Technical Appendix

Project name: Decreasing energy cost in federally assisted housing
Date finalized: 4/11/2025

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Appendix A – Randomization and analytic samples

	Units Randomized	Analytic Sample
		Two-week outcome period
No flyer control	929	851
Any flyer	1,867	1,663
Single-tip flyer	935	839
Multiple-tips flyer	932	824
Total	2,796	2,514

Appendix B - Difference in baseline energy use by treatment group

	(1)	(2)	(3)	(4)
	Average Daily Energy Use (KwH)	Average Daily Energy Use (KwH)	Average Daily Energy Use (KwH)	Average Daily Energy Use (KwH)
Sent any letter	0.161		0.223	
	(0.347)		(0.378)	
Sent multiple-tip letter		0.571		0.684
		(0.408)		(0.443)
Sent single-tip letter		-0.250		-0.247
		(0.396)		(0.434)
Observations	2,796	2,796	2,514	2,514
R-squared	0.147	0.148	0.139	0.141
Sample	Randomized	Randomized	Analytic	Analytic
Control mean	13.79	13.79	13.86	13.86
SD	9.23	9.23	9.54	9.54
P-value for multiple-tip = single-tip		0.043		0.037

Notes: *** p < 0.001, ** p < 0.01, * p < 0.05, + p < 0.10. Heteroskedasticity-consistent standard errors (HC2) in parentheses. Each regression includes block fixed effects and indicators for imputed baseline mean energy use by day. The sample includes all apartments that had valid energy use data for at least 11 out of 14 days of the outcome period.

Appendix C - Effect of information intervention on energy use

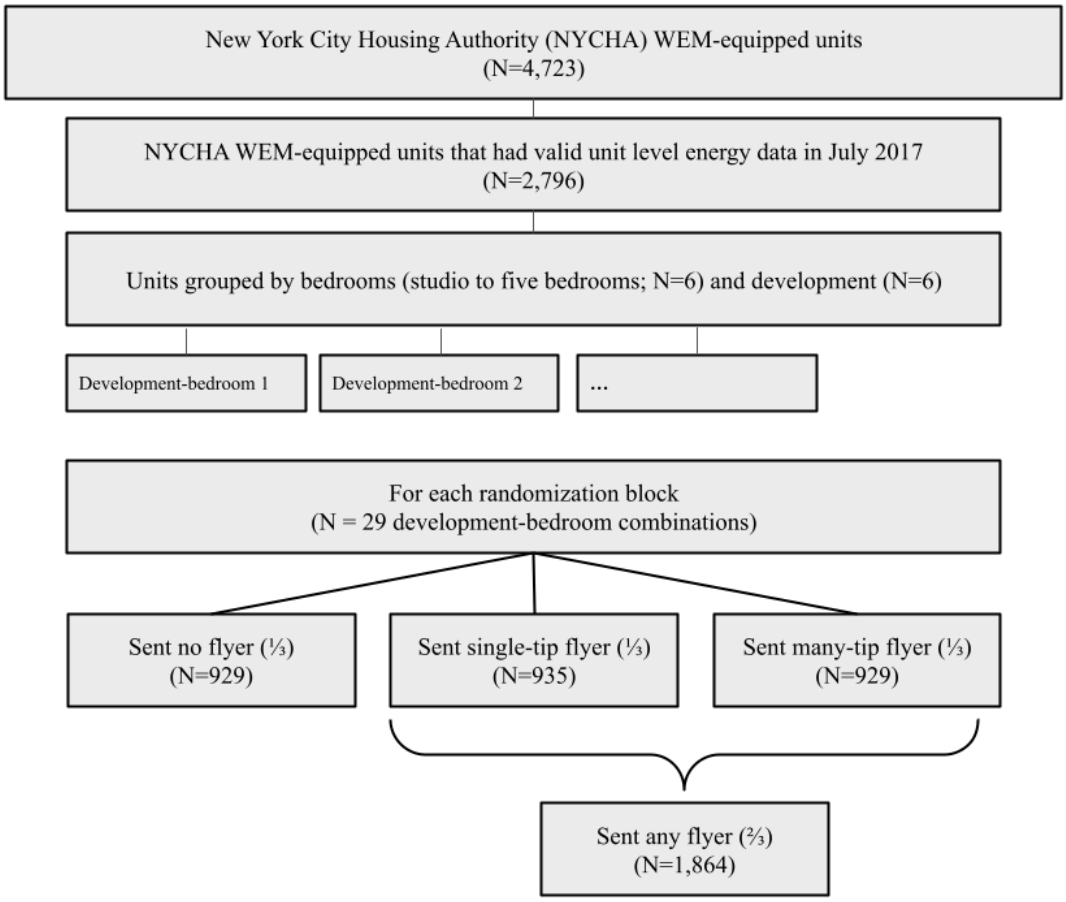
	(1)	(2)
	Average Daily Energy Use (kWh)	Average Daily Energy Use (kWh)
Sent any letter	-0.235	
	(0.159)	
Sent multiple-tip letter		-0.155
		(0.185)
Sent single-tip letter		-0.317+
		(0.185)
Baseline average daily energy use	1.159***	1.159***
	(0.0111)	(0.0111)
Observations	2,514	2,514
R-squared	0.900	0.900
Control Mean	16.88	16.88
Control SD	11.827	11.827
P-value for multiple-tip = single-tip		0.386

Notes: *** p < 0.001, ** p < 0.01, * p < 0.05, + p < 0.10. Heteroskedasticity-consistent standard errors (HC2) in parentheses. Each regression includes block fixed effects, baseline mean daily energy use, and indicators for imputed baseline energy use by day.

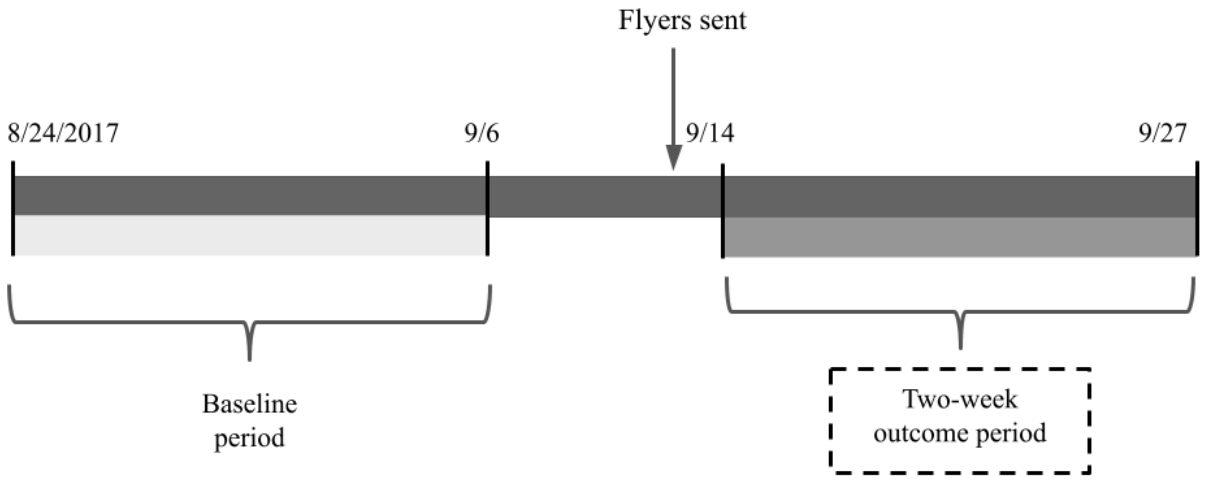
Appendix D - Holm-bonferroni adjusted p-values

	Unadjusted p-value	Holm-bonferroni adjusted p-value
Sent letter	0.14	0.42
Sent multiple-tip letter	0.40	0.77
Sent single-tip letter	0.08	0.35
Multiple-tip = single-tip	0.39	0.77

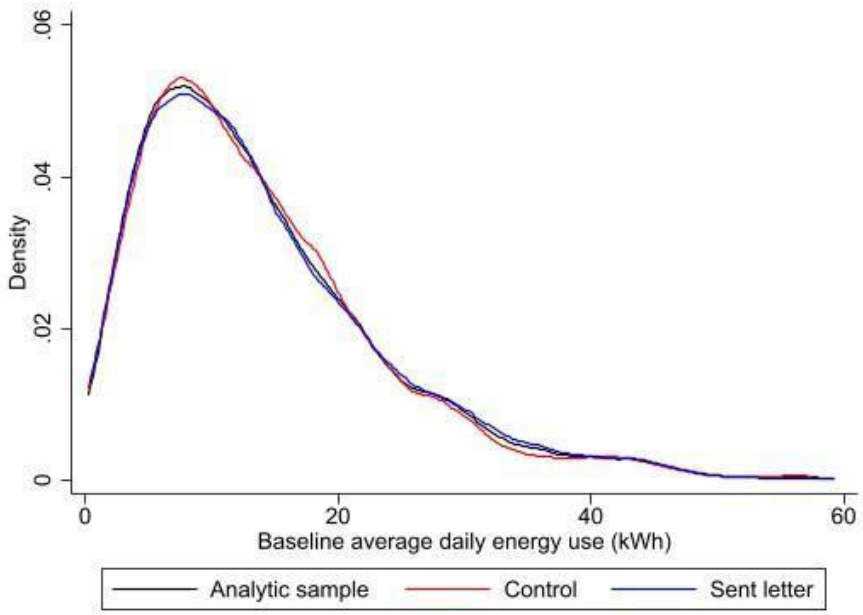
Appendix E - Random assignment

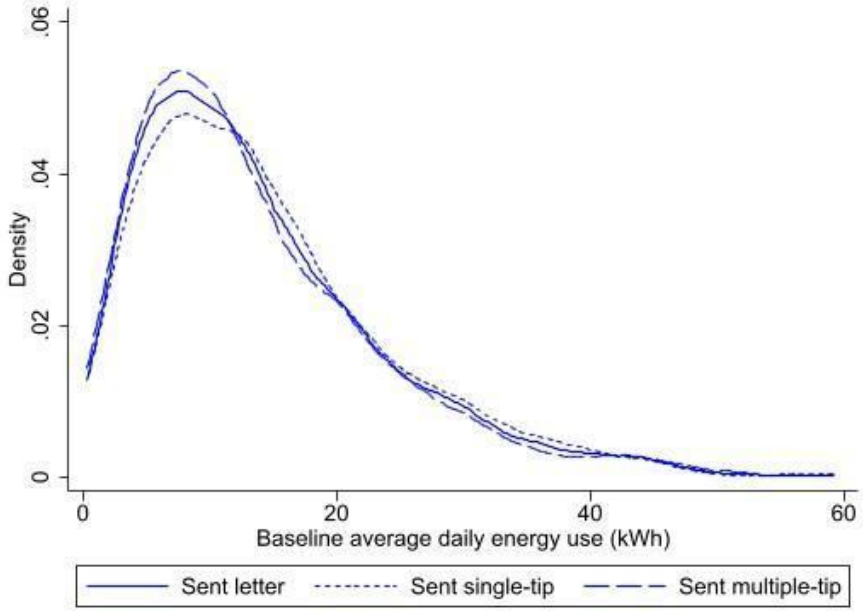


Appendix E - Implementation timeline

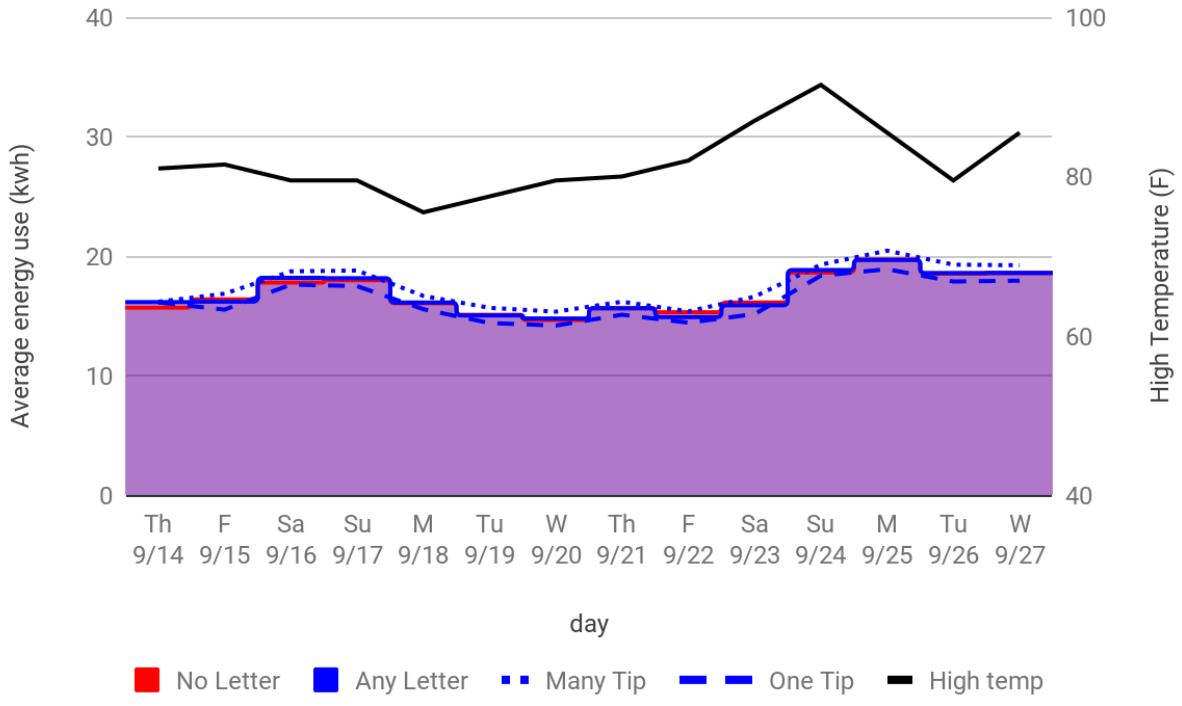


Appendix F - Distribution of baseline energy use





Appendix G - Mean daily energy use and temperature over two-week outcome period



Appendix H - Differential attrition during the outcome period

	(1)	(2)
	Attrition	Attrition
Sent either flyer	0.00501	
	(0.00575)	
Sent one-tip flyer		0.00512
		(0.00667)
Sent multiple-tip flyer		0.00490
		(0.00666)
Observations	2,796	2,796
R-squared	0.774	0.774
Control mean	.08	.08
Control SD	.277	.277
P-value for multiple-tip flyer = one-tip flyer		.974

Notes: *** p < 0.001, ** p < 0.01, * p < 0.05, + p < 0.10. Heteroskedasticity-consistent standard errors (HC2) in parentheses. Each regression includes block fixed effects and control for baseline mean energy use and indicators for imputed baseline mean energy use by day.

Appendix I - Informational flyers

Follow this easy step to save energy:

TURN OFF AC when not at home

Thank you!

Help Save Energy this Fall!

Together we can save energy and help the environment!

Follow these easy steps to save energy:

- **TURN OFF AC** when not at home
- **USE FANS** instead of AC to stay cool
- **OPEN WINDOWS** when it's nice outside
- **CLOSE WINDOWS** when it's hot outside
- **CLOSE DRAPES AND BLINDS** on hot sunny days

Thank you!