

# Better Buildings Summer Webinar Series

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# Innovative Energy Efficiency Financing in Public Housing

September 22, 2020

3:00 – 4:00 pm EDT



U.S. DEPARTMENT OF  
**ENERGY**



## Josh Geyer

Office of Environment and Energy

U.S. Department of Housing and Urban Development

# Better Buildings Challenge – Multifamily

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## 91 partners:

- 35 Public Housing Authorities (PHAs)
- 7 of the 10 largest PHAs in the country

## Partners:

- Commit to improve the energy efficiency of their portfolios by 20 percent over 10 years
- Receive utility benchmarking technical assistance
- Share energy performance data annually



<https://www.hudexchange.info/programs/better-buildings-challenge/>

# Agenda

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**1** Opening poll questions

**2** 3 presentations, each followed by 5 minutes of Q & A

**3** Closing poll

**4** Wrap up

# Today's Presenters

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**JoAnn Sutton**  
Manhattan Housing Authority



**Stephen Cea**  
Jersey City Housing Authority



**Tina Miller**  
Cambridge Housing Authority

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JoAnn Sutton

Manhattan Housing Authority



# **Manhattan Housing Authority**

Manhattan, Kansas

Apartment Towers

88 Unit Highrise Rehab Project

# About MHA

## PUBLIC HOUSING

202 Units of Public Housing

60 Units of Managed Mixed Finance (PH/LIHTC)

## SECTION 8 HOUSING CHOICE VOUCHER

197 Baseline HCV

55 HUD-VASH

25 Family Unification Program (FUP)

# Overview of Project

- o **Building constructed in 1973**
  - o 55 Studio Apartments
  - o 33 One-Bedroom Apartments
- o **Mold Discovered in Building in 2013**
  - o Building also contained asbestos in ceilings and tile floor glue



# Funding Strategy

- Applied for Emergency Capital Fund Grant in FFY 2014 - \$6.2 million
  - ✓ HUD Approved \$5.4 million
  - ✓ HUD would not approve replacement of windows, a large part of the problem
  - ✓ HUD required replacement of HVAC system with same 2-pipe type system with Emergency CFP Grant
- MHA was required to use Operating Reserves and Available CFP Funds for project-related expenses prior to approval of the Emergency CFP Grant:
  - ✓ Tenant Relocation
  - ✓ Mold Testing,
  - ✓ Engineer Estimate Fees
  - ✓ Etc.

# Gap Funding

## o Insufficient Funds to Complete the Project

- o HUD eventually agreed to fund domestic, storm sewer water lines from Emergency CFP Grant

## o Energy Performance Contract

- o \$719,000 in EPC funds to cover the cost of upgrades to HVAC (cost difference for 2 pipe system vs heat pump system), lighting retro-fits, water saving devices
- o Lighting and water saving retro-fits
- o New refrigerators

# Innovative Funding Strategy

## Replacement Housing Factor Grant Funds (Now DDTF)

Requested Waiver from HUD to use RHF for Capital Improvements (Approved)

HUD Granted Extension Obligation & Expenditure Dates

Total Impact over \$480,000

## Recoverable Advance Agreement with City of Manhattan, KS

City of Manhattan provided \$1 million in advanced Capital Funds

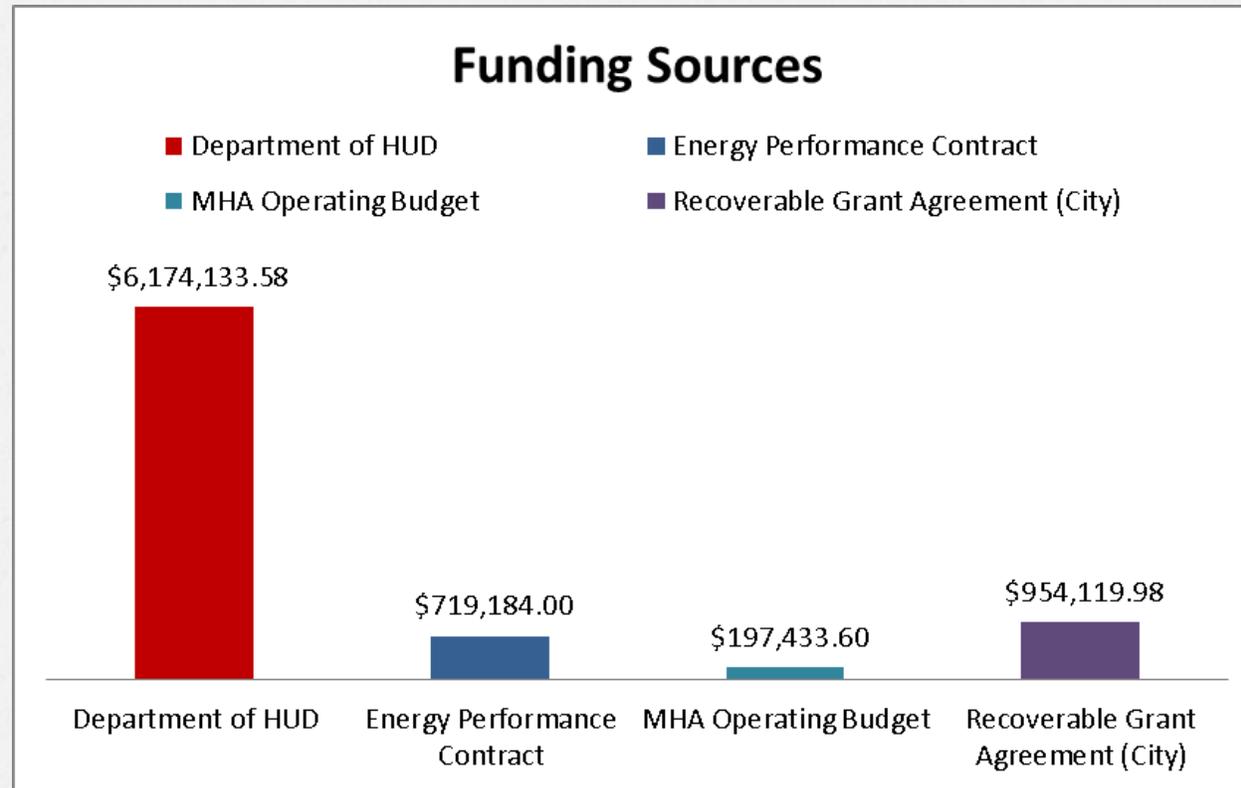
City issued bonds to fund the advance

Pay back over 30 years

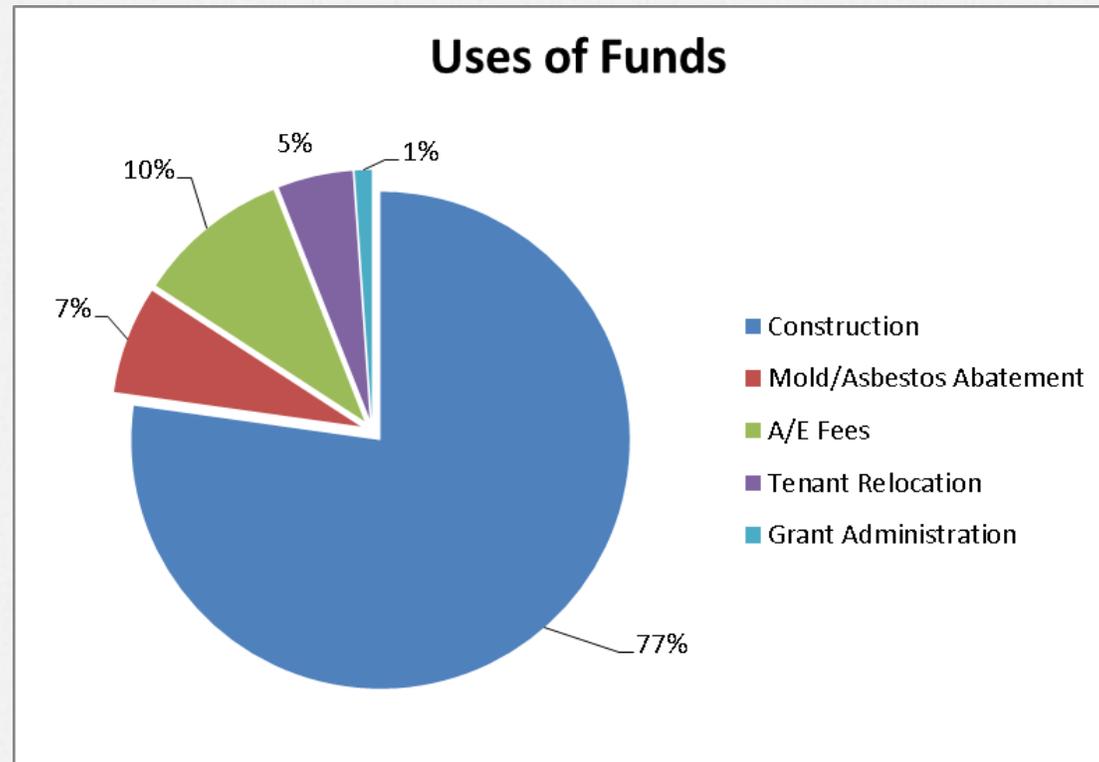
No collateral

Annual Payment \$62,000

# Project Funding Sources



# Uses of Funds



# Q & A



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Web: [www.mhaks.com](http://www.mhaks.com)

Submit Questions  
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Stephen Cea

Jersey City Housing Authority



**Jersey City**

**Housing Authority**

Building Communities...Creating Opportunities...Transforming Lives

Innovative Energy Efficiency Financing in Public Housing

# ENERGY EFFICIENCY GOALS

- JCHA - 2<sup>nd</sup> largest Housing Authority in NJ
- 7,000 affordable housing units
- 2400 Public Housing units and 4600+ units in Housing Choice Voucher Program
- Sustainability Plan established in 2008
- JCHA joined BBC in 2014
- JCHA met BBC goal within 6 years

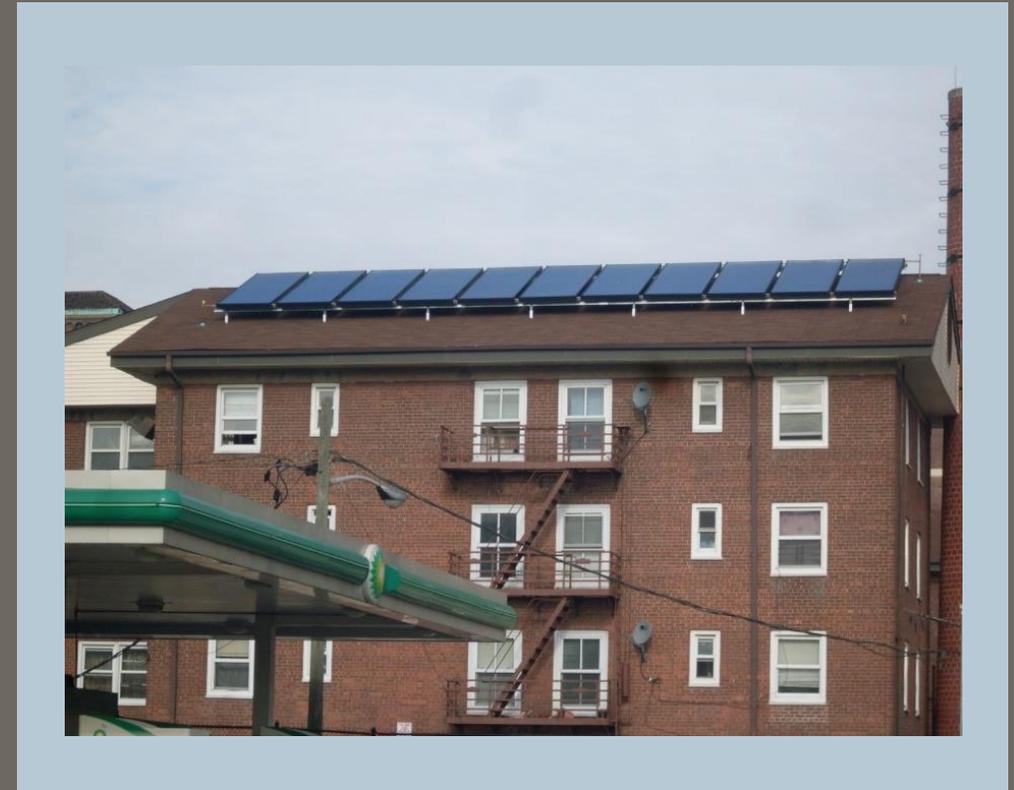


Image by JCHA of Holland Gardens Solar Panels

# BARRIERS TO ACHIEVING GOALS

- Aging Infrastructure & Outdated Mechanical Systems
- Financing/Funding Barriers
- Regulatory Barriers
- Force Majeure
- Resident Quality Of Life



Image by JCHA of Booker T. Washington Apts. Boiler Rooms

# FINANCIAL OPPORTUNITIES AVAILABLE TO PHAs

## Federal Opportunities

- Rental Assistance Demonstration (RAD)
- Capital Fund Financing Program (CFFP)
- Federal Emergency Management Agency (FEMA)
- Coronavirus Aid, Relief, and Economic Security Act (CARES Act)

## State Funding

- New Jersey Housing Mortgage & Finance Agency

## City & Local Funding

- Affordable Housing Trust Fund
- Local Non-Profit Organizations

## Energy Partnerships

- Energy Performance Contract (EPC)

## Low Income Housing Tax Credit Partnerships



# INNOVATION & PLANNING STRATEGIES

- SWOT Analysis
- Project Management Approach
- Cost Analysis & Feasibility
- Collaboration
- Negotiation



Image by JCHA of Berry Gardens

## FINANCIAL STRATEGIES

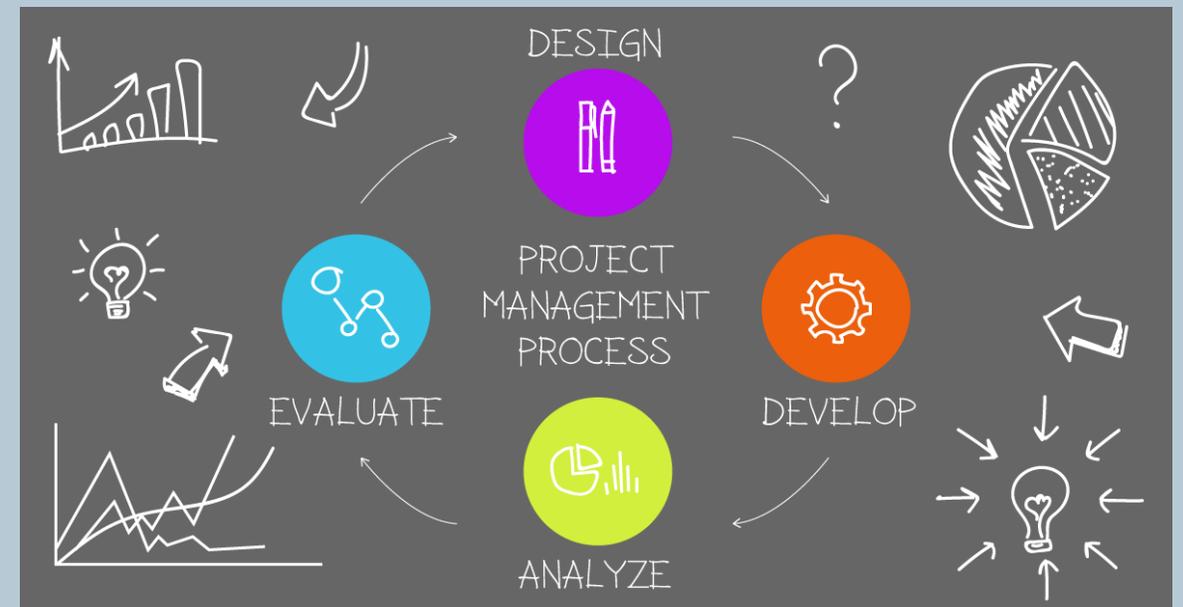
- EPC with Siemens (15 year term \$8.35M)
- Refinancing of EPC Loan with Capital One
- Sandy CDBG Disaster Relief FRM
- New Jersey Clean Energy Program
- Jersey City Affordable Housing Trust Funds
- CFFP/ARRA
- Local Non-Profit Energy Assistance Grants



Image by JCHA of Holland Gardens Solar Hot Water Heating System

# REPLICABLE STRATEGIES & NEXT STEPS

- Iterative Process
- Strategic Planning
- Stakeholder Engagement
- Funding Source Research & Analysis
- Identify & Establish Partnerships



# SUMMARY & QUESTIONS

## COLLABORATION IS KEY!

- Each JCHA Department and Technical Advisor approaches energy from a different perspective.
- Engineers are concerned with physical attributes of energy conservation.
- Accountants are focused on costs and savings.
- Operations Managers consider maintenance and operation of equipment.
- The various departments at the JCHA take into account all aspects of energy conservation utilizing an integrated project management approach.

QUESTIONS?



# Q & A



Contact Information:

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Director of Development & In-House Counsel

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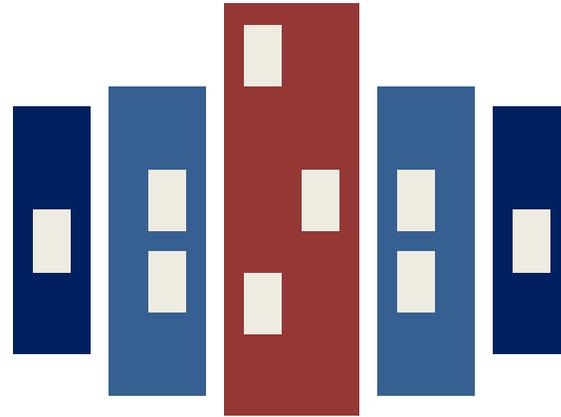
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**Tina Miller**

Cambridge Housing Authority



# Cambridge Housing Authority

Better Buildings Challenge Goal Achiever 2019



# CHA Mission Statement

- CHA's mission: to develop and manage safe, good quality, affordable housing for low-income individuals and families; promotes citizenship, community and self-reliance in one of most expensive housing markets in the country.
- Long-term rental housing and rental assistance to 7,000 low-income families, elders and disabled individuals
  - 12% of the city population
- Portfolio includes:
  - low-rise family developments
  - high rise housing for elders and disabled individuals



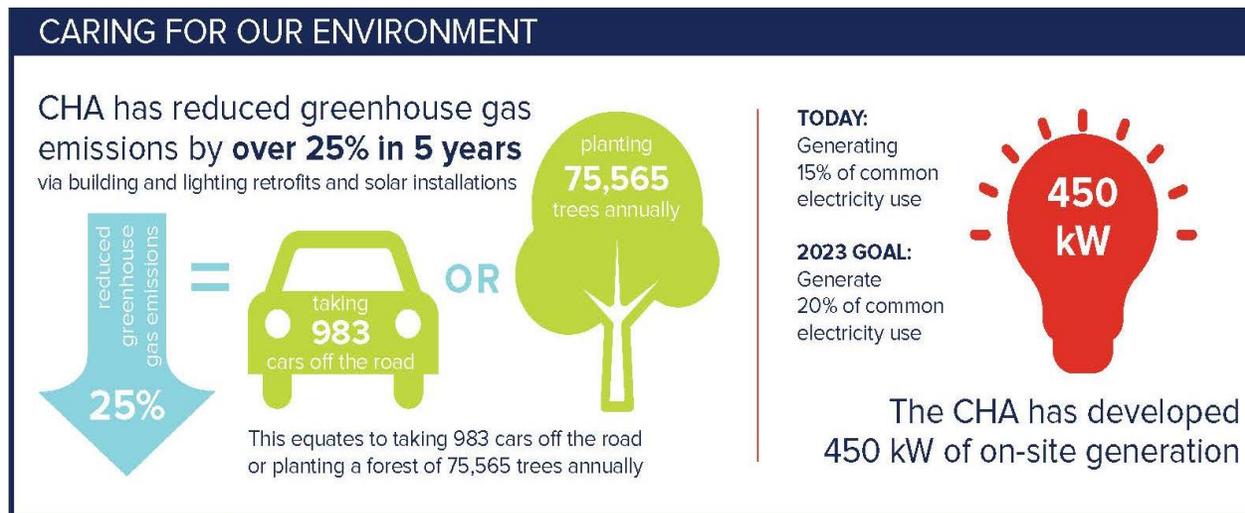
# CHA meets the Challenge

- CHA joined the Better Buildings Challenge in 2014
- Became a Goal Achiever in 2019: Reduced energy intensity by 23% within four years.



A result of:

- Moving to Work agency
- Track record of successful energy savings from retrofits
- Infusion of capital due to transition from public housing to RAD program.



## Under RAD: Used Section 18 to Convert to Section 8 Housing

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- Conducted comprehensive needs, existing conditions assessment
- Under RAD, financed retrofits using:
  - LIHTC credits
  - state bonds
- Raised significant capital, allowed much deeper retrofits than under EPCs
- Leveraged \$11 in equity for every \$1 CHA spent
- ENERGY STAR scores with modernization efforts went from 1 – 97.

# Fundamentals of Positioning Yourself for Financing

- Accurate, long term tracking of energy savings through utility benchmarking
- Deep bench within your Fiscal Department
- Increasing attention to property based NOI
- Third party energy certification program
  - LEED
  - Enterprise
- Local incentives: building relationships with local agencies



# PROVE Your Energy Savings to Investors through Benchmarking

## CHA has 3 energy tracking systems to show building performance

Total energy use ▾ in Btu per square foot ▾

Filters

Graph Table



Name	Full-Year Sum	
321 - Jefferson Park Fe...	60.4k*	<input type="checkbox"/>
631 - Putnam School	60.3k	<input type="checkbox"/>
359_RAD - Jackson Ga...	58.6k	<input type="checkbox"/>
356_RAD - Woodrow ...	57.6k*	<input type="checkbox"/>
301_RAD - Washingto...	55.9k*	<input checked="" type="checkbox"/>
355 - Willow St Homes	50.9k	<input type="checkbox"/>
312 - R.C. Weaver Apa...	50.8k	<input type="checkbox"/>
999 - 78-80 Porter Rd	50.6k*	<input type="checkbox"/>
Temple Place	44.8k	<input type="checkbox"/>
346 - 12-18 Hingham ...	44.4k	<input type="checkbox"/>
303_RAD - Putnam Ga...	40k*	<input checked="" type="checkbox"/>
351 - Russell Apartme...	27.9k	<input type="checkbox"/>
999 - Woodbridge St G...	9.2k*	<input type="checkbox"/>
339 - Garfield St	5.38k	<input type="checkbox"/>

Detailed data per month

You are currently viewing the last 2 years of data only

Zoom out



# Tracking Progress via Portfolio Manager

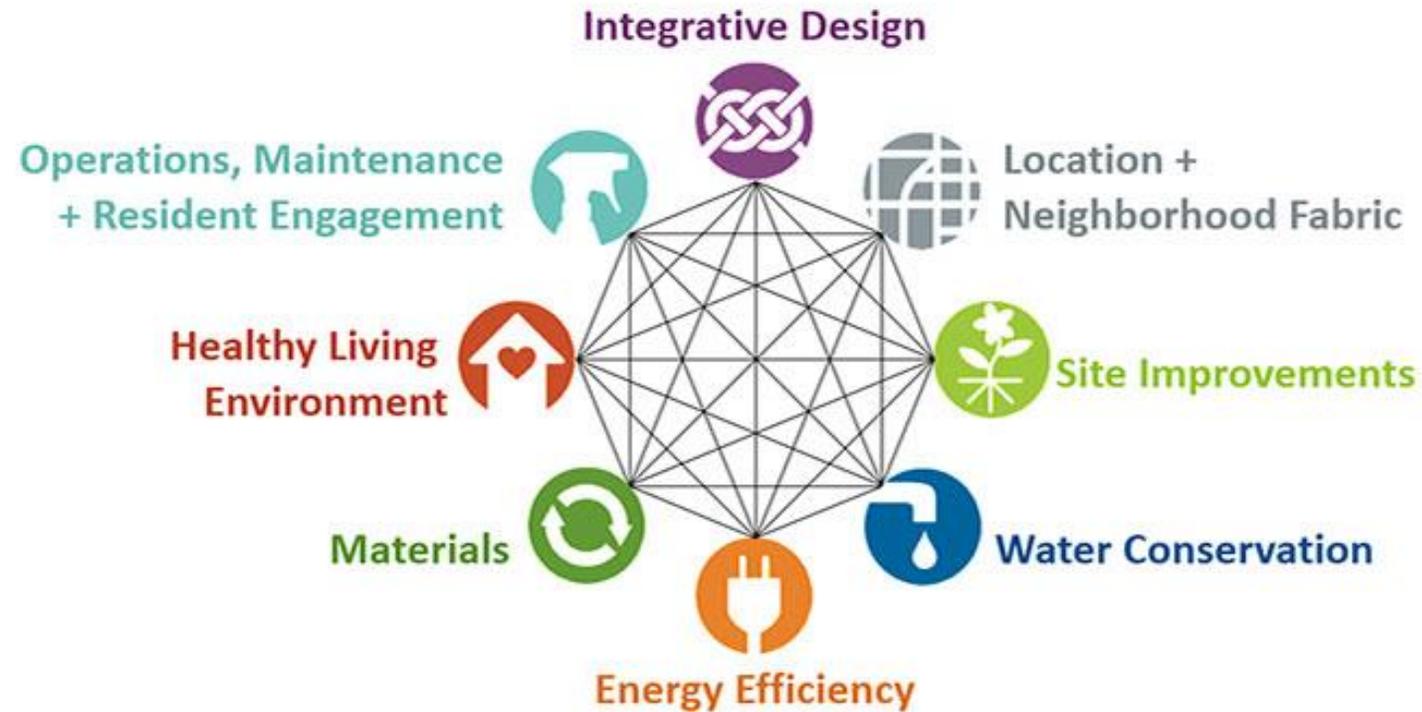
Property Name	Property GFA	2014			2018		
		ENERGY STAR Score	Site EUI (kBtu/ft <sup>2</sup> )	Source EUI (kBtu/ft <sup>2</sup> )	ENERGY STAR Score	Site EUI (kBtu/ft <sup>2</sup> )	Source EUI (kBtu/ft <sup>2</sup> )
Manning Apartments	160,580	3	72.3	202.5	95	54.7	83.1
					+ 92	24%	59%
Washington Elms	200,075	23	112.4	153.6	62	80.6	119.8
					+ 39	28%	22%
Putnam Gardens	126,002	15	124.4	162.2	98	43.8	71.2
					+ 83	65%	56%
Newtowne Court	275,666	34	102.6	136.7	90	62.1	88.5
					+ 56	39%	35%
<b>Total</b>	<b>762,323</b>	<b>NA</b>	<b>102.4</b>	<b>159.2</b>	<b>NA</b>	<b>62.4</b>	<b>92.7</b>
						39%	42%

# What you need in your Accounting Department



- Change of mindset from governmental service to business metrics. Will need asset management compliance oversight.
- Audit cycles for each entity, monthly financials and quarterly check ins.
- Consider outsourcing payables/ billables function
- With RAD, moving to LIHTC recertification and income limits
- New urgency to operations standards

# Enterprise Green Communities Certification for all substantial renovation and new construction



# Local incentives: build relationships with local agencies

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- Know the local playing field; both emerging pilots and conservation incentives from the utility.
- Assess potential partnerships such as PPAs for solar, offsite renewable energy purchase



# The Results at Manning Apartments



## Reducing annual utility costs by \$350,000

Added a 60 kwh co-generation unit to generate electricity on site.

Provided central A/C to residents and a new ventilation system, significantly improving resident comfort.

## Funded over \$66M in improvements:

- New building envelope eliminated significant water infiltration, added insulation
- Replaced electric resistance baseboard heat and domestic hot water system with gas hydronic system
- Replaced brittle, failing portable, sanitary and storm water piping in the building
- New kitchen and bathrooms and other interior refurbishments
- Added 6 new units to the building

# On-site Solar and Co-gen

- 450 kw of co-gen at 4 properties
  - 3 additional properties on line within 2020; for a total of 704 Kw
- Sited at developments with central boiler plants delivering heat and hot water to at least 120 units.
  - Cogen relieves grid congestion, lowers local emissions and provides Alternative Energy Credits which offset maintenance costs.
- 5% of CHA's electricity is provided by on site solar. CHA has both direct ownership and PPAs within our portfolio.
  - Solar arrays provide lower cost renewable power while lowering local emissions.
- CHA enters into long term contracts for retail gas and electricity supply which provides a stable budget base as well as cost savings for the agency.



# Q & A



Tina Miller, Energy Manager

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Phone: (617) 520-6344

Submit Questions

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What financing strategies are you now more informed about as a result of today's webinar?

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## Additional Resources

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- Manhattan Housing Authority: Navigating a Complex Regulatory Environment
  - <https://betterbuildingsolutioncenter.energy.gov/implementation-models/manhattan-housing-authority-navigating-a-complex-regulatory-environment>
- Jersey City Housing Authority Leverages Energy Performance Contracts for Energy Efficiency Projects
  - <https://betterbuildingsolutioncenter.energy.gov/implementation-models/jersey-city-housing-authority-leverages-energy-performance-contracts-energy>

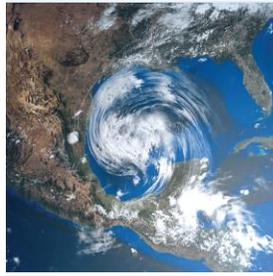
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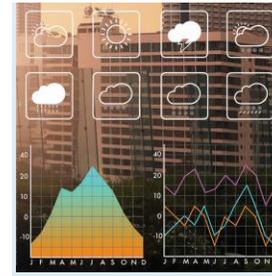
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STORIES FROM THE FIELD

Tue, Apr 6, 2021 | 3:00 - 4:00 PM ET

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### TURNS 10:

IMPACTS, CHALLENGES, AND WHAT COMES NEXT

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This webinar will explore the impacts and success stories of commercial property assessed clean energy (PACE) financing, better known as CPACE, 10 years since the completion of the first CPACE project. Attendees will hear the story of CPACE's growth and growing pains, learn about new research on prevailing practices for tracking impacts from CPACE programs, and find out what the future may hold – both obstacles and opportunities – for CPACE financing.

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■ Indicates the session was a part of the 2020 Virtual Summit. To view a full list of the Summit Sessions, [click here](#).

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