



One Way or Another: Using One Program to Generate Energy and Water Savings in Multi-Family Complexes

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Today's Presentation

- Introducing the 10-10-10 Multi-Family Program
- Challenges (and victories) in developing valid population and setting up experimental design
- Status of the program



The 10-10-10+ Multi-Family Program

Program Overview

- Behavior Intervention Pilot – focuses on influencing multi-family complexes to reduce consumption of:

Electricity by 10% + Gas by 10% + Water usage by 10%+

- Use multiple behavior-change strategies
 - Experimental design to test effectiveness
 - Target both property managers/owners and tenants
 - Partnership of electric, gas, and water agencies
- Benchmarking – developed an aggregation approach that can benchmark independently or upload data to EPA’s Energy Star Portfolio Manager

A Multi-Everything Program

in Southern California

- Multi-partner: 1 electric, 1 gas, and 3 water providers
- Multi-family: Engage both property managers/owners and tenants
- Utilize a combination of behavior change interventions
- Opt-in and Opt-out participant groups



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Behavior Intervention Strategies

Multiple Opportunities for Property Manager and Tenant Engagement

- Feedback/Benchmarking
 - Quarterly Letter to Managers – Comparative Energy & Water Use for entire complex
- On-site Marketing – Tenant Tips, Newsletters, Customized
- Competitions
 - Complex to Complex
 - City to City
- Commitment
 - Commit to 10% savings goals
- Rewards
 - Awards to complexes with highest energy reductions

Multiple Participant (Treatment) Groups

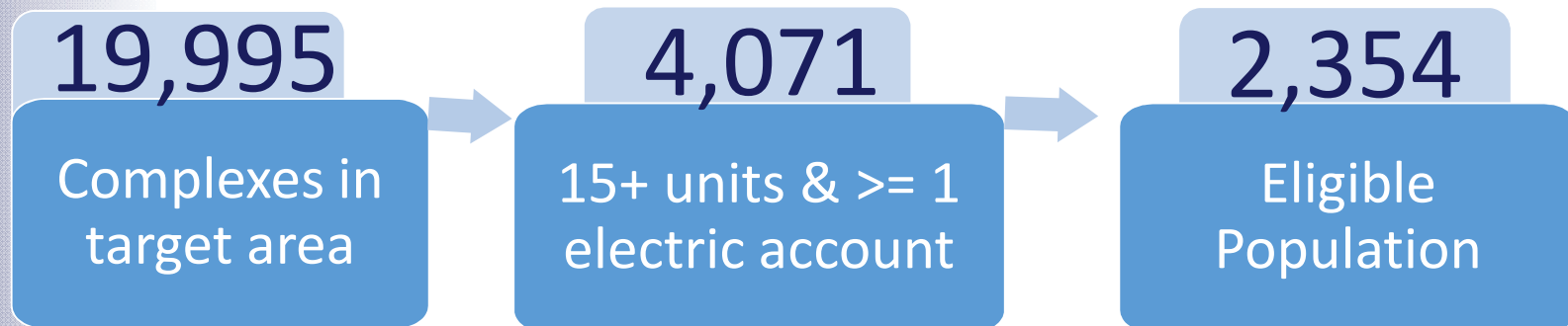
Randomized Control Trial (RCT) Experimental Design

Groups	Planned Qty	Treatment
Treatment Group 1	360 Complexes (Opt-out)	Behavior Messaging to Complex Property Managers
Treatment Group 2	360 Complexes (Opt-in)	Behavior Messaging Letter + Onsite Marketing to Tenants
Control Group	360 Complexes	No Treatment

Developing the Eligible Population

Harder Than You'd Guess

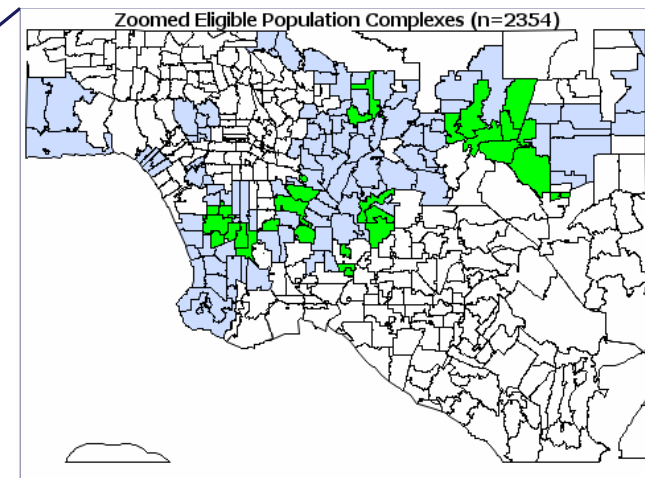
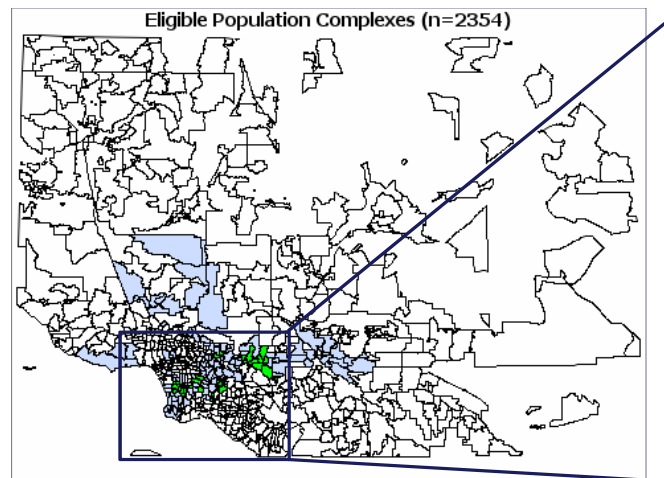
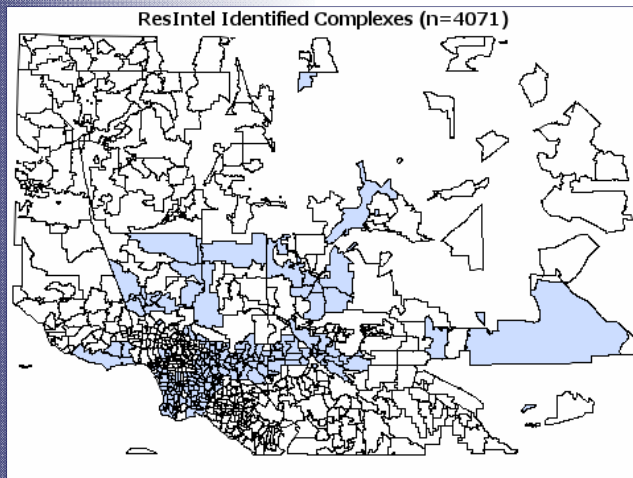
- Identify what addresses might be MF complexes
- Roll up multiple parcels/addresses to complexes
- Aggregate tenant and common area accounts to the complex level
- Match up electric and gas populations
- Find and integrate water accounts in eligible population complexes



A Look at the Eligible Population

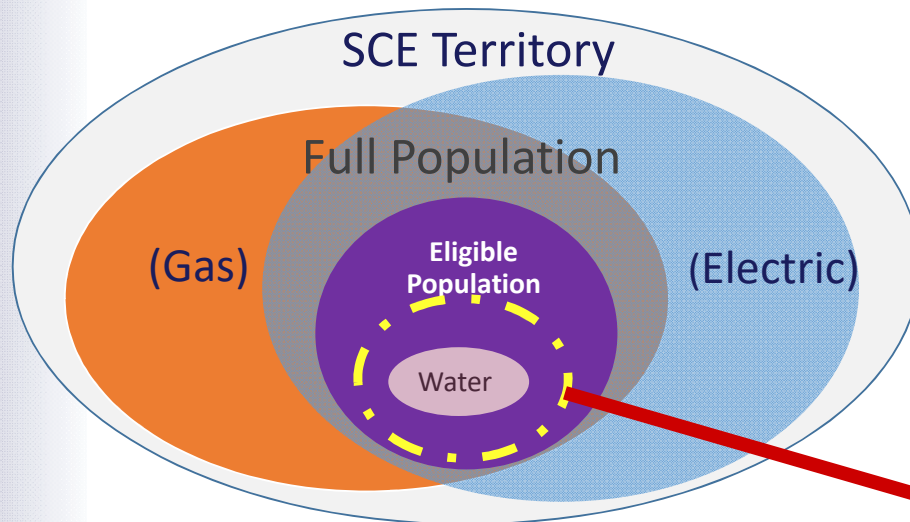
Geographic Distribution of Complexes by zip code

- From 4,071 plausible complexes, confidently matched 2,354 complexes in geographically contained area
- 175 complexes (in green) of the 2,354 have water identified water accounts



Plans for the Experimental Design

Anticipated Sampling Strategy



For the sample:

- Include all complexes with cleaned data available for all 3 resources
- Limit to a manageable geographic area

Sample

- 2 Treatment groups
- 1 Control group

Pilot Program Eligibility = All MF Complexes must have mapped electric/gas accounts and 15-100 tenant units

Sampling for RCT Experimental Design

Actual Sampling Strategy

- Use the entire eligible population as our sample – 2,354 complexes
 - 650 complexes for Treatment 1 (benchmark/usage reports via mail) Opt-out
 - This gives an excellent buffer in case we see smaller than expected savings
 - 650 complexes for Treatment 2 (reports + on-site/repeat contacts) Opt-in
 - Actual participation target is 390, the larger starting sample gives us room for a lower compliance rate than expected
 - Remainder (1,054 complexes) for Control group
- Two dimensional energy stratification + a water stratum for optimal electric, gas, and water savings capture

From Planning to Action

Refinements Maximize Opportunities for Engagement and Savings

- Send the relatively low-cost reports to reach more T1 participants than originally planned → max exposure & ensure measurability of minimum savings
- Create large group from which to recruit T2 participants → flexibility to adjust for opt-in take rate
 - Recruit T2 group in geographically contiguous neighborhoods to minimize cost
 - Recruit until the target participation numbers are reached, then stop
 - T2 treatments will engage both property managers & tenants



Conclusions & Program Status



Take-aways about multi-everything program development

- It's possible to obtain and integrate data from different electric, gas, and water providers who want to work together.
- Aggregation for benchmarking and comparative feedback is hard and time-consuming.
- Even with strict matching rules, can develop and populate a meaningful and evaluable experimental design.

Vanguard program for energy & water users in multi-family complexes almost ready for launch

- Report and competition designs nearing completion
- Recruitment about to start; anticipate will take several months to recruit Opt-Ins



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