



**Better Buildings Residential Network Peer
Exchange Call Series: *Incorporating Energy
Efficiency into Multifamily, Affordable
Housing Rehabilitation Projects (201)***

September 24, 2015

Call Slides and Discussion Summary

Call Participants

Residential Network Members

- District of Columbia Sustainable Energy Utility
- Efficiency Nova Scotia
- Elevate Energy
- Energy Efficiency Specialists, LLC
- Greater Cincinnati Energy Alliance
- Institute for Market Transformation
- International Center for Appropriate & Sustainable Technology (ICAST)
- Local Energy Alliance Program (LEAP)
- MaGrann Associates
- Mitsubishi Electric Cooling and Heating

- National Association of State Energy Officials (NASEO)
- National Grid

Non-Members

- ACTION-Housing, Inc.
- BlueGreen Alliance
- Building Envelope Materials
- California Housing Partnership Corporation
- CLEAResult
- Democracy And Regulation
- Economic Opportunity Studies, Inc.
- Environmental Design / Build
- Franklin Energy Services

Call Participants

Non-Members (con't)

- Fresh Energy
- Fruitfull Energy
- Green & Healthy Homes Initiative
- Green Madison
- Holy Cross Energy
- Housing Partnership Network
- Houston Housing Authority
- LINC Housing
- Mercy Housing
- Moen Inc.
- Mpower Oregon
- National Association of Housing and Redevelopment Officials
- National Church Residences
- National Housing and Rehab Association (NH&RA)
- National Housing Law Project
- New Buildings Institute
- NYC Housing Development Corporation
- NYC Mayor's Office of Sustainability
- Stone Energy Associates
- Sustainable Environments Inc.
- TRC Energy Services
- U.S. Department of Housing and Urban Development (HUD)
- Volunteers of America

Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
 - **Thom Amdur**, Executive Director, [National Housing and Rehab Association](#) (NH&RA)
 - **Ravi Malhotra**, Founder and President, [ICAST](#) (International Center for Appropriate and Sustainable Technology), (**Residential Network Member**)
 - **Alan Mileti**, Manager, Energy & Capital Planning, [National Church Residences](#)
- Discussion
 - Are there other examples of programs successfully bringing energy efficiency retrofits to the multifamily, affordable housing sector?
 - What are the challenges of incorporating energy efficiency into multifamily, affordable housing rehabilitation projects? What strategies can help mitigate those challenges?
 - What type of training, follow-up or other interventions can be used to sustain energy efficiency improvements after the work has been done (e.g., training for building managers)? How do programs measure and track success?
 - Are there other questions, best practices, or lessons learned related to multifamily, affordable housing energy efficiency projects that you would like to share?
- Closing Poll and Upcoming Call Schedule

Opening Poll

- Which of the following best describes your organization's experience with multifamily, affordable housing rehabilitation projects?
 - Some experience/familiarity – **58%**
 - Very experienced/familiar – **33%**
 - Limited experience/familiarity – **10%**
 - No experience/familiarity – **0%**
 - Not applicable – **0%**

Better Buildings Residential Network

Better Buildings Residential Network: Connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

Membership: Open to organizations committed to accelerating the pace of home energy upgrades.

Benefits:

- Peer Exchange Calls 4x/month
- Tools, templates, & resources
- Recognition in media, materials
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- Residential Program Solution Center guided tours

Commitment: Provide DOE with annual number of residential upgrades, and information about associated benefits.

For more information or to join, email bbresidentialnetwork@ee.doe.gov

Residential Program Solution Center

Web portal of residential EE upgrade program resources, & lessons learned to plan better, avoid reinventing the wheel.

- BB Neighborhood Program, Home Performance with ENERGY STAR Sponsors+
- Provides:
 - Step-by-step guidance
 - Examples
 - Tools and Templates
 - Quick Links and Shortcuts
 - Lessons learned
 - Proven Practices posts – see the latest on [Tiered Financing](#)
 - Tips
- Continually add content to support residential EE upgrade programs—**member ideas wanted!**



<https://bbnp.pnnl.gov/>

National Perspective:
National Housing & Rehabilitation Association
Thom Amdur, Executive Director

Incorporating Energy Efficiency Into Multi-family, Affordable Housing Rehabilitation Projects

National Housing & Rehabilitation Association



About NH&RA

- Founded in 1971
- Business peer network focused on transaction-oriented education
- Membership includes:
 - Private & Non-Profit Developers/Owners/Managers
 - Lenders
 - Syndicators & Investors
 - Attorneys, Accountants, Consultants & Advisors
 - Market Analysts & Appraisers
 - Housing Finance Agencies & Local Governments



NH&RA Developer Member Profile

- Active developers & owners of LIHTC, HUD-Assisted and/or USDA RD Financed Properties
- Primarily private developers & larger non-profits
- Typical portfolio size approximately 2,000 – 12,000 units
- National footprint with highest density of membership in New England, Mid-Atlantic, Mid-West & California
- Primary delegates typically senior development & finance executives



NH&RA's Preservation Through Energy Efficiency (PTEE) Initiative

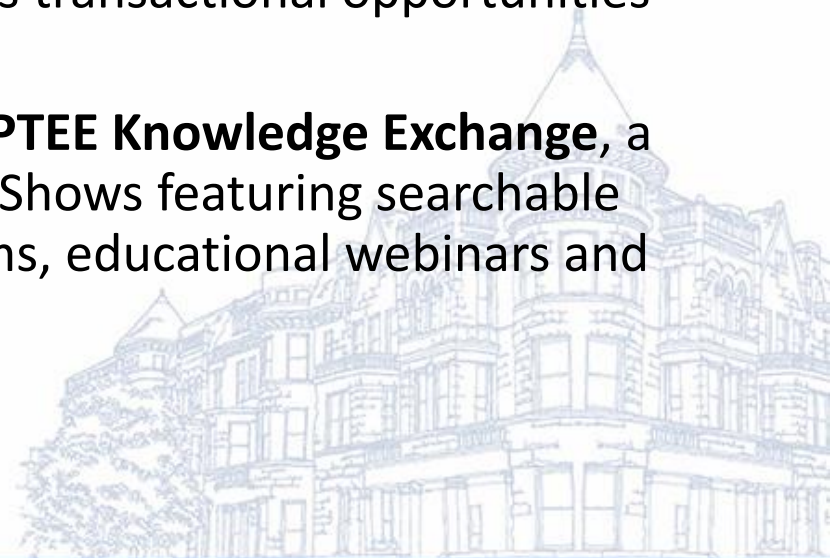
Background

- Effectively managing utility expenditures presents an important business opportunity for affordable housing owners in every stage of the development life-cycle.
- Targeted investments can decrease operating expenses and increase cash flow, open up new fee opportunities, increase effective rents and enhance the residual added value of an entire portfolio.



PTEE Continued...

- PTEE was designed to **empower decision-makers** at affordable housing companies to take immediate **executive actions** that can create portfolio-wide energy and water efficiencies.
- The cornerstone of the initiative are a series of seven regional “**Road Shows**”, convening affordable housing executives, along with technical and financial experts to discuss transactional opportunities around energy and utility efficiency.
- The events are supplemented with the **PTEE Knowledge Exchange**, a dynamic digital companion to the Road Shows featuring searchable online resource center, discussion forums, educational webinars and more...



PTEE Schedule of Events

- Philadelphia, PA – April 3, 2014
- Denver, CO – July 14, 2014
- Minneapolis, MN – September 15, 2014
- Atlanta, GA – October 28, 2014
- Indianapolis, IN – April 9, 2015
- Baltimore, MD – May 7, 2015
- Chicago, IL – September 28, 2015



Understanding The Owner

- Who are the key decision makers? *They are probably developers!*
- Who will be doing the work? *Probably not the developers!*
- Is the owner vertically integrated? To what extent?
- Varsity/Junior Varsity



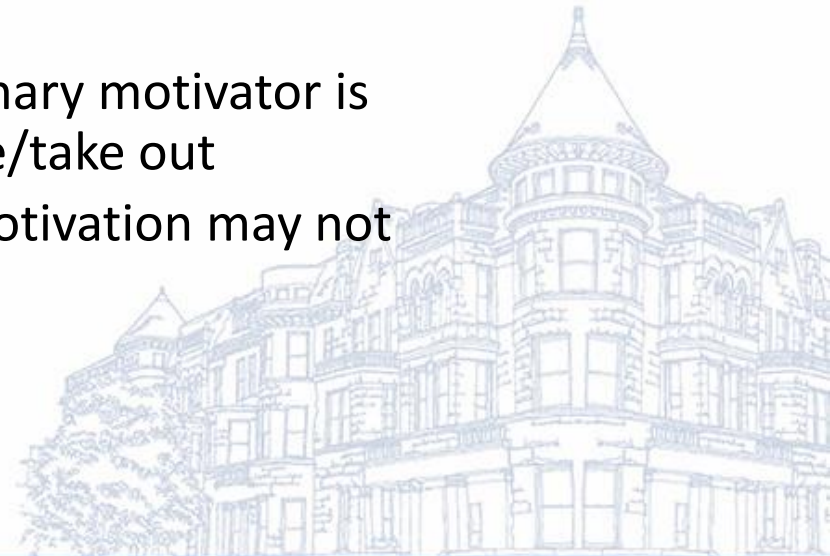
Communicating With Developers

- Transaction-Oriented / Deal Junkies
- Short Attention Spans
- Very wary of vendors
- Peers make the most effective pitch
- Scalable solutions a big plus



Understanding Company Culture

- Customize your pitch to speak to the motivating company culture:
 - Developer/Builder: Primary motivation is developer fee / contracting fee → focus on acquisition or recapitalization opportunities
 - Property Manager: Primary motivator is enhance management fee and cash-flow
 - Owner/Asset Management: Primary motivator is enhancing residual value for sale/take out
 - Non-Profit / Mission: Primary motivation may not be economics



Timing – Capital Events

- Capital events are a major motivator for investments
- It is important to understand the timeline for existing subsidies including LIHTC, Section 8, USDA RD 515, etc...
- You can add value by understanding the programs & requirements you will be layering with (e.g. Fannie/Freddie/FHA/ TEBs)



Challenges of Mid-Stream Retrofits

- Additional value proposition & probably subsidy too
 - Properties with the greatest needs are least likely to be able to afford the investment (i.e. Reserves Depleted b/c of Negative Cash Flow)
 - Properties that are currently performing to budget also need boost to overcome inertia, challenge of obtaining consents, etc...



Internal Capacity Variable

- Size and sophistication of firms in affordable housing highly variable
- Vertical integration not universal
- Is there an institutional mechanism in place to manage the process?
 - Asset management—internal professional asset management still relatively uncommon
 - Facilities management—many not exist if use 3rd party management



General Messaging: Value Proposition

- Focus on the financials and the transactional
 - Creating cash-flow
 - Paying back deferred developer fee
 - Control operating risk
 - Hedging against interest rate and commodities increases
 - Enhancing residual value



General Messaging: NEBs

- NEBs are secondary
- Know your audience and be selective
- Frame NEBs in the context of tangible benefits to the property



Understand Regulatory Barriers

- Affordable housing programs are not one-size-fits-all
- Important to understand similarities and differences between LIHTC, HUD, USDA RD
- It is critical to understand the specific challenges each subsidy brings as well as how they work together
- FLEXIBILITY IS KEY



Understanding External Barriers

- Investor, Lender & Regulatory Consents:
 - Difficult to obtain so savings must be substantial.
 - Flexible programs will create more opportunities
 - Guarantees go a long way
 - Trust-worthy data increasingly important



Is It Worth The Effort?

- Split Incentives
- Utility Allowances
- Commodity Pricing
- Capacity
- Investor Consents



Thank You!

Thom Amdur
Executive Director

National Housing & Rehabilitation Association

Learn more at: <https://www.housingonline.com/about/preservation-energy-efficiency-initiative/>



Lessons Learned:
ICAST (*Residential Network Member*)
Ravi Malhotra, Founder and President



COST EFFECTIVE GREEN REHAB FOR MULTIFAMILY



Multifamily Housing



1. **20%-30% of residential market**
 - ❖ **Subsidized Affordable – HUD, LIHTC, USDA-RD**
 - ❖ **Non-Subsidized Affordable / Market Rate**

2. **Underserved and untapped market**
 - ❖ **Commercial Property but Residential Use**
 - ❖ **Complex Ownership / Management Structure**
 - ❖ **Split-Incentive hurdle**
 - ❖ **Utility Rebate programs driven by Meter/Utility Account Holders**

Why MF Owners are not signing up?

❖ Time Constraint

- Complex Process

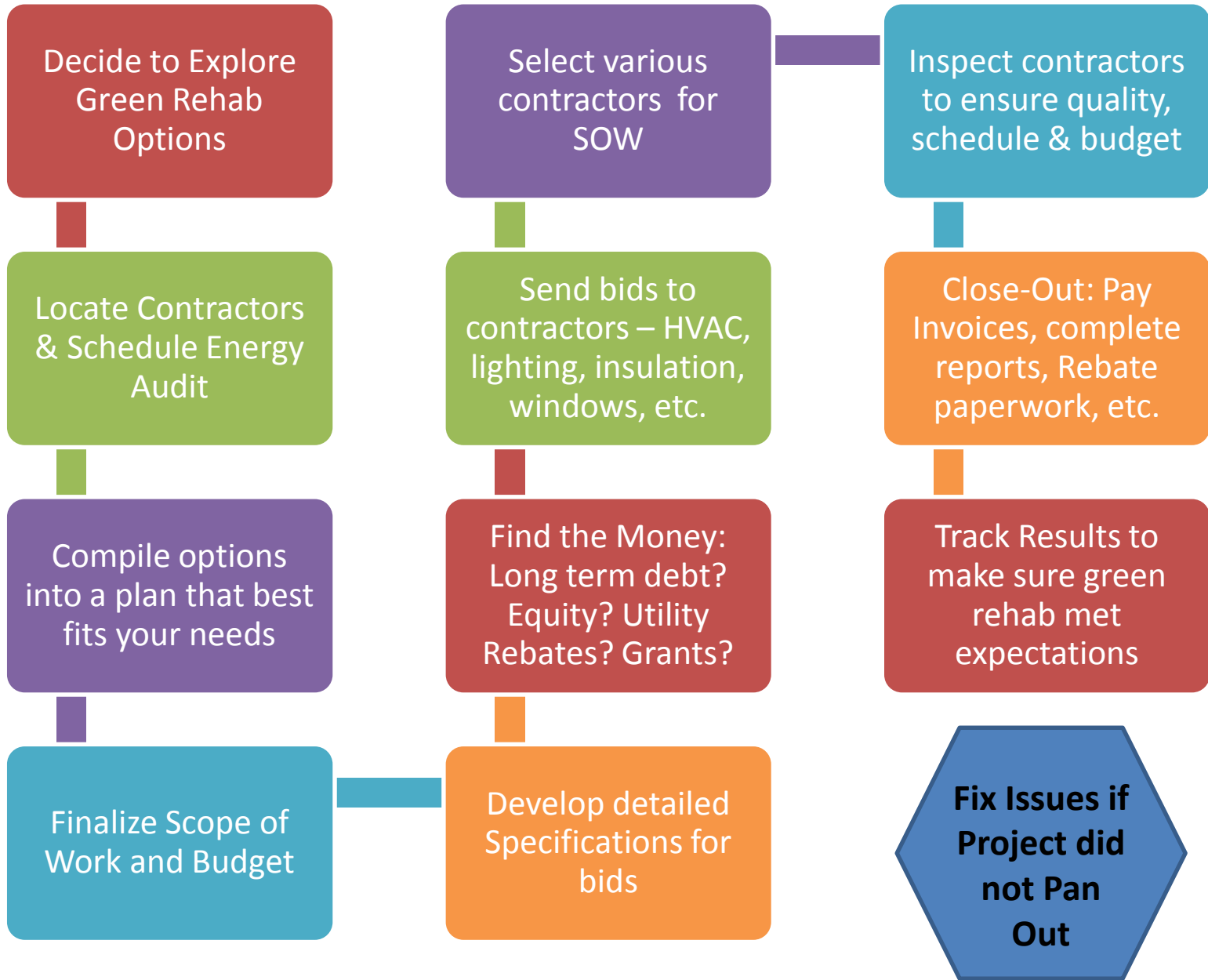
❖ Knowledge

- Regulatory Requirements
- Optimal Solutions
- Pace of Technology Change

❖ Financing

- Does not meet ROI threshold
- Lack of Reserves







By the Numbers



Current Annual Utility Cost	\$100,000
Average 25% Savings due to Going Green	\$25,000
Reduction in O&M Costs from Green Rehab	\$8,500
Increase in Profits due to higher Occupancy and Lower Turn-Over due to Benefits of Greener Property	\$6,500
Total Savings/Yr. i.e. Increase in NOI/Cash Flow	\$40,000
LifeCycle of Green Rehab (in years)	15
Total Savings from Green Rehab	\$600,000
Cost of Capital	10%
Increase in Value of Property	\$400,000

1. Free to MFAH owner

- ✓ Utility Direct Install - Quick and Hassle-Free
- ✓ Grant Funded – WAP, State, Foundation, etc.

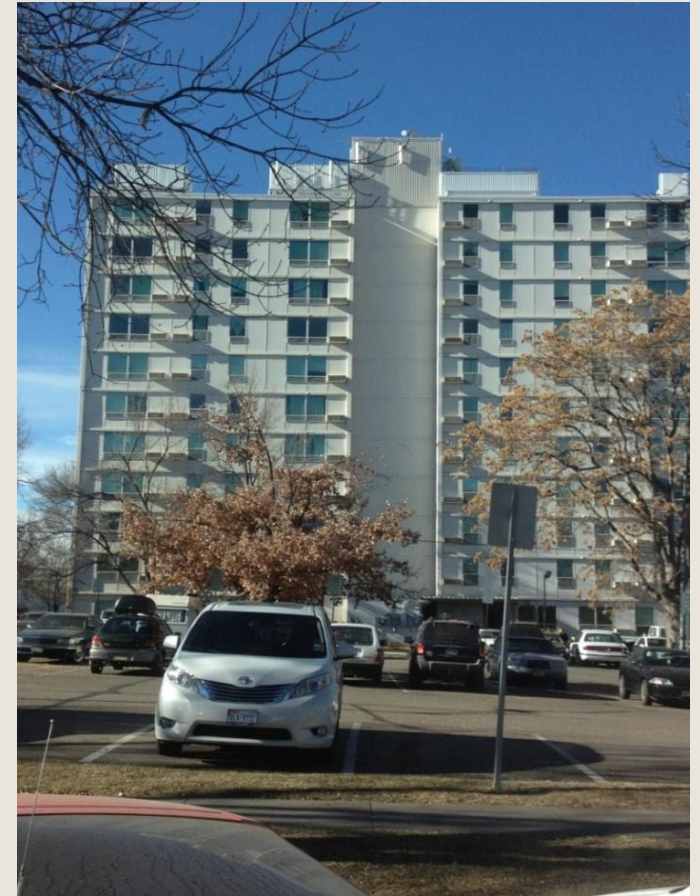
2. One-Stop-Shop

- ✓ Make it hassle-free
 - Oversees entire green rehab
- ✓ Provide relevant information
 - Cost effective ECMs
- ✓ Access to financing options
 - Rebates, Incentives, Grants
 - Debt, EPC, PACE, etc.





- ✓ Portfolio & Property Assessments
- ✓ Design and Development
- ✓ Access to Financing
- ✓ Green Retrofit:
 1. Energy Efficiency and DSM
 2. Renewable Energy
 3. Water Conservation
 4. Indoor Air Quality
 5. Tenant Engagement
- ✓ O&M Training





Service Providers Perspective:

1. Financial viability of Green Retrofit is important
 - **But take a Holistic approach**
2. Leverage utility rebates, grants and incentives
 - **But owner “buy-in” is essential for sustainability**
3. Offer a comprehensive, hassle-free, and cost-effective program
 - **Keep it simple and Make it easy, for the owner/manager**

Whole is Greater than Sum of Parts



Questions?



THANKS

<http://www.icastusa.org/>

Program Experience:
National Church Residences
Alan Mileti, Manager, Energy & Capital Planning



National Church Residences
EXCELLENCE THAT TRANSFORMS LIVES

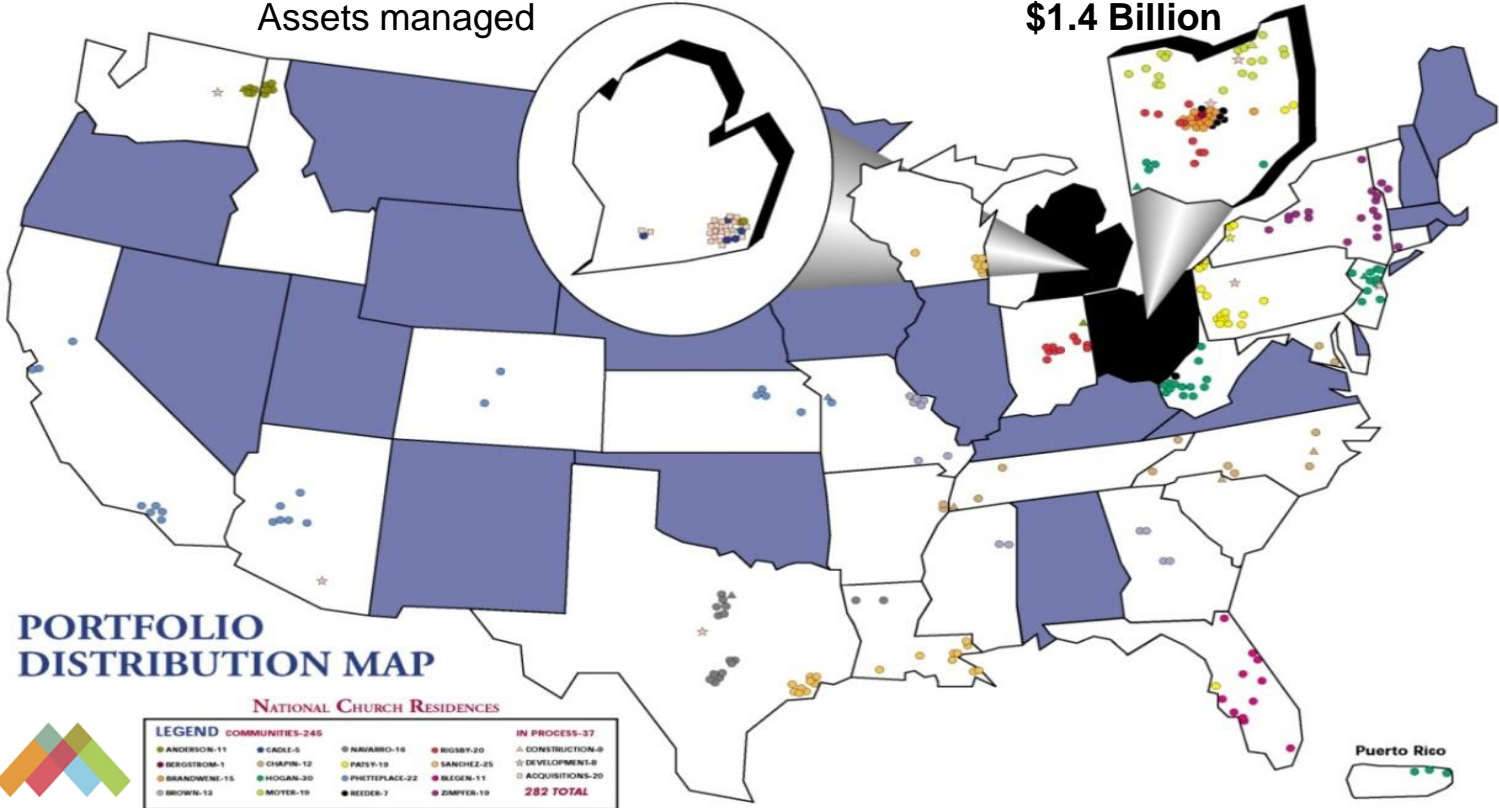
Incorporating Energy Efficiency into Multifamily, Affordable Housing Rehabilitation Projects

Alan Mileti
Manager; Energy & Capital Planning
National Church Residences
September 24th, 2015

National Church Residences Portfolio Overview

of properties in US and Puerto Rico
 # of states with properties
 # of residents served
 Assets managed

350
29
24,000
\$1.4 Billion



National Church Residences Utility Data Management



CASS receives invoice from vendor

Invoice is keyed for data, converted to electronic format, and a check is mailed to the vendor



CASS provides a data feed to Ecova

This includes bill image, consumption, dollars spent, and more

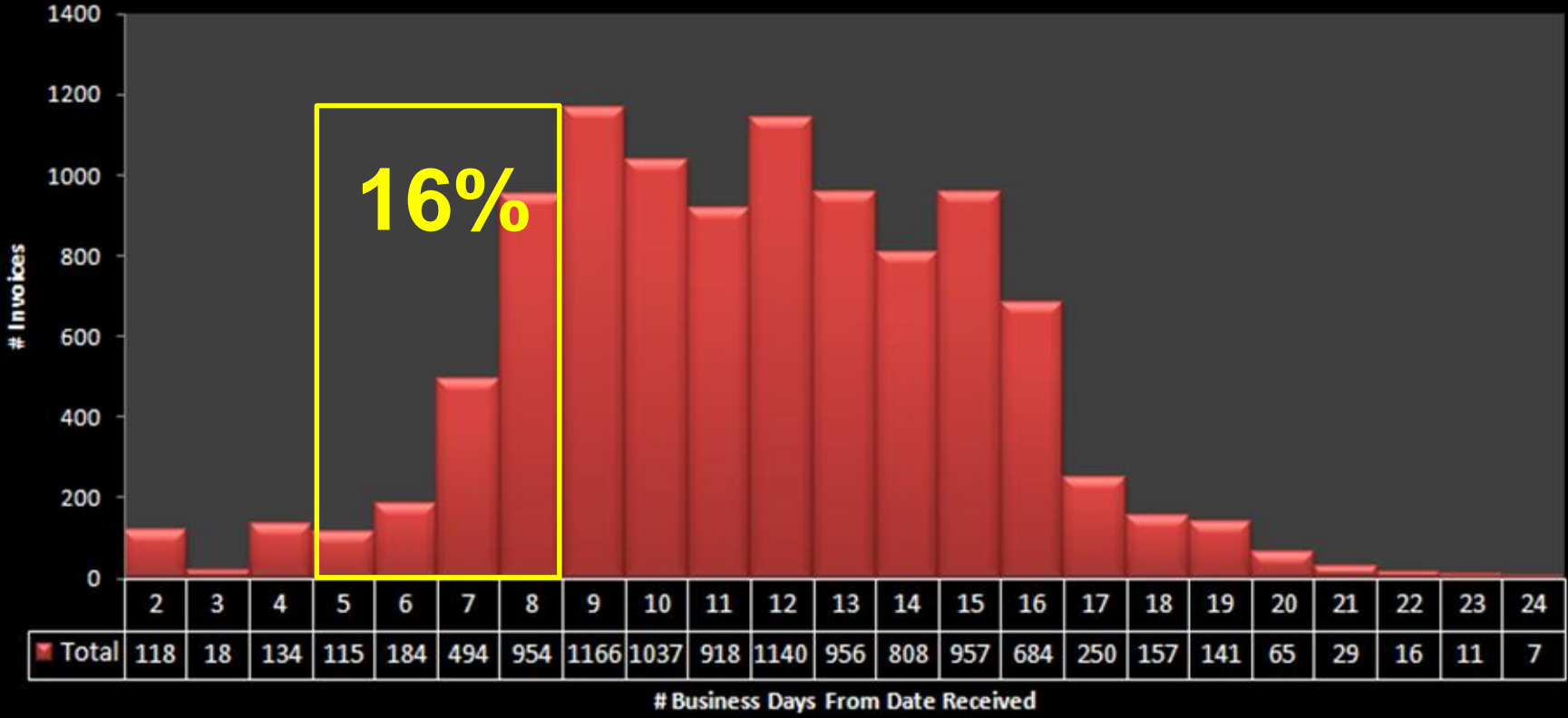


Ecova provides a clean view of the CASS data which allows for data reporting and auditing services

This is the end product for our utility purposes

National Church Residences Invoice Management Savings

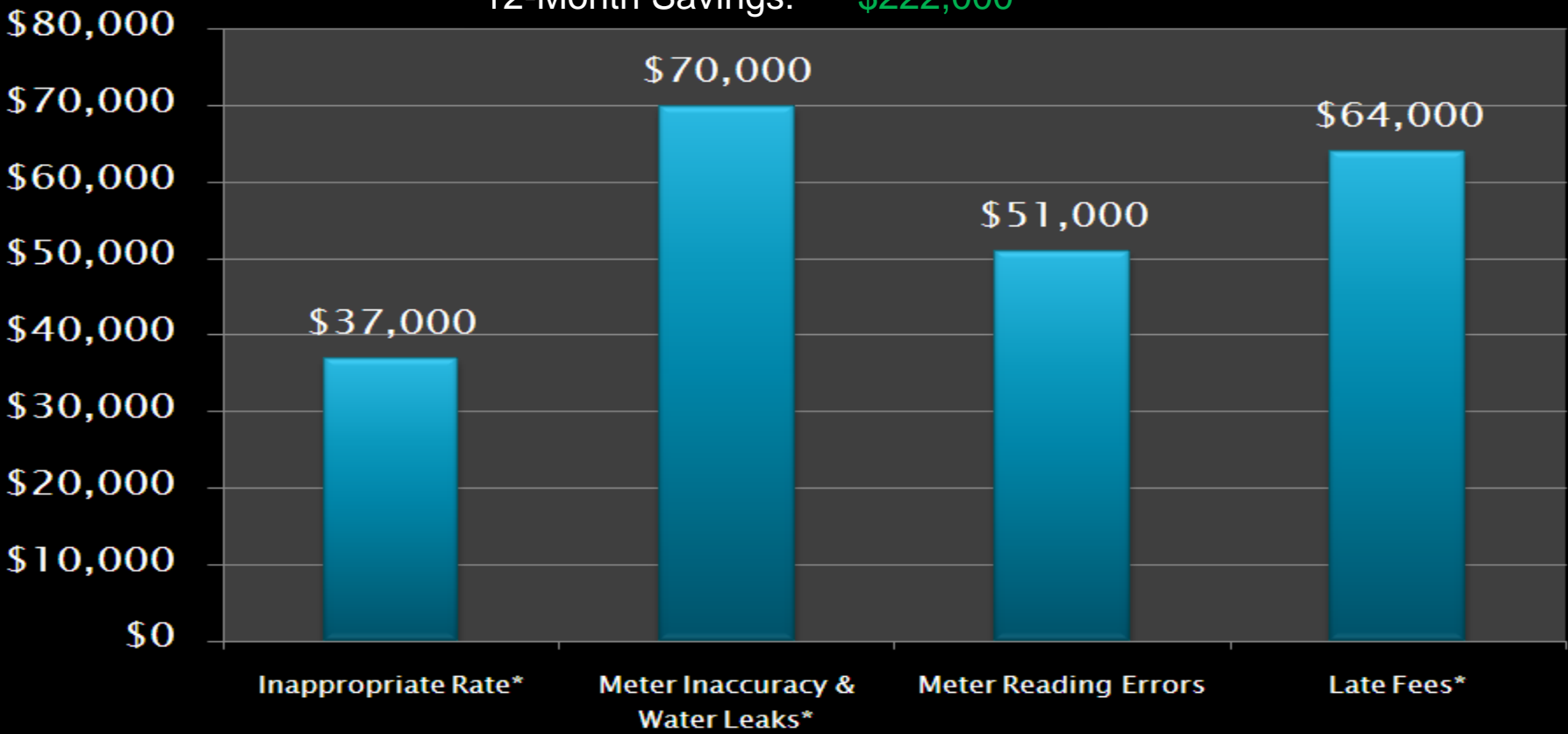
Business Days to Pay (2009)



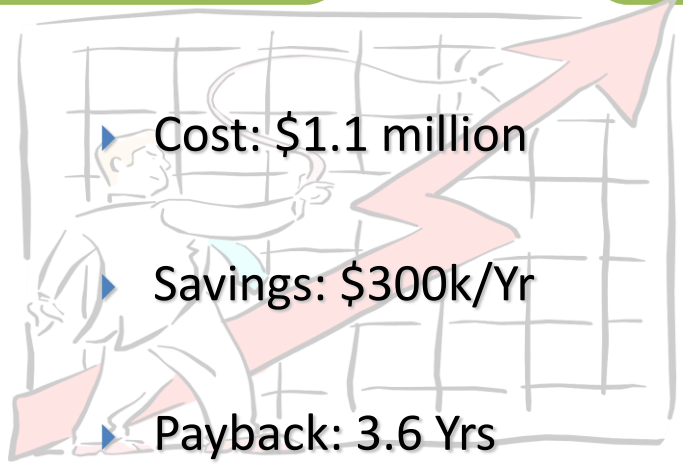
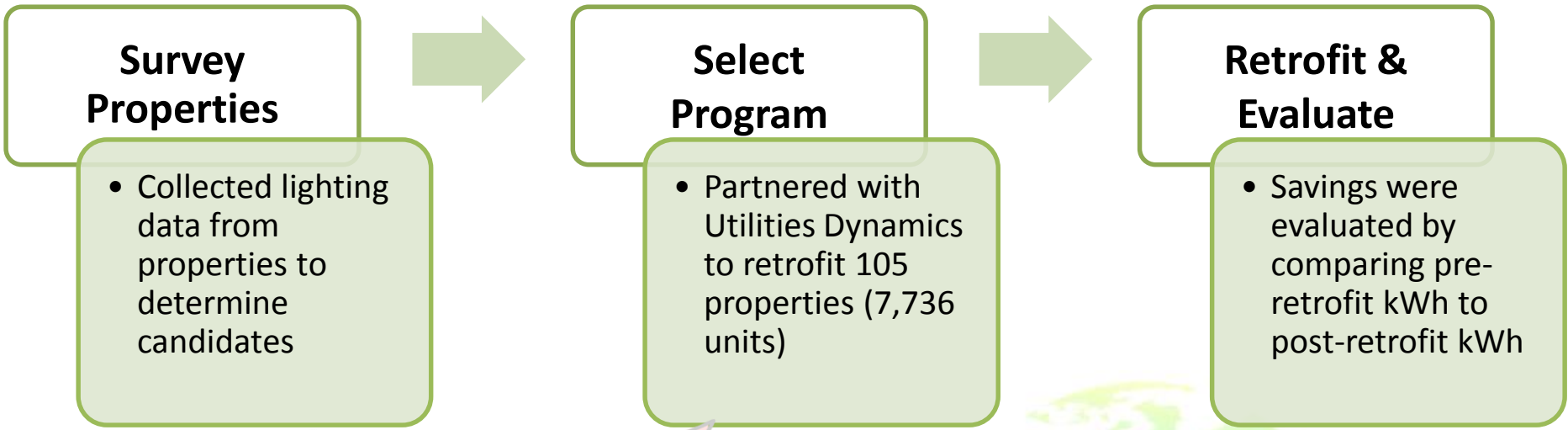
Business Days From Date Received

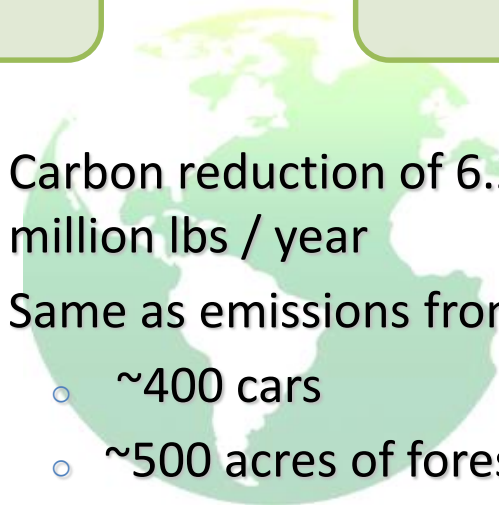
National Church Residences Invoice Management Savings

Cost of Services: **\$75,000**
12-Month Savings: **\$222,000**



National Church Residences Lighting Retrofit



- 
- ▶ Carbon reduction of 6.2 million lbs / year
 - ▶ Same as emissions from
 - ~400 cars
 - ~500 acres of forest

National Church Residences Energy Benchmarking

NCR Responsibility for Tenant's					
	General Use	Water Heating	Space Heating	Space Cooling	NCR Properties
1	Y	Y	Y	Y	100
2	Y	Y		Y	0
3	Y		Y	Y	0
4	Y			Y	0
5		Y	Y	Y	19
6		Y	Y		50
7		Y		Y	0
8		Y			65
9			Y	Y	0
10			Y		3
11				Y	0
12					93

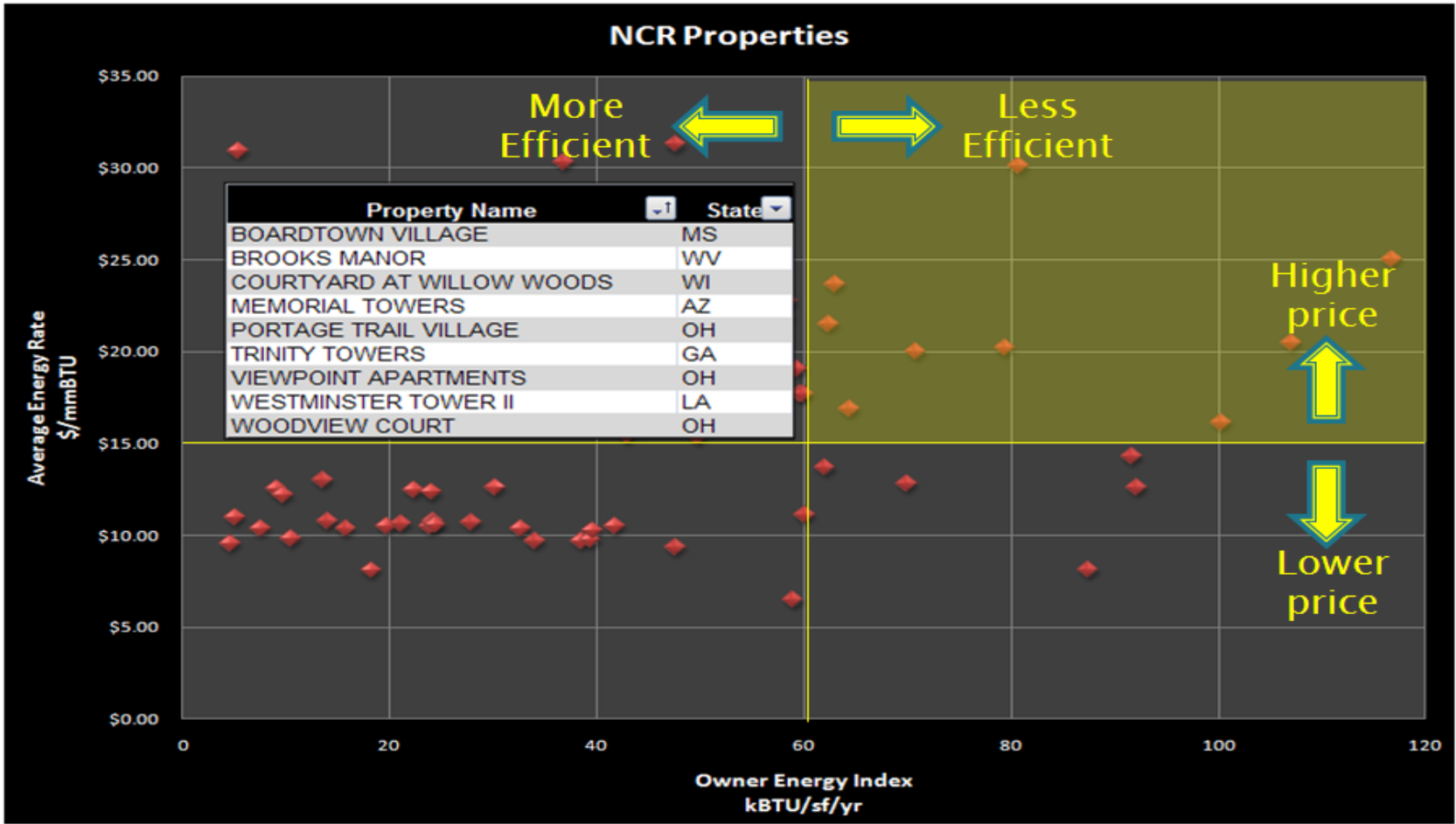
Using utility data and property profile information, portfolios can be benchmarked for energy

There are theoretically 12 property profiles depending on what tenant energy is provided by the owner as opposed to the tenant

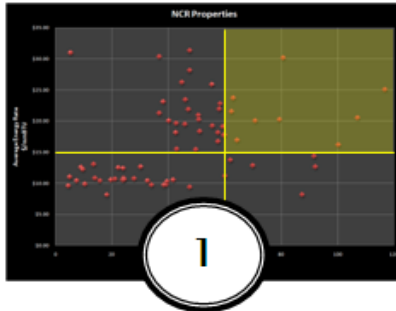
However, NCR properties fall into 6 profiles

NCR's benchmarking will be based on the 6 profiles to ensure appropriate comparison of properties

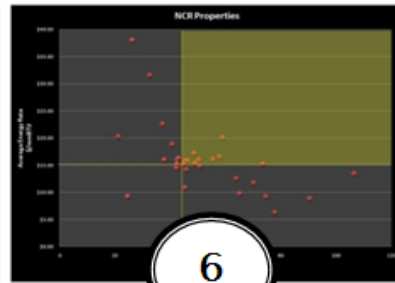
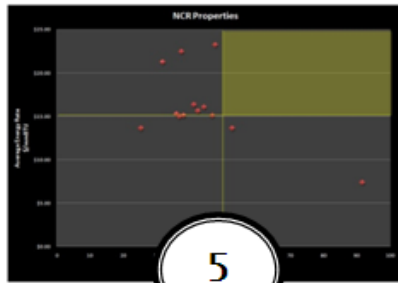
National Church Residences Energy Benchmarking



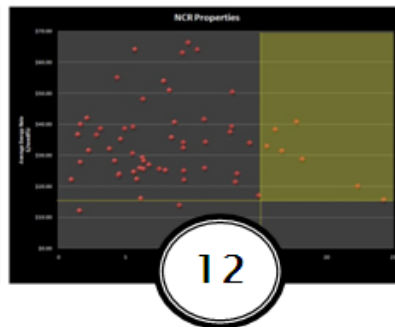
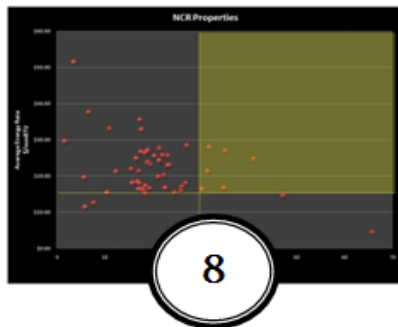
National Church Residences Energy Benchmarking



- Once benchmarking has been completed, energy outliers can be targeted for energy initiatives



- The best way to identify effective energy initiatives with a timely payback is to have an energy audit performed on the appropriate properties

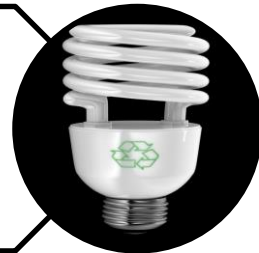


- HOWEVER, it is highly recommended the auditing company commit to performing retrofits so that savings can be tied directly to the audit results

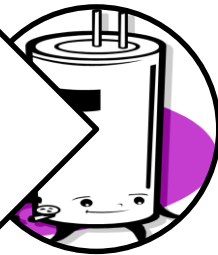
National Church Residences Energy Benchmarking

Typical Recommendations

- Lighting Retrofits
- Refrigerator Replacements
- Water Conservation Measures



- HVAC Tune-Ups/Upgrades
- Water Heater Replacements




- Insulation Upgrades
- Air-sealing/Weather-stripping
- Door Upgrades



Energy Audit
Memorial Towers

Prepared for:

National Church Residences
2335 North Bank Drive
Columbus, OH 43220




Memorial Towers
1405 South Seventh St., Phoenix, AZ

Memorial Towers
1405 South Seventh Street
Phoenix, AZ 85007

EBI Project No. 15110035

Assessment Date: October 10, 2011
Report Date: December 5, 2011




Creating Value for Your Business

ENERGY CONSERVATION MEASURES								
	SAVINGS (KTS/YEAR)	SAVINGS (\$/YEAR)	PAYBACK (YEARS)	REMAINING USEFUL LIFE (YEARS)	EXPECTED USEFUL LIFE (YEARS)			
	Therms	\$475	0	NA	NA			
	Gal	\$1,768						
	kWh	\$7,365	0.4	NA	5			
	Therms	\$811	1.9	NA	25			
	kWh	\$4,165						
	Therms	\$28	4.2	0	10			
	kWh	\$62						
	kWh	\$328	5.3	NA	15			
	kWh	\$69	7.9	NA	15			
	kWh	\$294	8.8	NA	15			
	kWh	\$2,969	12.0	0	15			
	kWh	\$1,241	18.2	NA	20			
10	Insulate Roof	\$55,000	\$0	11.3%	Therms \$432	31.8	NA	30
					kWh \$1,094			
11	Domestic Hot Water Boilers	\$40,600	\$24,000	1,250	Therms \$1,262	48.0	3	25
12	Condensing Boiler	\$63,000	\$31,680	1,167	Therms \$1,178	53.3	4	25
					kWh \$6,385			
Totals		\$154,148			183,089			
					Therms \$13,577			
					Gal 180,999			
					Gal \$1,768			

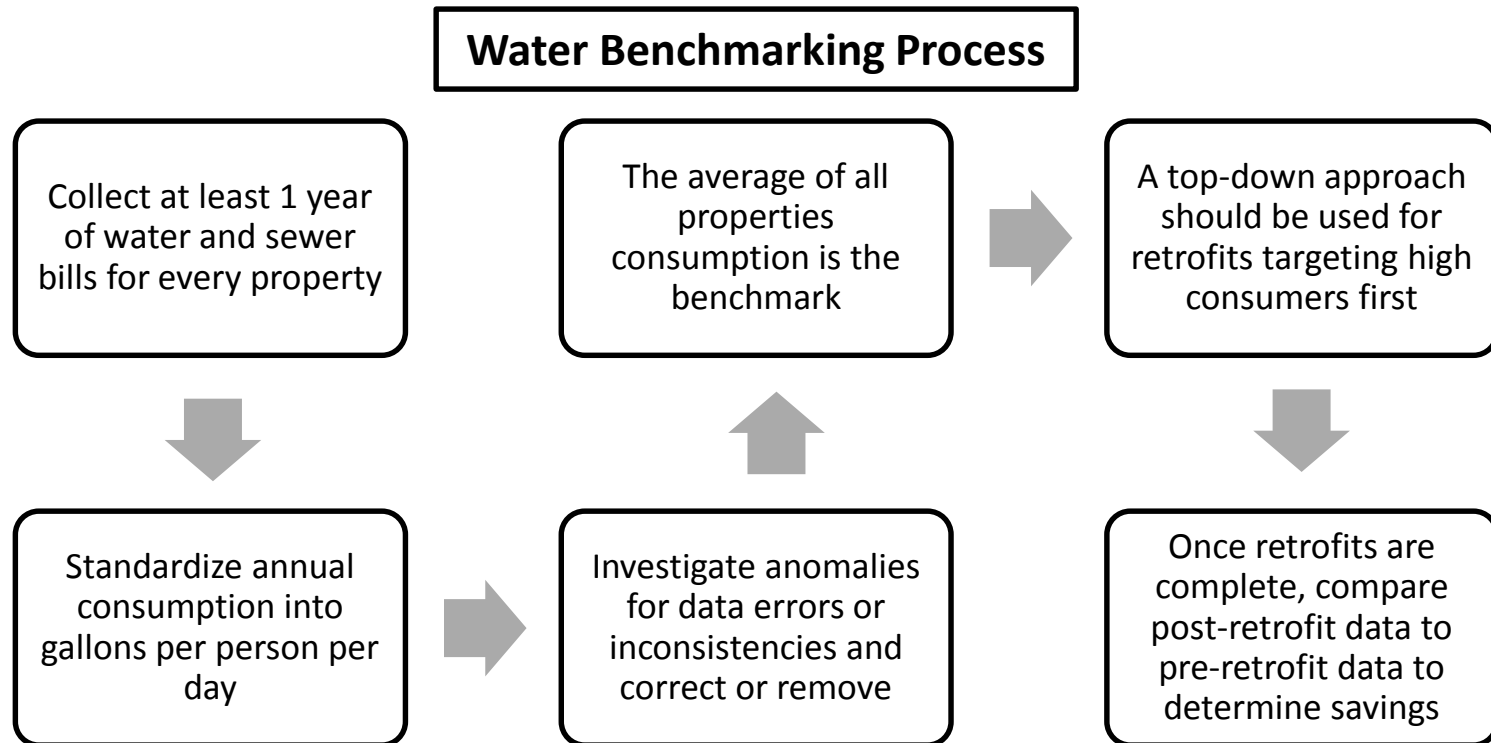
The following table includes a single recommended measure, ECM #13, that has been removed from Table 2 for accuracy of the water savings totals at the bottom of Table 2. The water savings associated with ECM #13 is an estimate that would not be appropriate to be mixed with ECMs contained in Table 2 that are calculated with a higher level of precision. Also, ECM #13 has an unknown initial cost, payback, remaining useful life, and expected useful life.

TABLE 3: SUMMARY OF ENERGY CONSERVATION MEASURES - OTHER									
ECM #	ENERGY CONSERVATION MEASURE	COST (\$)	AVOIDED REPLACEMENT CAPITAL COST (\$)	SAVINGS (UNITS / YEAR)	SAVINGS (\$/YEAR)	PAYBACK (YEARS)	REMAINING USEFUL LIFE (YEARS)	EXPECTED USEFUL LIFE (YEARS)	
13	Detect and Repair Water Leaks	Unknown	Unknown	1,760,000	Gallons	\$17,195	Unknown	NA	NA

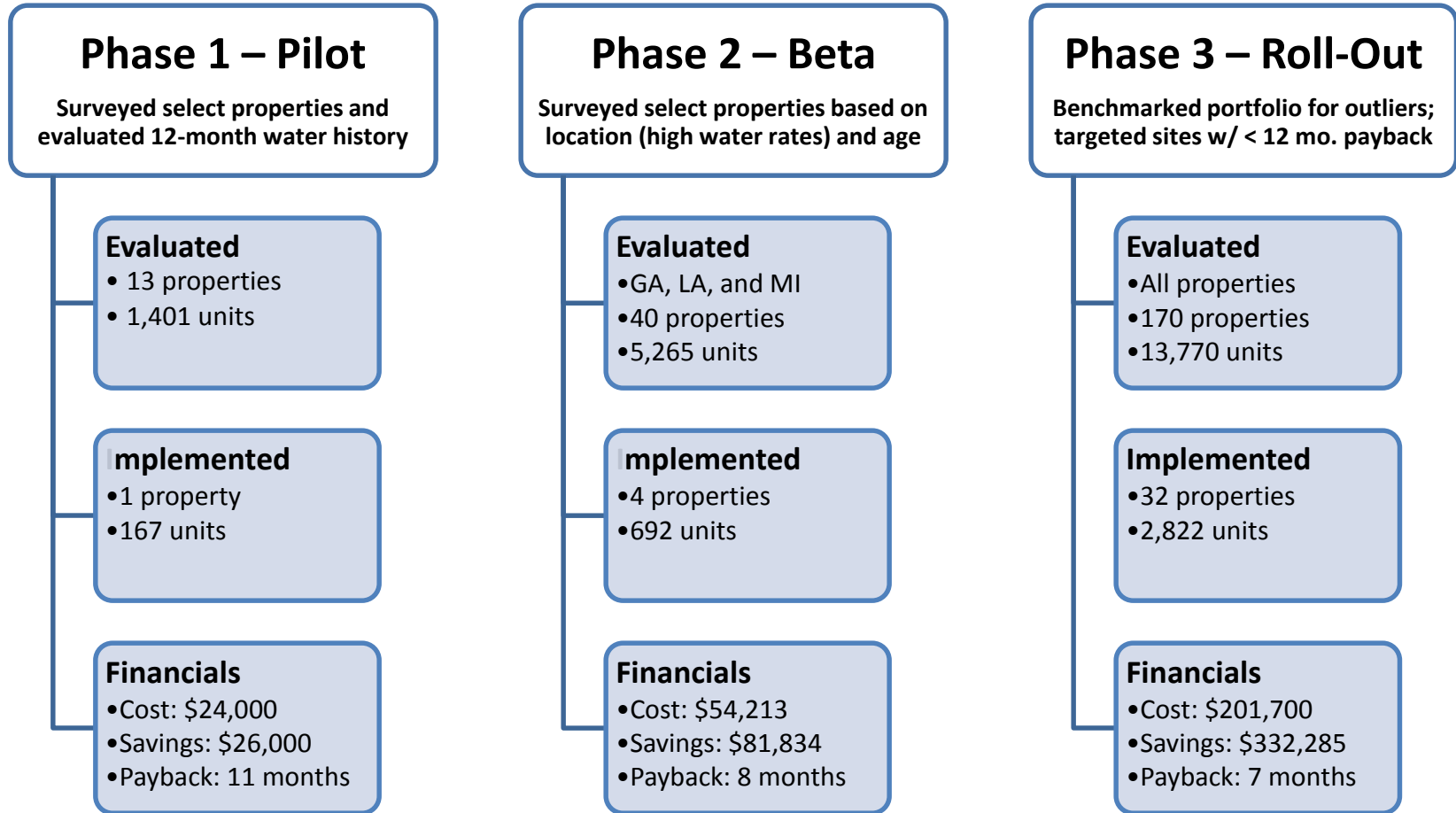
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National Church Residences Water Conservation Initiative

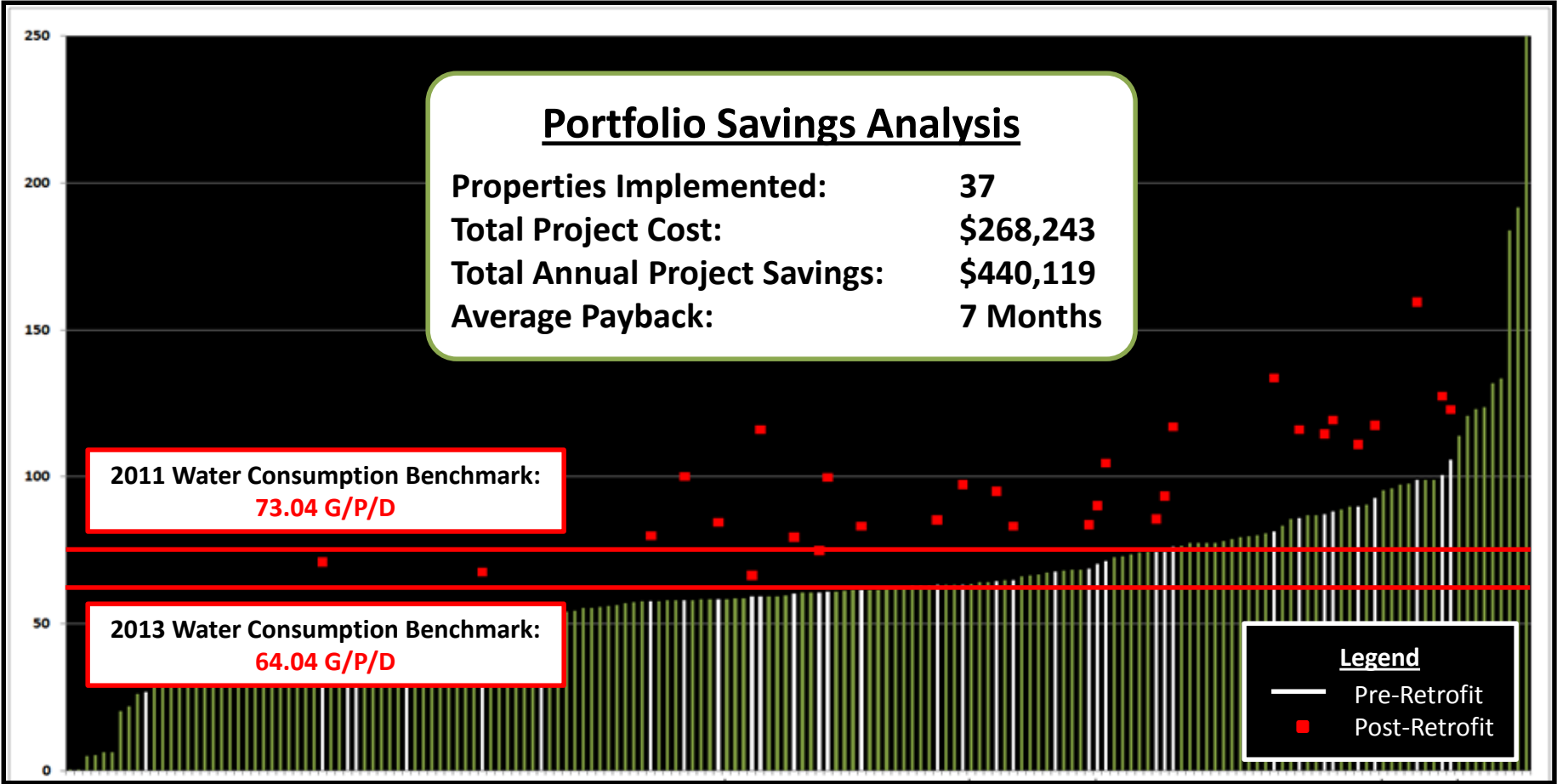
In order to most effectively tackle water efficiency initiatives, it is best to target high consumers within a portfolio. Benchmarking is critical in identifying these properties and ensuring that both savings and water reduction are being maximized.



National Church Residences Water Conservation Initiative



National Church Residences Water Conservation Initiative



National Church Residences

Energy Policy & Procedure Guide



Energy Data Management Systems

- New property/acquisition steps
- Cass/Advantage IQ process

Utility Accounts

- Setting up new accounts
- Commodity procurement policy

Building Maintenance

- National vendor policies
- Equipment standards


Emergency Procedures

- Emergency generators
- Gas leaks/water leaks

Renewables

- Solar Energy
- Wind Energy

National Church Residences



2011 Energy Policy & Procedures Guide (PPG)

Alan Mitani
Utility & Procurement Coordinator
Engineering, Energy, & Procurement Services

directly to the survey:
www.cass.com/Forms/01093272/NUVU
and answer the questions appropriately to

at Policies

be followed when a tenant enters a new leasing agreement in order to provide NCR with the by consumption and ensuring compliance with

PPG

rent tenant lease renewal, it is mandatory that the form that would provide NCR the ability to data from a given utility vendor. A sample of the found on (insert page number).

ization Form are as follows:

form should be printed on the letterhead of the leasing or renewing an

form should only be signed by the person who has if name. If multiple tenants have the utilities in g tenant complete and sign the form.

sign their first and last name, and also print their mber, and the date which the form was signed.

Form should be signed by the current property

rent tenant lease renewal, it is mandatory that the eSMART brochure, which was developed by the ent Services team at NCR to provide information ilities and maintain a clean and healthy living

environment.

Brochures can be ordered as needed from the NCR Central Office, and they are available in both English and Spanish. Directions for ordering the LiveSMART brochures are as follows:

following steps:

II. **Utility Account Set-up**
Utility accounts should be set up through the following steps:
This will be necessary for Engineering, Energy, and Procurement Services to be set up by doing the following steps:

Accounts to be paid by NCR are:

1. Certain accounts for purposes of **setting up the POWER BY PROPERTY** program, containing utility data, and identifying sites where energy initiatives are attractive. The characteristics of accounts to be paid by NCR Central Office are:
 - Mass-metered - serving entire building or common areas
 - Large expense - averaging \$100/month or higher
 - Leasing offices - paid at NCR Central Office discretion
2. When setting up a utility account to be paid through the NCR Central Office, please change the billing address only to the following:
NCR MS 96
P.O. Box 182633
Columbus, OH 43218

team has entered into services to maintain utility manage the major utilities (bearing the responsibility on payment and processing and conveniently only 15 er, Arlington, Ohio). CASS y invoices nationwide and et as maintaining last fees in the given fees.

utility vendor to the CASS R accounts. The CASS P.O.

NCR MS 96
P.O. Box 182633
Columbus, OH 43218

1. Invoices sent to the P.O. Box are scanned for data retrieval and then paid. The utility data is key-stroked and scanned for any errors.
2. The utility data is sent to a value-added service provider (see Advantage IQ (insert section number)) which allows a variety of different analyses to be performed.

Thank You

Alan Mileti

Manager; Energy & Capital Planning

National Church Residences

nationalchurchresidences.org

Discussion Questions

- Are there other examples of programs successfully bringing energy efficiency retrofits to the multifamily, affordable housing sector?
- What are the challenges of incorporating energy efficiency into multifamily, affordable housing rehabilitation projects? What strategies can help mitigate those challenges?
- What type of training, follow-up, or other interventions can be used to sustain energy efficiency improvements after the work has been done (e.g., training for building managers)? How do programs measure and track success?
- Are there other questions, best practices, or lessons learned related to multifamily, affordable housing energy efficiency projects that you would like to share?

Discussion: Challenges to Driving Demand for Improvements in the MF/Affordable Sector

- If management pays the utilities or if the cost of energy is particularly high, properties will be more receptive to investing energy efficiency improvements. However, different rental subsidies to tenants can also impact building management and tenant demand.
- For subsidized housing programs, utility savings are absorbed by the U.S. Department of Housing and Urban Development (HUD) and do not benefit the property owner or tenant.
 - In these programs, HUD pays the difference between the rent level, including the estimated utility costs, and the tenant's contribution, determined by a percentage of their income.
 - When EE improvements lower energy consumption, tenants will receive a smaller utility allowance and thus may have to pay a higher rent equivalent to the utility costs savings.
- External investors in affordable properties are also not always interested in creating savings opportunities because it can decrease the investor yield.
- Focus your program's efforts on properties where the savings can be monetized.

Discussion: Strategies to Increase Demand and Maintain Energy Savings

- Direct install programs are easy ways to engage tenants and get the low-hanging fruit of energy savings as they are quick, straightforward, and require no or little financial commitment from tenants or building management.
- Bigger approaches and whole building retrofits require management buy-in and can be more complicated.
 - There are not many examples of whole building retrofits in the affordable, multifamily housing sector, so management may find the investment risky.
 - A pay-for-performance contract could be one way to mitigate risk.
- Energy savings will only be realized if retrofits are well-operated and maintained.
 - Finding operations and maintenance (O&M) staff qualified to operate these energy management systems can be challenging. Additionally, building managers need on-going training in O&M. Industry turnover is high, so follow-up or a maintenance contract may be needed.

Closing Poll

- After today's call, what will you do?
 - Seek out additional information on one or more of the ideas – **46%**
 - Consider implementing one or more of the ideas discussed – **23%**
 - Make no changes to your current approach – **23%**
 - Other (please explain) – **8%** (*build information into future program and guidance design*)

Please send any follow-up questions or future call topic ideas to:
peerexchange@rossstrategic.com

Peer Exchange Call Series

Beginning in October, we will hold one Peer Exchange call every Thursday from 1:00-2:30 pm ET.

This is a change from the current call schedule.

Calls cover a range of topics, including financing & revenue, data & evaluation, business partners, multifamily housing, and marketing & outreach for all stages of program development and implementation

Upcoming calls:

- **October 8:** On-Bill Financing: Reducing Cost Barriers to Energy Efficiency Improvements (201)
- **October 15:** You Are My Sunshine: Integrating Residential Solar and Energy Efficiency (301)
- **October 22:** Programs and Contractors – Top Tips for Successful Relationships! (101)
- **October 29:** Ghosts in the Attic – Horror Stories from the Field (What to Do When Things Go Wrong) (201)

Send call topic ideas to peerexchange@rossstrategic.com