BUILDINGENERGY BOSTON

From Gas to Electricity with Speed and Equity

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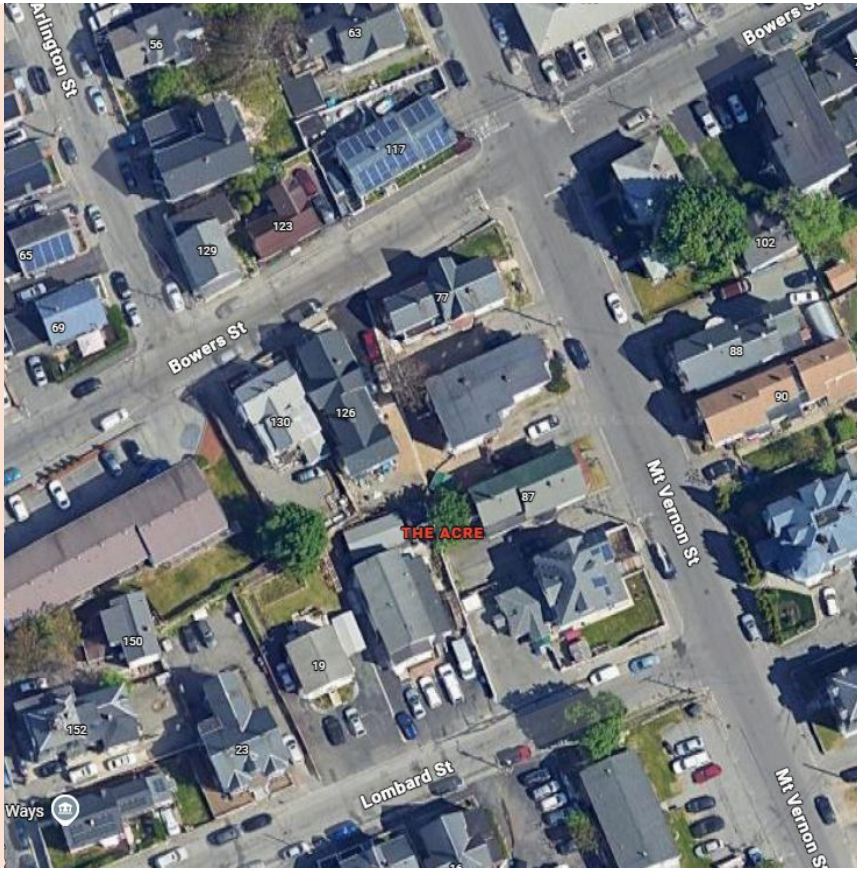
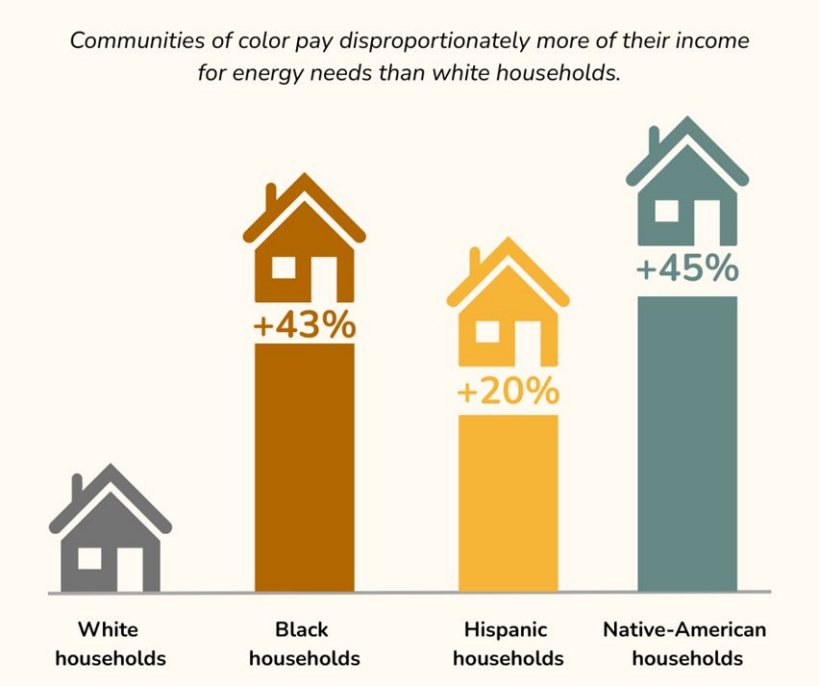
Northeast Sustainable Energy Association (NESEA) | March 24, 2026

FROM BUILDINGS TO BLOCKS: SCALING EQUITY/JUSTICE THROUGH A MANAGED TRANSITION.



BLACK SWAN LAB

WHY THIS MATTERS?



High Energy Burdens: A disproportionate percentage of household income is spent on energy costs, particularly among Black, Brown, and Indigenous households.

Structural & Thermal Barriers: Aging building stock with significant "envelope" issues, such as poor insulation, air leakage, and outdated electrical systems (e.g., knob-and-tube wiring).

The Renter Gap: A high concentration of renter-occupied units where "split incentives" prevent landlords from investing in efficiency, leaving tenants with high bills.

Grid & Infrastructure Constraints: Existing electrical infrastructure and local grid capacity are often insufficient to support house-by-house electrification without coordinated upgrades.

Uniform Health Challenges: Residents across the neighborhood face identical, chronic health risks—specifically disproportionately high asthma rates and respiratory distress—driven by the same aging building stock, poor ventilation, and indoor combustion of fossil fuels.

Initiative for Energy Justice

BLOCK-LEVEL COMMUNITY DEVELOPMENT LOGIC AS A FRAMEWORK FOR A MANAGED ENERGY TRANSITION

- **What are CDCs**? Nonprofit, place-based organizations created to strengthen a specific neighborhood through coordinated investment, community governance, and long-term stewardship.
- **A Shift in Scale**: Just as efforts like the Dudley Street Neighborhood Initiative coordinated improvements across an entire area—not one house at a time—the energy transition requires neighborhood-scale planning rather than scattered, individual electrification.
- **Layering Resources:** CDCs succeed because certain neighborhoods are designated as priority investment zones, unlocking federal tools like the Low-Income Housing Tax Credit (LIHTC) and the New Markets Tax Credit (NMTC). These credits make it possible to finance high-cost renovations and community facilities that would otherwise be out of reach for low-income residents. A managed energy transition can follow the same logic by directing incentives and public capital to the neighborhoods that need the deepest upgrades, allowing weatherization, wiring, and electrification to be financed as coordinated, community-scale projects rather than scattered, individual efforts.
- **Energy as Shared Infrastructure**: The same logic that underpins community land trusts—treating essential resources as shared, community-governed assets—can guide how we design future heating and cooling systems. Models like networked geothermal offer a way to organize energy at the block level, lowering costs and distributing benefits across the community when planned as shared infrastructure rather than individual, house-by-house upgrades.
- **Equity as a Design Principle**: CDCs were created to ensure that revitalization benefits the people who already live in a neighborhood. A managed energy transition can be built on the same principle—designing the process so that low-income households are not left behind in an increasingly expensive gas system. Our current approach relies on scattered, after-the-fact equity interventions, rather than embedding equity into the structure, scale, and sequencing of the transition itself.

EQUITY THROUGH TARGETED DELIVERY – MASS SAVE

Designated Equity Communities (DECs)

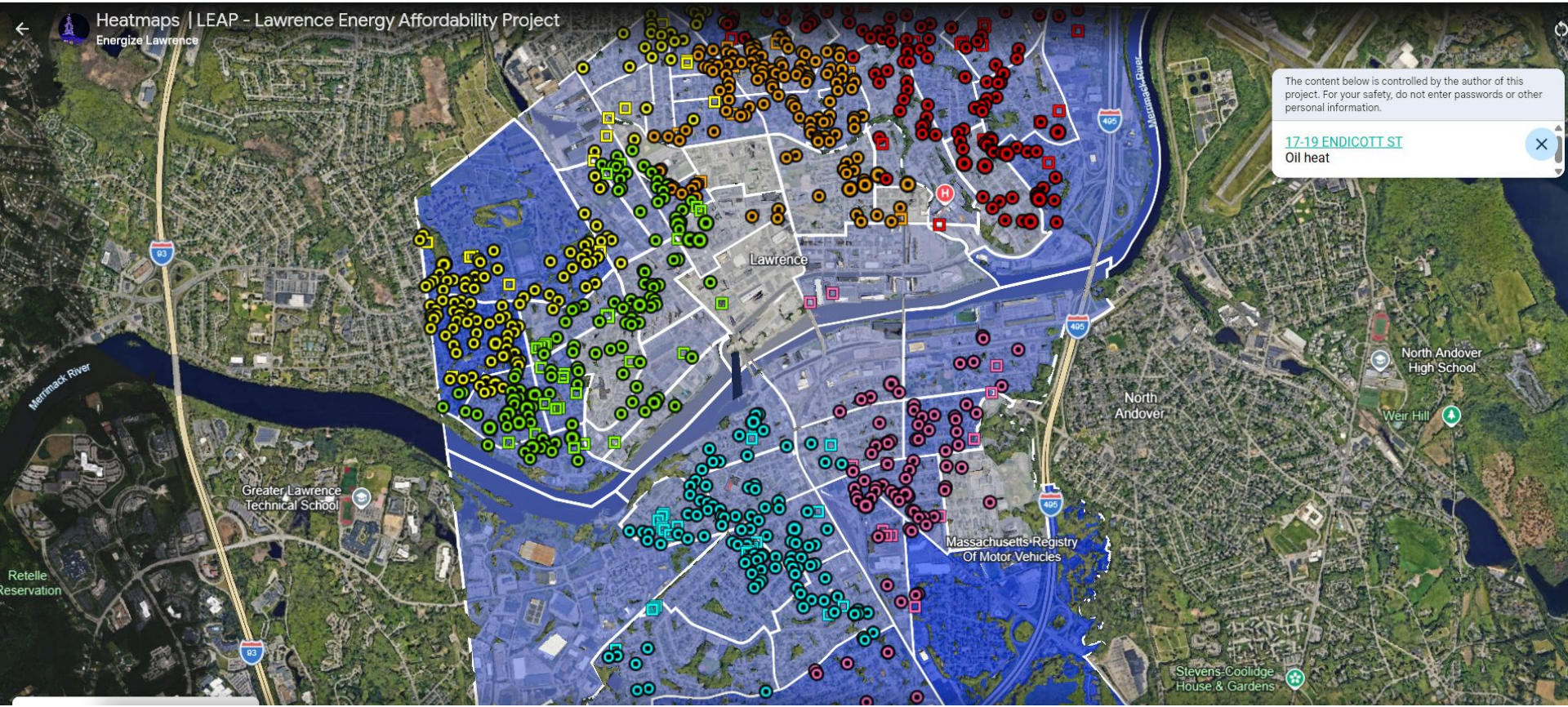
- A DPU-approved framework that identifies neighborhoods with higher energy burdens, more renters, and lower participation in energy programs.
- Demonstrates that Massachusetts already uses **place-based targeting** to direct resources where they are most needed.
- Establishes a foundation for thinking about **geographic concentration** of effort.

Community First Partnership (CFP)

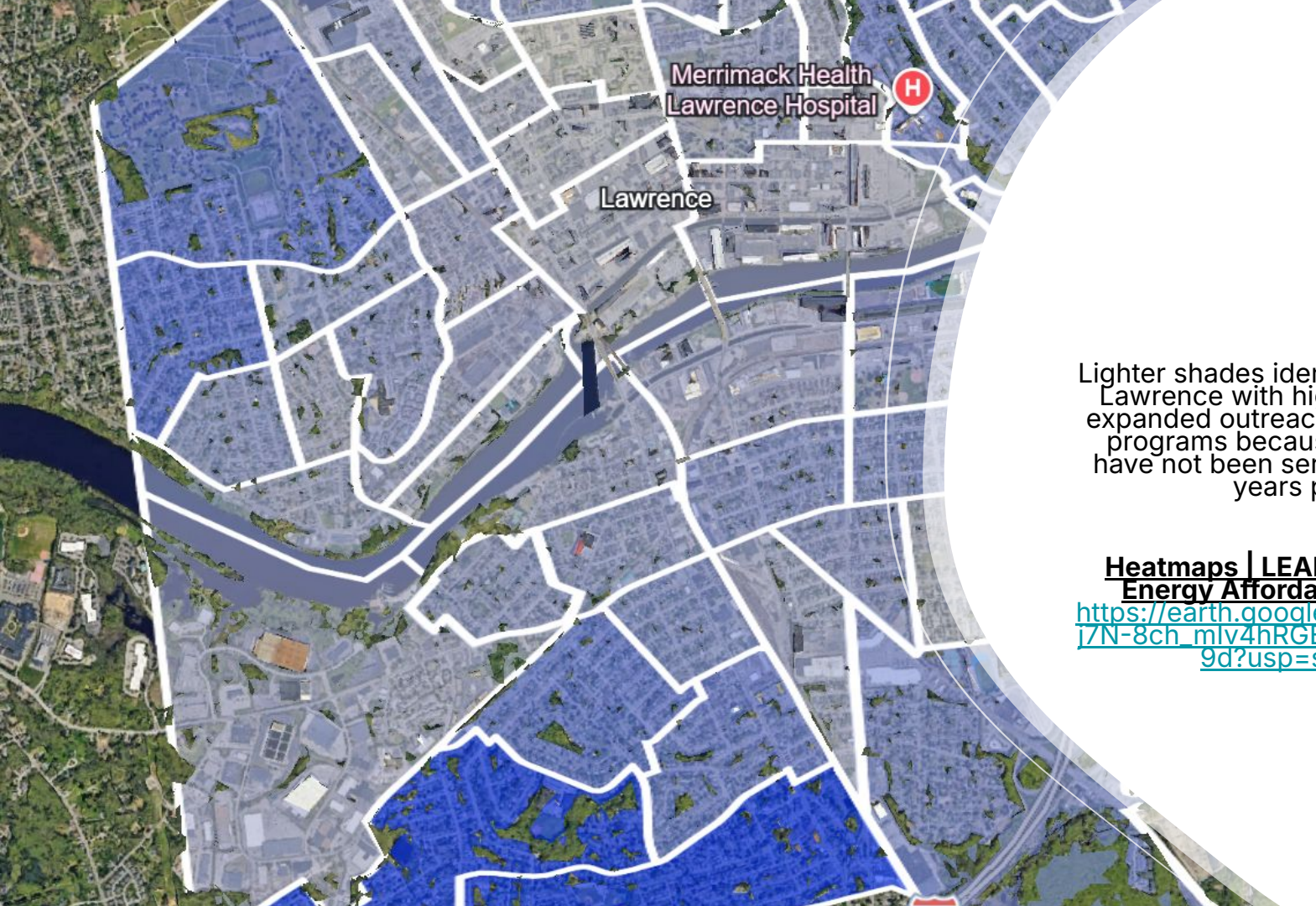
- A DPU –approved program that funds **local, community-based organizations** to support outreach and help residents access programs.
- Demonstrates the value of **trusted, neighborhood-level messengers** in increasing participation.
- Establishes a foundation for **localized coordination** within priority areas.

Why Neighborhood Scale Is the Natural Next Level

- Both strategies show that the state already embraces **targeted**, **place-based**, and **community-anchored** delivery.
- The next logical step is to apply these same principles **across entire blocks or neighborhoods**, rather than one address at a time.
- Neighborhood-scale delivery builds on what already works—**targeting + trusted local partners**—and extends it to support coordinated electrification and gas transition planning.



HEATMAPS | LEAP - LAWERENCE ENERGY AFFORDABILITY PROJECT
HTTPS://EARTH.GOOGLE.COM/EARTH/D/1DJ7N-8CH_MIV4HRGEVWVFZRIVXLC9W9D?USP=SHARING



Lighter shades identify areas within Lawrence with high potential for expanded outreach for Mass Save programs because these areas have not been served as much in years past.

Heatmaps | LEAP – Lawerence Energy Affordability Project
https://earth.google.com/earth/d/1dj7N-8ch_mIy4hRGEvwvfZRivxLc9w9d?usp=sharing

We are currently looking at our gas grid the way people looked at these vacant lots in 1984—as a liability. But when we apply neighborhood-scale logic, that liability becomes the foundation for a clean, modern energy system.

https://rioonwatch.org/?p=70247
Pictures from Dudley Neighbors Inc – The Roxbury Community Land Trust, responsible for revitalizing a neighborhood from blight and abandonment to stability and prosperity for individuals and the community at large.

From fragmented liability to collective asset: The power of the neighborhood scale idea.

BLACK SWAN LAB

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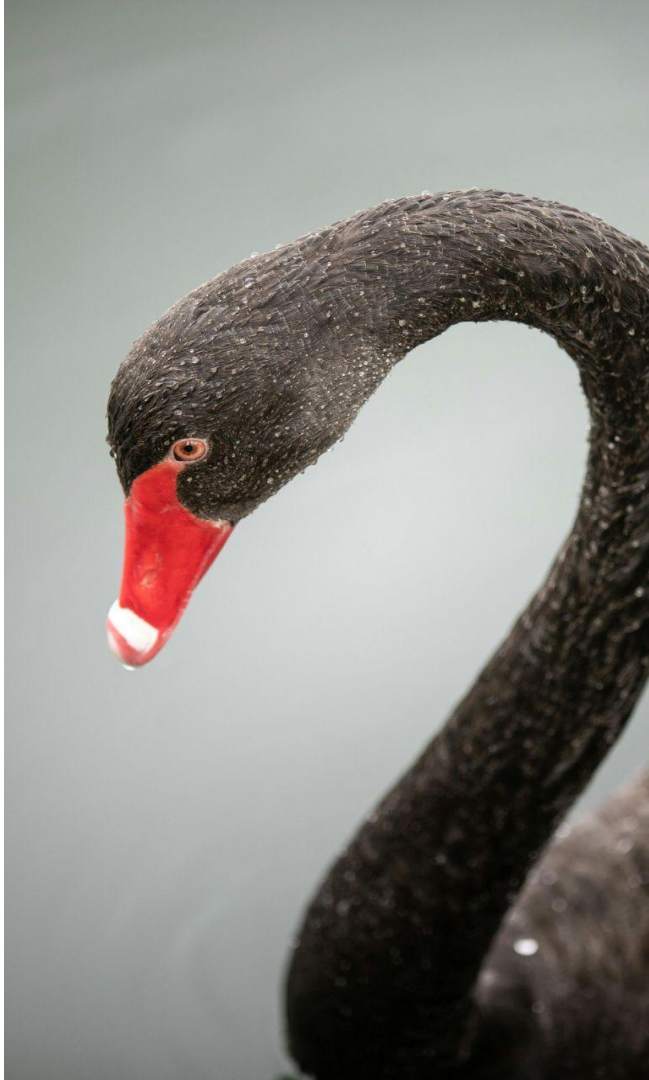
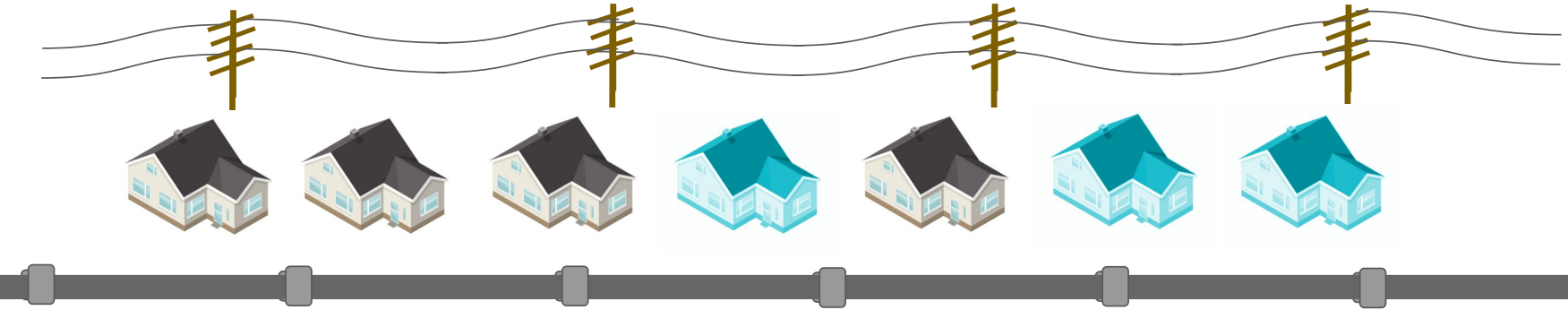
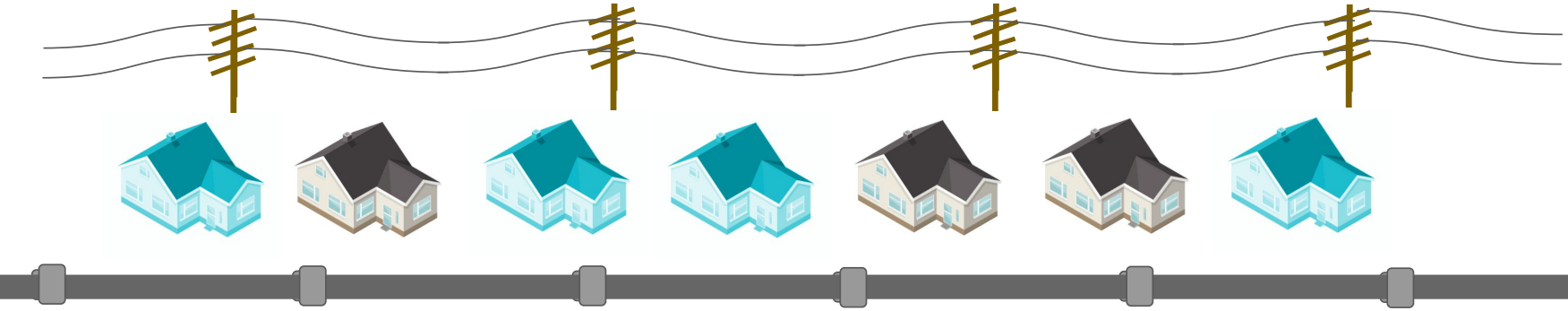
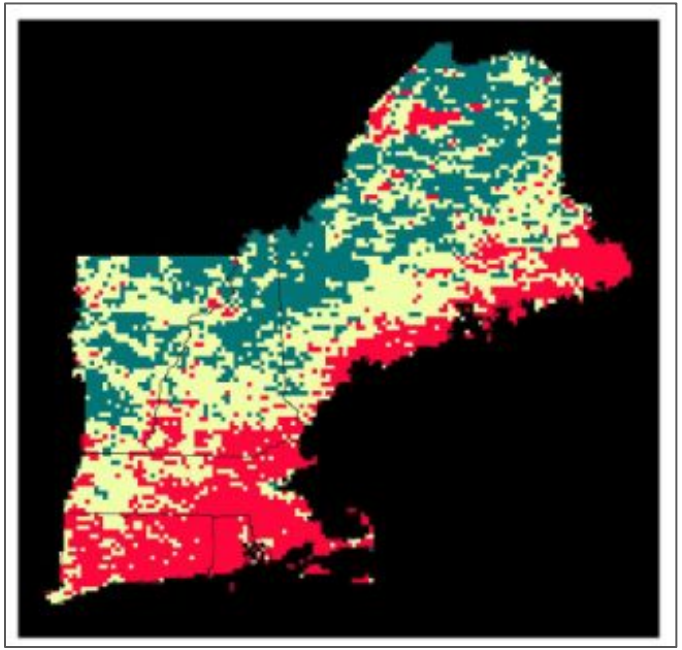
Practical solutions for system change

Barr Foundation



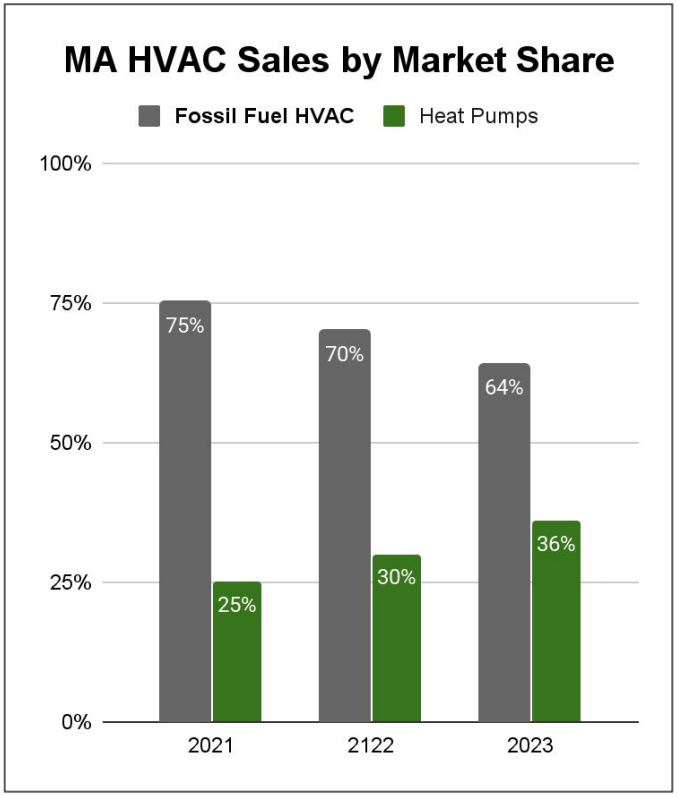






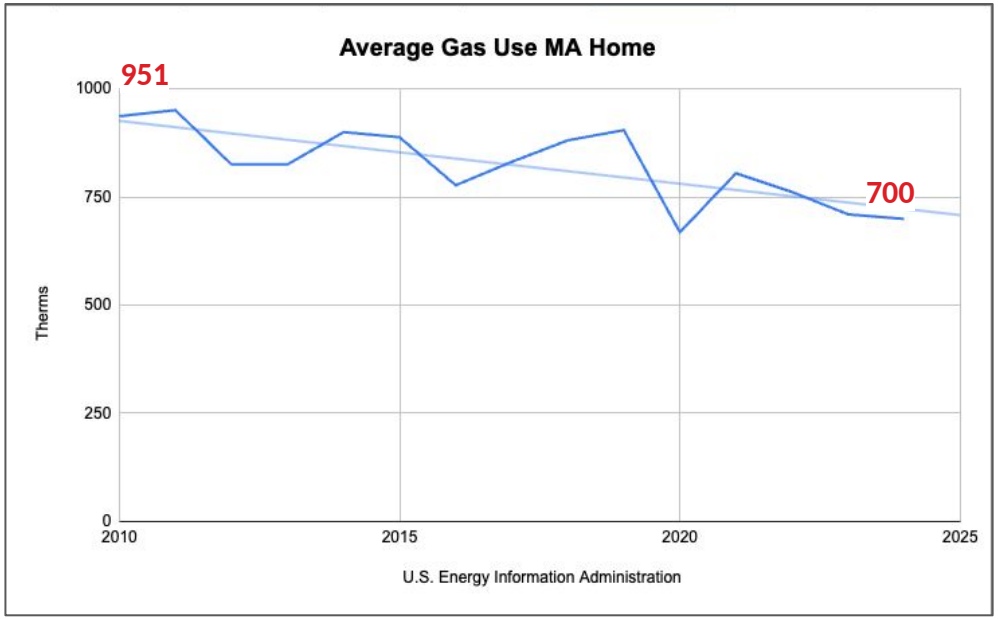
SALEM STATE UNIVERSITY

MA IS HEATING UP FASTER THAN ALMOST ANY OTHER PART OF THE PLANET AND ...



MA EEAC 2023/2024 FINAL REPORT

...HEAT PUMPS ARE SELLING BETTER AND BETTER

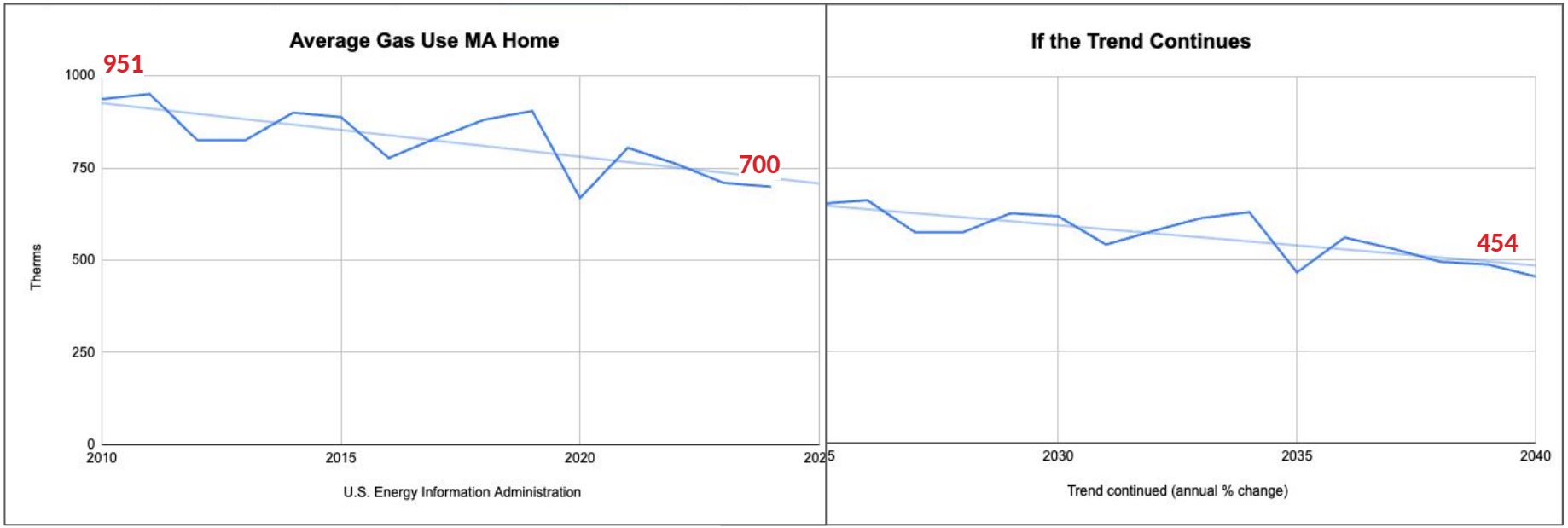


EIA DATA

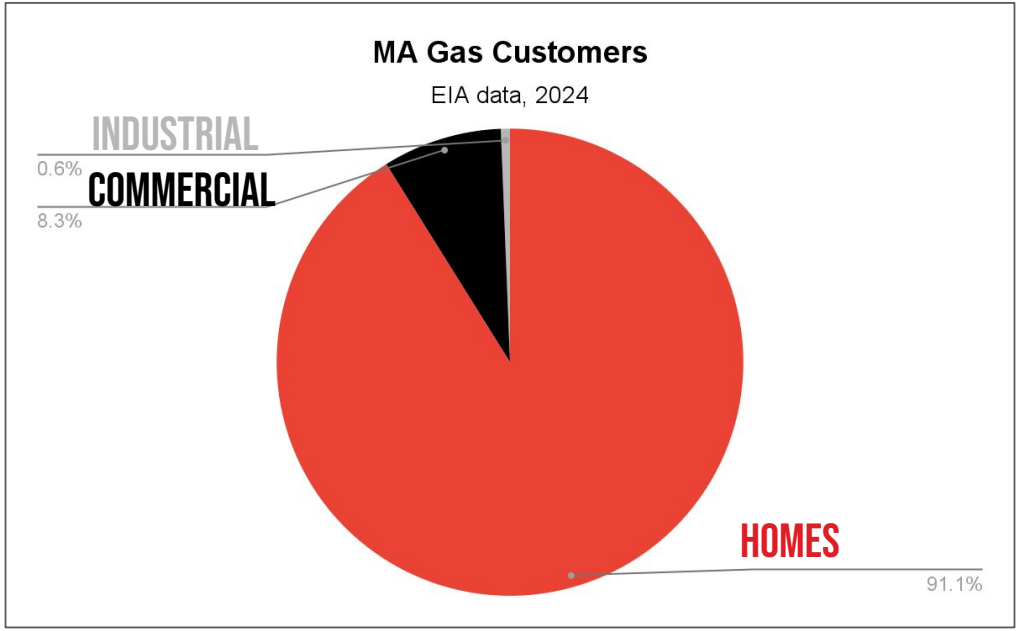
THUS GAS USE IN MA HOMES IS DECREASING QUICKLY

~25% IN 15 YRS

JUST HOMES, NOT INDUSTRIAL SITES OR POWER PLANTS



IF TREND CONTINUES?



EIA DATA

HOMES ARE OVER 90% OF MA GAS CUSTOMERS

Wendy's closing up to 6% of US locations in first half of 2026

Mary Walrath-Holdridge
USA TODAY

Feb. 17, 2026, 2:48 p.m. ET

Fast food chain Wendy's will shutter 5% to 6% of its stores nationwide in the first half of 2026. *Brandon Bell, Getty Images*

SO, IF 90% OF CUSTOMERS ARE BUYING LESS....

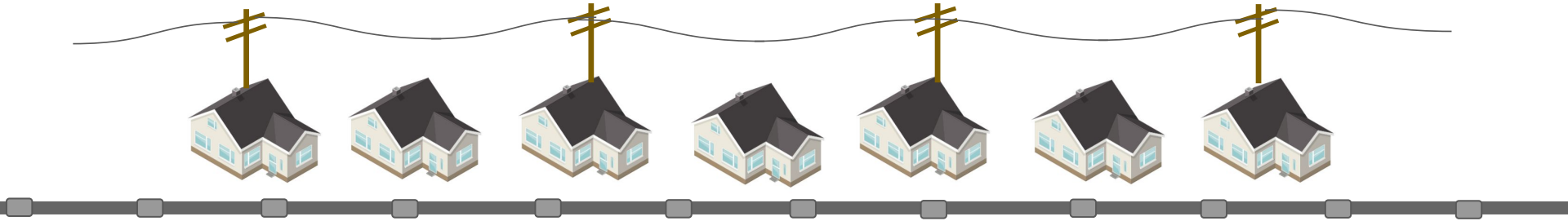
Crews replaced old underground gas pipes along Summit Avenue in Salem. MARK LORENZ FOR THE BOSTON GLOBE/FILE

INSTEAD, GAS UTILITIES INVESTING IN GAS PIPES EVERYWHERE (GSEP)

INCREASING CUSTOMER BILLS (8 TO 11%)

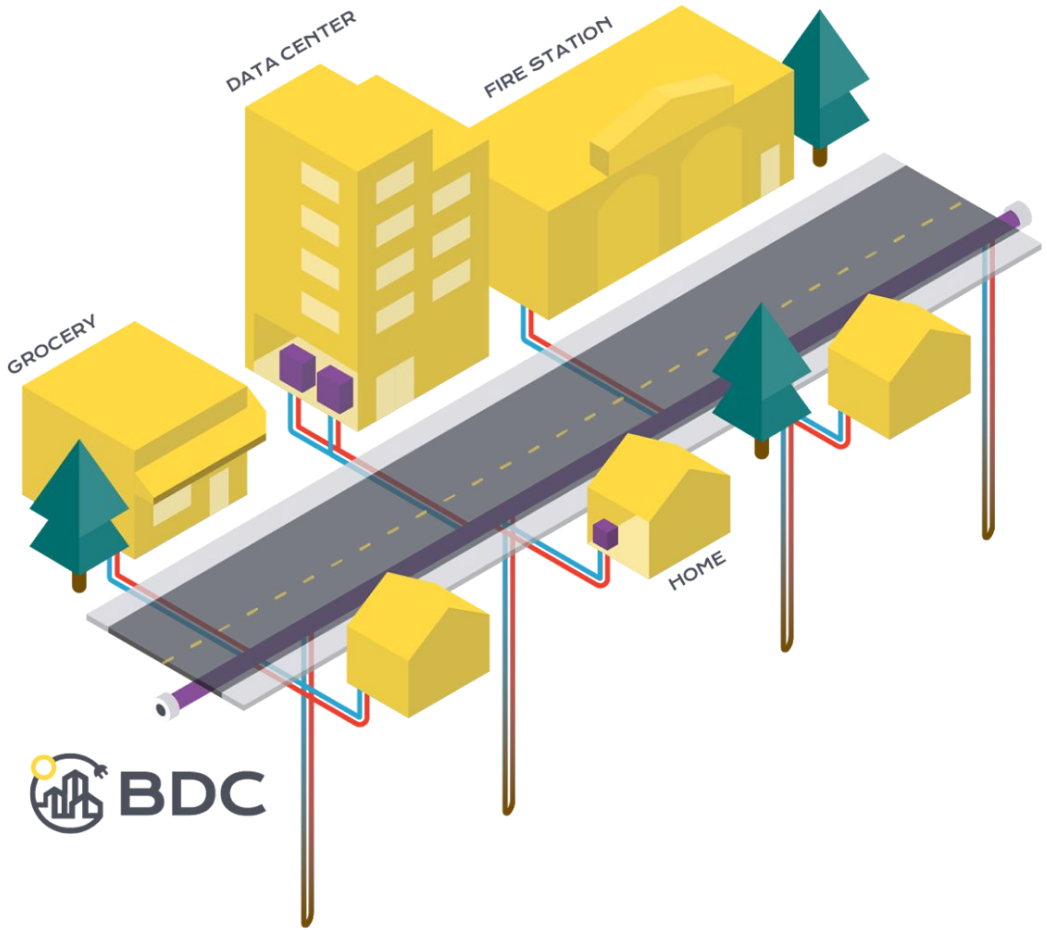
IS THERE A BETTER WAY?

3 STEPS TO A MANAGED TRANSITION



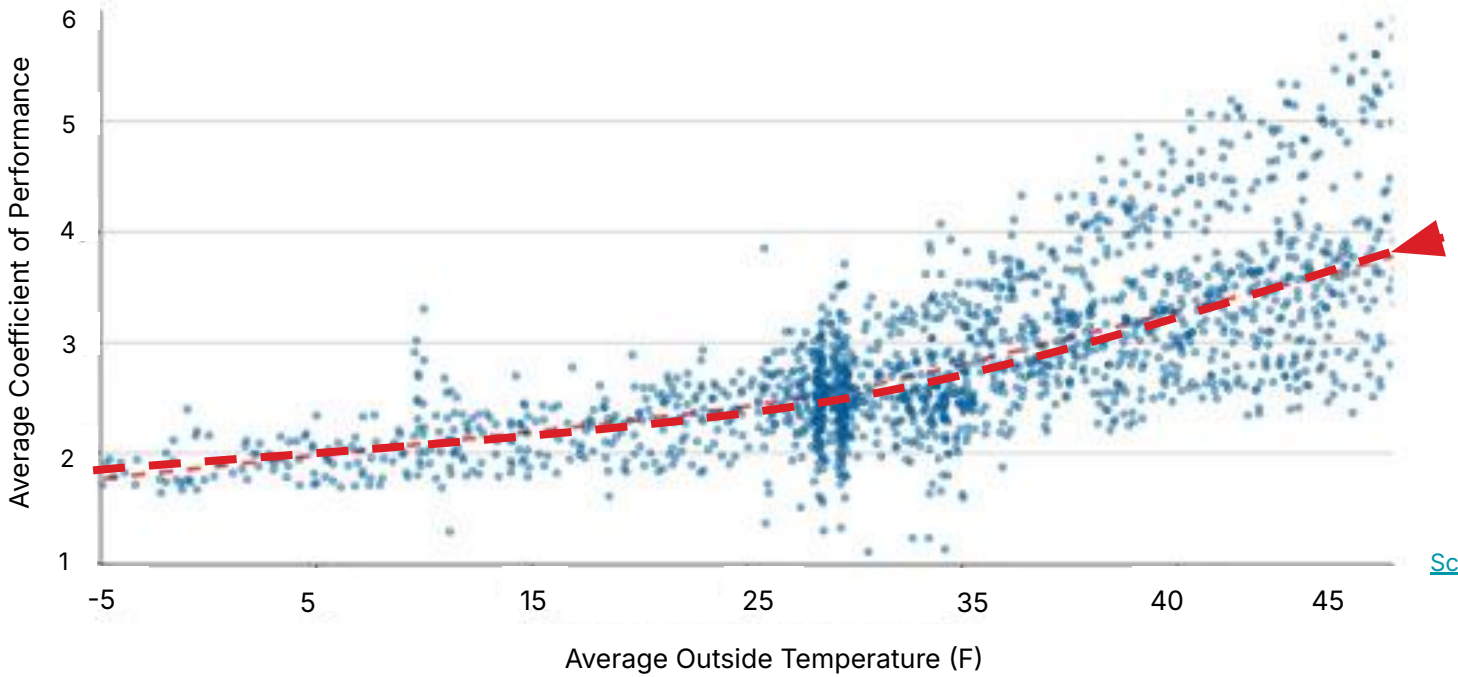
BACKGROUND

THERMAL NETWORKS



BACKGROUND

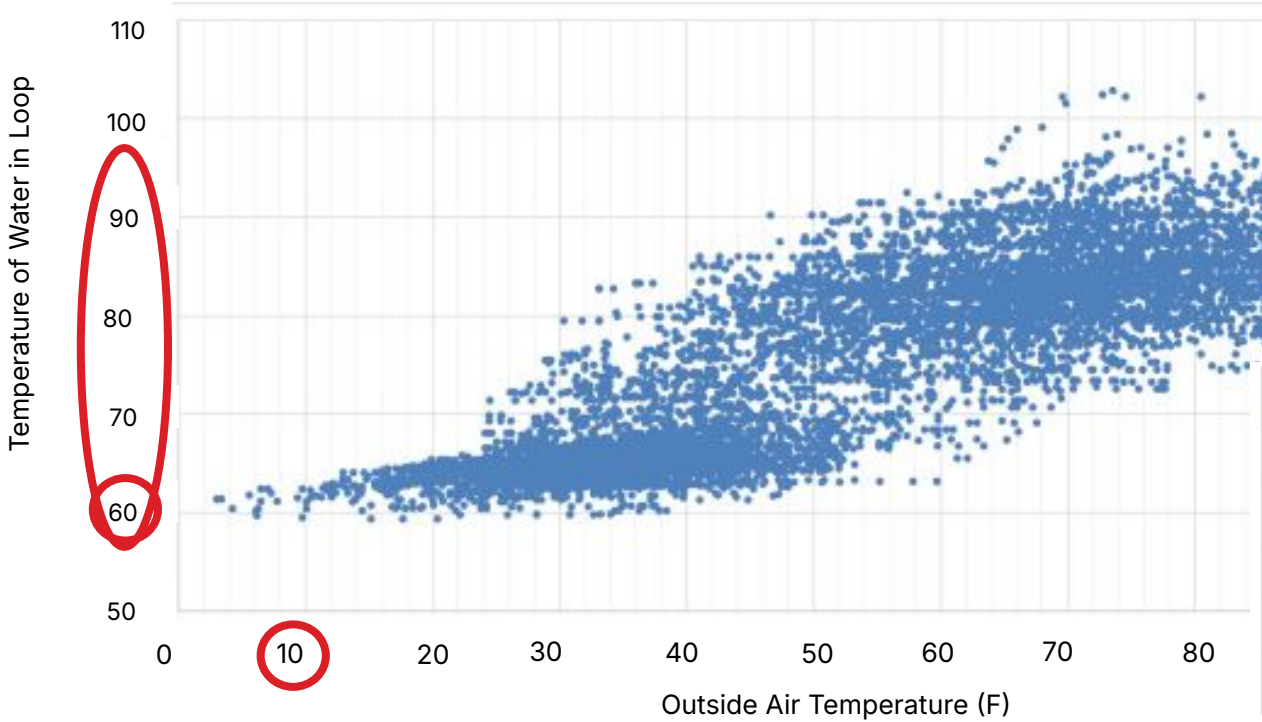
AIR SOURCE HEAT PUMPS - MORE EFFICIENT WHEN AIR TEMP NOT EXTREME



Science Direct, Sept 2023

BACKGROUND

THERMAL NETWORK - TEMPERATURE OF WATER NEVER EXTREME



System COP	
Spring	7.0
Summer	3.6
Fall	5.8
Winter	8.9
Overall	**5.7**

BACKGROUND

MA UTILITY INSTALLS - UTILITY PAYS FOR ALL

Utility-owned boreholes

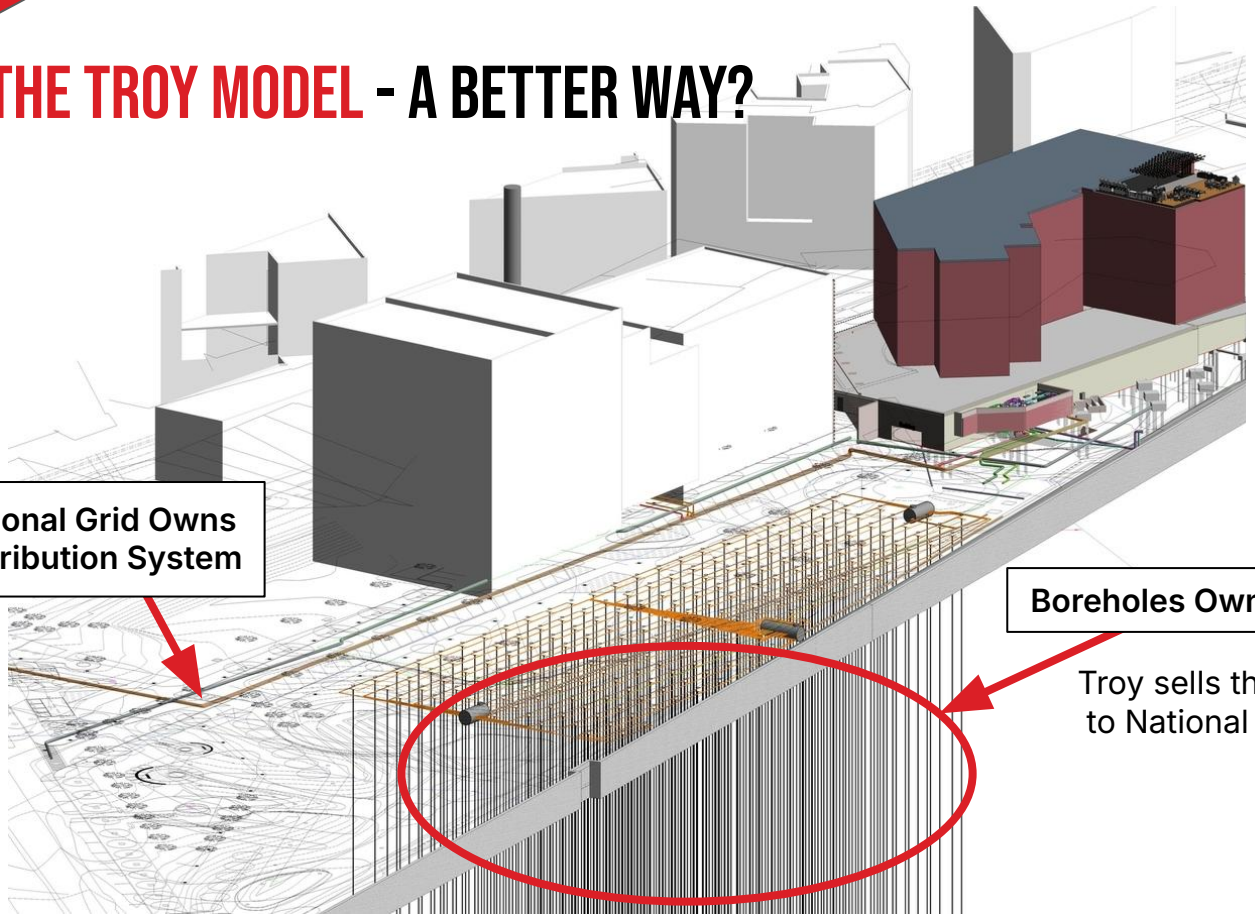
Utility does retrofits

Utility-owned Distribution System

National Grid's Proposed Install in Lowell MA

BACKGROUND

THE TROY MODEL - A BETTER WAY?



BACKGROUND

Utility

8.5% weighted average, 35 yrs

$ Spent

Boreholes

+

Cost of Capital

=

Total Cost to Customers

clf

BACKGROUND

	$ Spent		Cost of Capital		Total Cost to Customers
Utility 8.5% weighted average, 35 yrs	Boreholes 	+		=	
State 4.5% bond rate, 20 yrs	Boreholes  Retrofits 	+		=	

OR

BACKGROUND

WHAT KIND OF STATE BOND?

General Obligation Bonds

- Paid back by taxes
- Benefits the general public

Revenue Bonds

- Paid back by project's revenue
- Benefits a specific group

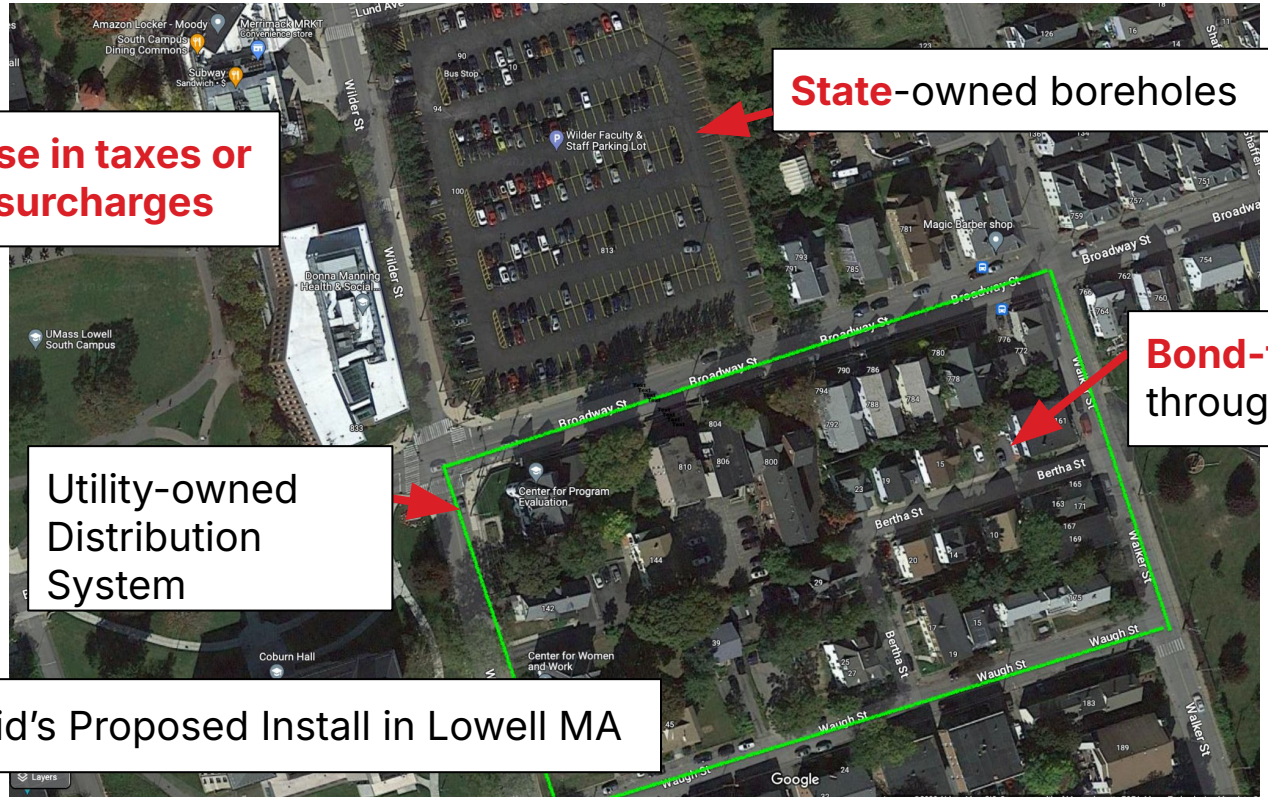
BACKGROUND

AN EXAMPLE

National Grid's Proposed Install in Lowell MA

BACKGROUND

AN EXAMPLE



State-owned boreholes

No increase in taxes or energy surcharges

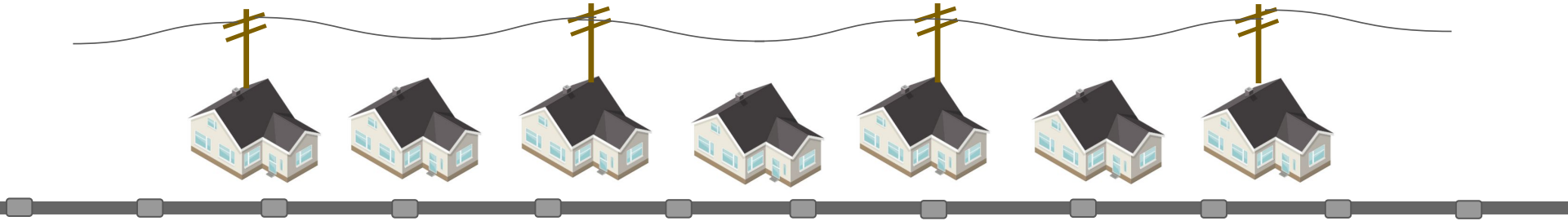
Bond-funded retrofits through Mass Save

Utility-owned Distribution System

National Grid's Proposed Install in Lowell MA

IS THERE A BETTER WAY?

3 STEPS TO A MANAGED TRANSITION



STEPS

1

EACH GAS UTILITY CREATES A 25-YEAR PHASED PLAN FOR FUTURE FINANCIAL VIABILITY

- To right-size distribution system to homes, not to industry or power plants.

STEPS

2

ELECTRIC UTILITIES PRIORITIZE TARGETED AREAS

- Don’t have to upgrade everywhere.
- Can better allocate workers, transformers & money.
- Can use some of avoided costs to pay for building retrofits.

STEPS

3

MASS SAVE PRIORITIZES TARGETED AREAS

- Cost of customer acquisition= $0. Neighborhood economies of scale. Can pay for larger % of each retrofit.
- Electric grid avoided costs added in.
- Residents are safer & healthier.