family economic security

LONG TERM IMPACTS

- neighborhood quality improvement
- reduced health disparities
- school attendance
- economic productivity

Illinois ComED Utility Project

Project Goal: To develop a coordinated service delivery model that achieves a whole-home retrofit for utility customers with significant health, safety and energy needs and that leverages both time and financial resources of ComEd and AMITA Health.

Intervention design: Targets high-utilizing asthma patients of local hospital who are uninsured or under-insured and most likely to also need energy efficiency improvements. Exploring if targeting multi-family buildings with multiple asthma patients for efficiency opportunities.

Funding: Pilot combines community benefit dollars from local hospital system, utility R&D dollars to investigate new service delivery models, and local grants

Results:

- Phase 1 of pilot increased asthma control of 19 of 20 patients
- Phase 1 lacked energy efficiency dollars, which will be addressed via phase 2



Health, Energy and Housing - GHHI Greater Syracuse

Before GHHI Greater Syracuse & Partners

- Owned by a single-mother with 2 children
- Furnace not working & little insulation
- Asbestos around the furnace
- Electrical hazards
- Peeling lead paint, inoperable windows
- Collapsing back porch and front steps

After GHHI Greater Syracuse & Partners

- Asbestos removed
- A new furnace & hot water heater installed
- Insulation and other air sealing
- Electrical Improvements
- Remediation of lead paint hazards & new windows
- New front steps & rear porch for fall prevention
- CO detectors and fire alarms installed



> PEACE Inc. representative Sally Ward, left, presents homeowner Tanesha Keene with a bucket of home safety items donated by The Home Depot, including smoke detectors for her children's rooms. | Riley Bunch, Staff Photo
Source: Riley, Bunch. The Stand. Winter 2016
2017.

Partners: Home HeadQuarters PEACE, Inc., Onondaga County Health Department, & Onondaga County Community Development Division's Lead Hazard Reduction Program, the Home Depot, and applicant.



HUBS Baltimore Model Summary: Housing Upgrades for Seniors

1

Founding Organization

Organizes referral process, develops trainings for partners, and hosts leadership meetings



2

Leadership Team

Performs home remediation and installs fall prevention measures



3

HUBS

Provides referrals into HUBS, conducts individualized needs assessment and assists with service referral process



4

Evaluator

Currently evaluating cost savings and impact of program



Home Safety Improvements

Grab bars
Handrails



Home Rehab Services

Roof repair
Plumbing repair



Weatherization and Energy Efficiency Services

Insulation
Weather stripping
LED Installation

Lesson Learned: Define the Business Case

Example: the case to fund early lead and asthma interventions

Lead Poisoning Prevention

Environmental Control of Asthma

Impacts during childhood

- 700% increase in school drop out rate
- 600% increase risk of juvenile delinquency

Impacts in adulthood

- Diminished earnings from lower IQ
- Higher likelihood of incarceration

\$1

invested in preventive remediation

\$17 - \$221

return on investment

Increased lifetime earnings of **\$1,024,000** per child if lead poisoning prevented

Asthma results in **\$50.1B** in annual medical costs
(40% of costs are tied to triggers in the home)



Cost of ER visit
\$500-\$1,000



\$1
invested in asthma interventions



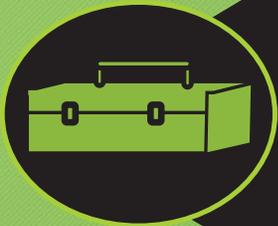
Cost of hospitalization
\$7,500-20,000



\$5.30 - \$14
return on investment

Sources: HUD, Gould, RWJ Commission on Building a Healthier America, HHS economic review of published studies

Secure Health Care Sector Investments in Energy and Housing Projects



Medicaid, CHIP Waivers & State Plan Amendments

Hospital Community Benefits

Pay for Success

MCOs and Value-based Payments

Medicare Advantage Plans

Administrative Resources

Partner with Healthcare and Housing

Medicaid/CHIP Innovations Funding Preventive Interventions

Michigan

- \$119 million in CHIP funds for lead hazard remediation and related services; workforce development

Maryland

- \$14.4 million in CHIP funds for lead inspection and hazard remediation and preventive asthma services

Ohio & Indiana

- \$5 million (OH) & \$3 million (IN) CHIP funds for lead testing and remediation

Missouri

- Medicaid funding allowable for Asthma resident education; Environmental assessment services

Oregon

- Rule 1115 Waiver allowing for flexible services including asthma home visiting resident education

Rhode Island

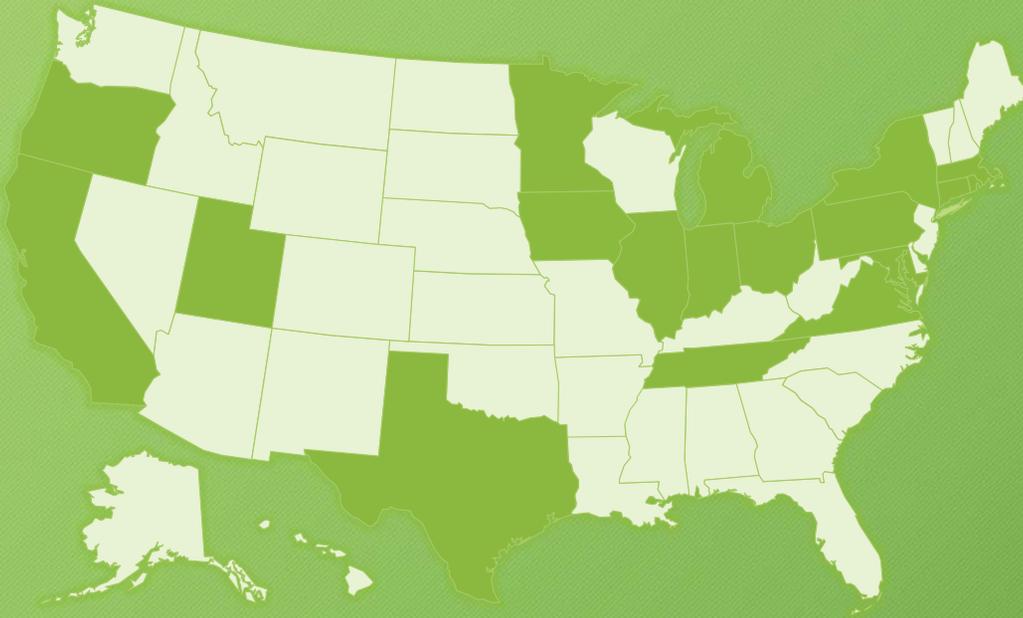
- Rule 1115 Waiver allowing for lead remediation

Virginia

- Rule 1115 Waiver for asthma interventions



GHHI Innovative Healthcare Financing Projects



- Allegheny County - UPMC and Allegheny Co. Health Department
- Baltimore - Priority Partners MCO
- Buffalo - Oishei Children's Hospital and IHA MCO
- Chattanooga - green|spaces and Erlanger Children's hospital
- Chicago - Presence Health, Elevate Energy, & NextLevel MCO
- Cincinnati - People Working Cooperatively
- Connecticut Medicaid and CT Greenbank
- Grand Rapids - Priority Health MCO, Healthy Homes Coalition of West Michigan
- Houston - UnitedHealthcare & Baylor
- Houston - Community Health Choice MCO
- Indiana - Indiana Joint Asthma Coalition
- Iowa - Healthy Homes Des Moines
- Marin - Contra Costa Health Services & MCE
- Memphis - Le Bonheur Children's Hospital & UnitedHealthcare, Amerigroup, and BlueCare
- Minneapolis - MN Energy Efficiency For All
- New York City - Affinity Health Plan, AIRnyc, & AEA
- New York City - LISC
- New York Medicaid and NYSERDA
- Oregon - Community Services Consortium
- Philadelphia - National Nursing Care Consortium
- Richmond City Health District
- Rhode Island - State Medicaid and Integra Accountable Entity
- San Antonio - SA Asthma Collaborative
- Salt Lake - University of Utah Health Plans and Salt Lake County
- Springfield - Health New England MCO, Baystate Health, Public Health Institute of Western Mass
- Worcester - UMass Memorial Hospital

Funders



Explore State Partners - New York State Healthy Homes Project - Integrating Health, Energy and Housing

Goal Build capacity for services throughout the state and design an integrated delivery model

Outcome Reduce energy usage, asthma episodes, household injury and lead poisoning and related energy and medical costs

Approach Evaluate the possibility of supporting energy, health and housing services through sustainable public and private funding.

Commitment \$10,000,000 in NYSERDA funding for pilot implementation

Partners NYSERDA, NYSDOH, NYHCR



Explore State Partners - Connecticut Green & Healthy Homes Project (7 State Agencies)



Pursue Lead Grant and Other Housing Funding Resources to Support Your Cross Sector Collaboratives – GHI Lead Funding Toolkit Development

Identified Over 40 funding sources supporting lead hazard reduction

Public Data Sources



Potential users, unmet needs, additional data sources

Key Stakeholder Insights



Real world examples, strategic implementation guidance, and categorize by source and needs

Develop Roadmap



GHI Lead Toolkit - Go to:
<https://www.greenandhealthyhomes.org/ghhi-toolkits/>

State Attorney General Settlement Funds

[Home](#) > [Toolkit to Fund Lead Poisoning Prevention](#) > [Funding and Financing](#) > [State and Local Public Funding](#) > [State Attorney General Settlement Funds](#)

Click on the sections below to expand them for more information.

Description ▾

Strategic Implementation ▾

Example ▾

**Download the Entire
Funding and
Financing Toolkit**

Print This Document

Questions? Chat with us

Our Opportunity and Our Charge

Achieving Health Equity through Affordable, Safe & Efficient Housing

A young child with short dark hair is lying on their stomach on a wooden floor, focused on drawing on a piece of white paper. The child is wearing a light-colored shirt with teal and green stripes. A black chair leg is visible in the background. The scene is warmly lit, suggesting an indoor setting.

Foster community-based participation in the national movement through strategic partnerships and innovative practices



Ruth Ann Norton
President & CEO
ranorton@ghhi.org

@RuthAnnNorton

@HealthyHousing

www.ghhi.org

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