Key Findings from the Chicago Multifamily Market Study

Efforts to mitigate climate change in the United States must focus on buildings, which use the most energy and produce the most carbon emissions of any sector, including transportation. In particular, multifamily buildings, defined as residential buildings with two-or-more units, need attention. Approximately 25 percent of U.S. households reside in a multifamily building. Utility- and government-run efficiency programs have had limited success serving this sector. As a result, well over 16 million households pay more to heat and cool their homes than necessary.

Table 1. City of Chicago Affordable Multifamily Housing Units

	Multifamily Buildings with 2-to-4 Units		Multifamily Buildings with 5-or-More Units		Total Multifamily Units	
	# Units	Percent	# Units	Percent	# Units	Percent
Market-Rate Higher-Cost	111,632	30%	264,359	49%	375,991	41%
Unsubsidized Lower-Cost	261,502	70%	183,860	34%	445,362	49%
Subsidized	Data not available		90,747	17%	90,747	10%
Total Housing Units	373,134	100%	538,966	100%	912,100	100%

Source: NHPD, ACS

Improving the efficiency of multifamily housing requires policymakers to understand the characteristics of the market. Elevate Energy constructed a database of 143,000 Chicago multifamily buildings and segmented them based on age, size, and other traits in order to better understand the Chicago multifamily sector.

Figure 1. Number and Percentage of Unsubsidized Lower-Cost Buildings with Five-or-More Units, by Chicago Community Area

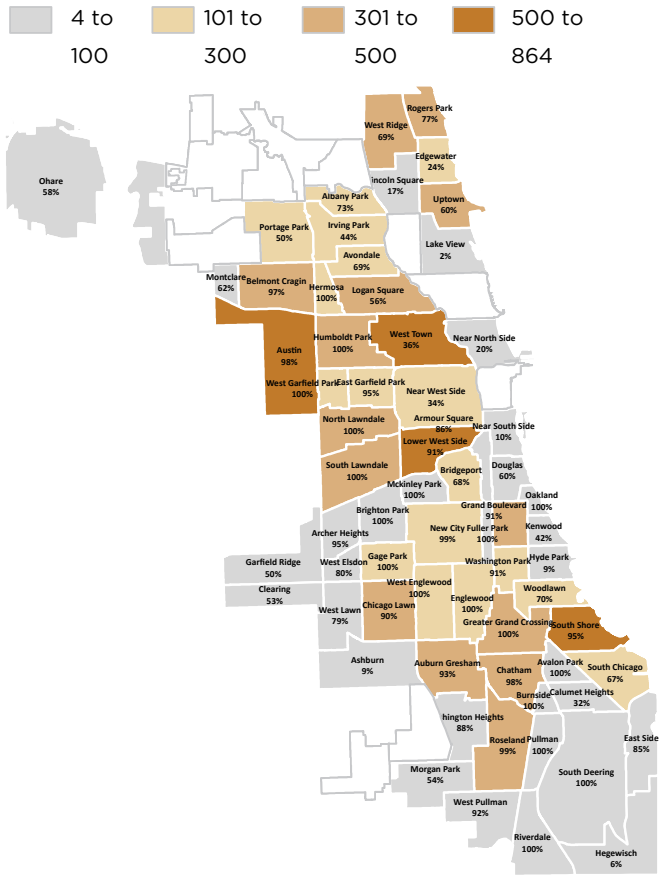
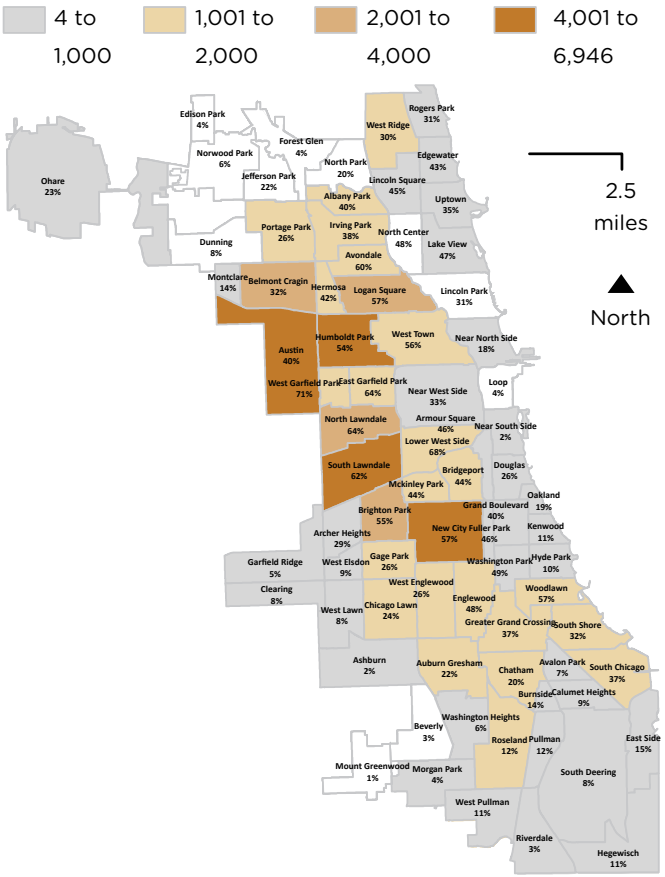


Figure 2. Number and Percentage of Unsubsidized Lower-Cost Buildings with Two-to-Four Units, by Chicago Community Area



Three Out of Four Chicagoans Live in a Multifamily Building.

Chicago is home to an estimated 1.3 million housing units, of which 77 percent, or around 1 million units, are in multifamily buildings. Approximately one third of these multifamily units are condominiums, which are more likely to be owner-occupied than the remaining two-thirds, or 700,000 units, which are likely to be rental units.

Most of Chicago's Lower-Cost Multifamily Housing Is Unsubsidized.

Chicago has nearly 91,000 units of subsidized housing, defined as housing whose rents are subsidized by a government entity (Table 1). These subsidized units are dwarfed by Chicago's 440,000 units of lower-cost unsubsidized multifamily housing, defined by the report authors as housing located in low-income neighborhoods and receiving no government subsidy (Figures 1 and 2). Neighborhoods are considered low-income if the majority of households earn less than $57,920 for a family of four.

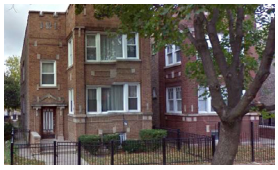
Chicago's Multifamily Building Stock Is Old and Energy Intensive.

More than 75 percent of Chicago's multifamily housing was built before 1942 and predates modern building codes. Unless the buildings have been substantially rehabbed, they lack basic energy efficiency improvements such as proper insulation and air sealing, which can cut energy usage and costs by up to 30 percent.

Chicago's Top Three Multifamily Segments Account for 92% of the Building Stock.

Elevate Energy segmented the multifamily housing stock into 15 building types based on age, size, and construction material. The analysis revealed that 92 percent of Chicago's multifamily buildings fall within just three segments, all of which were constructed before 1942 (Table 2). Together, the three segments represent nearly 500,000 housing units and the potential to avoid 6.5 million metric tons of carbon dioxide emissions through off-the-shelf energy efficiency improvements.

Table 2. Multifamily Building Segments and Potential Savings

	 2-4 unit building, pre-war, masonry	5+ building, low-rise, pre-war	2-4 unit building, pre-war, frame
Number of Buildings	79,903 (54%)	15,595 (10%)	41,159 (28%)
Number of Units	202, 924 (30%)	199,294 (29%)	97,892 (14%)
Emissions Avoided Given 20% Reduction	3,632,967	1,160,168	1,871,385

Conclusion

The segmentation findings point to several improvements for energy efficiency programs serving Chicago:

- Given the large number of units and distinct building characteristics of the unsubsidized affordable multifamily market in Chicago, this market segment merits distinct energy efficiency programs tailored to their particular needs.
- The ownership and operational differences in the top three multifamily segments require that policy makers design distinct approaches for each segment in order to ensure program uptake.
- Low-income definitions for efficiency programs must be sufficiently broad to include all unsubsidized lower-cost multifamily housing.
- Mapping the multifamily segments to low-income census tracts reveals that six Chicago neighborhoods are home to more than 18 percent of the buildings in the top three segments. Targeting the six Chicago community areas – Auburn-Gresham, Austin, Humboldt Park, Lower West Side, North Lawndale and South Lawndale – has the potential to streamline program implementation while delivering energy saving improvements to nearly 80,000 affordable multifamily units.

The full multifamily market segmentation analysis, "Segmenting Chicago Multifamily Housing to Improve Energy Efficiency Programs", is available at: www.elevateenergy.org/document/ChicagoMultifamilySegmentation.

This research was a part of the Energy Efficiency for All initiative (EEFA), which is a joint effort of the Natural Resources Defense Council (NRDC), the National Housing Trust, the Energy Foundation, and Elevate Energy. The mission of EEFA is to make multifamily homes healthier and more affordable through energy and water efficiency and access to clean energy. EEFA is made possible by the generous support of The JPB Foundation.