



# Housing the Force 2025



## Partners Presentations

**Customer Service**  
**Renewable Energy**  
**Energy Efficiency**  
**Manage Historic Properties**

**Balfour Beatty**  
Communities

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## Solar Commitment

**Diana Kinlaw**  
**Balfour Beatty Communities**

**Balfour Beatty**  
Communities



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## Balfour Beatty Solar Commitment

- Install solar at military projects to reduce non-controllable expenses and support the Department of Defense in its effort to reach net zero.
  - Reduce and/or Stabilize electric energy costs over a twenty year period.
- Process required to gain approval
  - Agreement with Solar Company via a Power Purchase Agreement(PPA)
  - Revised MSA—Must include the ability to use solar
  - Proof that solar will be less than or equal to current fee from DPW
  - Commitment that Renewable Energy Credits generated go to the Army
  - Army and Lender Approvals
  - Revisions to the Ground Lease to allow solar

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## Fort Bliss Family Housing Solar Power Production



PORTFOLIO VIEW | Logout

Monitored Energy - Daily | Monitored Energy - Monthly | Energy Readings | Project Map

Fort Bliss Portfolio Monitoring Date Range 11/01/2012 8/18/2015 Installation / Job ID

Installations	System Size	11/01/2012 - 8/18/2015	CO2 Savings	CO2 Offset	Equivalent in Coal	Equivalent in Natural Gas	Water Saved
1065 system(s)	13,642 kW total	<b>30,602,496</b> kWh produced	21,973 tons of CO2*	18,680 trees*	32,744,671 pounds*	244,208 Mcf (1000 cubic feet)*	12,240,998 gallons*

\* Estimates based on data provided by the U.S. Department of Energy and other sources



Production Date	Production (kWh)
8/18/2015	65128
8/17/2015	74426
8/16/2015	71753
8/15/2015	70047
8/14/2015	73554
8/13/2015	72507
8/12/2015	78447
8/11/2015	77485
8/10/2015	73804
8/9/2015	72380
8/8/2015	70379
8/7/2015	71272
8/6/2015	71566
8/5/2015	101326
8/4/2015	77394
8/3/2015	69771
8/2/2015	73150
8/1/2015	76669

Installations ( Fort Bliss Portfolio Monitoring / \* ): 1065  
Production ( 11/01/2012 - 8/18/2015 ): 30,602,496 kWh





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## Balfour Beatty Solar

Installation	City, State	State	Service	# Housing Units	# Units With Solar Panel	PV Status	Estimated KW/MW
Ft Bliss	El Paso, TX	TX	Army	4,469	1,831	Producing	13.6 MW actual
Walter Reed Army Medical Center	Wheaton, MD	MD	Army	243	243	Approved	1089 kW
Ft Hamilton	Brooklyn, NY	NY	Army	228	212	Approved	913kW
Ft Carson	Colorado Springs, CO	CO	Army	3,368	3,368	Approved	3000kW
Ft Detrick	Frederick, MD	MD	Army	356	356	Approval	1100 kW
Ft Leonard Wood	St. Roberts , MO	MO	Army	1806	1744	Awaiting Approval	7.9 MW
West Point	West Point, NY	NY	Army	844	530	Awaiting Approval	2.3 MW
Ft Stewart	Hinesville, GA	GA	Army	2,932	1,211	Under Consideration	
Hunter AAF	Savannah, GA	GA	Army	698	454	Under Consideration	
Marne Point	Hinesville, GA	GA	Army	370	28 Bldgs	Under Consideration	
White Sands Missile Range	Las Cruces, NM	NM	Army	425	374	Under Consideration	1.5MW





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## Balfour Beatty Overall Solar Projects

Army:	In Production 13.6 MW (Produced 2012-2015: 30,602.24 MW) Approved (either installing or working technical designs)—8.5MW Actively Seeking approvals -- 9.5MW
Air Force:	In Production 0 MW Approved (either installing or working technical designs)—0 MW Actively Seeking approvals -- 8.5MW
Navy:	In Production 5 MW (Produced 2013-2015: 102.25 MW) Approved (either installing or working technical designs)—3.25 MW Actively Seeking approvals -- 15MW
Total:	In Production 18.6 MW Approved (either installing or working technical designs)—11.75 MW Actively Seeking approvals -- 33 MW



# Managing Historic Housing Cost Effectively

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## **Allyson McKay**

Vice-President – Central Texas and Project Executive Director  
Lincoln Military Housing  
Fort Sam Houston's RCI Project

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# Managing Historic Housing Cost Effectively

- Lead Based Paint – Lead Based Paint renovators have to be used for any scraping or repairs in historic homes (built prior to 1978). LMH required their vendors to obtain their Lead Certification to avoid the high cost of using commercial lead remediators.
- Approval through State Historic Preservation Office (SHPO)
- Columns – Wood barrel style 20 ft. historic columns (Colonial) were beginning to separate. To replace the columns exactly the cost would be \$38,000. Maintenance Director and Contractor found a repair solution instead of full the replacement solution that they approved through SHPO (State Historic Preservation Office). The columns were banded, wrapped in sheet metal, and painted to preserve the look of the original column. The cost was \$9,000



# Columns - Before



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# Columns - Before



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# Columns - Before



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# Columns Completed

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# Managing Historic Housing Cost Effectively

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- Windows - Obtained 3 bids with a detailed scope to replace all the wood windows on the Commanding General's sunroom with vinyl. The vinyl had to duplicate the look of the sash, mullion (inside and out) and in addition, had to have a Low-E rating. Drawings had to be submitted to SHPO. 6 month process for SHPO to approve before officially ordering the windows. Cost: \$55,000. The bid for wood windows was \$78,000.



# Managing Historic Housing Cost Effectively

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## Commanding General's Home— Before



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# Managing Historic Housing Cost Effectively

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## Commanding General's Home— Under Construction



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# Managing Historic Housing Cost Effectively

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## Commanding General's Home— Under Construction



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# Managing Historic Housing Cost Effectively

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## Commanding General's Home— Completed



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# Managing Historic Housing Cost Effectively

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- Porches – SHPO approved using a standard treated deck board vs. a non-treated pine tung and groove board. The treated board will last 3 times longer and prevent water entering the structure causing the wood to decay.



# Artillery Senior Officer Home - Before

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# Artillery Senior Officer Home - Completed

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# Managing Historic Housing Cost Effectively

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- Make Ready/Turn Cost – LMH has found it to be more cost effective to have 1 vendor perform all MR services (Paint, Repairs, MR and Clean) than having separate vendors for each service.



# Tub Tile Repair



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# Plaster failure due to age



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# Containment for testing power washing on lead based paint exterior

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# Points of Contact Information

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## Water Conservation & Renewable Energy



### **Megan Dougherty**

Senior Development Associate; Asset Manager

California Military Communities & Monterey Bay Military Housing

Clark Realty Capital



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## Water Conservation & Renewable Energy AGENDA

1. Water RECP: Status Update
2. Water RECP: Suitability
3. Water RECP: Program Administration
4. Water RECP: Rate “Normalization” Example
5. Water RECP: Early Results
6. Water RECP: Lessons Learned
7. Other Water Conservation Measures
8. Solar



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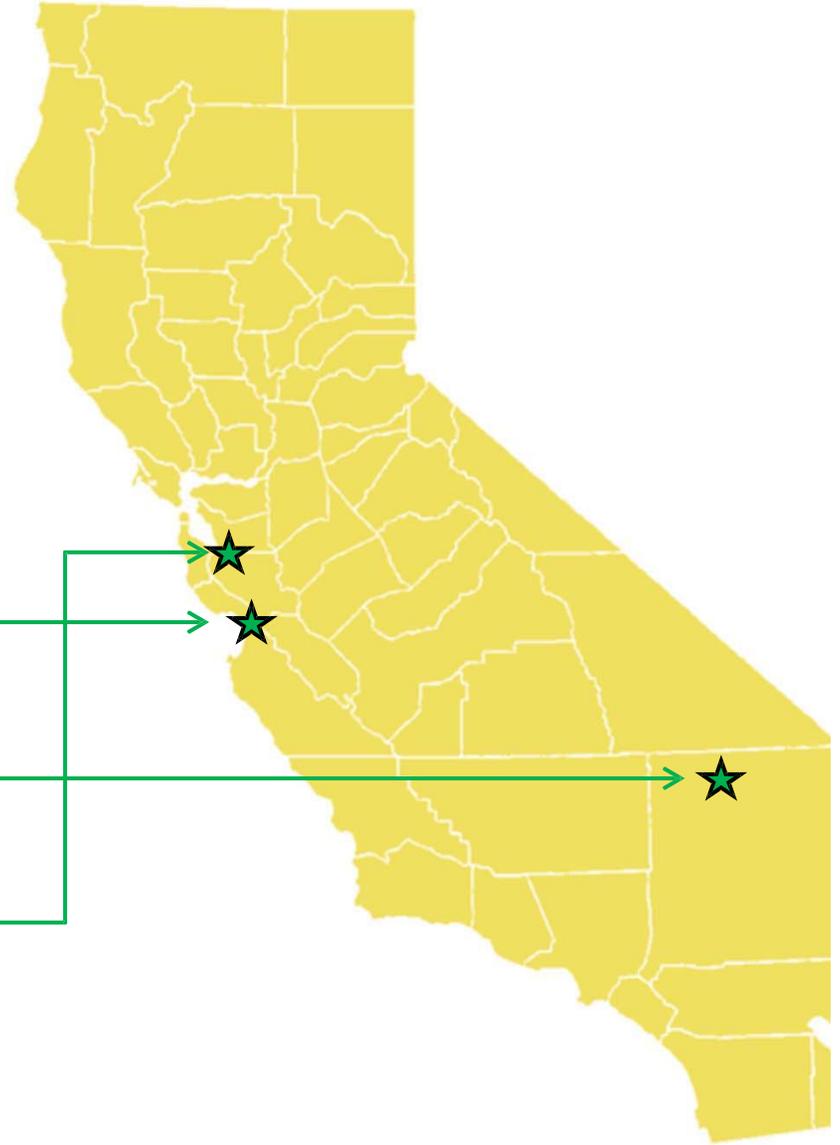


## Water Conservation & Renewable Energy WATER RECP: STATUS UPDATE

- Presidio of Monterey
  - 324 units pilot program
  - February 2014 mock billing start
  - May 2014 live billing start

- Fort Irwin
  - 2,668 units
  - July 2015 mock billing start
  - October 2015 live billing start

- Moffett Field
  - 190 units
  - July 2015 mock billing start
  - October 2015 live billing start



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## Water Conservation & Renewable Energy WATER RECP: SUITABILITY

### A Water Constrained Region:

- Gov. Brown declares “State of Emergency” - January 2014
- Monterey Bay region is facing a severe water shortage (even before the current drought). Additionally, a planned desalinization plant on the Monterey Bay Peninsula could quadruple water costs in the area.
- Irwin (Mojave Desert) pumps from aquifers which will be dry in [2040?] if pumped at current rates

Significant Financial Impact: 19% & 12% of MBMH & CMC total operating costs, respectively

Infrastructure: Individual unit metering and separate irrigation system



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## Water Conservation & Renewable Energy WATER RECP: PROGRAM ADMINISTRATION

- Establishing a Baseline – consistent with current RECP practices
- Accounting for Outliers – removed outliers, water audits / leak detection
- Timeline – Internal mock, resident mock & resident live billing
- Resident Communication – town halls, office hours, direct mailings, email blasts, Facebook, mock bills etc.
- Lease Amendments
- “Normalizing” Fixed Charges – rate structure (see example on next slide)



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## Water Conservation & Renewable Energy WATER RECP: RATE "NORMALIZATION" EXAMPLE

- Variable Rate

**Fixed Base Charge:** \$0.00

Consistant Rate:	Rate	Qty.	Cost
0-100 gal	\$0.30	100	\$30.00
101-200 gal	\$0.30	100	\$30.00
201-300 gal	\$0.30	100	\$30.00
301-400 gal	\$0.30	100	\$30.00
<b>Total</b>		<b>400</b>	<b>\$120.00</b>



**"Normalized" Rate (Ave. \$ per gal) \$0.30**

- Fixed Base Charge + Consistent Rate

**Fixed Base Charge:** \$20.00

Consistant Rate:	Rate	Qty.	Cost
0-100 gal	\$0.25	100	\$25.00
101-200 gal	\$0.25	100	\$25.00
201-300 gal	\$0.25	100	\$25.00
301-400 gal	\$0.25	100	\$25.00
<b>Total</b>		<b>400</b>	<b>\$120.00</b>



**"Normalized" Rate (Ave. \$ per gal) \$0.30**

- Fixed Base Charge + Variable Rate

**Fixed Base Charge:** \$20.00

Variable Rate:	Rate	Qty.	Cost
0-100 gal	\$0.10	100	\$10.00
101-200 gal	\$0.20	100	\$20.00
201-300 gal	\$0.30	100	\$30.00
301-400 gal	\$0.40	100	\$40.00
<b>Total</b>		<b>400</b>	<b>\$120.00</b>



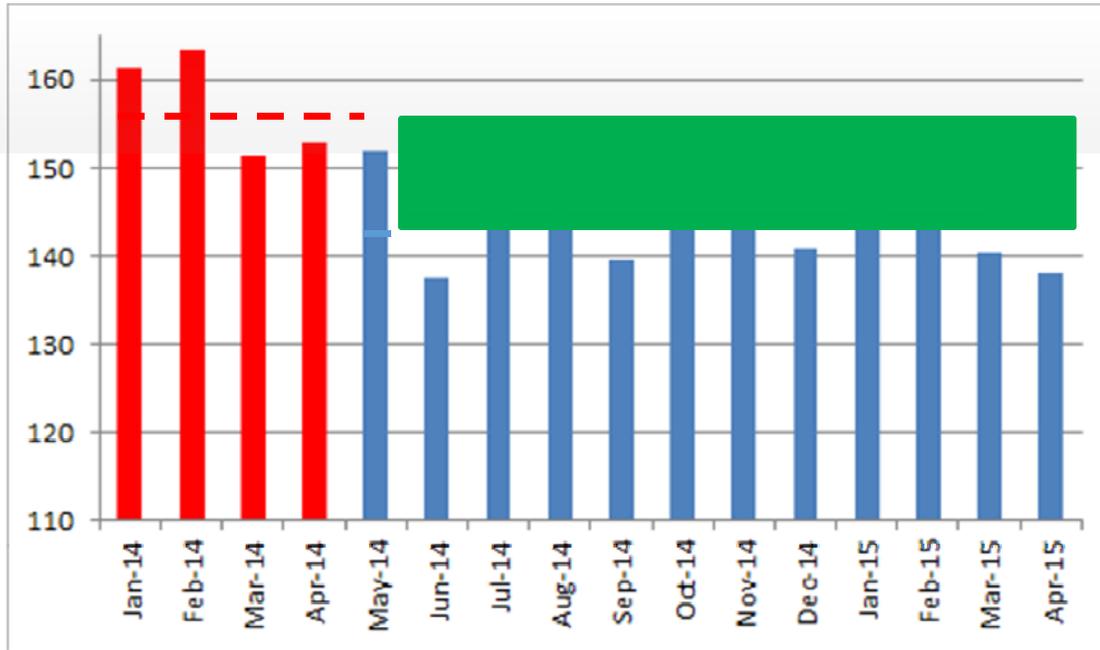
**"Normalized" Rate (Ave. \$ per gal) \$0.30**



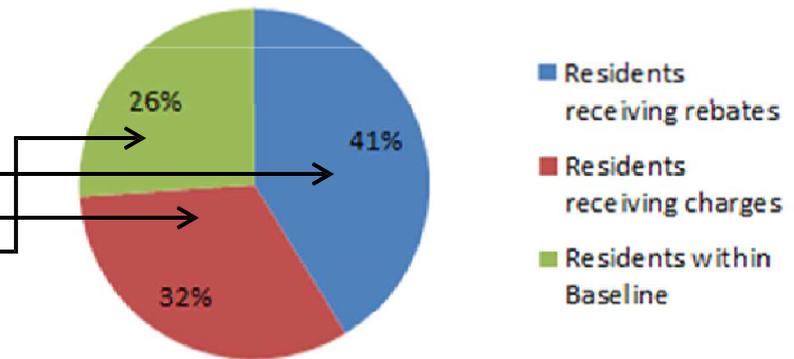
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## Water Conservation & Renewable Energy WATER RECP: EARLY RESULTS



LIVE BILLING AVERAGES:	Units	%	Cost
Residents receiving rebates	107	41%	\$33
Residents receiving charges	85	32%	(\$44)
Residents within Baseline	68	26%	
<b>TOTAL</b>	<b>260</b>	<b>99%</b>	<b>(\$1)</b>





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## Water Conservation & Renewable Energy WATER RECP: LESSONS LEARNED

- Command and Secretariat support
- Communication:
  - You can not over communicate. That said residents seem to respond better to personal touch points – i.e. direct mailings
  - Water component on the RECP bill is conspicuous
  - Explain utilities are a cost to the Project – not “free” and now a new cost to residents. Also that savings are reinvested into housing
- Billing in Arrears: ~45 day lag from consumption period to when residents get their bills. Schedule notifications accordingly.
- Landscape maintenance contractor is not using hose bibs from housing units
- Resident Concerns:
  - Small number of vocal resident opponents to the program. As with gas and electricity, its anticipated that this will subside as residents become more familiar with the program and if / when the water RECP program is implemented on other posts.
  - “Why isn’t my neighbor on the water RECP program?” Ideally water RECP would be rolled out to all communities within a military housing portfolio at the same time.
  - “I have more family members so I should have a larger baseline.” Water RECP will follow gas and electricity RECP guidelines and establish baselines based on house-type not family size.
  - “My bill is high because my faucet was leaking all month”. The goal of the program is to reduce consumption in general; reporting leaks promptly can be just as effective as residents electing to reduce their usage via lifestyle adjustments. That said, events beyond resident control will be handled on a case-by-case basis.



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## Water Conservation & Renewable Energy OTHER WATER CONSERVATION MEASURES

Initiative	Description	Estimated Savings
LMV Toilet Retrofit	Replaced 1800 toilets with 0.8 gallon per flush toilets as well as low flow showers and sink aerators. The toilet distributor supplied the new toilets, installed them, and disposed of the old ones. They did it all at no cost to our housing project. They coordinated with the local water authority and collected the \$200 per toilet rebates that the water district offered.	Estimated savings based on use assumptions are approximately 12 million gal per year. We will be able to confirm these estimates once we have a full year of actual data.
Hayes Park Toilet Retrofit	Replaced 200 toilets with 0.8 gallon per flush toilets as well as low flow showers and sink aerators. The toilet distributor supplied the new toilets, installed them, and disposed of the old ones. They coordinated with the local water authority that offered \$125 per toilet rebates, MBMH shared in the cost and paid \$75 per new toilet installed.	Estimated savings based on use assumptions are approximately 3.9m gal per year. We will be able to confirm these estimates once we have a full year of actual data.
Native Plantings	MBMH has landscaped 474 homes with native plants, which will require minimal irrigation as opposed to traditional turf landscaping	





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## Water Conservation & Renewable Energy SOLAR

- Solar City selected to finance, build, and operate rooftop solar at Monterey Project.
- DASA and Lender approvals received and final administrative taskers underway. Goal is to start construction prior to end of 2015.
- 1,300 rooftops targeted with potential for 5 MW ("mega watts") of generation.
- ~ 65% of total electricity demand to be provided by solar panels.
- PG&E owns and operates existing electrical infrastructure in neighborhoods.
- Average price per kwh for majority of housing project is \$0.24. Solar city price to be approximately 50% of that with 0% escalations across 20 years.
- Estimated annual cost savings in year one more than \$500,000.



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## Point of Contact Information

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