DOE Low-Rise Multifamily Energy Code Field Studies

DOE Research Update
& Feedback Session

May 30, 2019

Low-Rise Multifamily (LRMF) Project Team

Three Studies:

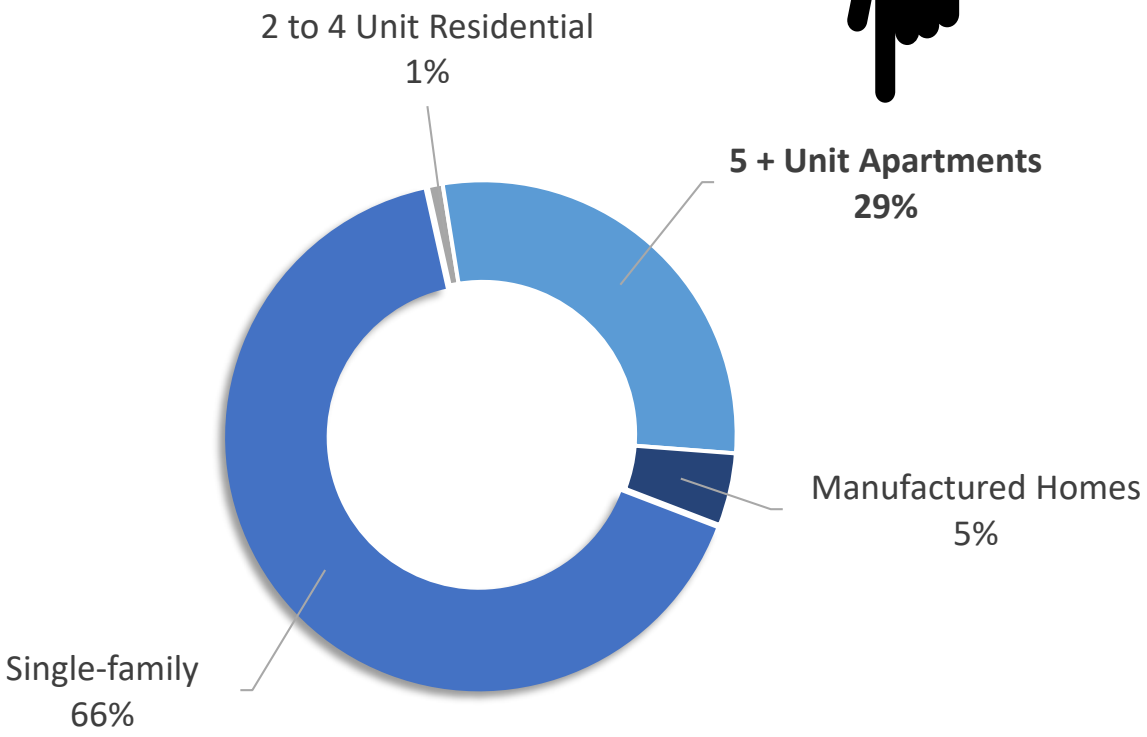
1. Baseline and Energy Study
2. Market Research Study
3. Air Tightness Testing Study

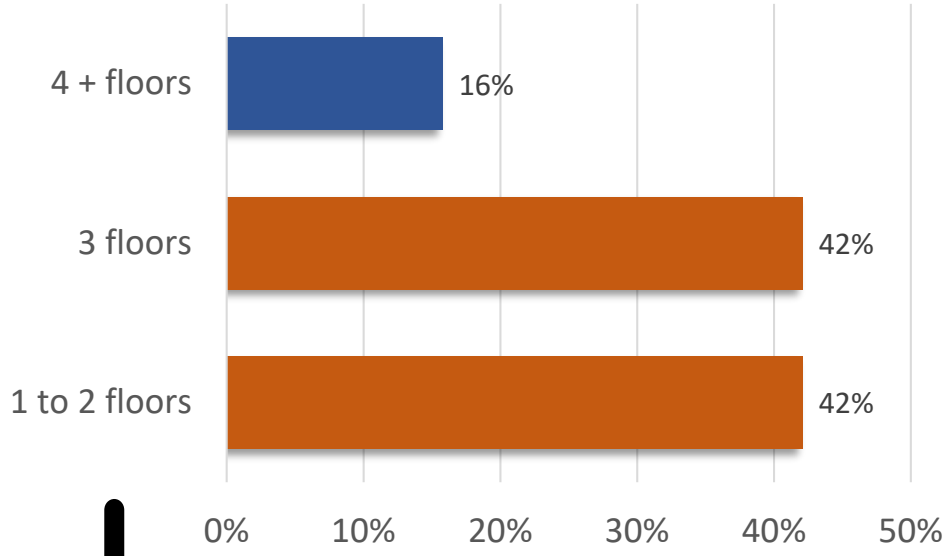
Collective LRMF Field Study Goals

- Estimate regulated energy use in typical low-rise multifamily buildings
- Identify opportunities for energy and cost savings through increased compliance with energy code
- Improve understanding of baseline characteristics of this under-represented building type

Why Low-Rise Multifamily?

Almost 30% of new residential units are in MF buildings





Nearly 85% of new MF buildings are low-rise

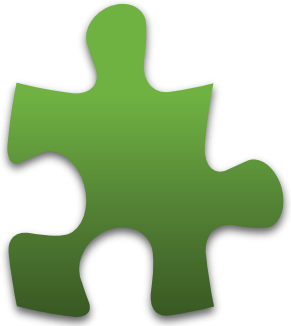
It’s a Hybrid


SINGLE-FAMILY RESIDENTIAL
LOW-RISE MULTIFAMILY
COMMERCIAL
RESIDENTIAL ENERGY CODE
RESIDENTIAL/COMMERCIAL ENERGY CODE
COMMERCIAL ENERGY CODE

LRMF Field Study Objectives

Baseline and Energy Study

- Adapt single-family (SF) protocol to low-rise multifamily (MF)
- Collect baseline and energy characteristics
- Model energy use



Market Research Study

- Gain better understanding of firms in LRMF construction market
  - Design/build practices
  - Energy code education/training

Air Tightness Testing (ATT) Study

- Understand relationship between test types
- Range of air leakage observed
- Recommendations for revising MF ATT protocols and requirements

Target Population in Four States

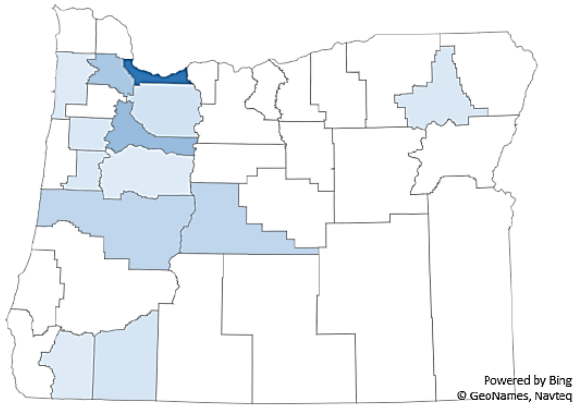
Includes

- New construction (~3 years)
- 1-3 stories, 5 + units
- Mixed occupancy buildings

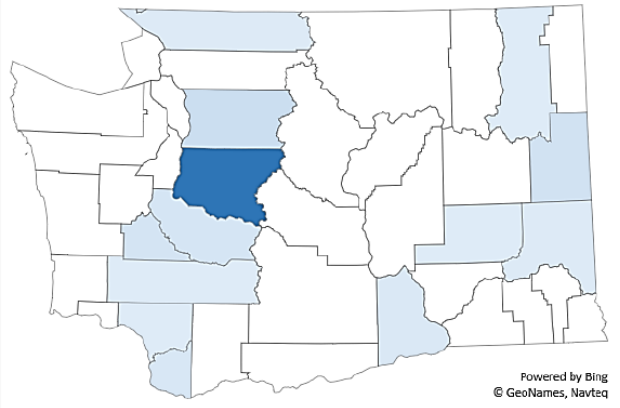
Excludes

- Single-family
- Townhouses/rowhouses
- Duplexes, triplexes, fourplexes
- Dorms, assisted living, nursing homes, hotels, etc.

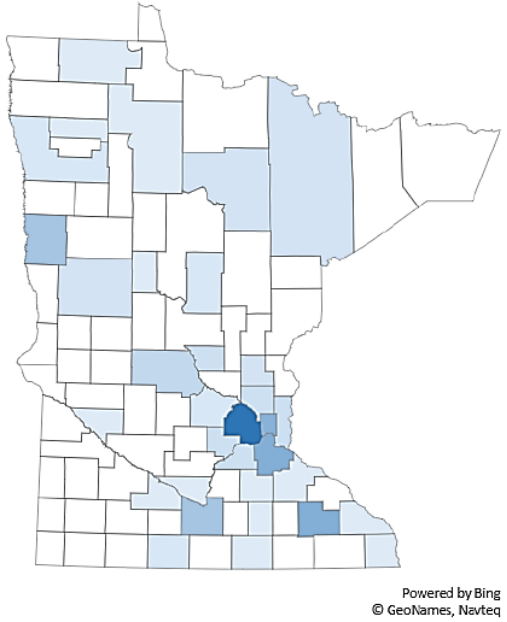
Oregon



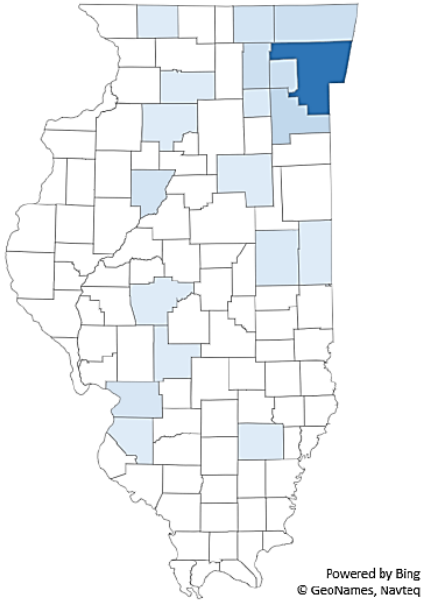
Washington



Minnesota



Illinois



Baseline and Energy Study Objectives

- Adapt single-family field study protocol to low-rise multifamily
- Collect baseline and energy characteristics
- Model energy efficiency performance

Baseline and Energy Study Activities

Study Design

Logic model, task mapping and literature review

Data Collection Protocol and Tool

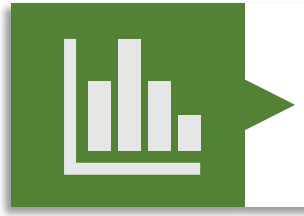
Develop LRMF protocol and data collection tool

Data Collection

Plan review, field visit, and data collection completion

Dataset and Analysis

Baseline characteristics dataset and energy performance modeling



Reporting

LRMF baseline and energy study methodology, baseline dataset

Field Study Progress