STL MULTIFAMILY HOUSING:
BUILDING ENERGY EFFICIENCY THROUGH BUILDING COMMUNICATION

a collaboration between *Washington University in St. Louis Sustainability Exchange* & the *City of St. Louis* to promote *Building Energy Awareness* that will reduce *GHG Emissions* & combat *Climate Change*

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Community Partners: Rachel Presley (Lindell Park Apartments), Stephanie Blockton (House at Westminster)

OBJECTIVES

1. improve **communication** & **energy awareness** between tenants & management
2. make saving energy **easy** & **accessible** for all stakeholders

OUR PROCESS

RESEARCH communication & energy consciousness

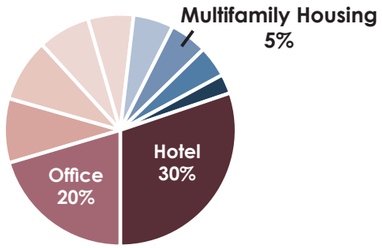
INTERVIEW community partners

SURVEY tenants

COMPILE & CREATE resources & checklists

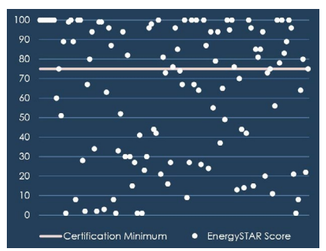
WHY MULTIFAMILY HOUSING

TOTAL GHG EMISSIONS (Metric Tons CO2e)



Breakdown of10 largest contributors, representing 72% of total emissions

2018 DISTRIBUTION OF MULTIFAMILY HOUSING ENERGY STAR RATINGS



50% of STL multifamily housing buildings are below the ENERGY STAR certification minimum of 75

UNIQUE MULTIFAMILY HOUSING CONDITIONS

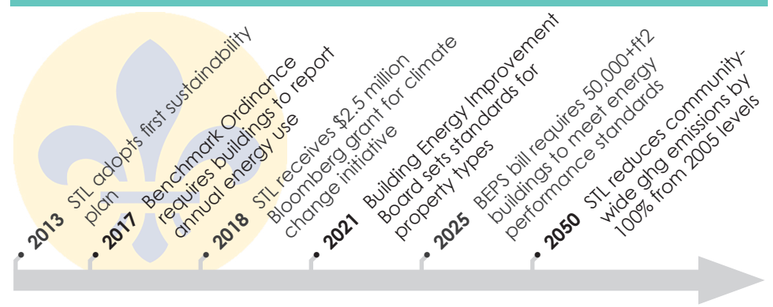
PRIVATE >SHARED SPACE

24/7 USE

LIFESTYLE & PREFERENCE

VARYING BUDGET

TIMELINE



WHY COMMUNICATION for our Partners

STAKEHOLDERS

utility companies ↔ tenants ↔ building managers ↔ property owners ↔ utility companies

BARRIERS/ISSUES

- communicate out of necessity
- energy-saving not a priority
- knowledge gaps in utility usages
- enery burden
- lack of proactive measures

	HOUSE AT WESTMINSTER	LINDELL PARK APARTMENTS
TENANT TYPE	independent senior living, 1 occupant/unit	studio apartments, 1-2 occupants/unit
POSSIBLE ADVANTAGES	• extensive metering • building manager controls utilities of shared spaces • qualifies for rebates	• present & motivated property owner • digital communication • developing facility & energy-related blog

FINAL DELIVERABLES

SURVEY RESULTS from Tenants:

"Between you and your landlord, what are some ways to improve communication about energy use and energy conservation?"

"...providing a monthly visual chart on the rise and fall in the percentages of utility usage"

"Anonymous feedback forms... [and] Text communication..."

CHECKLISTS for Community Partners, based on Interviews & Surveys:

COMMUNICATION between Building Managers & Tenants
- maximize unit efficiency
- inform & motivate tenants

BUILDING OPERATIONS for Building Managers
- maximize efficiency in shared spaces
- utilize metering & utility bills

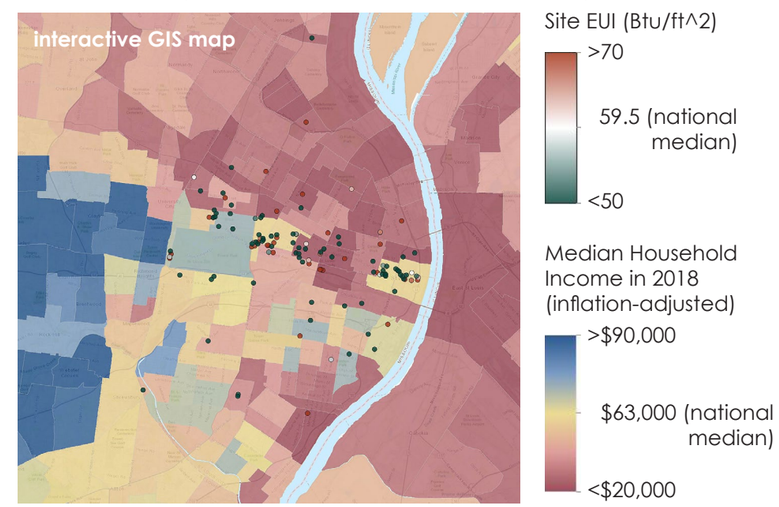
REBATES & INCENTIVES for Property Owners
- third-party resources
- lighting upgrade payback calculator

Type of Usage	Current/Old Lightbulb Selection	Number of Old Lightbulb	Wattage of Old Lightbulb	Average Usage (hours/day)	Location Description
Residential					
New/replacement Lightbulb Selection	**Number of New Lighbulb**	**Wattage of New Lightbulb**	**Average Usage (hours/day)**	**Price per New Lightbulb**	**Location Description**

Total Upfront Cost	
Annual Monetary Savings	
Payback Period (months)	
Annual Electricity Savings (kWh/year)	
Annual GHG emissions savings (Metric tons CO2/kWh)	

ANALYSIS & **VISUALIZATION** of Benchmarking Data for Client:

Multifamily Housing Site Energy Use Intensity & ENERGY STAR Rating 2018 vs. local factors (Race, Median Household Income, etc.)



POSSIBLE NEXT STEPS

- more personalized recommendations
- develop incentives for tenants (social groups, give-aways, parties, etc.)
- further education & conversation (blog, open forum, print material, etc.)