



# Targeting Untapped Territories with GIS Heat Mapping

**6th Annual ENERGY STAR® for New Homes  
Sponsor Meeting Agenda**

*Presented on behalf of:  
Joint Management Committee (JMC)  
Massachusetts New Homes with ENERGY STAR Program*



# Mapping Out the Presentation

- Program Sponsors
  - Service Territories
  - Account Manager Territories
- Market Success and Barriers
- Introduction of Heat Maps
  - Utilizing GIS Mapping
  - Reviewing past, current and trend analysis
- Lessons Learned
- Questions

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# The Joint Management Committee (JMC)

The Joint Management Committee (JMC) is comprised of nine Energy Efficiency Service Providers throughout the Commonwealth of Massachusetts

- Electric Sponsors
  - Cape Light Compact
  - National Grid Electric
  - NSTAR Electric
  - Western Massachusetts Electric
  
- Gas Sponsors
  - Columbia Gas of New England Gas
  - Berkshire Gas
  - National Grid Gas
  - New England Gas
  - NSTAR Gas

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# Massachusetts New Homes with ENERGY STAR Program

## Program Design

- ❑ The goal of the Massachusetts New Homes with ENERGY STAR Program (Program) is to increase the production and market penetration of energy efficient homes that exceed the minimum ENERGY STAR specification guidelines and exceed Massachusetts Energy Code.



# Market Successes

- ❑ Market penetration rate of +30%
- ❑ Average energy savings per unit to 27% above MA UDRH
- ❑ Increased the installation of CFLs by 25%, over 60,000 installed in 2011
- ❑ Continue to expand the number of HERS rating companies serving the market to 44
- ❑ Provided technical assistance, training and marketing to increase participant exposure and differentiation within the marketplace
- ❑ Maintained 80% of the existing builders participating in the program while continuing to increase the number of new builders, contractors, lumber yards, and other market actors working with the program
- ❑ Administered energy saving pilot programs and leverage affiliate programs to support the core program



# Market Barriers

- ❑ For more than a decade, the JMC has worked to address numerous market challenges barriers associated with energy efficient new construction in Massachusetts. This mature program continues to face some challenging market barriers in 2011 and it committed to:



# Market Challenges

- ❑ Addressing a market faced with the introduction of multiple energy codes in an ENERGY STAR market
- ❑ Maintain and develop builder and ally relationships in a declining new construction market
- ❑ Working within a multi client market with overlapping service territories, statewide budgets and individual savings goals

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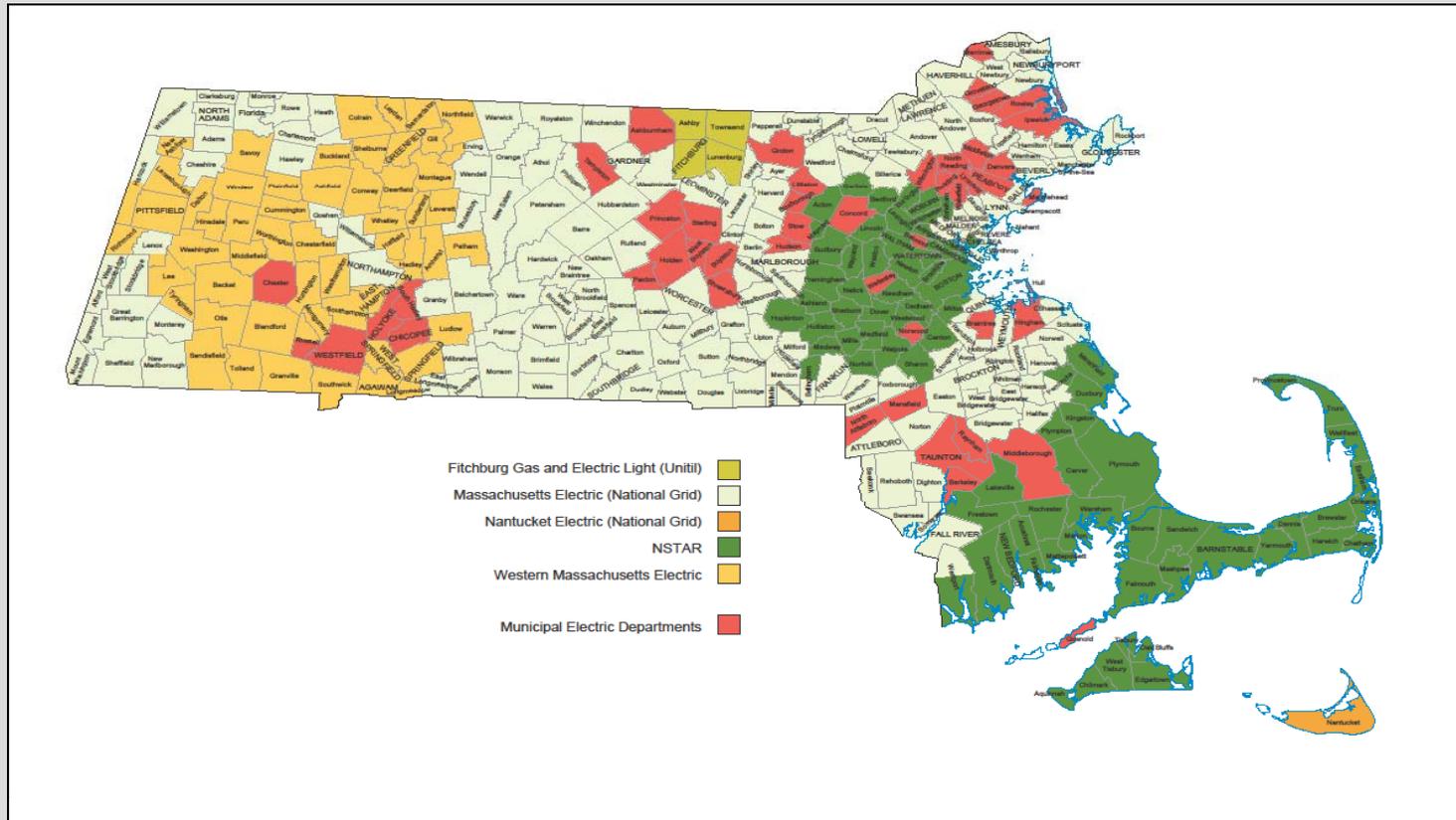
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# Service Territory Maps

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# Electric Sponsor Service Territories

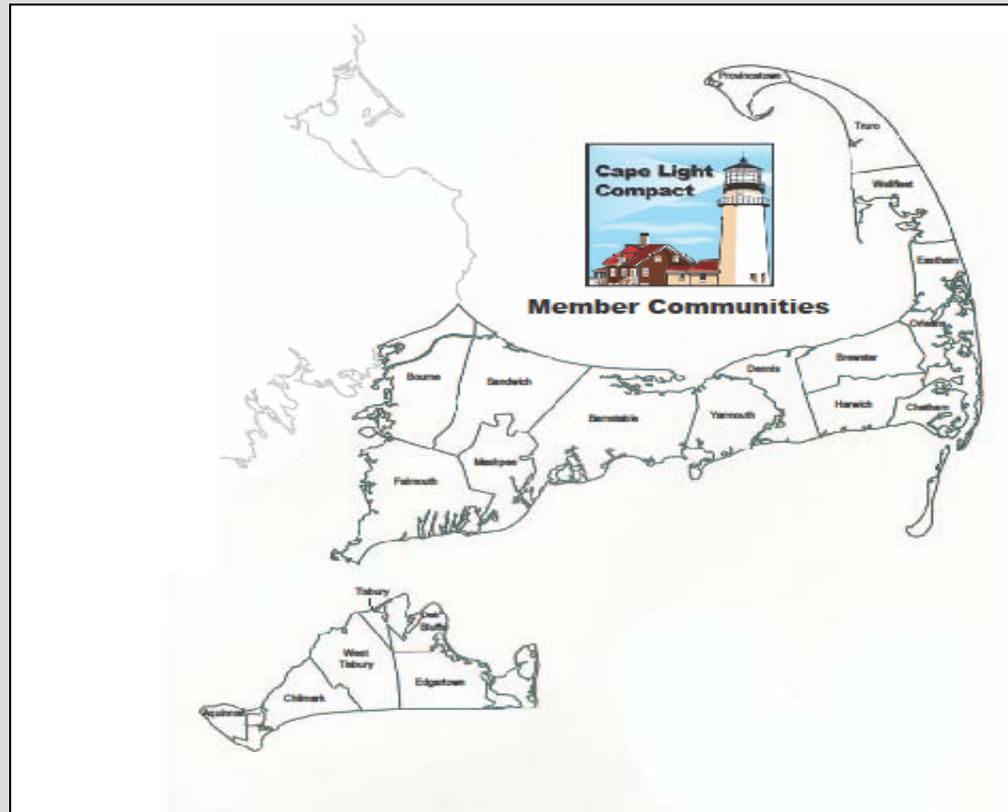


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# Cape Light Compact

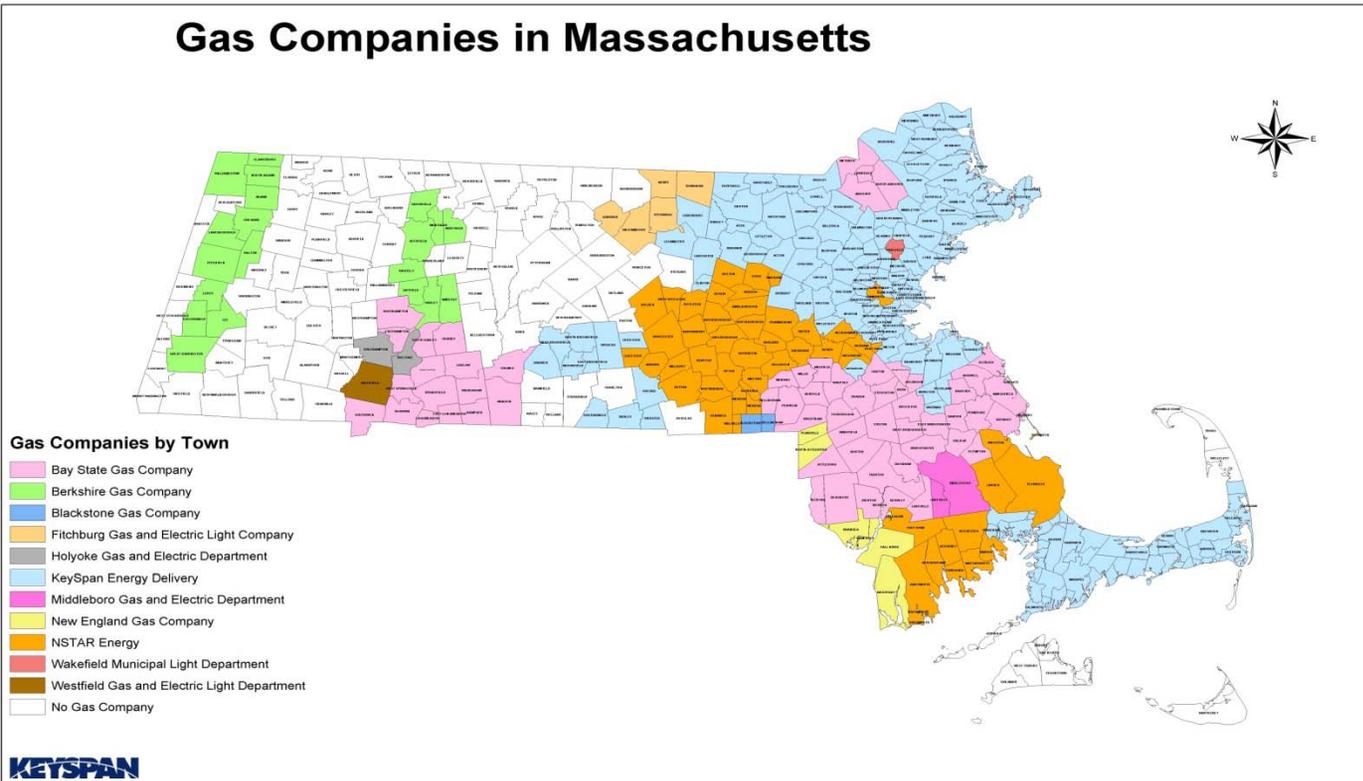


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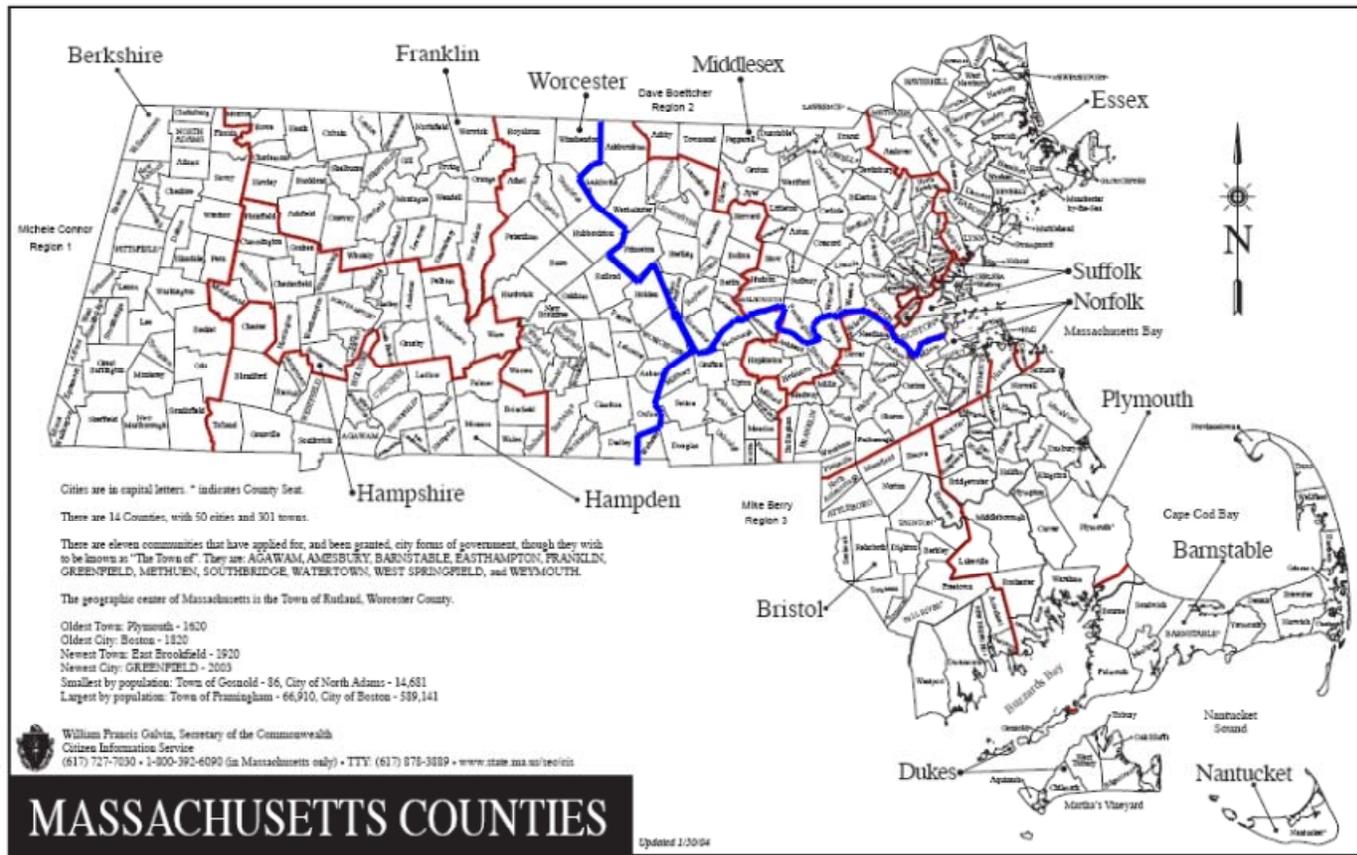
# Gas Sponsor Service Territories

## Gas Companies in Massachusetts





# Account Manager Territories



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# Introduction of “Heat Maps”

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# Targeted Outreach Utilizing GIS “Heat” Mapping

- ❑ **Targeted Outreach:** The Program’s outreach efforts have been evolving over the past several years to increase program participation rates
  - ❑ Starting in 2011 the Program has elevated this process through geo-targeted marketing and account management outreach utilizing a Geographic Information System (GIS)



# GIS-Mapping

- ❑ GIS-Geographic information systems (or Geospatial Information Studies) are designed to capture, store, manipulate, analyze, manage, and present all types of geographical data.
  - ❑ Program units from the database are feed into ArcGIS (the industry standard) to provide plotting plots
    - ❑ Using the attributed values method of heat mapping data points are plotted in specific relationship to a geographic area
    - ❑ Additional data can be added to allow for additional statistical analysis
      - ❑ Building energy codes, permit data, etc.



# Utilization of Heat Mapping

- ❑ New construction trends were identified by:
  - ❑ Mapping program participation patterns
    - ❑ Past, present, future pipeline and forecasts
  - ❑ Comparing them to historical permit data
    - ❑ Challenges faced by town, county and statewide reporting
- ❑ Allows the Program to “keep up” with the ever changing landscape of MA Energy Codes.
- ❑ IECC 2009/2012 state and the Stretch Energy Code scattered across the state
  - ❑ Assists with the unified statewide marketing effort put in place to provide support to communities struggling to meet or exceed the local energy codes.

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# Current Heat Maps

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*Start of Heat Map Slide Deck (15 maps)*



# Lessons Learned

- ❑ Linking the GIS system to extract/map fields participation directly from the Program Database speeds up the process
- ❑ Code changes are driving participation, but creates issues with free-ridership
- ❑ Market participation rates vary due to reporting, census v. local
- ❑ Need to watch out for Build Out (Lot-Yield Analysis) drop off
- ❑ You can get lost in a map, define early what you want and follow the K.I.S.S. rule-treat it like a graph
- ❑ Next generation maps will be client specific and show market penetration rates (historic, present and projected)
  - ❑ More trend analysis will be incorporated including ally outreach and outreach/recruitment events

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# Questions

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