

# **Tracking and Benchmarking for Maximum Savings**

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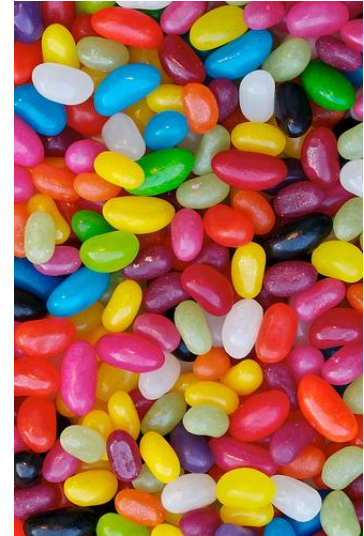
# Energy Data



Monthly  
Energy Data



Interval  
Energy Data



Real Time  
Energy Data

# Building Characteristics

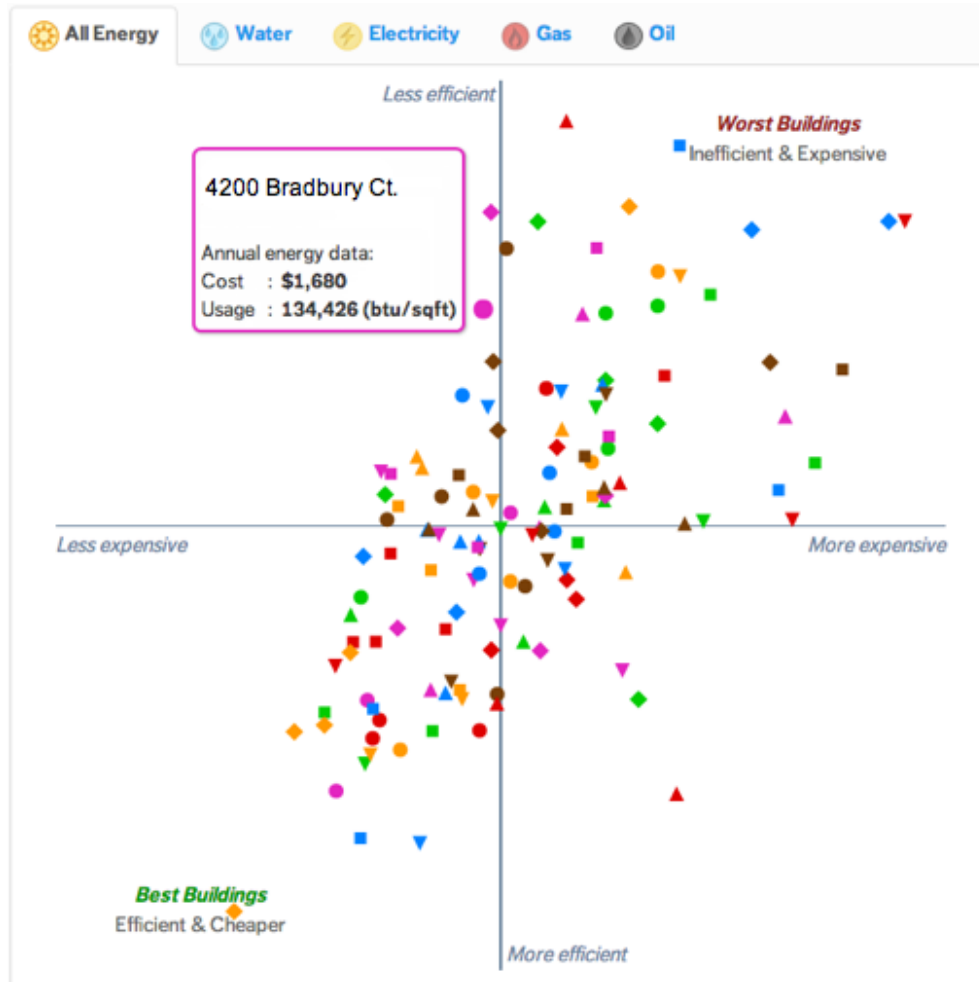
|  |  |  |
|--|--|--|
| <p><b>Age &amp; Type of Building</b><br/>         Built in 1920<br/>         Multi-family home</p>   | <p><b>Energy Efficiency</b><br/>         Not certified as a green building</p>   | <p><b>Electric Accounts</b><br/>         Apartments have electric meters<br/>         1 electric account</p> |
| <p><b>Housing Category</b><br/>         Low-income housing<br/>         Resident type: Other</p>   | <p><b>Heating</b><br/>         Gas heat<br/>         Boiler (Hot water)</p>  | <p><b>Gas Accounts</b><br/>         Gas meters are all building-wide<br/>         1 gas account</p>          |
| <p><b>Structure</b><br/>         Masonry (load-bearing) construction<br/>         No basement</p>  | <p><b>Cooling</b><br/>         None</p>  | <p><b>Water Accounts</b><br/>         Water meters are all building-wide<br/>         1 water account</p>    |
| <p><b>Size</b><br/>         4,947 square feet in total<br/>         4,000 sq. ft. in apartments<br/>         3 stories tall<br/>         4 apartments<br/>         11 bedrooms</p> | <p><b>Hot Water</b><br/>         Gas hot water heater<br/>         Stand-alone storage water heater</p>                          | <p><b>Notes</b></p>  |
|  | <p><b>Facilities</b><br/>         No laundry<br/>         0 elevators<br/>         No ventilated garage<br/>         No pool</p> |  |



## Utility Data

| End Date<br>MM/DD/YYYY | Start Date<br>MM/DD/YYYY | Usage<br>Btu    | Usage<br>Therms | Total Charge |
|------------------------|--------------------------|-----------------|-----------------|--------------|
| 07/16/2011             | 06/17/2011               | 40,500,000 Btu  | 405 thm         | \$761.53     |
| 06/16/2011             | 05/17/2011               | 107,950,000 Btu | 1,080 thm       | \$1,793.53   |
| 05/16/2011             | 04/17/2011               | 168,600,000 Btu | 1,686 thm       | \$2,735.46   |
| 04/16/2011             | 03/21/2011               | 216,800,000 Btu | 2,168 thm       | \$3,503.99   |
| 03/20/2011             | 02/17/2011               | 281,300,000 Btu | 2,813 thm       | \$4,543.54   |

# Your To Do List



# Your Targets

## Water

**POOR**

Entire building - Gallons / bedroom / day

**161% worse than similar bldgs**

**217** Actual

**83** Similar

**224% worse than efficient bldgs**

**217** Actual

**67** Efficient

[View meter-level data](#)

## Electric

**POOR**

Common areas - kWh / 1k sqft / day

**191% worse than similar bldgs**

**32** Actual

**11** Similar

**482% worse than efficient bldgs**

**32** Actual

**5.5**  
Efficient

[View meter-level data](#)

## Gas

**BETTER THAN AVERAGE**

Entire building - Btu / sqft / day

**19% better than similar bldgs**

**95** Actual

**117** Similar

**12% worse than efficient bldgs**

**95** Actual

**85** Efficient

[View meter-level data](#)

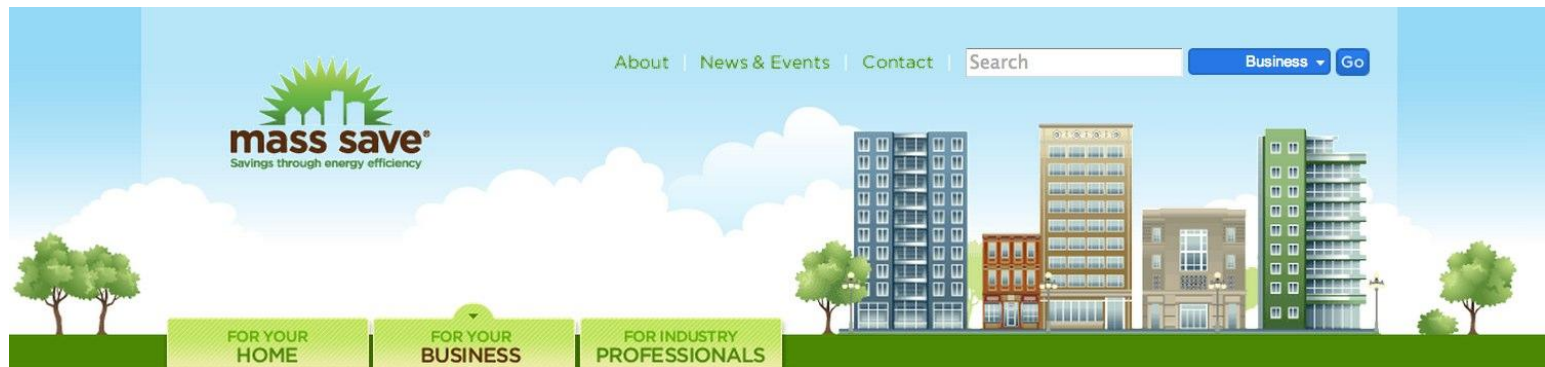
# BTU



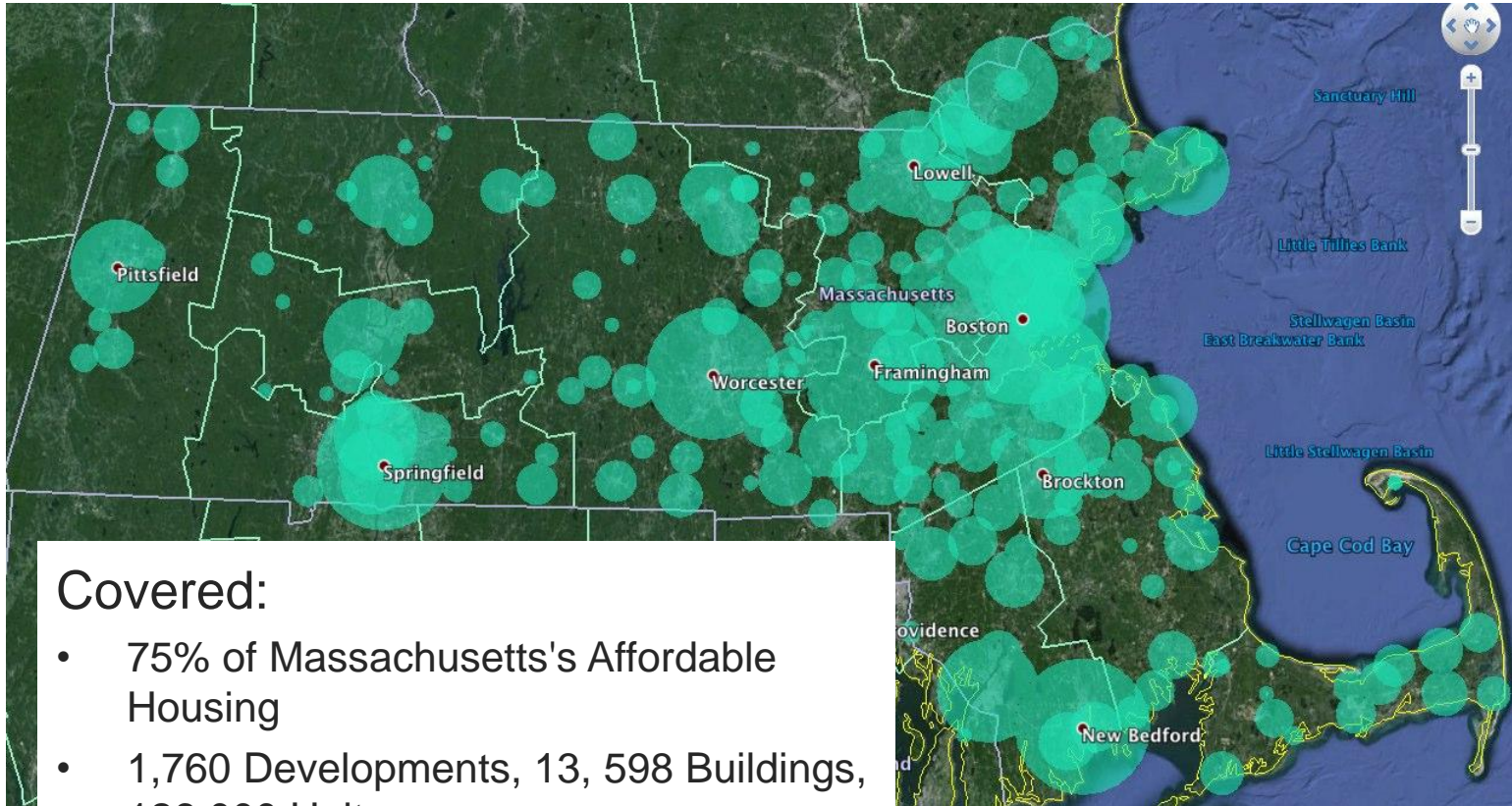
# BTU/Cond. Sqft/HDD



# Big Data in Massachusetts



# Identify Savings Potential



## Covered:

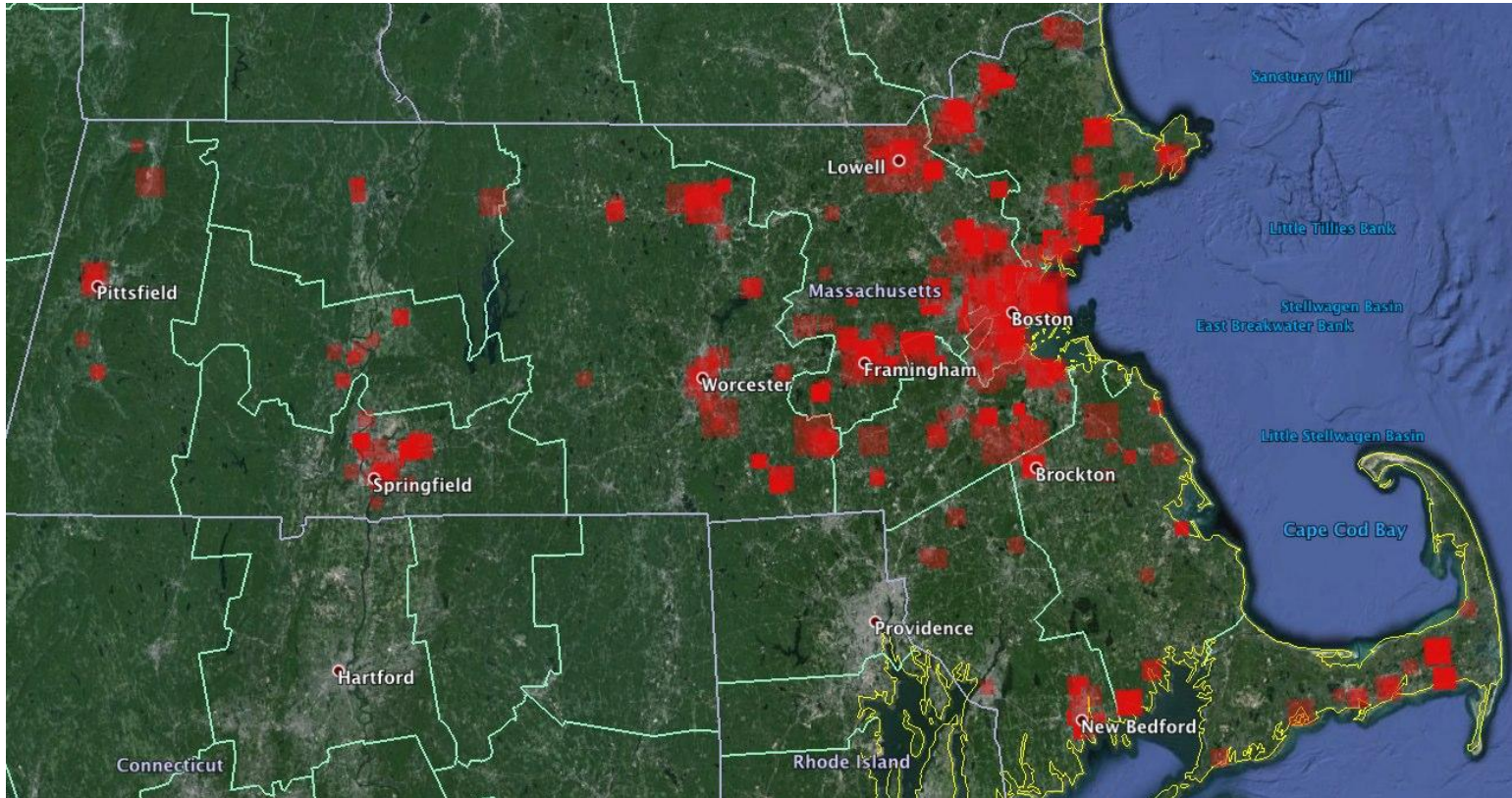
- 75% of Massachusetts's Affordable Housing
- 1,760 Developments, 13, 598 Buildings, 126,000 Units

## Served:

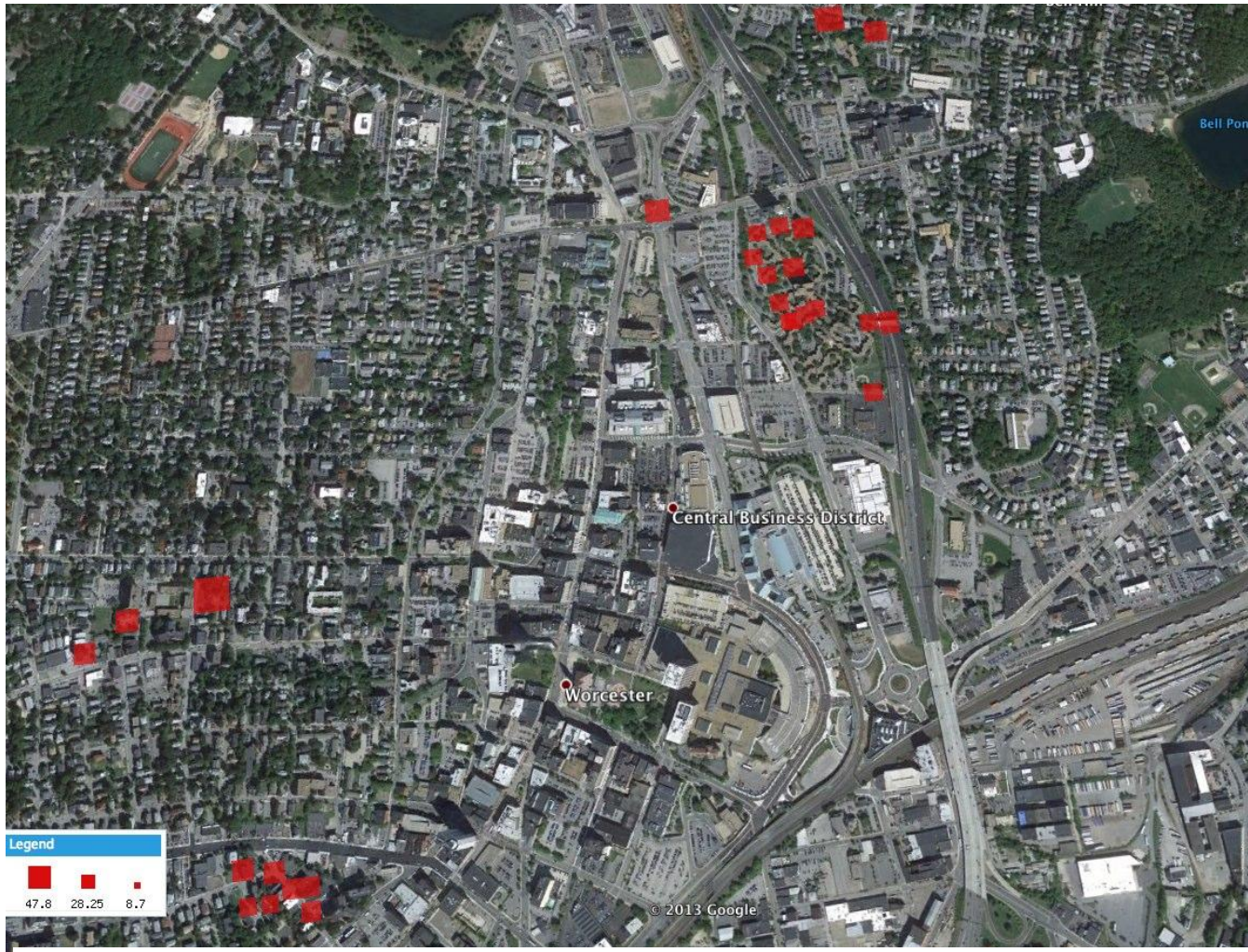
- 439 Affordable Housing Organizations
- 207,659 Residents



# Accelerate Program Implementation

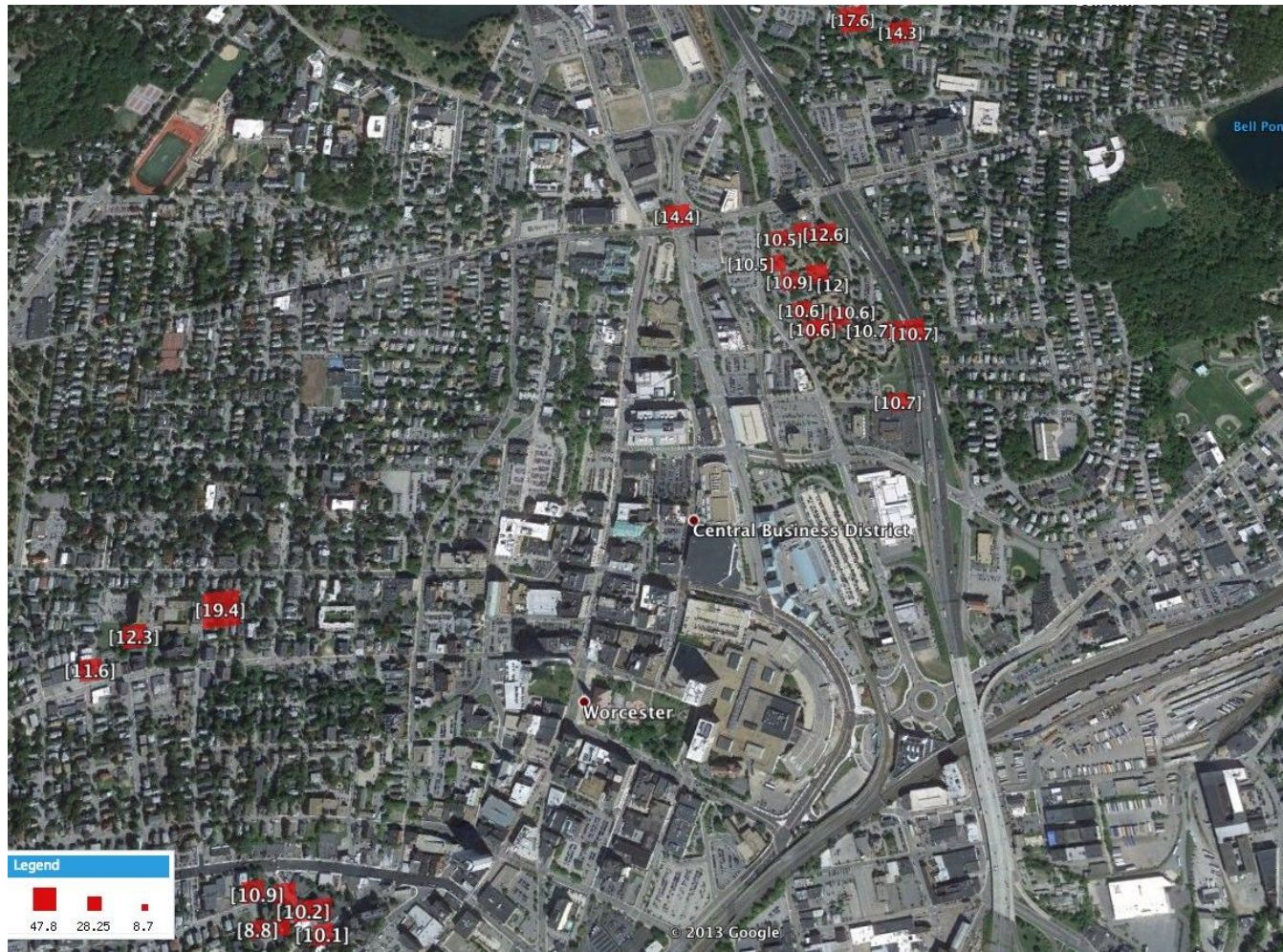


# Accelerate Program Implementation



Worcester, MA

# Accelerate Program Implementation



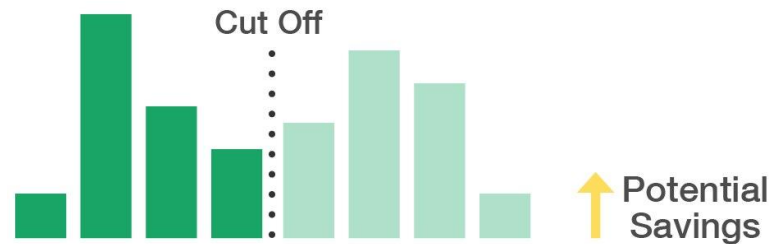
Prioritize by energy savings potential:

12,331,835 Therms in gas savings

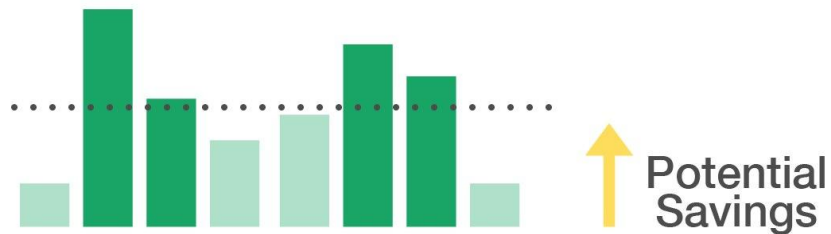
165,283,531 kWh in electric savings

# Fund True Opportunities

## Typical Funding Program



## LEAN Approach



\$80,000,000 Annual Budget;  
\$2,390,480+ in avoided audit costs

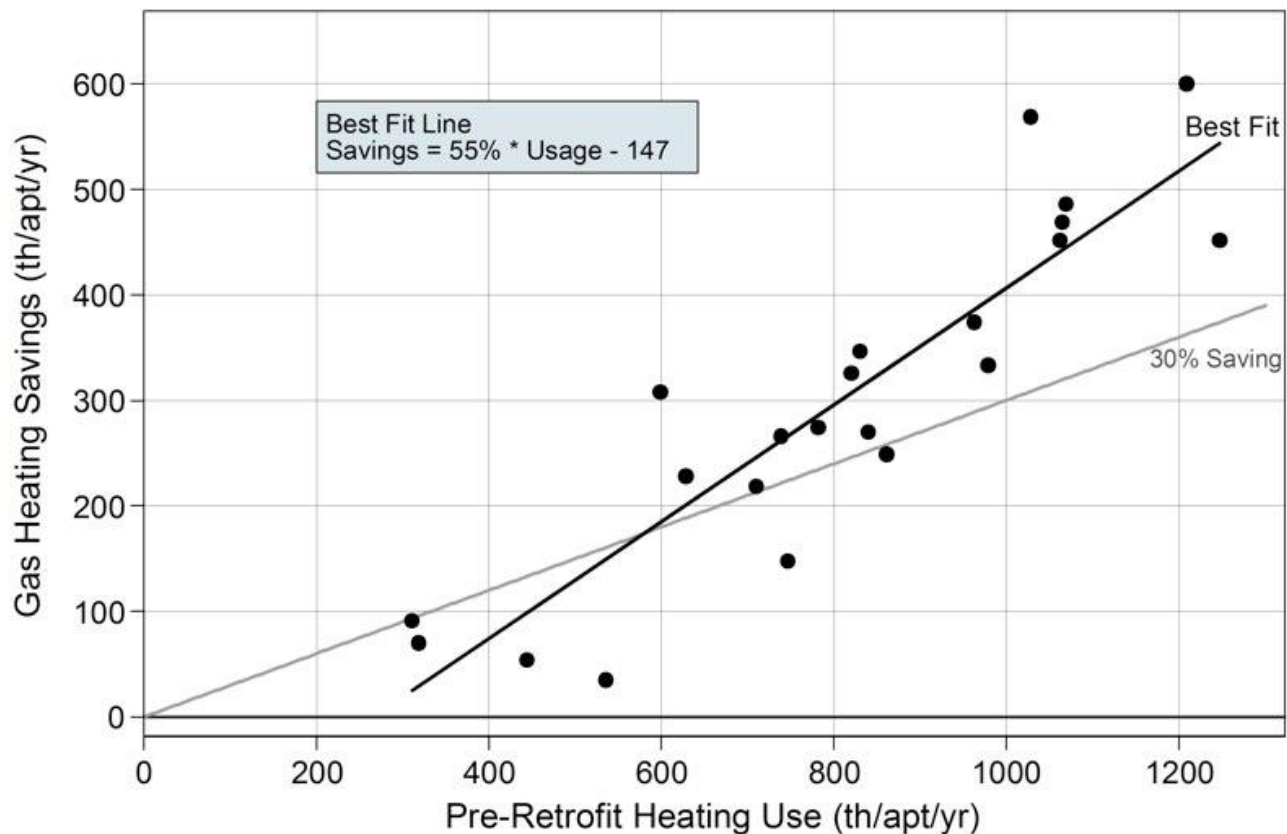
# Measure Results

736,000 Tracked Accounts = 8,832,000 Annual Bills = 5,888 feet  
= ~ 1 Mile of Paper

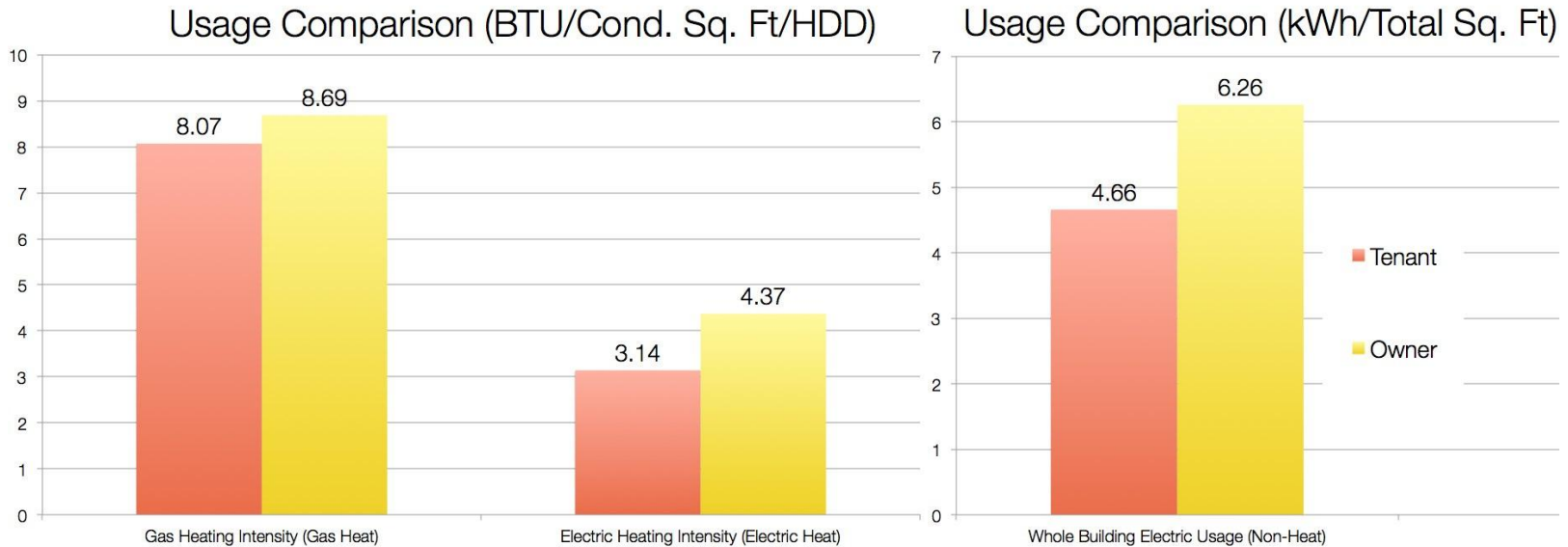


# Improve

## Massachusetts Green Retrofit Initiative: Gas Savings from Heating Replacements



# Improve



Buildings where tenants pay utilities have lower usage than buildings with owner-paid utilities.

- Gas Accounts: 7% Less.
- Whole Building Electric, Electrically Heated: 28% Less
- Whole Building Electric, Gas Heated: 25% Less.

# Big Data

- Benchmarking program participant's energy use helps make the case for efficiency investments, Drives participation and delivers deeper savings.
- Remote monitoring, measurement and verification of all projects offers greater transparency and higher customer satisfaction
- Automated data collection makes tracking utility data across **all** fuels in buildings easy without installing expensive hardware



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