MULTIFAMILY PROGRAM DESIGN OPPORTUNITIES AND WHERE TO FIND THEM

DISCOVERING CUSTOMER INSIGHTS FROM DIVERSE DATA SOURCES

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A key challenge for program administrators is understanding multifamily buildings in their territories

• Where are these buildings located?
• What are the characteristics of these buildings?
• How have past program activities have served these markets?

Recently, the team conducted study with the electric and gas program administrators in Massachusetts with these objectives:

1. Develop a detailed database of multifamily buildings in Massachusetts and characterize any past program interactions with this population

2. Analyze this compiled building data to identify opportunities for customized multifamily program delivery strategies to maximize energy savings.
A solution to this challenge is leveraging a diverse set of available data sources to gain key insights.
The team reviewed and merged several data sources to develop a multifamily building database.

- Geocoded Addresses
- Participation Tracking
- Property Tax Data
- Billing History
- Rate Codes
- Census Data
- Active Customer Lists (Residential and Commercial & Industrial)

Multifamily Building Databases
Each active account may have been linked with one or more data sources, though not all accounts were completely matched with all other data sources.

Residential Active Customer List:
56% of 3.9 million customers matched to all sources.

C&I Active Customer List:
40% of 120,000 customers matched to all sources (accounts associated with residential locations only).
After developing the database, the team identified accounts associated with multifamily buildings

This study focused on identifying buildings with five residential units or more that met any of the following criteria:

<table>
<thead>
<tr>
<th><strong>Number of Housing Units</strong></th>
<th><strong>Property Tax Data</strong></th>
<th><strong>Past Participation</strong></th>
<th><strong>Rate Code</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• has five or more housing units at the address</td>
<td>• has a property tax use code indicating a multifamily building with five or more housing units</td>
<td>• historically participated in a multifamily program</td>
<td>• have one or more accounts under multifamily-specific rate codes</td>
</tr>
</tbody>
</table>
### MULTIFAMILY CENSUS RESULTS

The team identified approximately 64,197 multifamily buildings comprising 644,274 housing units

<table>
<thead>
<tr>
<th>Description</th>
<th>Housing Units in Building</th>
<th>Housing Units</th>
<th>Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multifamily buildings (including both apartments and condos)</td>
<td>5 or more units</td>
<td>611,381</td>
<td>37,751</td>
</tr>
<tr>
<td></td>
<td>Less than 5 units</td>
<td>32,893</td>
<td>26,446</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>644,274</td>
<td>64,197</td>
</tr>
<tr>
<td>Multifamily condos only</td>
<td>5 or more units</td>
<td>111,005</td>
<td>6,713</td>
</tr>
<tr>
<td></td>
<td>Less than 5 units</td>
<td>13,591</td>
<td>11,961</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>124,596</td>
<td>18,674</td>
</tr>
</tbody>
</table>

- The American Community Survey estimates 586,956 housing units in buildings with five or more units (US Census Bureau 2016)
- The team also identified 18,674 multifamily condo buildings comprising 124,596 units

United States Census Bureau. “Selected Housing Characteristics.” 2016 American Community Survey 5-year Estimates. Available at: [https://factfinder.census.gov](https://factfinder.census.gov)
The multifamily database enabled exploration of the geographic distribution of multifamily buildings.

High number of multifamily buildings in the Boston Area. Blue regions indicate none identified, possibly due to data issues.
The multifamily database enabled exploration of various building characteristics, including building size (number of housing units).

A large number of multifamily buildings have between 5 to 9 units, representing a potential opportunity for increasing engagement.
Eversource has used this data to better understand, segment, and tailor offerings to the multifamily market

Data prepared as part of Statewide effort

Additional Eversource data appended

Additional cleaning and data aggregation done more manually

Use dataset to understand, target, and deliver program
EVERSOURCE MULTI-FAMILY DATASET

**CoStar**
- True owner
- Property manager
- Building class
- # of stories

**Eversource**
- Billing (CIS/C2)
- Past participation
- Segmentation

**MF Database**
- Building Type
- Fuel Type

![Diagram showing the integration of CoStar, Eversource, and MF Database](image)
Some challenges with multi building/address data

• About 85% of this matching done in statewide effort and remaining 15% using a more manual effort.
• Ranged addresses (i.e., 38-42 Main Street) match to one address.
• Used ARC GIS to identify range addresses and capture multiple meters in single complex.

Address match

• Matching data across multiple datasets (Costar and utility billing data) required standardizing address information.

Conflicting data

• Hierarchy of assigning data (i.e., assigning data when multiple datasets include same but conflicting data).
UNDERSTAND, TARGET, DELIVER PROGRAM

Understand
- Informed planning decision to segment into attached low rise and high rise in planning cycle
- Universe of building opportunities and untapped potential

Target
- Remove previous participants
- Higher energy use intensity
- Larger communities (i.e., large condo owned townhouse developments / home owner associations)

Program offerings
- Craft different program designs with specially chosen contactors to target complexes with good potential as identified using data
A variety of existing data sources can be leveraged to develop a thorough understanding of customers and facilitate program design.

Not all data sources will be available in all areas, but similar methods could be applied even without all of the resources that we’ve had available here.

Currently, the study identified statewide potential strategies for future targeting efforts for multifamily programs, such as unserved customers by specific geographic region, ownership type, and specific building sizes (i.e., buildings with 5 – 9 units).

The database provides continuing value as a tool for PA implementers to use to further explore the multifamily population and provide opportunities for new delivery approaches.