New Integrated Solutions in Water, Solar and Energy Efficiency

NPH Annual Conference
September 30, 2016
WORKSHOP PANELISTS

1. Cindy Wu, Deputy Director, Chinatown Community Development Center.


3. John Neal, Senior Project Manager, Association for Energy Affordability.

Moderator: Blanca de la Cruz, Sustainable Housing Program Director, California Housing Partnership.
AGENDA

1. New Legislation for 2017 & Owner Resources
2. Green Affordable Housing
   • Rebate Program Case Study
3. Water, Solar, Energy Efficiency
   • Lindsay Village Case Study
4. Breaking Through The Barriers To Energy And Water Upgrades
5. Q&A
NEW LEGISLATION FOR 2017

➢ **Clean Energy and Reduction Act (SB 350):** Requires 50% increase in efficiency of existing buildings and renewable energy by 2030.
  - Barriers to Access Study due, Jan. 1, 2017

➢ **Energy Data Access (AB 802):** Requires all utilities to provide property owner access to whole building energy usage data upon request for multifamily residential buildings of 5 units or more.
  - Data access begins starting Jan. 1 2017

➢ **Statewide longer-term water conservation measures (EO B-37-16):** Sets permanent water use standards and will establish new and regionally specific efficiency targets.
  - Provisional standards due Jan. 1, 2017
  - Finalize standards in 2018
CAP-AND-TRADE FUNDED PROGRAMS

- **Low Income Weatherization Program (LIWP):** Incentives for energy efficiency, solar thermal, and solar PV installation in existing large MF properties.
  - Properties in Disadvantaged Communities (DACs)
  - Ongoing enrollment for $24 M initial launch

- **Multifamily Solar Roof Program (AB 693):** $100 M annually for solar PV with EE component to lower tenant and property owner bills.
  - Existing MF and new construction eligible
  - Launch July 1, 2017
UTILITY INCENTIVES & FINANCING

- **Energy Savings Assistance Program (ESAP) by PG&E**: Pending CPUC decision to include multifamily common area measures.
  - Decision due October 29, 2016

- **Energy Upgrade California by BayREN**: Provides $750/unit rebate and free energy consulting for multifamily energy improvements.

- **PG&E’s Multifamily Upgrade Program**: Per unit incentive based on energy savings for energy-efficient retrofits of multifamily.

- **On-Bill Repayment (OBR) Financing by IOUs**: Statewide pilot for financing option with a surcharge on owner’s utility bill to pay 3rd party capital provider.
  - May pay for 25% - 50% of cost of EE and water measures
  - Launch by Q2 2017
WATER RESOURCES

➢ Water Conservation: Resources specific to each urban water provider.
  • Owners need to navigate many different water providers.
GREEN AFFORDABLE HOUSING

“NEW INTEGRATED SOLUTIONS IN WATER, SOLAR AND ENERGY EFFICIENCY”

PRESENTED BY:

CINDY WU
DEPUTY DIRECTOR, CHINATOWN COMMUNITY DEVELOPMENT CENTER
OVERVIEW

• Scan of 7 energy-efficiency, energy-generation, and water conservation programs at CCDC
  • 4 real estate strategies
  • 1 tenant engagement strategy
  • 1 property management strategy
  • 1 neighborhood-scale strategy

• Energy Rebate Program Case Study
NEW CONSTRUCTION

BROADWAY-SANSOME (2015)

2060 FOLSOM (2018)
MAJOR REHAB

PUBLIC HOUSING REHAB (2015-2019)

TENDERLOIN FAMILY HOUSING (AKA 201 TURK) (2014)
SPECIAL PROJECT @ WILLIAM PENN HOTEL

• Zero-Net-Energy (ZNE) retrofit for 94-unit SRO in Tenderloin
• $3M grant from California Energy Commission
• If successful, upgrades can be applied to other CCDC buildings
• 4-year collaborative project
TARGETED INTERVENTION

• BAYREN Energy Efficiency Upgrades (2015)
  • Rebate program
  • Provided mechanism and incentive to pursue larger scale greening work
  • 6 buildings
    • Lighting retrofits
    • Attic insulation
    • Boiler upgrades/replacements

  • Rebate program through California Solar Initiative, a program of the California Energy Commission
  • 3 buildings
ENGAGEMENT STRATEGIES

• Tenant Engagement
  • Water Conservation Program
    • Selected 3 buildings, educated residents on water usage, and set up contest
    • 17% decrease in average water consumption per building (May-July 2014)
  • Educational pamphlets

• CCDC Green Team
  • Office Greening
    • Ex) Printer Competition
  • NeighborWorks Green Designation
    • Received in August, 2016
    • Opens up more opportunities for funding from NeighborWorks
UTILITY TRACKING

- CCDC uses WeGoWise to track utility usage rates
- Ability to see effectiveness of energy efficiency upgrades (before and after)
- Ability to track effectiveness of water conservation programs
- Spikes in the data indicate problems such as toilet leaks, etc.
SUSTAINABLE CHINATOWN

“The community space will be beautiful with good fortune and peace”

“Housing with luck, longevity, and health”
CASE STUDY: BAYREN PROGRAM

- **Summary**
  - Scattered-site approach to capital improvements
  - 6 buildings
  - 5 contractors
    - 3 mechanical
    - 1 insulation
    - 1 lighting

CCDC leveraged BAYREN funds for energy retrofits for 507 affordable units in 2015

- Overall Contracts: $590,745.49
- Overall Rebates: $347,250.00
- **59% Cost Savings**
NOTRE DAME APARTMENTS (1590 BROADWAY)

Mechanical Upgrades/Repairs

Total Contract $203,865.65
Total Rebate $150,750.00
74% Cost Savings

201 Units
WILLIAM PENN HOTEL (160 EDDY)

Mechanical upgrades/repairs, Roof cap insulation, LED lighting retrofit

Total Contract $139,513.30
Total Rebate $69,000.00

50% Cost Savings

94 Units
SWISS AMERICAN HOTEL (534 BROADWAY)

Mechanical upgrades/repairs, Roof cap insulation, LED lighting retrofit

Total Contract $105,242.08
Total Rebate $33,000.00

31% Cost Savings

66 Units
ST. CLAIRE RESIDENCE (585 GEARY)

Roof cap insulation, LED lighting retrofit

Total Contract $31,251.71
Total Rebate $15,000.00

48% Cost Savings

40 Units
CLAYTON HOTEL (667 CLAY)

Mechanical upgrades/repairs, Roof cap insulation, LED lighting retrofit

Total Contract $63,998.75
Total Rebate $61,500.00

96% Cost Savings

82 Units
CONSORCIA APARTMENTS (1204 MASON)

Mechanical upgrades/repairs, Roof cap insulation

Total Contract $46,874.00
Total Rebate $18,000.00

38% Cost Savings

24 Units
HOW DID THESE PROJECTS GET OFF THE GROUND?

• Identify staff time funding source(s) to assign a Project Manager at .25-.5 FTE, depending on scope of work
• Assemble a development team including a construction manager, building staff, and technical assistance
• Consider a scattered-site approach to energy upgrades
• Compile, review, and analyze Capital/Physical Needs Assessments across housing portfolio
• Work closely with building staff to develop scope of work
AND HOW DID WE PAY FOR IT ALL?

• **Project Management Staff Time**
  Community Development Block Grant funding

• **Soft Costs – Engineering, Technical Assistance**
  NeighborWorks Capital Real Estate Grant funding

• **Hard Costs – Contractors**
  Replacement Reserves (Notre Dame)
  NeighborWorks Capital Real Estate Grant funding (Portfolio Project)
Self-Help Enterprises

Water  ☼ Solar  ☼ Energy Efficiency
About Self-Help Enterprises…

- Established in 1965
- Helped more than 6,100 families to build their own homes & developed 1,300 units of rental housing
- Work with over 60 community services districts or small water systems; active in the drought
- Reduced water consumption at all rental sites (up to 60%) and still see increase in water costs of 186-260%
Solar & Energy Efficiency

- Benchmarking---WegoWise
  - Common area accounts only
- Solar Site Pre-screening Report
- Enrollment in LIWP
- Partnership with GRID and opportunities such as MASH
- Desire to achieve ZNE with new construction & within portfolio
Water...or lack thereof...

- SJV challenges with the drought
- Need to demonstrate low-impact development through graywater and maximization of water efficiency elements
- Retrofit existing sites--Goshen Village II Moisture Sensor Pilot
  - 25% water reduction
Case Study: Lindsay Village

- Phase I of a multi-phase project on 6.8 acres
- 20 units/acre = twice as dense as average SHE project
- Project includes minor environmental remediation to remove impacted soil
- Infill site in close proximity to shopping, schools and other amenities
- Proposed project includes a bicycle share program and vanpool program; improvements to facilitate walking & biking
- Graywater system to cover irrigation needs (showers and bathroom sinks)
- 100% solar PV to offset common area and residential load
- Grid neutral zero net energy
Contact Information

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“You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of difference you want to make.” —Jane Goodall
Breaking through the Barriers To Energy and Water Upgrades

John Neal, Senior Project Manager
Association for Energy Affordability
Presentation Goals

- Bust through some **common barriers** to upgrades
- Discuss **leveraging** opportunities
- Review how to identify good project **candidates**
- Drink the **Kool-Aid** and leave with a plan!
Barriers?

“We have to wait for resyndication”

• TCAC now has five year look back
  – Will equipment survive until resyndication?
  – Leverage incentives now = less to do later
  – Deferring upgrades = lost revenue in utility savings
  – Targeted efficiency upgrades are sometimes easier outside of a rehab
Barriers?

“I have Limited Reserves & Can’t Take On Debt”

– Buildings with strong reserves are always easier but...

– Utility rebates + LIWP *sometimes* cover close to 100% of costs

– LIWP portfolio approach – divvy up incentive across projects

– On Bill Repayment – finance gap without permanent debt

– 3rd party may want tax credits or other benefits from upgrades
  - leased/depreciated equipment (solar), 45L tax credit
Barriers?

Owner vs Tenant Split Incentive

– Take advantage of incentives to perform needed upgrades
– LIWP pays more for upgrades that offset tenant bills
– LIWP pays for free tenant solar PV systems
– Improvements to tenant comfort, utility costs, etc. can reduce turnover
Barriers?

Low flows, toilets, and efficient lighting don’t work

– First gen. water saving toilets, direct install CFL lights did cause many headaches

– High performance toilets excel! http://www.map-testing.com/

– WaterSense showerheads increase pressure while reducing water use

– LED lighting is amazing and has cost parity with fluorescents
Identify Candidates

Benchmarking can help identify worst offenders
Identify Candidates

Energy or Cost Savings Opportunity?

TOTAL AGGREGATED USE

End-Use Breakdown (kBtu)

- Cooling 415,067 (13%)
- Gas Baseload 471,004 (15%)
- Heating 436,321 (14%)
- Electric Baseload 1,824,777 (58%)

Spending Breakdown

- Gas Baseload $5,652 (6%)
- Heating $5,236 (6%)
- Cooling $15,239 (16%)
- Electric Baseload $66,997 (72%)
Identify Candidates

What are the planned/known capital needs at the property? Good trigger points for efficiency:

- Roofing
- Exterior painting
- Light remodels
- Any equipment upgrade
Central system upgrades are less expensive on a per unit basis than in unit systems (replace 1 boiler or 40 water heaters?)
Identify Candidates

Typical Opportunities at Properties < 10 yrs old

Solar

Water efficiency

Lighting

Water heating

Properties > 10 yrs old

All measures + equipment upgrades
Identify Candidates

Portfolio Approach

- Consistency for operations staff
- Better contractor pricing
- Easier to implement (one contractor and similar scope)
Next Steps

– Make a list of your projects with some of the above information noted

– Call the LIWP program. If no LIWP, talk to your local utility rebate program

– For upcoming rehabs start the conversation with LIWP/Utility programs early (when you start scope development)!
Case Study – Santa Monica

5 building energy & water retrofits

EUC + Ratepayer Integrated On Bill Payment Program
Case Study – Santa Monica

Newer buildings – typical findings

• 80% efficient boilers
• Fluorescent lighting and broken lighting controls
• Inconsistent showerheads and aerators
• Top loading washers in central laundry
• Decent envelope
• Onset and advanced DHW crossover disease
Case Study – Santa Monica

Older buildings – similar, except:

• More components at end of useful life
• Poor performing envelope
• Uninsulated DHW piping
• Higher chance of asbestos, lead hazards
• Capital needs (new roof, rewire, aging HVAC)
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