

# BOSTON HOUSING AUTHORITY STRATEGIC SUSTAINABILITY PLAN





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# ADMINISTRATOR'S MESSAGE



Dear Residents,

I am very pleased to present this Strategic Sustainability Draft Plan to you. It is my sincere hope that you will engage with the Boston Housing Authority (BHA) as we endeavor to preserve our portfolio of public housing in a manner that is healthy, efficient and sustainable for future generations.

“Sustainability” is a popular and perhaps over-used term, but it has particular meaning here at BHA. For the BHA and its residents, first and foremost there is the importance of community sustainability—promoting healthy resident communities that can achieve their goals and thrive. Secondly, there is the sustainability of our physical portfolio of over 12,000 units—and ensuring that we are doing everything possible to reduce our significant energy and water consumption. And thirdly, there is operational sustainability, delivering our housing programs and services day-to-day in the “greenest” manner possible.

Please take a moment to read the Strategic Sustainability Draft Plan. Let us know your ideas so that we can preserve our public housing communities for generations to come!

Sincerely,

Bill McGonagle  
*Administrator*



# ACKNOWLEDGEMENTS



The Boston Housing Authority would like to thank the Sustainability Green Team for its support in creating the Strategic Sustainability Plan.

The BHA “Green Team,” an interdepartmental group of BHA employees who meet bi-weekly to review, monitor and promote a wide array of sustainability projects across all areas of the Organization. The team consists of the following BHA staff:

**Kate Bennett**, Chief of Planning, Development and Capital Construction  
**Gail Livingston**, Director of Operations  
**Trinh Nguyen**, Chief of Staff  
**Shirley Ransom**, Director of Capital Construction  
**Dan Helmes**, Energy Manager  
**John Kane**, Senior Planner  
**Lori Luce**, Maintenance Systems Manager (*not pictured*)  
**Edna Rivera-Carrasco**, Resident Capacity Coordinator  
**Stephanie Mendez**, Project Manager, Real Estate Development  
**Alex Pereira**, Bright Study Intern  
**Elizabeth Koerber**, Recycling Coordinator  
**Ashley Roberts**, Environmental Defense Fund Climate Corps Graduate Fellow



# BOSTON HOUSING AUTHORITY

The Boston Housing Authority (BHA) is the largest public housing authority in New England and the sixth largest in the nation. BHA has approximately 900 staff organized into several divisions: Operations (which manages the public housing portfolio), Community Services, Leased Housing (which administers rental assistance programs), Occupancy, Planning and Real Estate Development, Capital Construction, Finance and Accounts, and Administration. Roughly two thirds of BHA employees work “in the field” at public housing developments across the city.

Within the public housing program, BHA owns and operates 63 developments that are home to 21,631 Boston residents (10,697 households), most of whom are extremely low-income, averaging about \$13,639 in annual income per household. BHA developments, however, are among the most diverse communities in the city of Boston across a spectrum of measures: race, ethnicity, religion, age, disability status, languages spoken, immigration/refugee status, and family status. BHA residents are roughly 42% Latino, 32% Black, 16% White, and 10% Asian. Residents speak dozens of languages, with 40% of households speaking Spanish at home.

As an agency, BHA cultivates the same diversity among its staff. In recent years especially, the BHA has emphasized cultural competency and language access across its operations, and has created a Limited English Proficiency initiative to ensure that all BHA programs are accessible to all residents, employees, and members of the broader Boston community.

The BHA is committed to soliciting and incorporating the diverse perspectives of its constituents in all aspects of its operations. In developing its Strategic Sustainability Plan, the BHA seeks to involve its residents and staff in order to identify the best strategies for our diverse communities, to anticipate disparate concerns, and to facilitate a successful plan implementation.



# HISTORY OF SUSTAINABILITY EFFORTS

The Boston Housing Authority has emerged as a national leader over the past decade for its emphasis upon green and healthy housing initiatives. These efforts are coordinated by the BHA “Green Team,” an interdepartmental group of BHA employees who meet regularly to review, monitor and promote a wide array of sustainability projects across all areas of the organization. Key initiatives are as follows:

## REDEVELOPMENT PROJECTS

The opportunities to achieve the highest standard of green building and community sustainability are greatest with new construction. The BHA has achieved significant success at its redevelopment sites with solar panels, enhanced ventilation, co-generation, healthy homes interiors, high-efficiency boilers, and high performance windows and building envelopes. With its latest redevelopment initiative—the transformation of the 840-unit Old Colony public housing community in South Boston—the BHA has raised the bar further to explore a net zero energy plan.

## CAPITAL UPGRADES

BHA has utilized federal stimulus funding (through the American Recovery and Reinvestment Act of 2009) to pilot a new model for “green” substantial rehabilitation at the Barkley and Heath developments. In addition, the BHA recently completed a \$65 million Energy Performance Contract (EPC) for energy and water upgrades at 13 federal sites. At the same time, green standards are being explored for routine capital upgrades throughout the BHA’s portfolio.

## RESIDENT EDUCATION

Resident outreach and education have been key to a number of energy- and health-related initiatives at BHA. Further outreach materials are being developed with the roll-out of this Strategic Sustainability Plan (see Community Sustainability).

## HEALTHY HOUSING

The BHA is engaged in partnerships with local non-profits, health agencies, community health centers, and universities to promote policy and practice related to healthy housing. Recent initiatives include the BHA Smoke-Free Housing initiative, Integrated Pest Management, and several grant partnerships focused on the intersection of resident health and housing conditions. The BHA went entirely smoke-free in September 2012.

Through all of these efforts the BHA endeavors to institutionalize green principles in our housing and business policies, and to foster green values among our residents, colleagues and neighbors.

## HIGHLIGHTS

- *Largest PHA in the nation to become entirely smoke free*
- *Several LEED Gold and LEED Platinum designations for redevelopment and rehab*
- *Over \$80 Million in Energy and Water upgrades through performance contracting*



# SUSTAINABILITY PLAN OVERVIEW

As the largest landlord in the City of Boston and a key provider of affordable housing to those most in need, the Boston Housing Authority recognizes that promoting sustainable communities—both in terms of residents and buildings—is crucially important. BHA believes that a Sustainability Plan can meaningfully integrate and advance the three core elements of our agency’s mission:

- To provide stable, quality affordable housing for low and moderate income persons;
- To deliver these services with integrity and mutual accountability; and
- To create living environments which serve as catalysts for the transformation from dependency to economic self-sufficiency.

The initiatives defined herein are intended to provide better housing for today’s residents, and to preserve BHA housing for future generations; to increase BHA’s accountability for improving and sustaining our communities; and to engage residents and staff to ensure optimum quality of life within BHA developments.

## FOCUS AREAS

*The BHA’s Sustainability Plan focuses on three key areas:*

- *Community Sustainability*
- *Energy and Water Conservation*
- *Sustainable Operations*

*Within each focus area, the plan identifies specific goals and strategies to achieve desired outcomes.*





# COMMUNITY SUSTAINABILITY

While “sustainability” frequently refers to buildings and infrastructure, BHA understands that at its core, sustainability deals with people: the residents, neighbors and staff in and around our communities. BHA recognizes that the social dimension—what we are calling “community sustainability”—must be explicitly addressed in the Strategic Sustainability Plan in addition to initiatives to sustain the Physical portfolio.

BHA communities are home to a diverse population of residents, many of whom are among the most vulnerable in the city: children, those who are disabled, elderly, or formerly homeless. BHA residents are overwhelmingly low-income, and many belong to groups that have been historically marginalized, such as racial minorities and recent immigrants.

The Strategic Sustainability Plan recognizes the needs and concerns of residents and strives to align those needs with the physical improvements necessary to achieve a more sustainable portfolio.

BHA continues to enhance the lives of its residents, and through its Resident Empowerment Coalition (REC), local tenant organizations, and its Resident Advisory Board (RAB), BHA will further explore and refine the following goals:

*Recognize and promote the central importance of resident engagement in achieving physical and community sustainability at BHA sites.*

*Create an effective communications platform to help residents understand the significant impact that they have in achieving energy, water, and waste conservation*

*Engage in best practices, both within BHA and in collaboration with city and community partners, in order for residents to continuously enhance healthy living.*

*Identify and execute strategies that lead to educational and economic opportunities for BHA residents.*

*Convene residents for a Sustainability Summit in to better define resident goals for the BHA Strategic Sustainability Plan.*





# COMMUNITY SUSTAINABILITY

One of the first steps in developing more specific and measurable Community Sustainability Goals was to convene residents for a Sustainability Summit in July 2013. The Summit included a resident survey to further understand resident values and behavior in regards to energy and water consumption; educational workshops on sustainability; and interactive workshops about resident priorities for the Strategic Sustainability Plan. The BHA will issue a revised set of measurable Community Sustainability Goals.

## NEXT STEPS

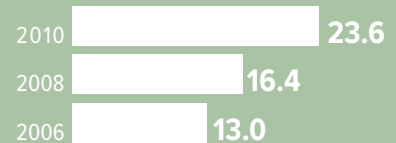
- *Held Resident Summit and will continue to hold these summits on an annual basis in order to help define resident goals towards creating a more sustainable environment*
- *Create a set of graphic tools by July 2014 to help communicate to residents*

*The BHA has adopted the Resident Health Advocate program (RHA) to train public housing residents as community health workers, with preparation tailored to the health needs and concerns of their fellow residents. The role of trained residents as specialized community health workers in public housing has been the core focus of two research projects with the Partners in Health and Housing Prevention Research Center (PHH-PRC). The collaborative process of developing the program has also been described in the Boston University School of Public Health Dean's Report 2009-2010 "Health Disparities: narrowing the gap through community partnerships." Throughout the program, the BHA has trained over 120 health advocates.*

*BHA has made significant strides in helping residents achieve better health. In one example, the housing authority teamed up with the Boston Public Health Commission in 2005 to reduce the number of roaches and rodents, while reducing the use of pesticides, which, along with roach and rodent droppings, can aggravate asthma symptoms. The Boston Globe recently reported results showing reduced Asthma rates throughout BHA developments. The adjacent chart illustrates the reduced rates as of 2010.*

## Percentage of adults who reported asthma symptoms

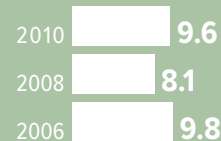
### Live in BHA housing



### Live in subsidized, non-BHA housing



### All others



SOURCE: Boston Housing Authority and Boston Public Health Commission

# ENERGY & WATER CONSERVATION

The BHA recognizes the significant energy and water resources consumed by its portfolio, as well as the associated costs. With a \$40 million utility bill, BHA is Boston's largest residential utility consumer, using 90 million kWh of electricity, 10 million therms of natural gas, 250 thousand gallons of oil and 90 million cubic feet of water every year. The BHA has set a goal to reduce energy and water consumption (from 2008 levels) by 25% by 2020, consistent with the City of Boston's Climate Action Plan goals.<sup>1</sup>

While energy and water savings are a critical cornerstone to the Strategic Sustainability Plan, it is equally important within the BHA context to provide energy and water systems that are robust enough to support the long term wellbeing of BHA properties; therefore, the goal of conservation must be balanced with the goal of durable, sustainable systems.

The BHA has made important strides in achieving significant energy and water savings through energy performance contracts (EPCs). Under an EPC, private investors provide initial funding for efficiency improvements that will reduce utility costs. The improvements are then paid off through the stream of utility cost savings over time. The U.S. Department of Housing and Urban Development and the Massachusetts Department of Housing and Community Development support these projects by agreeing to set utility reimbursements at a fixed base-line level such that savings can accrue to pay for the improvements, interest on the loan, and future projects. The BHA has

saved approximately \$17 million in utility costs since 2002 through past EPCs. The most recent EPC, totaling over \$60 million for improvements at thirteen BHA developments, is projected to save over \$120 million in utility costs during the next twenty years. With this contract, it is estimated that approximately \$18 million from these savings will be redistributed amongst the thirteen developments for further upgrades and improvements over the length of the EPC.

Continued utility cost savings are based upon the following measures at selected developments:

- Heating System Upgrades may include small-scale measures (installation of temperature controls and Energy Management System), as well as large-scale measures (decentralization of domestic hot water boilers and boiler replacements, including a conversion to hot water and natural gas in instances where the site currently has a steam and/or oil-fueled boiler).
- Water System Upgrades are uniform throughout each development and include the installation of a low-flow toilet and a low-flow showerhead in every unit.
- Electricity and Lighting Upgrades include exterior lighting controls, exterior security lights, interior common area lights and interior apartment lighting upgrades.

The graphs on the following pages illustrate historical data alongside future savings projections resulting from the most recent EPC.

<sup>1</sup> See the City of Boston's Climate Action Plan at:  
<http://www.cityofboston.gov/climate/bostonsplan/default.asp>



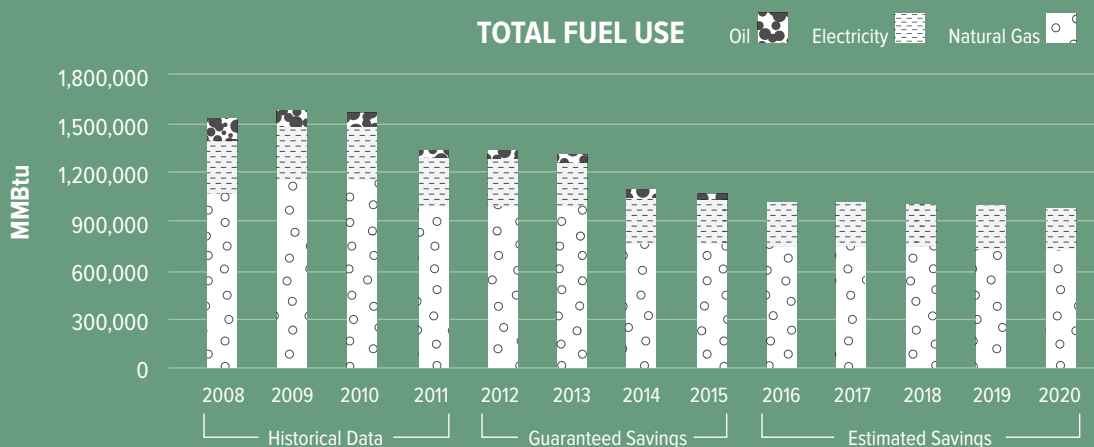
# ENERGY & WATER CONSERVATION

## BOSTON HOUSING AUTHORITY PORTFOLIO

### TOTAL CO<sub>2</sub> EMISSIONS



### TOTAL FUEL USE

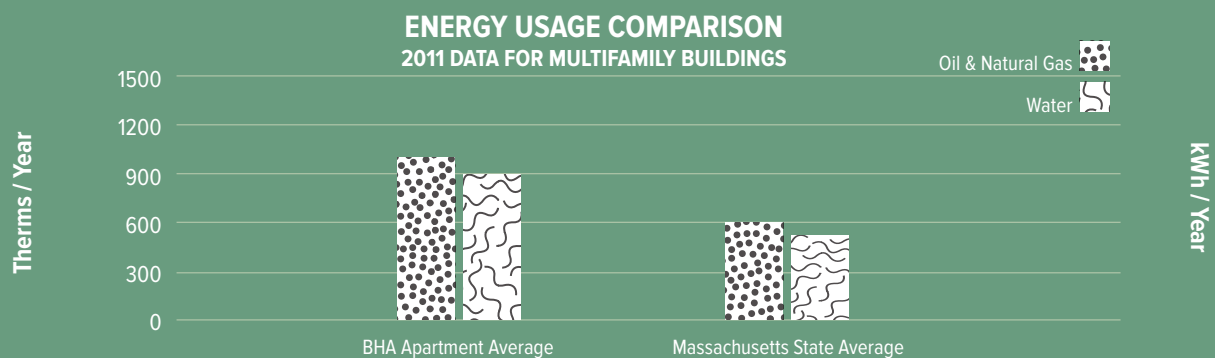
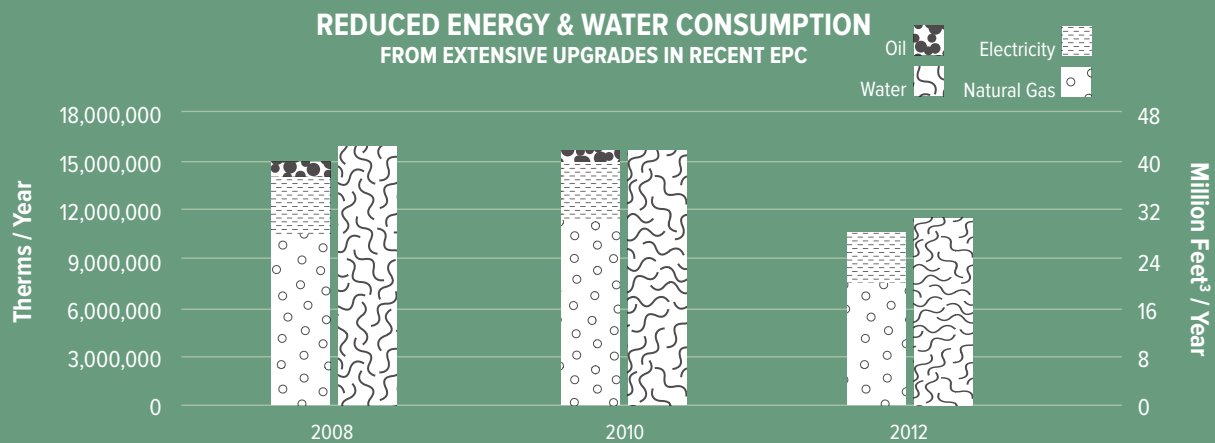
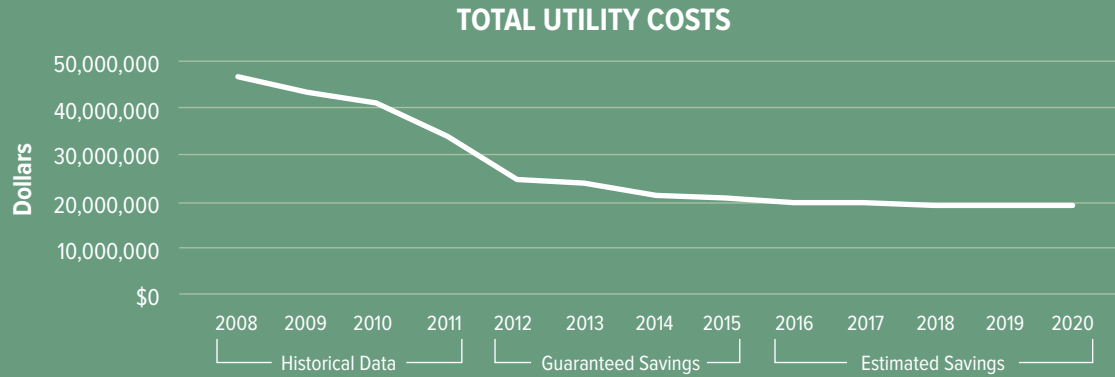


### TOTAL WATER USE



# ENERGY & WATER CONSERVATION

## BOSTON HOUSING AUTHORITY PORTFOLIO



# ENERGY & WATER CONSERVATION

Over the next year, BHA will implement HUD's Green Physical Needs Assessment (GPNA), through which the BHA will compile a detailed inventory of existing conditions and capital needs, as well as a comprehensive energy audit of all properties. This work will form the basis for decisions about the next set of energy and water savings projects as well as future EPCs. Furthermore, in conjunction with implementing the GPNA, BHA will implement a data tracking system to more readily analyze the wealth of utility and cost data that BHA currently maintains.

Input and feedback from residents is extremely helpful when deciding specific aspects of these upgrades. For example, the upgrades for the option to control the exterior lighting of the buildings were not included in the original EPC report, but were later added to the plan after the need was identified by members of the resident committee. Open, two-way communication between the BHA

and residents is essential for success in energy conservation endeavors and further opportunities to facilitate this are a major focus for BHA going forward. Options currently under consideration are resident training programs, information sessions, and systematic feedback on energy consumption.

The overall goals for energy and water conservation are to meet and exceed the reduction goals of Boston's Climate Action Plan while bringing the entire BHA portfolio into alignment with usage levels for other, typical multi-family housing units in Massachusetts. The below graphs show how continued energy upgrades bring these overall goals into reach, while also noting that resident engagement and behavioral aspects of energy conservation will be a necessary component of lowering usage to that of typical multifamily dwellings in the area. The graphs below compare the 2011 energy usage of BHA buildings with the MA average for multi-families.

## ENERGY AND WATER CONSERVATION GOALS

- *Reduce Energy and Water Consumption from 2008 levels by 25% by 2020*
- *Implement the Green Physical Needs Assessment, including a baseline energy audit of all BHA properties in 2014*
- *Participation in HUD's Affordable Green Initiative pilot program in 2013 and meet all requirements for Green Organizational Accreditation by 2015*
- *Develop an energy management review procedure for all capital and redevelopment projects*
- *BHA will create a set of graphic tools by January 1, 2014 to help communicate to residents:*
  - *The amount of energy and water being consumed*
  - *What energy improvements are happening at their site*
  - *Concrete benefits of incorporating sustainable measures into their daily lives*



# SUSTAINABLE OPERATIONS

The BHA has significant opportunities to promote sustainability through its day-to-day operations, primarily at its housing developments but also in its business operations, which encompass over 900 employees, a central office facility as well as maintenance and management facilities throughout the portfolio.

Our Operations division endeavors to support a green and healthy environment through its cleaning, maintenance and repair, turnover, pest management and waste/recycling processes.

Within the past year the BHA has added a full-time Recycling Coordinator to advance the recycling and

waste management practices within the Authority. While improving recycling is an obvious goal for us, the management of trash generally throughout the BHA's housing developments is a key target for improving quality of life for both residents and employees under the Strategic Sustainability Plan.

In addition, in support of creating a healthier environment within BHA housing, the entire portfolio became smoke-free in September, 2012. This was a major, 3-year effort involving significant partnerships among residents, healthcare non-profits, and local universities. Boston is currently the largest entirely smoke-free public housing authority in the nation.

## **SUSTAINABLE OPERATIONS GOALS**

- *Ensure recycling access to 100% of BHA residents by end of 2014 (25% in 2013)*
- *Improve overall waste management system at BHA for efficiency and quality of life improvements*
- *Formalize the BHA Green Procurement policy based upon current pilot efforts by April, 2014*
- *Incorporate identified green, healthy and sustainable principles into the BHA's Operations and Maintenance plan in 2013*
- *Formalize the Chauncy Street sustainability plan and schedule in 2014*
- *Continue to track implementation of the BHA's Non-Smoking Policy; revise implementation guidelines as needed*
- *Implement sustainability review protocol for all capital and redevelopment projects in 2013*



# CONTACT

For comments or questions regarding the Draft Strategic Sustainability Plan, please contact:

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617-988-4128

This plan was discussed at the Resident Empowerment Summit on July 12, 2013 as part of an ongoing effort to engage residents in sustainability at BHA.

