Getting Past the Doorman: Key Challenges, Solutions, and Findings of a Determined Multifamily Baseline Study Team[1]

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ABSTRACT

Retrofitting multifamily buildings plays a key role in meeting climate and equity goals; however, less is known about the energy-use characteristics of multifamily buildings than about buildings in any other sector. This paper explores the challenges, successes, and lessons learned of a determined, all-in effort to collect data on the energy use characteristics of multifamily buildings throughout New York State, including affordable and market-rate housing.

The study comprised three components: (1) a building stock assessment; (2) market assessments for HVAC, water heating, building shell, and building electrification; and (3) an image analysis study that determined external characteristics of nearly every multifamily building in the state. This paper focuses on the building stock assessment.

The authors share information about the building stock assessment's formidable data collection challenges, which centered mostly around recruitment. Multifamily building owners and managers are often reluctant to participate in studies of any sort, and reliable contact information is scarce at best. Recruiting occupants is easier than recruiting building owners and managers, but adequately characterizing multifamily buildings often requires access only a building owner or manager can provide, such as to the roof and mechanical rooms, as well as overarching building knowledge.

The study ultimately completed 1,565 surveys of multifamily building owners or managers and 434 site visits to multifamily buildings, which provided invaluable data for program implementation and planning. The paper will share solutions that led to this successful conclusion, along with lessons learned that will improve future efforts.

Introduction

The New York State (NYS) 2019 Climate Leadership and Community Protection Act (Climate Act) set carbon reduction goals of 40% below 1990 levels by 2030 and 85% by 2050. When faced with such ambitious goals, all possibilities to decarbonize must be explored, and multifamily buildings constitute a particularly large opportunity in NYS. According to the 2021 U.S. Census American Housing Survey (Census Bureau 2021), buildings with five or more living units[2] account for more than 2.9 million dwellings throughout the state—about 35% of the estimated 8.5 million dwellings.

[1] Any opinions expressed, explicitly or implicitly, are those of the authors and do not necessarily represent those of the New York State Energy Research and Development Authority.
[2] NYSERDA's definition of multifamily buildings is buildings with 5 or more living units.

The New York State Energy Research and Development Authority (NYSERDA) has long pursued energy savings in multifamily buildings. However, multifamily retrofits are difficult due to many unknowns about the buildings themselves. Therefore, upgrades to address carbon reduction and energy efficiency are difficult for planners to estimate, which leaves programs with too little information to effectively pursue savings and keeps service providers and other supply-side market actors from understanding the true size and nature of the retrofit market.

To help address these challenges, NYSERDA released a request for proposals in 2020 to conduct the first statewide multifamily baseline study in NYS, ultimately choosing a team led by Cadmus[3] to conduct the study. The overall objective of the Statewide Multifamily Baseline Study (SMBS) was to evaluate and develop a baseline of the existing multifamily building stock conditions and associated energy use, which involved collecting, analyzing, and summarizing data about every aspect of multifamily buildings and living units that affects energy usage. The information will be used to improve the ability of NYSERDA and NYS utilities to develop, implement, and evaluate energy efficiency programs for multifamily buildings in NYS. The data and findings provide information that service providers can employ in their business and marketing strategies to target and engage the multifamily market with energy efficiency and carbon-reduction opportunities more effectively. The findings can also be used to set more accurate baselines for incentive programs, inform energy savings calculations, and provide inputs for multifamily potential studies.

The SMBS consisted of three components. The largest component was the building stock assessment, which included site visits to 434 buildings and 1,565 surveys of property owners or managers (building representatives). The second component was a market assessment for HVAC, water heating, building shell, and building electrification. This market assessment included surveys and interviews of building representatives, architects, energy consultants, and contractors. The third component was an image analysis study, which is the subject of a separate Summer Study paper (Geery et al. 2024). The image analysis used machine learning and high-quality aerial imagery[4] to determine external characteristics of nearly every multifamily building in the state.

This paper focuses on the building stock component. More specifically, it focuses on the failures and successes of efforts to overcome the study's most formidable challenge—recruiting multifamily building representatives to participate in the study. We believe the information and lessons learned presented here will give organizations planning similar studies an accurate understanding of the required level of effort and budget for building representative recruitment. This information should also help future baseline study project teams more effectively recruit multifamily building representatives, though the efficacy of the various recruitment channels may well vary geographically.

This team undertook a great effort to obtain this data because complete population and energy use data for NYS multifamily buildings did not exist. Partial population data can be found

[3] Cadmus is the prime contractor. Subcontractors include Res-Intel to enhance and validate the multifamily building population data; Leede Research for survey telephone outreach; APPRISE Inc. for additional survey telephone outreach and property owner and manager relationship building; and GDS Associates, Steven Winter Associates, and Ridgeline Energy Analytics to conduct site visits.

[4] The aerial imagery was provided by EagleView Technologies, Inc.

in several sources including public NYS tax assessor, GIS parcel data and New York City (NYC) Open Data[5], as well as in commercially available databases like Costar, Data Axel, NYC PLUTO, and Reonomy. It's important to note that there is no one source of truth or estimated truth in these datasets, and a key value of this baseline study is that it produced a single dataset that consolidates all these sources into one more reliable dataset. Data on baseline energy use conditions of NYS multifamily buildings is much less available. NYC Local Law 87 mandates that buildings over 50,000 gross square feet undergo periodic energy audit and retro-commissioning measures and the audit data collected is publicly available. However, multifamily buildings in NYC that are greater than 50,000 square feet are less than 15% of the total NYS multifamily building population.

Sampling Plan

Cadmus honed and vetted the sampling plan for the study using a rigorous process befitting such a major baseline study effort, including multiple meetings of a sampling plan stakeholder working group. The sampling plan effort also featured development of population data far more detailed and comprehensive than that of most studies. Developing population data that identified essentially every multifamily building in NYS was necessary to support the image analysis component of the project, and those data also supported the building stock assessment. Drawing on numerous sources, including an earlier NYSERDA attempt to develop a similar dataset, Cadmus and population data subcontractor Res-Intel ultimately arrived at population data that documented the basic characteristics of approximately 135,000 buildings throughout NYS.

As Res-Intel and Cadmus developed and enhanced the population data, Cadmus and the NYSERDA project managers organized and facilitated the sampling plan working group sessions. Stakeholders included representatives from multiple NYSERDA teams and several New York utilities.[6] The working group agreed to a sample design with three stratification variables, with separate building representative survey and building site-visit targets to be specified for each combination of the following variables:

- **Geographic region**—the service area of each of the state's investor-owned utilities (IOUs)
- **Building size—**low-rise (one to three stories), mid-rise (four to seven stories), and high-rise (more than eight stories)

[5] https://opendata.cityofnewyork.us/

[6] Represented New York utilities included Central Hudson, Con Edison, National Grid, New York State Electric and Gas, PSEG Long Island, and Rochester Gas and Electric.

- **Ownership type**—affordable subsidized, affordable unsubsidized, market rate rental, and co-op/condo.[7]

The sampling plan stakeholder working group also identified the segmentation to use for analysis and reporting. These included building size and ownership type, as identified above. For reporting, instead of using the IOU service area, the working group defined geographic regions as NYC (designated as Climate Zone 4a), Long Island and Westchester County (designated as Climate Zone 4b), Climate Zone 5, and Climate Zone 6. Identified reporting segments also included disadvantaged communities[8] and dwelling unit metering type (direct metered or building-level metered).

Cadmus determined the sample size for each combination of sampling strata (substrata) based on agreed-upon confidence and precisions targets,[9] the estimated population of buildings in each substratum of the population data, and the variation of building age in the population data. Cadmus and the working group stakeholders agreed to base variation on building age partly because stakeholders identified building vintage as an important segment for reporting.

Ultimately the study arrived at the sample design shown in Table 1 for building representative surveys and Table 2 for building site visits. To avoid the potential for skewing results toward smaller substrata, Cadmus eliminated sampling for any substrata for which the population data contained fewer than five buildings. To reduce budget impact for substrata with fewer than 40 buildings, which would not have a large impact on findings overall, Cadmus further reduced sample sizes (beyond the reduction indicated by finite-population correction) for these substrata.

[7] Res-Intel and Cadmus identified co-ops and condos using NYS GIS property use codes outside of NYC and Primary Land Use Tax Lot Output (PLUTO) building class codes for buildings within NYC, as well by flagging buildings with multiple tax parcels. Affordable subsidized buildings were identified through several datasets of buildings receiving subsidies. The project team assigned the affordable unsubsidized type to buildings located within census block groups with estimated household income below 60% (low) or 80% (moderate) income, based on a 2019 income threshold table provided by NYSERDA. Properties not identified as having any other ownership type were designated as market rate rental.

[8] Disadvantaged Communities are determined according to criteria developed by the Climate Justice Working Group (CJWG). These criteria include multiple indicators that represent environmental burdens and climate change risks within a community, and population characteristics and health vulnerabilities that can contribute to more severe adverse effects of climate change. More information can be found here https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria.

[9] For site visits, the study targeted 90% confidence and ±15% relative precision at the IOU level and ±25% at the substrata level. For building representative surveys, the target was 90% confidence and ±10% absolute precision at the substrata and IOU levels.

Table 1. Building representative survey sample design

Building size	Ownership type	Central Hudson Gas and Electric	Con Edison	NYSEG & RGE	National Grid	Orange and Rockland	PSEG Long Island	Statewide
1–3 stories	Affordable subsidized	35	64	61	60	30	42	292
	Affordable unsubsidized	57	76	66	66	54	60	379
	Co-ops and condos	-	66	-	-	-	57	123
	Market-rate	66	73	67	68	65	67	406
4–7 stories	Affordable subsidized	14	71	21	32	7	11	156
	Affordable unsubsidized	17	81	34	51	20	49	252
	Co-ops and condos	-	68	-	-	-	24	92
	Market-rate	37	77	43	63	32	55	307
8+ stories	Affordable subsidized	5	66	15	22	-	1	109
	Affordable unsubsidized	3	62	5	13	1	11	95
	Co-ops and condos	-	67	-	-	-	20	87
	Market-rate	2	68	15	39	-	41	165
Total		236	839	327	414	209	438	2,463

Table 2. Building site-visit sample design

Building size	Ownership type	Central Hudson Gas and Electric	Con Edison	NYSEG & RGE	National Grid	Orange and Rockland	PSEG Long Island	Statewide
1–3 stories	Affordable subsidized	13	14	17	15	10	19	88
	Affordable unsubsidized	14	16	18	15	14	13	90
	Co-ops and condos	-	17	-	-	-	21	38
	Market-rate	19	15	22	21	18	22	117
4–7 stories	Affordable subsidized	10	16	13	15		8	62
	Affordable unsubsidized	9	17	11	14	8	13	72
	Co-ops and condos	-	16	-	-	-	10	26
	Market-rate	21	16	19	21	21	13	111
8+ stories	Affordable subsidized	-	19	8	9	-	-	36
	Affordable unsubsidized	-	14	-	7	-	7	28
	Co-ops and condos	-	17	-	-	-	10	27
	Market-rate	-	21	8	11		10	50
Total		86	198	116	128	71	146	745

Recruitment Plan

It is no secret that multifamily property owners and managers can be difficult to recruit, at least among those who have tried. Getting this population to say yes is no easy task due to many reasons including no reasonable incentive is worth their while, they are simply too busy, they see risk in sharing information or providing on-site access, or several people would need to provide approval or access. Recruiting dwelling unit occupants is much easier, but characterizing multifamily buildings often requires access to central mechanical equipment, attic spaces, and other areas that occupants typically cannot provide. Characterizing multifamily buildings was the primary objective of this study, so the mission was clear: the study *had* to recruit multifamily building owners and managers.

Cadmus and project stakeholders developed a best-practices, tried-and-true recruitment plan, which is illustrated in Figure 1. The plan centered around a nested recruitment approach, which recruited building owners and managers (building representatives) for surveys and then recruited site-visit participants from willing survey respondents. To minimize bias and increase success, recruitment used a multimode approach, with initial outreach through email or postcard. The initial outreach would invite recipients to complete the survey online or by calling a toll-free number. Recipients who did not respond would receive up to three calls requesting that they complete the survey. With this initial plan, the study offered building representatives incentives of $50 per survey and $150 per building site visit, which the study provided through Amazon eGift cards. As represented in the gray boxes at the right of Figure 1, the plan also called for site visits to one or two dwelling units per visited building. Occupants of those dwelling units would then be encouraged to complete the occupant survey. Occupant incentives were $50 for the dwelling unit site visit and $30 for the occupant survey.

Res-Intel appended building representative contact data from CoStar, Data Axel, Exact Data (now owned by Data Axel), and property parcel data to the population data where contact information was available. To provide as much randomness as practical in recruitment while ensuring that the sample frame represented all sampling strata as well as possible, Cadmus constructed four batches of 20,000 buildings by randomly drawing from the population data within each substratum in proportion to the substrata sample sizes. The process randomly selected buildings for these batches without regard to whether contact information was available for each building. Cadmus initially provided contact information to Leede Research for only the first batch of buildings, to be followed by the subsequent batches. A separate postcard sample frame comprised only buildings with building representative names and mailing addresses.

The project team, which we define for this paper as the NYSERDA project managers and Cadmus team members, also planned to incorporate recruitment from multifamily organizations that agreed to help promote the study, referred to as study ambassadors. Figure 1 represents study ambassador recruitment as Trade Group Outreach. Cadmus contacted 24 organizations with the ability to reach multifamily property owners and managers. These included multifamily trade groups, NYS and NYC housing authorities and agencies, and non-profits specializing in building decarbonization and housing affordability. Eight organizations eventually agreed to

participate.[10] All eight study ambassadors provided information about the study to their members by email, sharing a link to an online survey that allowed members to get started.

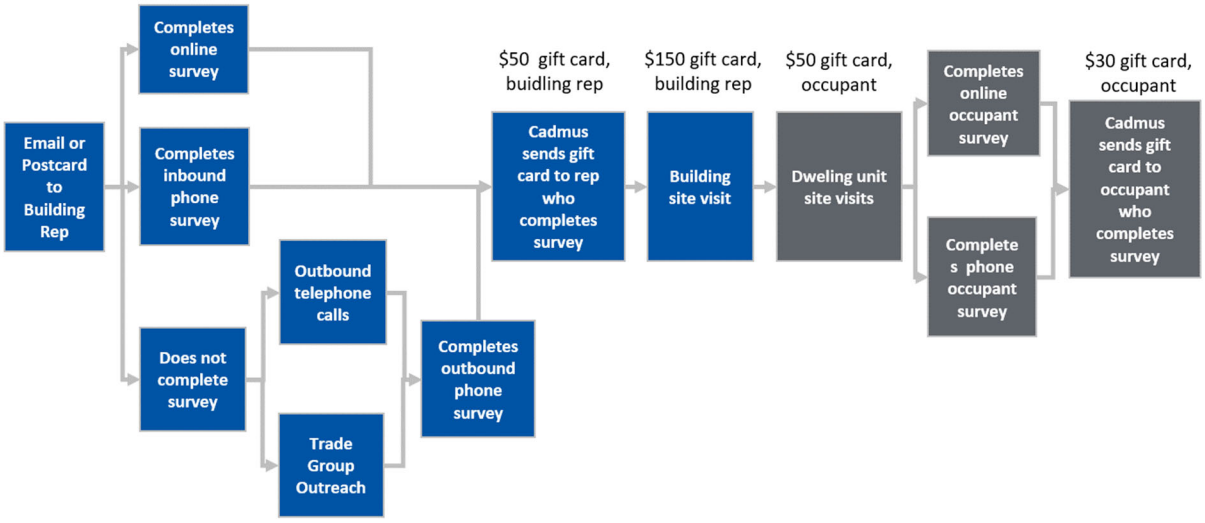

Figure 1. Initial recruitment plan

Recruitment in Action

Recruitment for the study began in early 2022 with the soft launch of an email campaign and online survey. The response was not promising, with only one survey completion from the 159 recipients, yielding a response rate of less than 1%. Unfortunately, that survey respondent was not interested in participating in a site visit. The numbers ticked up when recruitment began in earnest in April 2022, but response rates remained low.

After three months of recruitment, which included an email campaign, an initial batch of postcards, and outbound calls by Leede Research, recruitment efforts had yielded only 154 of the needed 2,463 building representative survey completions, with only 80 respondents indicating a willingness to participate in a site visit. Considering that only 50-60% of willing site-visit participants were likely to schedule a site visit, thus far the study had recruited only 40 or so of the 745 needed site visits. At that rate, recruiting enough site-visit participants would have taken nearly five years.

The problem was not only that recruitment was too slow; response rates were also far too low, which meant that the project would burn through available contact information too fast and would consume more budget than anticipated. As shown in Table 3, response rates for the initial batch of postcards in May 2022 were only 0.3% for surveys and 0.1% for willingness to participate in a site visit. A postcard response rate of even 1-2% would be considered mediocre at best for most studies.

[10] The eight study ambassadors included The Building and Realty Institute of Westchester, Community Housing Improvement Program, The Council of New York Cooperatives and Condominiums, The New York Public Housing Authorities Directors Association, The Real Estate Board of New York, Urban Green Council, and two others who wish to remain anonymous.

The email response rate was somewhat better at 1%, but the study had already exhausted available email addresses by May 2022. The project team received a list of 46,000 multifamily building representative email addresses from a data vendor, but most of these contacts were associated with buildings that had fewer than five units. This and other limitations of those data left the study with only 1,682 viable email addresses.

Things were not better with phone outreach. Leede Research's calls had resulted in 81 survey completions and 47 willing site-visit participants, but the company made more than 14,000 calls to achieve those numbers. Worse, the company reported that it was taking 13 to 14 hours of phone work on average for each survey completion. Clearly, changes were needed.

Table 3. Early recruitment response rates

Channel	Quantity*	Surveys	Survey response rate	Site-visit recruits	Site visit response rate
Email campaign	1,682	17	1.0%	8	0.5%
Postcards	20,000	56	0.3%	25	0.1%
Phone outreach	14,231	81	0.6%	47	0.3%

*Quantity represents mailing or calls, which include multiple outreach events to some building representatives

Early Recruitment Improvements

The project team quickly implemented several changes to the recruitment plan. The most substantial was to invert the recruitment process to recruit for site visits first instead of surveys. With this change, only postcard recruitment would follow the original, nested-recruitment approach. The project team revamped email and phone outreach to recruit for site visits, which were a larger priority for the study. With this approach the building representatives could agree to a site visit with its $150 incentive without requiring them to spend 20 to 30 minutes completing a phone survey. The revised process added a step after site visits to encourage building representatives to complete the survey online.

Given the obvious reluctance of most building representatives to complete a survey, the project team also increased the survey incentive from $50 to $100. This change helped boost the postcard response rate, as well as online survey completions after the site visit.

The project team also changed how dwelling unit occupants were recruited for site visits. Instead of Leede Research attempting to recruit occupants separately for a site visit that would occur on the same day as each building site visit, the new plan provided a $50 incentive to building representatives for each dwelling unit site visit they helped arrange (up to two) in the building. One of those dwelling units could be vacant, though occupied units for both dwelling unit site visits were strongly preferred. This change resulted from the realities of recruiting dwelling unit occupants more than as a response to poor response rates, though it also boosted the potential incentive for building representatives.

The project adjusted postcard messaging as well, partly to update incentive amounts but also to focus more on the total incentive of up to $400 available per building, which included $100 for the building representative survey, $150 for the site visit, $50 for facilitating each of two dwelling unit site visits, and $50 for the market assessment component building decision-

maker's survey. Whereas the original postcard focused more on messaging participation in this study as a social good ("Help us realize New York State's energy efficient future"), the new postcard led with "Earn up to $400 per building by participating in NYSERDA's Statewide Multifamily Building Study." The total incentive was provided to the main building representative contact, and it was up to their discretion how to distribute that among invested parties.

The poor response rates and relatively low building populations in many substrata outside of NYC led to another major change: instead of limiting recruitment to a subset of the population of buildings—a sample frame that was as randomly drawn as the population sizes would allow—the project team opened recruitment to the entire population of buildings. This would allow the study to accept any building recruited through any source as long as the quota for that building's substrata had yet to be met and the building met all other study criteria.

With this new ability to recruit beyond a limited sample frame, the project team attempted to recruit more buildings from each willing site visit participant. Adding this strategy was prudent, because multifamily property owners and managers often own or manage more than one property. The study had already set limits on how many buildings could be recruited within a given multifamily complex—two for properties with five to 11 buildings and three for properties with at least 12 buildings. To guard against bias, the study also established guidelines for limiting the number of buildings recruited from any one owner, property management firm, or other organization.

A final early enhancement added intensive, targeted outreach. With more than 60% of the state's multifamily buildings located in NYC, recruitment naturally led to a greater number of willing participants there than elsewhere in the state. To boost success outside of NYC and provide much-needed leads for the subcontractors conducting site visits in those regions, Cadmus began intensive phone outreach on Long Island and in Upstate New York. A highly skilled Cadmus recruiter utilized the project's GIS tool of mapped buildings to help search for multifamily properties in areas where contact information was lacking. This exploration often used Google Maps Street View to obtain property names from signage, which could then be used to search for contact information. The recruiter would attempt to reach a building representative by phone, email, or both and to establish a relationship that could lead to participation.

The second quarter of recruitment also saw initiation of outreach through study ambassadors. Study ambassadors shared study information and survey links with approximately 7,500 individuals.

Better, But Not Much

The early recruitment changes brought near-immediate improvement in site-visit recruitment, with the number of willing participants jumping from 81 during the previous three months to a cumulative total of 404 by late September 2022. Assuming a 50% site visit scheduling rate, the 404 willing participants would lead to only 200 of the 745 needed site visits. The number of survey completions was 369, also well below the target of 2,463.

As shown in Table 3, response rates were still disappointing at best, though the overall site-visit response rate had doubled from 0.2% to 0.4%. The biggest improvement in response rate relative to the first three months of recruitment was through phone outreach, where the response rate with the updated approach was 2.2% for site visits, compared with 0.4% during the

initial three months. Surprisingly, the survey response rate through phone outreach held steady at 0.6% with the updated approach.

The postcard response rate held steady at 0.1% for site visits but dropped slightly for surveys from 0.28% to 0.24%, which Table 2 and Table 3 round to 0.3% and 0.2%, respectively. It seems notable that the response rate did not increase with improved messaging and an increased incentive, but there was a complicating factor: the second postcard batch included recipients who received a postcard in the first batch but did not respond. Response rates may have been higher for the second batch had it only included new recipients.

Table 4. Recruitment response rates after six months

Channel	Quantity*	Surveys	Survey response rate	Site-visit recruits	Site-visit response rate
Email campaign	1,682	26	1.5%	16	1.0%
Postcards	62,884	154	0.2%	73	0.1%
Phone outreach, survey first (original approach)	14,231	81	0.6%	50	0.4%
Phone outreach, site visit first (updated approach)	7,215	42	0.6%	162	2.2%
Study ambassador email	7,500	51	0.7%	63	0.8%
Cadmus intensive outreach, subcontractors, and other	N/A	15	N/A	40	N/A
Total	93,512	369	0.4%	404	0.4%

*Quantity represents mailing or calls, which include multiple outreach events to some building representatives.

Hard Truths

With six months of recruitment data as evidence, it was clear that response rates were not likely to improve with the current recruitment approaches. Cadmus and Res-Intel had been improving the population data over time, and Cadmus explored what response rate would be required to meet the survey and site-visit targets within each substratum. The outlook was promising in the Con Edison region, which primarily includes NYC with its population of more than 80,000 multifamily buildings. All other utility regions had multiple substrata for which required response rates appeared unachievable. Table 5 shows a typical example. In this case, required response rates for low-rise buildings looks good overall, though achieving the required 6% for affordable subsidized buildings would require some targeted outreach. For most other substrata, achieving the targets appeared difficult at best, with required response rates as high as 44%. The bottom line: judging by response rates thus far and the best-available population data at the time, some survey and site-visit targets simply could not be met.

Table 5. Required response rates for one IOU region (not Con Edison)

Building size	Ownership type	Number of buildings	Eligible buildings	Site-visit target	Required response rate
1–3 stories	Affordable subsidized	532	251	15	6%
	Affordable unsubsidized	2,409	1,278	15	1%
	Co-ops and condos			-	-
	Market-rate	10,649	4,194	21	1%
4–7 stories	Affordable subsidized	73	62	15	24%
	Affordable unsubsidized	213	173	14	8%
	Co-ops and condos			-	-
	Market-rate	869	581	21	4%
8+ stories	Affordable subsidized	34	29	9	31%
	Affordable unsubsidized	22	16	7	44%
	Co-ops and condos			-	-
	Market-rate	120	72	11	15%
Total		14,921	6,656	128	2%

The good news was that even with a relatively conservative estimate of achievable survey and site-visit completions by study completion, confidence and precision could be strong enough to provide statistically meaningful results in the study's reporting segments. For example, with site visits, Cadmus estimated statewide relative precision at ±4% at 90% confidence, and statewide relative precision for each building size stratum was less than ±10% at 90% confidence. Statewide estimated precision at 90% confidence within each ownership type ranged from ±7% for market rate rentals to ±12% for co-ops and condos. Estimated relative precision at 90% confidence within each of the four geographic reporting regions ranged from ±6% for NYC to ±15% in Climate Zone 6.

Doubling Down

Faced with the decision of whether to cut losses or redouble efforts, NYSERDA chose the latter. As noted above, even conservative estimates showed that at least most findings would be meaningful across all strata statewide, as would findings for each of the four geographic reporting regions. To complete the study within any reasonable timeframe and to provide adequate leads for the data collection subcontractors, the project team needed to accelerate recruitment. The team also understood that doing more of the same would often mean reaching out again to building representatives who had already been contacted multiple times, which would likely prove both ineffective and bothersome to the would-be recruits.

Cadmus proposed a series of recruitment enhancements, including new recruitment channels. The project team reconvened the sampling plan working group to review proposed enhancements, solicit new suggestions, and gain access to utility- or program-specific contact information where possible. Ultimately NYSERDA directed Cadmus to move forward with the following enhancements:

- Attempt to recruit additional study ambassadors
- Increase incentives substantially from $100 to $200 per building representative survey and from $150 to $250 per building site visit
- Expand efforts to secure more contact information, particularly email addresses
- Increase phone outreach capacity by bringing on an additional survey firm, APPRISE Inc.
- Pilot social media advertising
- Pilot third-party building representative survey panels
- Consider physical canvassing

What Worked

By the time data collection ceased in the summer of 2023, the project had completed 1,565 building representative surveys and 434 building site visits. Although significantly short of the study's original targets of 2,463 surveys and 745 building site visits, the final counts were higher than the conservative estimates projected in October 2022 and good enough to provide statistically meaningful results not only statewide but by the primary reporting segments, including geographic region, building size, and ownership type.

Some improvements made more of a difference than others, but no one improvement saved the day. The most effective strategy was persistently recruiting through multiple recruitment channels to bring in as many leads as possible. Table 6 summarizes the number of survey completions and site-visit recruits attributed to each recruitment channel.

Table 6. Final survey and site-visit recruits by channel

Channel	Surveys	Site-visit recruits	Projected site-visit completes[11]
Email campaign	286	223	111
Postcards	342	185	92
Leede Research phone outreach	276	459	229
Study ambassador email	84	88	44
APPRISE intensive phone outreach	117	30	15
Paid advertising	139	25	12
Cadmus intensive outreach, Cadmus post–site visit surveys, subcontractors, other	321	207	103
Total	1,565	1,217	606

The project team noted the following enhancements as most impactful in improving project recruitment.

Increased incentives. Though its impact is difficult to quantify, increasing incentives to $200 for building representative surveys and $250 for the building site visits appeared to bolster

[11] Based on the assumption that only 50% of site-visit recruits will complete a site-visit.

recruitment. Combined with the ability to earn $50 for facilitating each of two occupant site visits, building representatives could earn up to $550 for each building, and the study accepted as many as three buildings in complexes with 12 or more buildings. Building representatives were also allowed to participate with buildings on multiple properties and received the applicable incentives for each participating building.

More contact information. Another enhancement—greatly improving the volume of contact information—made meaningful email outreach and continued high-volume postcard and phone outreach possible. Cadmus greatly increased the number of building representative mailing addresses by matching them indirectly from tax assessor data provided by NYSERDA. For email and phone outreach, the project team purchased a trove of contact information from Reonomy, which aggregates and sells commercial real estate data. We were able to obtain multiple email addresses for multiple contacts[12] for roughly 45,000 buildings, along with phone numbers for many of the contacts.

The influx of email addresses enabled a sustained email campaign, in which Cadmus sent an initial email and up to four reminders to the first email address for the first contact for each building, then the second email address for the first contact, then the third email address for the first contact, then the first email address for the second contact, and so on. Combined with the smaller, initial email effort, the email campaign ultimately accounted for 286 building representative survey completions and recruitment of 223 site-visit leads.

The additional contact information also supported continued phone outreach, particularly in Upstate New York, where subcontractor Leede Research had run out of phone numbers. In the final six months of recruitment, after receiving the influx of new contact information, Leede's efforts led to 106 of its 276 total building representative survey completions and 148 of its 459 recruited site-visit leads.

Increased phone outreach capacity. To increase phone outreach capacity, the project team engaged APPRISE Inc. to handle phone outreach for NYC and Long Island. Whereas Leede Research followed more of a telemarketing approach, relying on high volume to bring in leads, APPRISE focused more on building relationships. Cadmus used a relationship-building approach throughout the project on a limited basis, particularly with housing authorities throughout the state. APPRISE focused more resources on this effort and worked to build relationships especially with organizations that owned or represented large numbers of buildings. Over a period of five months, APPRISE's efforts resulted in 117 building representative surveys and approximately 30 site-visit recruits.

Paid-media advertising. The project team engaged NYSERDA marketing partner KSV to pilot social media advertising for multifamily recruitment. KSV proposed and implemented a paid-media advertising campaign that included the following channels: Google Display advertising, LinkedIn advertising, a co-branded eBlast of The Real Deal real estate news outlet, and sponsored links with the BisNow commercial real estate B2B platform. Over a period of three

[12] Efforts were made during both survey and site-visit recruitment to ensure the contacts that ultimately participated in this study were appropriate representatives of the buildings for which we sought information.

months at the end of the study, the paid-media campaign resulted in a total of 139 building representative survey completions and approximately 25 site-visit leads.

What Didn't Work

The following attempted recruitment enhancements did not produce the intended results.

Additional study ambassadors. Email outreach through study ambassadors resulted in a fair amount of survey completions and site-visit recruits early in the project, but recruiting additional study ambassadors later in the project proved ineffective. Efforts to reach out through stakeholders to organizations that had thus far declined to participate did not produce a different outcome.

Third-party building representative survey panels. Cadmus contracted with Qualtrics to bring in 150 building representative survey responses using Qualtrics survey panel participants, which was to take place over a four- to five-week period. Ultimately, Qualtrics could secure only 14 surveys.

Physical canvassing. The project team determined that physical canvassing was not likely to provide many survey responses or building site-visit recruits, given that canvassers were unlikely in most cases to connect with a building representative. Cadmus' intensive outreach using the project GIS tool and Google Maps Street View allowed virtual canvassing of sorts, by allowing our recruiter to scan for buildings, view building photos to look for a property name, and then conduct an online search for building representative contact information.

Lessons Learned

The project team learned many lessons, large and small, during the project's 16 months of recruitment. Below, we share the lessons that most stand out.

When recruiting multifamily building representatives, a multimodal approach will be needed to meet the project's recruitment goals. Successfully recruiting a large number of multifamily building representatives takes considerable budget and sustained effort across multiple recruitment channels.

It is essential to obtain abundant, high-quality building representative contact information as early in the project as practical. Commercial real estate data sources such as Reonomy appear to offer a much higher volume of contact data than more traditional multifamily and commercial building data sources.

Begin social media and other targeted paid advertising early in the project to allow ample time for momentum to build. KSV noted that response appeared to wane towards the end of the three-month pilot, indicating that messaging might need to be refreshed periodically to maintain good response rates over a more-sustained recruitment effort. Involving a marketing team early in the project across all paid-media channels would allow the study to reach more building representatives and keep the campaign fresh.

Begin intensive relationship-building phone outreach early in the project, to allow ample time for recruiters to locate and research suitable targets and to allow for momentum to build and networked connections to play out. Relationship-building phone outreach can happen concurrently with telemarketer-style outreach with minimal coordination between the phone outreach teams.

Regardless of the style of phone outreach, getting past the gatekeepers for any given organization can be challenging. The person answering the phone often is not the person the recruiter needs to reach, and the phone-answerer often serves as a barrier between the recruitment target and unwanted calls. Part of the recruiter's job with a relationship-building approach is figuring out how to get past the gatekeeper. With the telemarketer approach, the caller is more likely to just move on.

Consider offering building representatives attractive incentives from the outset, such as the $200 building representative survey incentive and $250 building site-visit incentive eventually offered during this project. The higher incentives will likely pay for themselves by reducing required recruitment hours.

Study ambassadors played a valuable role in study recruitment at no additional cost. A notable lesson learned here is that study ambassadors, while valuable, are an inherently finite resource. Such organizations are relatively small in number, and once they have sent an email blast and a reminder or two, there is likely little else they will be willing to do.

Conclusion

Multifamily baseline studies provide data essential to programs and planners as they work to optimize use of ratepayer funds and meet energy and climate goals. The challenges of recruiting multifamily building representatives to participate in such studies present a significant barrier to study success. The project team for the NYSERDA Statewide Multifamily Baseline Study documented numerous lessons learned in this paper with the hope of helping future studies overcome the multifamily recruitment barrier. Key lessons learned include maintaining sustained effort through multiple modes and channels of recruitment, obtaining a high volume of high-quality building representative contact information early in the project, engaging a marketing partner early in the project to plan and manage paid-media advertising, and engaging potential participants by phone from the outset using both high-volume and relationship-building approaches.

Many of these lessons learned apply to energy efficiency and clean energy programs in the multifamily building sector as well. Obtaining a high volume of high-quality contact information, relationship building to establish trust with key building representatives, and engaging marketing partners that work with multifamily buildings are especially important. The marketing message is also impactful to maintaining engagement. This study seemed to indicate that messaging that focused on the collective good of energy efficiency was less effective with this audience than in other sectors.

References

Climate Act (Climate Leadership and Community Protection Act). 2019. NYS Senate Bill S6599 (signed July 18). www.nysenate.gov/legislation/bills/2019/S6599

Census Bureau. 2021. American Housing Survey Table Creator: New York, Housing Unit Characteristics. www.census.gov/programs-surveys/ahs/data/2021/ahs-2021-summary-tables.html

Geery, C., N. Hinkle, A. Dugan, and J. Geppner. 2024. “Seeing Is Believing: Understanding and Expanding Multifamily Building Retrofit Markets Through Large-Scale Computer Vision Analysis of Building Characteristics.” 2024 ACEEE Summer Study on Energy Efficiency in Buildings.