



## MULTIFAMILY GREEN INITIATIVE



### EXECUTIVE SUMMARY

A core component of Fannie Mae's mission is to support the U.S. multifamily housing market to help serve the nation's rental housing needs, focusing on low- to middle-income households and communities. For more than 25 years, Fannie Mae's Multifamily Mortgage Business (Multifamily Business) has successfully and consistently provided a stable, reliable secondary market for participants in the multifamily housing industry. In fact, as of December 2011, the size of Fannie Mae's multifamily guaranty book of business stood at nearly \$193 billion, making Fannie Mae the nation's largest single participant in multifamily mortgage financing according to the Federal Reserve.

The company's housing mission and size of its multifamily portfolio provides a natural alignment of interests with green building principles. Virtually every aspect of green building principles may result in improved financial performance, property condition and tenant satisfaction, ultimately reducing negative environmental impact. These opportunities take on even greater importance given that the average age of the U.S. multifamily housing stock is 38 years, meaning that much of it pre-dates energy efficiency building code requirements.

### TABLE OF CONTENTS

1	Executive Summary
3	Real Estate and Environmental Impact
5	Fannie Mae Multifamily Mortgage Business
9	Multifamily Green Initiative
16	Conclusion
17	Appendix A: Energy Performance Systems and Green Building Certifications
19	Endnotes

Aging multifamily housing stock and increasing energy costs give rise to an opportunity to preserve affordable housing. Given the importance of its role as a stable, long-term source of multifamily financing, Fannie Mae is in a unique position to create opportunities for greater financial and environmental stewardship of multifamily assets. Taking a leadership position in the greening of multifamily assets nationwide, Fannie Mae has set the following goals:

- i) Serve as a catalyst to accelerate multifamily property improvements based on green principles;
- ii) Address the financial and housing industries' need for energy and water performance data for multifamily properties; and
- iii) Raise awareness and advance public discourse on energy efficiency

Fannie Mae's Multifamily Green Initiative is supported by a multidisciplinary strategy to achieve these goals. Primarily, the Green Initiative seeks to integrate property improvements based on green building principles into the standard Multifamily Business. The mission is to improve energy and water efficiency, enhance the financial and environmental sustainability, and extend the useful life of all multifamily housing stock financed by Fannie Mae. Central to the Green Initiative is a core concept referred to as "Property Improvement and Expense Reduction" (PIER), which focuses on the reduction of expenses through property improvements, specifically energy and water efficiency improvements,

throughout the term of a mortgage loan. For example, today the Multifamily Business offers Green Refinance Plus, a financing solution that provides capital for the upfront costs of implementing these investments at the time of refinance and acquisition of a multifamily property. Other efforts to integrate energy and water efficiency improvements include the design of a "green" physical needs assessment (PNA) report

*"Incorporating green building principles into property improvements enhances the overall quality of the existing multifamily housing stock and provides benefits to property owners, tenants, lenders and investors while reducing the stock's impact on the environment."*

and development of a "green" mortgage-backed security (MBS), thereby augmenting the underwriting process and broadening the investor base, respectively.

Another important effort of the Green Initiative is the large-scale collection and analysis of multifamily energy and water performance data. The current lack of such industry data limits green investment activity due to an inability to quantify the full value of energy and water efficiency property improvements. Retrofitting aged multifamily properties with energy and water efficiency improvements reduces energy

and water consumption, thereby counteracting rising energy and water costs. Property owners and tenants can realize a financial benefit through lower utility costs over time.

Ultimately, incorporating green building principles into property improvements enhances the overall quality of the existing multifamily housing stock and provides benefits to property owners, tenants, lenders, and investors while reducing the stock's impact on the environment.

## REAL ESTATE AND ENVIRONMENTAL IMPACT

The built environment has a significant impact on the natural environment. Virtually every aspect of property development and operation has environmental consequences. According to data for the United States provided by the U.S. Environmental Protection Agency (EPA), buildings account for<sup>1</sup>:

- 39 percent of total use of energy from fuel oil, coal, and other energy types
- 68 percent of the total electricity consumption
- 12 percent of the total water consumption
- 38 percent of the carbon dioxide emissions

One of the factors driving such high energy consumption is the age of the U.S. building stock. Properties built prior to the existence of any building codes with energy efficiency requirements are likely to contain inefficient lighting, heating, ventilation and air conditioning, and building envelope (e.g. window, roofing) technologies. Improvements to these building components are relatively easy and economical to

make. Therefore, “beyond the direct ecological impacts of buildings, environmentalists focus on real estate because significant resource reductions can be achieved at relatively affordable costs as compared with other industries.”<sup>2</sup>

### Defining Green Buildings

The term “green” evokes a broad array of meanings and sentiments. There is no single definition of what constitutes a “green building” that is agreed upon by the real estate community, much less the broader environmental constituency. However, there are shared themes. According to the U.S. EPA, green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment by:

- Using energy, water, and other resources efficiently
- Protecting occupant health and improving employee productivity
- Reducing waste, pollution and environmental degradation<sup>3</sup>

A similar definition comes from the Office of the Federal Environmental Executive, a Task Force of the White House Council on Environmental Quality that is responsible for promoting environmental stewardship throughout federal government operations:

*... the practice of (1) increasing the efficiency with which buildings and their sites use energy, water, and materials, and (2) reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal—the complete building life cycle<sup>4</sup>*



The U.S. Green Building Council envisions a broader definition:

*Green Building encompasses planning, design, construction, operations, and ultimately end-of-life recycling or renewal of structures. Green building pursues solutions that represent a healthy and dynamic balance between environmental, social and economic benefits.<sup>5</sup>*

Despite the myriad definitions for green building, the common denominator among the definitions is the focus on reducing the consumption of energy, water and other resources in order to create economic, environmental, and social value.

### Development of the Green Building Market in the U.S.

The contemporary green movement has its roots in the 1970s. Sharp increases in oil prices accompanied with international oil supply shortages spurred research and activity to improve energy efficiency and find alternative and renewable energy sources. The green building field came together more formally in the 1990s with several significant developments, including the development of voluntary labels of a product's energy efficiency, energy performance rating systems and green building certifications.

The Energy Policy Act of 1992 (amended in 2005) provided the statutory basis for federal energy and water conservation activities. With the passage of the Act, the U.S. Federal Government introduced ENERGY STAR®, a voluntary labeling program designed to identify and promote energy-efficient products that reduce greenhouse gas emissions. In 1999, the

EPA expanded the program and introduced the ENERGY STAR energy performance scales and certification for buildings. As of 2011, more than 16,500 buildings have received the ENERGY STAR certification. The ENERGY STAR certification is available for many real estate asset types, including offices and hospitals. Another available energy performance rating system is the Residential Energy Services Network Home Energy Rating System (HERS). Other federal activities, such as the greening of the White House, propelled the movement throughout the 1990s.

Parallel developments outside the federal government also gained momentum in the 1990s. Green building certifications developed along with the ENERGY STAR energy performance rating systems. In 1993, the U.S. Green Building Council (USGBC), a non-profit organization committed to promoting cost-efficient energy- and water-saving buildings, was formed. USGBC has been instrumental in setting standards for the design and construction of U.S. green buildings – its Leadership in Energy and Environmental Design (LEED®) certification system,

#### ***DID YOU KNOW?***

*An energy performance rating generally tracks a property's energy or water consumption over increments of time, from monthly, quarterly to annually.*

*A green building certification generally indicates that a property has met specified criteria at a single point of time.*

*For more information on rating systems and certifications, see Appendix A.*



launched in 1999, has become a widely-accepted system used to certify the sustainability or green measures for a range of building types. As of January 2012, there were more than 11,500 commercial properties and 500 multifamily properties (representing 9,800 residential units) with a LEED certification. Other certifications developed in the 1990s and into the 21st century include Build It Green's Green Point Rated System, National Association of Home Builder's Research Center ICC-700 National Green Building Standard and Enterprise Community

### ***DID YOU KNOW?***

Fannie Mae provides financing to many types of multifamily housing, including student and seniors housing.

**West 27th Street, Los Angeles, CA**  
**USGBC 2011 LEED Platinum**



Owner: Kayne Anderson  
Financing: Fannie Mae & KeyBank

Partner's Green Communities Criteria. Together these programs are meeting developer, owner and tenant (commercial and residential) demand for third-party metrics to review and certify the green qualities of a property.

## **FANNIE MAE MULTIFAMILY MORTGAGE BUSINESS**

A core component of Fannie Mae's mission is to support the U.S. multifamily housing market to help serve the nation's rental housing needs, focusing on low- to middle-income households and communities. In addition to families, Fannie Mae serves the housing needs of military personnel, students and seniors. For more than 25 years, Fannie Mae's Multifamily Mortgage Business has successfully and consistently provided a stable, reliable secondary market for participants in the multifamily housing industry. In fact, as of December 2011, the size of the Fannie Mae multifamily guaranty book of business stood at approximately \$193 billion. According to the Federal Reserve in Q4 2011, Fannie Mae holds 21.2% of the United States' mortgage debt outstanding for multifamily housing. In 2011, the company provided financing to more than 3.8M multifamily units, of which 87.7% were affordable to families earning 100% or below the median income in their area.

*(Source: Fannie Mae December 31, 2011)*

### **Green Leadership in Multifamily Finance**

Given the importance of Fannie Mae as a stable, long-term source of multifamily financing, Fannie Mae is in a unique position to create opportunities for greater financial and environmental stewardship of multifamily assets. Fannie Mae's



Multifamily Green Initiative seeks to encourage the integration of property improvements based on green building principles into the standard Multifamily Business to better serve tenants, borrowers, lenders and investors. The strategy comprises the following three key components:

- **Serving as a catalyst to accelerate multifamily property improvements based on green principles:** Achieved by offering financing solutions that encourage installation of energy and water efficiency property improvements, augmenting the underwriting process, and seeding a broader securitization investor base.
- **Addressing the financial and housing industries' need for energy performance data for multifamily properties:** Achieved by amassing and sharing reliable energy and water performance data on the real costs of operating multifamily buildings. Armed with better data, industry participants will be able to refine underwriting criteria, quantify energy and water efficiency costs and savings, and derive value over a property's life cycle. Benefits gained from such metrics include generating more demand for green improvements and justifying eligibility for government rebates or incentives.
- **Advancing public discourse on energy efficiency and raising awareness:** Achieved through contributing thought, analysis and action in diverse ways ranging from leading the industry to leading by example.

*"As of December 2011, projections indicate that between 2012 and 2016 more than 13,000 loans in Fannie Mae's guaranty book of business will mature and may refinance."*

financed as of December 2011, Fannie Mae has a leadership opportunity to identify and integrate green building strategies into a significant number of existing multifamily properties. In addition, a number of practical and economic realities provide Fannie Mae an added incentive to promote green building strategies:

i) *The U.S. multifamily housing stock is aging and will require capital improvements to remain in commission.*

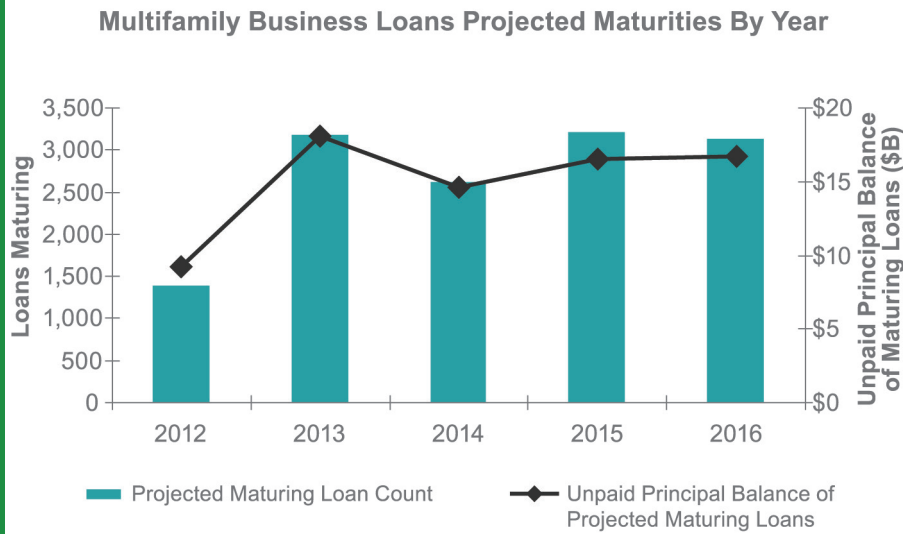
According to a report by Harvard University's Joint Center for Housing Studies, the median age of the U.S. rental housing stock is 38 years.<sup>6</sup> Buildings constructed prior to the Energy Policy Act of 1992 can be less energy efficient than apartments built to more recent building codes. As a building system reaches the end of its useful life, the opportunity arises to retrofit the property to code and to green building standards. The expected benefit is performing, quality properties, backed by Fannie Mae.

ii) *An anticipated refinance wave resulting from maturing loans in Fannie Mae's portfolio provides a near-term opportunity to encourage green property improvements at the time of loan refinance, resulting in better assets backing MBS.*

### Fannie Mae and Green Multifamily Properties

With a portfolio of more than 3.8 million housing units

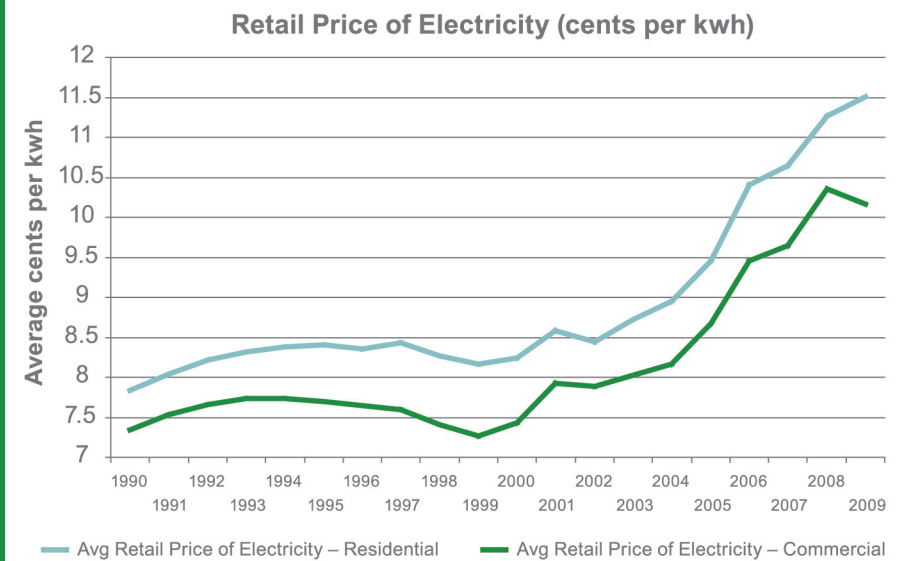
**FIGURE 1: FANNIE MAE MULTIFAMILY BUSINESS LOANS PROJECTED MATURITIES 2012-2016**



Source: 2011 Credit Supplement to the annual report Form 10-K

At the occurrence of a transaction, such as the acquisition or refinance of a property, the borrower and lender assess a property’s operations and capital needs. Whenever capital investments are being considered, it is an opportune time to encourage integrating green property improvements into an investment plan. As of December 2011, projections indicate that between 2012 and 2016 more than 13,000 loans with an aggregate outstanding balance of \$75 billion in Fannie Mae’s guaranty book of business will mature and may refinance. Figure 1 depicts the trend and magnitude of the anticipated loan maturity wave over these years.

**FIGURE 2: RETAIL ELECTRICITY PRICES FOR COMMERCIAL AND RESIDENTIAL PROPERTIES 1990-2009**



Source: U.S. Energy Information Administration, Form EIA-826, “Monthly Electric Sales and Revenue Report with State Distributions Report”.

*iii) Reducing energy costs presents an opportunity to enhance future property financial operations while preserving affordable housing.*

A multifamily property’s energy and water expenses impact both an owner’s net operating income and a tenant’s household net income. A study by the Harvard University Joint Center for Housing shows that household utility costs rose 22.7 percent in the decade 2000-2010 in real terms.<sup>7</sup> Figure 2 provides a detailed look at



one component of that expense—the cost of electricity.

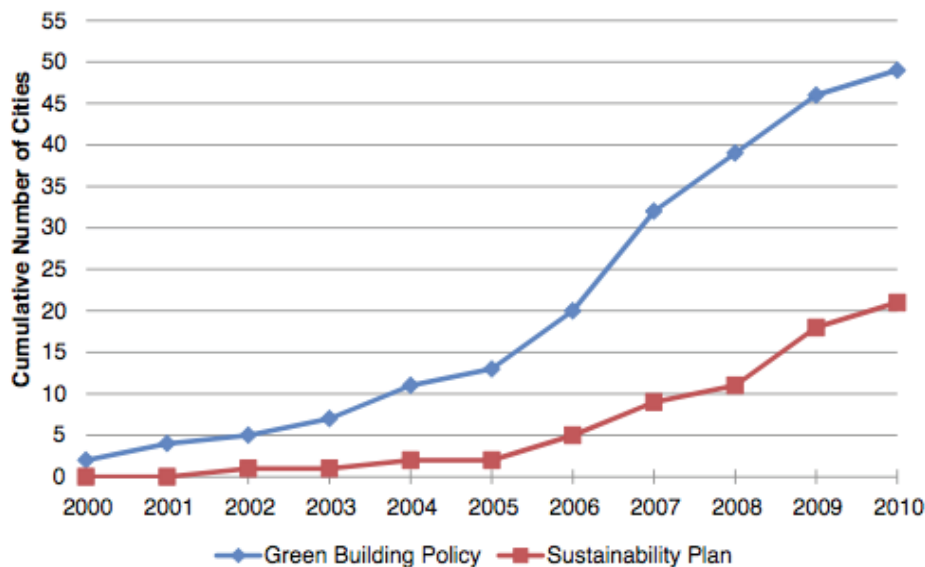
In a rising cost environment, reducing consumption can have a significant impact on both an owner’s and a tenant’s financial bottom-line. Investments in a property’s energy and water efficiency may increase affordability for tenants, a key component of Fannie Mae’s mission. U.S. Census Bureau reports that nearly 80 percent<sup>8</sup> of renters pay separately for electricity consumption. Thus, rising energy costs add to mounting housing affordability pressures. “Indeed, three-quarters of extremely low-income renters in 2009 lived in units built before 1980 . . . investments in weatherization, upgraded heating systems and appliances and other measures could lower household energy use, which would not only improve affordability but would also reduce carbon emissions.”<sup>9</sup>

A recent study sponsored by Deutsche Bank Americas Foundation and Living Cities included an extensive survey of New York City multifamily buildings and demonstrated that building retrofits save energy. In this case, buildings reduced fuel consumption by 19 percent and electric consumption by 7 percent.<sup>10</sup> From an owner and lender’s perspective, counteracting rising energy costs may stabilize or increase property cash flow and may reduce loan default risk.

*iv) Regulatory mandates, sustainability plans and incentives in jurisdictions across the country to improve building energy efficiency will have an impact on properties in the Fannie Mae book of business.*

Energy performance benchmarking, sustainability plans and disclosure laws or ordinances are market transformation

**FIGURE 3: CITIES WITH GREEN BUILDING POLICY OR SUSTAINABILITY PLAN ENACTED BETWEEN 2000 AND 2010 PER GREEN BUILDING REGULATORY DATABASE**



Source: Kontokosta, Constantine E., 2011.



strategies designed to make the green building certification level or energy efficiency of a given building transparent and an explicit component of its value. Property owners then have the potential to highlight the green “level” or energy efficiency of their buildings in order to become more competitive in both the rental and building sale markets. Likewise, such information also helps prospective tenants and buyers compare the relative energy efficiency of their occupancy or acquisition options. As shown by research completed at the New York University Schack Institute of Real Estate, green building policies or a sustainability plans are increasingly being implemented across the United States.<sup>11</sup> Figure 3 shows the increase in the number of cities across the US adopting Green Building Policy or Sustainability Plans.

Along with local mandates, incentives are used by all levels of government and by utility companies to defray some of the upfront cost of undertaking energy efficiency improvements. Such voluntary programs include various types of incentives to increase participation and compliance with local energy efficiency improvement objectives. Effective incentives can be designed to save money or time. Available financial incentives range from grants or rebates to reimbursement for certification fees. Issuance of construction permits on an expedited basis is an example of a time incentive. Besides local mandates, a multitude of voluntary incentive programs provide impetus for owners to undertake green retrofits.

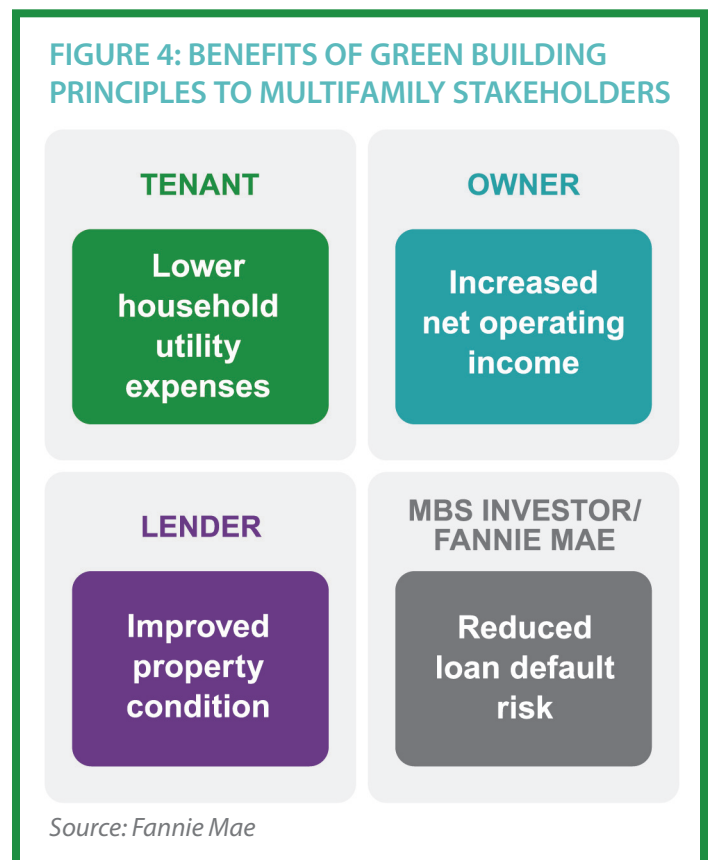
As the real estate and regulatory markets move to address these factors, the Multifamily Business is prepared to support the

multifamily industry through the Multifamily Green Initiative.

## MULTIFAMILY GREEN INITIATIVE

The mission of the Fannie Mae Multifamily Green Initiative is to improve energy and water efficiency, enhance the financial and environmental sustainability, and extend the useful life of multifamily housing stock financed by Fannie Mae. Fannie Mae expects this initiative will make a direct contribution to enhanced affordability, reduced risk and increased tenant satisfaction. Launched in 2010, the strategy consists of three broad components as elaborated below. Additional information on the Fannie Mae Green Initiative can be found at [www.fanniemaegreeninitiative.com](http://www.fanniemaegreeninitiative.com).

### Strategy 1 — Accelerate multifamily property



**FIGURE 5: PIER OPPORTUNITIES THROUGHOUT FANNIE MAE MULTIFAMILY FINANCING PROCESS**


### improvements based on green principles

A central concept integrated into this strategy is that of Property Improvement and Expense Reduction (PIER). While green building refers to a wide range of activities, Fannie Mae is targeting property improvements that may also reduce operating expenses. Specifically focusing on reducing energy and water consumption translates into increased value across the stakeholder spectrum as summarized in Figure 4.

PIER improvements can take the form of major capital expenditures, such as replacing windows and appliances with their ENERGY STAR-rated counterparts. However, typical PIER improvements can also include low-cost practices, such as installing low-flow water faucets, shower heads, and toilets or replacing incandescent lighting with compact fluorescent light bulbs. Importantly for Fannie Mae and its portfolio, the PIER concept can be applied to a diverse set of property types, ranging from market-rate to affordable to special asset classes (senior, student, or military housing) as well as to new construction or existing buildings.

Figure 5 shows specific ways in which Fannie Mae is implementing this vision to facilitate PIER or energy and water efficiency property improvements.

**Origination – Green Refinance Plus:** Green Refinance Plus is a financing solution that provides an incentive for owners to undertake energy and water efficiency improvements at the time of purchase or refinance of an existing mortgage. The Federal Housing Administration (FHA) and Fannie Mae have joined forces to offer this product enhancement supporting the preservation of affordable housing projects with expiring Low Income Housing Tax Credits. Approximately \$100 million is the expected initial refinance volume. Green Refinance Plus provides additional loan proceeds to the owner helping to overcome the implementation cost barrier by financing the initial costs of property improvements, such as upgrading heating, ventilation and air conditioning systems, and spreading out the cost over time. In addition, such upgrades can reduce operating expenses for the owner and residents over the asset’s life.

Other future product enhancements to be piloted include financing solutions for market-rate properties and supplemental mortgages.

#### **Underwriting – Green Physical Needs Assessment (PNA):**

A PNA is a third-party assessment of the physical condition of a property and is generally required for underwriting multifamily properties. A Green PNA report not only evaluates the immediate repairs needed at a property, but also specifically identifies improvement options that may reduce energy and water consumption immediately and over time. The Green PNA is now required for all properties participating in the Green Refinance Plus program and is optional for any other Fannie Mae financial products. The Green PNA

is a valuable reference tool for property owners because it identifies green operations and maintenance practices that can be applied throughout the asset's remaining life and reduce energy and water costs for the owner and tenant.

#### **Securitization – Green Mortgage-backed Security**

**Disclosure:** The development of a broad investor market for MBS based on either green buildings or green financing is necessary to facilitate demand for implementing green property improvements. Fannie Mae is assessing potential demand for green fixed-income securities within its existing sizable investor base and within the growing sustainable/ socially responsible investor community.

## **DEAL SPOTLIGHT**

### **Fannie Mae Supports Affordable Housing and Energy Efficiency**

#### **Financing Amount:**

\$19 million

#### **Project Name:**

City Gardens – Santa Ana, CA

#### **Owner:**

LINC Housing

#### **Lender:**

Enterprise Mortgage Investments



Provided by LINC Housing. Photographer, Gary Krueger

Green Refinance Plus provides additional proceeds for some \$1.5 million in renovations and energy-efficiency upgrades to City Gardens, a 274-unit affordable housing complex serving primarily families with children. In one of the nation's most expensive housing markets, the apartments – a mix of studios, 1- and 2-bedroom apartments – rent below the maximum that can be charged under the Low Income Housing Tax Credit (LIHTC) program and are fully 22% below market rate.

Working through an experienced Special Affordable Lender, Enterprise Mortgage Investments, Fannie Mae's Green Refinance Plus loan enabled the sponsor to retire tax exempt bonds, buy out the

LIHTC equity partner, and realize roughly \$1.5 million for property improvements. Almost one third of those improvements are "green" – replacing old inefficient gas-fired furnaces with ENERGY STAR-rated furnaces, installing low-flow plumbing fixtures, installing energy efficient lighting in units and common areas, and installing a passive solar domestic hot water system. In addition, the property was landscaped to provide relief from the "heat island" effect and irrigated with reused grey water, lowering both energy and water consumption on the property and reducing operating expenses. These measures are projected to save the owner and the tenants costs on their energy and water bills.

For investors to determine whether a security meets the investment criteria established by their respective institutions, they need as much information about the underlying loan and asset as possible. This information can be found in each security’s disclosure documents. Fannie Mae has embarked on a disclosure analysis project to anticipate the information needs of the green investment community and create an MBS considered as a green investment.

To capture and communicate to the investor community the nature of an asset’s green characteristics, Fannie Mae now discloses specific data for two categories:

- i) Green Building Certification
- ii) Green Financing

Fannie Mae can now disclose which green building certification or rating the property has achieved. The eligible certification and rating systems are listed in Table 1:

**TABLE 1: MULTIFAMILY GREEN BUILDING CERTIFICATIONS AND ENERGY PERFORMANCE RATING SYSTEMS APPLICABLE FOR FANNIE MAE GREEN MBS DESIGNATION**

Certification / Rating	Awarding Entity
EarthCraft Multifamily	Greater Atlanta Home Builders Association / Southface
Enterprise Green Communities Criteria	Enterprise Community Partners, Inc.
Green Globes	Green Building Initiative
GreenPoint Rated New Home and GreenPoint Rated Existing Home (Whole Building Label)	Build It Green
Leadership in Energy and Environmental Design – LEED for Homes Multifamily Mid-Rise; LEED New Construction; LEED Existing Buildings Operations and Maintenance	U.S. Green Building Council
ICC-700 National Green Building Standard	National Association of Home Builders Research Center
ENERGY STAR Multifamily High Rise; ENERGY STAR v.3 (for buildings under 4 stories)	U.S. Environmental Protection Agency
Home Energy Rating System (for buildings under 4 stories)	Residential Energy Services Network

*For a full description of each certification, refer to Appendix A: Table 2.*

The Green Financing classification refers to the underlying loan as part of a green financing solution, such as the Green Refinance Plus program. As of February 2012, investor's can determine the green nature of the asset or financing and can make their investment decisions accordingly. *Fannie Mae's new green disclosures will provide greater transparency and encourage liquidity within the developing green MBS market.*

#### **Asset Management – Database of State Incentives for Renewables & Efficiency (DSIRE™) for Multifamily and PIER**

**for Real Estate Owned (REO) assets:** Multifamily owners regularly seek access to financial rebates and incentives to implement PIER at their properties. DSIRE is a comprehensive on-line source of centralized information on federal, state, local and utility company incentives and policies that promote energy and water efficiency for all building types. Established in 1995 and funded by the U.S. Department of Energy, the DSIRE database is updated continually with the latest available incentives to implement energy-efficient property improvements. Because upfront costs can present a barrier to investment, streamlined access to attractive rebates would encourage owners to use available energy and water efficiency rebates. *To support the multifamily industry, Fannie Mae has partnered with DSIRE to enable multifamily owners to identify the incentives applicable to multifamily properties through the Fannie Mae Green Initiative web site.*

Since preparing a foreclosed property for disposition often includes making property improvements, Fannie Mae

is reviewing capital improvement strategies for ways to incorporate energy and water efficiency improvements in Multifamily REO properties in order to enhance value. An REO multifamily property located in Orlando, FL is serving as a pilot property for Fannie Mae asset management staff to incorporate green property improvements into the capital improvement strategy for REO assets. *Fannie Mae seeks to return value to the taxpayer through the investment in PIER opportunities at REO properties.*

#### ***DID YOU KNOW?***

Multifamily owners and property managers can now access information on financial rebates and incentives applicable to multifamily properties, through Fannie Mae's website. Information is supplied and updated by the Database of State Incentives for Renewables & Efficiency (DSIRE).

Go to [www.fanniemaegreeninitiative.com](http://www.fanniemaegreeninitiative.com)



#### **Strategy 2 — Contribute resources and data to develop reliable energy performance data and tools to access other relevant information, such as local incentives and rebates**

Measurement of energy, water and costs at multifamily properties is complicated by complex metering and billing structures in place. Therefore, valuing the benefits of energy efficiency retrofits is a topic of much debate.

To fill this information gap and to build a foundation upon which to quantify the value of energy and water efficiency



improvements for multifamily properties, Fannie Mae is collaborating with energy and water industry participants and multifamily stakeholders in the following ways:

**Multifamily Industry Taxonomy:** Fannie Mae leads a working group of property owners, lenders, non-profit entities, foundations, energy management and efficiency experts, third-party utility billers, and federal agency representatives to develop a national multifamily taxonomy. This taxonomy is dedicated to establishing a national standardized protocol for collecting and sharing data on property attributes combined with energy and water consumption and cost data. A standardized protocol will further the industry goal of amassing reliable property energy and water use data on a large-scale. *Standardizing data sets would enable comparability, establish benchmarks, quantify the benefits of property retrofits, and facilitate research activities.*

The taxonomy effort will contribute to the data collection and reporting standards for three other industry projects in which Fannie Mae is participating, including:

1. Implementation of Energy and Water Market Research
2. Standardization of a multifamily industry Green PNA
3. Development of Commercial Real Estate Finance Council's Investor Reporting Package standards

**Energy and Water Multifamily Market Research:** In an effort to quantify the energy and water costs carried by property owners and tenants across the U.S., Fannie Mae is conducting a nationwide survey of multifamily property owners. This survey has been endorsed by the Commercial Real Estate Finance

#### ***DID YOU KNOW?***

According to the EPA, more than 80 percent of Americans recognize the ENERGY STAR label.

In 2011, Fannie Mae became an ENERGY STAR Partner.



Council, National Multi Housing Council and the Urban Land Institute. A subset of owners within Fannie Mae's multifamily portfolio will be asked to voluntarily provide energy and water consumption and cost data. The resulting data will be analyzed and a report summarizing the findings of national and regional energy consumption trends will be shared with survey participants. The data set will be used to explore the development of an EPA ENERGY STAR energy performance rating system specific to existing multifamily properties. *If the exploration is successful, multifamily owners may have a 1 to 100 rating system for their existing multifamily properties, allowing owners to track, compare and improve the relative energy performance of their buildings by 2013.*

*Fannie Mae is engaged with the real estate, financial and energy efficiency communities on topics related to multifamily energy and water efficiency financing and standards.*

### **Strategy 3 – Promoting Public Discourse and Raising Awareness**

A variety of other activities enable Fannie Mae to promote on-going public discourse and raise awareness regarding the benefits of retrofitting existing buildings. A few examples are summarized below.

**Green Rental Housing Discussions:** The Fannie Mae Green Initiative regularly brings together property owners, lenders, non-profits, industry associations, federal agencies, and experts in energy and water efficiency to discuss energy and water efficiency for financing multifamily properties. The discussions provide an opportunity and forum to elevate issues, and priorities with a focus on devising and implementing the best strategies to integrate and finance energy and water efficiency retrofits. Facilitating these external perspectives provides insight and guidance on creating the most effective strategy for the Green Initiative. Past discussions topics have included:

- Standardizing physical needs assessments and energy audits for multifamily properties
- Developing an industry standard and platform for collecting and storing multifamily energy and water data
- Integrating the financing of energy and water efficiency property improvements into Fannie Mae’s existing multifamily financial products

Fannie Mae is to engaged with the real estate, financial and energy efficiency communities on topics related to multifamily energy and water efficiency mortgage financing, and standards.

#### **PIER Opportunities within Fannie Mae’s Office Portfolio:**

Fannie Mae is pursuing energy and water efficiency strategies within its own corporate office facilities and has been recognized for its efforts. In 2011, Fannie Mae entered one of its Washington, DC office properties into the ENERGY STAR National Building Competition, run by the EPA. Fannie Mae’s property on Wisconsin Avenue NW, Washington, DC finished 6th out of 245 competitors in the 2011 ENERGY STAR National building competition. The Facilities team reduced the property’s energy consumption by 34% with actions such as retrofitting interior lighting and replacing heating boilers with new high-efficiency units. The anticipated operating cost savings are \$49,000 annually. Fannie Mae raised employee awareness of these activities by providing guided tours of the property’s upgraded equipment and sharing progress updates through regular email communications.



Fannie Mae's corporate conference center located at 4000 Wisconsin Avenue NW, Washington DC achieved LEED Gold certification in 2009. This facility boasts low flow water fixtures, the elimination of chlorofluorocarbon (CFC) refrigerants, and smart lighting solutions. *By implementing these activities, Fannie Mae is capturing the value of green building principles and energy and water efficiency for the benefit of its employees, the taxpayer and the environment.*

## CONCLUSION

Continuing capital investment in and maintenance of existing multifamily buildings is critical to fulfilling the long-term demand for affordable housing. For aging properties, energy and water efficiency retrofits not only improve physical condition of properties, but also provide a range of benefits for property owners, tenants, lenders and investors. Supportive financing and tools are required to take advantage of the energy and water efficiency potential in the nation's multifamily housing stock. Fannie Mae is stepping up to meet this challenge through a multifaceted approach with its Multifamily Green Initiative.

## APPENDIX A: ENERGY PERFORMANCE SYSTEMS AND GREEN BUILDING CERTIFICATIONS

An **energy or water performance rating system** tracks a property's energy or water consumption over increments of time, from monthly, quarterly to annually. The rating system uses the actual energy consumption, measured in kilowatt hours, therms and other units of measure, and then may calculate a single number summarizing the total energy consumption of a property.

Similar to other familiar product certifications, such as the Good Housekeeping Seal™, a **green building certification** indicates to the occupant and the market that a building, home or community was designed and built or retrofitted to achieve defined standards. Depending on the rating system, a green building certification may award points for construction or maintenance processes that incorporate key principles such as development of an existing building site instead of previously undeveloped land, installation of energy and water conservation measures, use of materials from renewable or recycled sources and design and installation of appropriate ventilation systems to ensure high indoor air quality. Once a

total point minimum is accumulated, a certification is awarded by an independent, qualified, third-party organization, providing an objective, consistent, and branded metric. The benefit of such a certification is broad market recognition of a building's environmental attributes, with the effect of influencing purchase or occupancy decisions. USGBC's LEED certification is an example of a green building certification.

A green building certification generally indicates that a property has met the specified criteria at a single point of time. Until the certification is renewed, generally on-going metrics are not tracked on a regular basis.

Just as there are multiple definitions of "green", multiple green building certifications and energy performance rating systems are available in the market for commercial, multifamily and single family buildings. Reflecting the variety of views on green building standards, Table 2 summarizes a number of widely-recognized building certifications and energy performance rating systems that may be applicable to multifamily properties.

Please contact the individual awarding entity to confirm eligibility for your property.



TABLE 2: LIST OF CERTIFICATION AND RATING SYSTEMS APPLICABLE TO MULTIFAMILY PROPERTIES

Certification / Rating	Awarding Entity	Description
<i>Green Building Certification</i>		
EarthCraft Multifamily	Greater Atlanta Home Builders Association / Southface	Designed suit the unique climate conditions (high heat and humidity), as well as wide temperature swings of the Southeast U.S.
Enterprise Green Communities Criteria	Enterprise Community Partners, Inc.	Focused on affordable housing development types, including new construction and rehabilitation of both multifamily and single-family residential projects
Green Globes	Green Building Initiative	Internationally-recognized program for new and existing commercial buildings
GreenPoint Rated New Home and GreenPoint Rated Existing Home (Whole Building Label)	Build It Green	Residential new construction and renovations focused within the state of California
Leadership in Energy and Environmental Design – LEED for Homes Multifamily Mid-Rise; LEED New Construction; LEED Existing Buildings Operations and Maintenance	U.S. Green Building Council	Internationally-recognized rating for new construction, rehabilitation and operation of offices, retail and service establishments, institutional buildings, hotels and residential properties
ICC-700 National Green Building Standard	National Association of Home Builders Research Center	Focused on residential construction – new or remodeled single-family homes, new or remodeled multifamily buildings, and residential land developments. Meets criteria of the ICC 700-2008 National Green Building Standard™
ENERGY STAR Multifamily High Rise; ENERGY STAR v.3 (for buildings under 4 stories)	U.S. Environmental Protection Agency	Internationally-recognized labeling program for multifamily properties for buildings under 4 stories
<i>Energy Performance Rating System</i>		
Home Energy Rating System (for building under 4 stories)	Residential Energy Services Network	Nationally-recognized home energy rating system, measuring energy performance and incorporated into several other certification systems including Energy Star for Homes, LEED Homes and National Association of Home Builders Green Buildings Program



## CONTACTS

### Multifamily Green Initiative

Email: [green\\_initiative@fanniemae.com](mailto:green_initiative@fanniemae.com)

Web: [www.fanniemae.greeninitiative.com](http://www.fanniemae.greeninitiative.com)

### DISCLAIMER

The information contained in this document is for general informational purposes only and is not intended as an offer or solicitation with respect to the purchase or sale of securities. Any investment decision as to any purchase or sale of securities referred to in the document must be made solely on the basis of existing public information on the securities. You may not rely on the completeness or accuracy of the information contained in this document.

---

## ENDNOTES

1. <http://www.epa.gov/greenbuilding/pubs/whybuild.htm>
2. RREEF Research, "The Greening of U.S. Investment Real Estate - Market Fundamentals, Prospects and Opportunities", November 2007
3. <http://www.epa.gov/greenbuilding/pubs/whybuild.htm>
4. "The Federal Commitment to Green Building: Experiences and Expectations", Office of the Federal Environmental Executive, 2003
5. USGBC, "Green Building and LEED Core Concepts Guide" Second Edition
6. Harvard University Joint Center for Housing Studies, "America's Rental Housing – Meeting Challenges, Building on Opportunities", April 2011
7. Harvard University Joint Center for Housing Studies, "America's Rental Housing – Meeting Challenges, Building on Opportunities", April 2011
8. U.S. Census Bureau, "American Housing Survey for the United States: 2009", March 2011
9. Harvard University Joint Center for Housing Studies, "America's Rental Housing-Meeting Challenges, Building on Opportunities", April 2011
10. "Recognizing the Benefits of Energy Efficiency in Multifamily Underwriting", Deutsche Bank Americas Foundation and Living Cities, January 2012
11. Kontokosta, Constantine E. "Greening the Regulatory Landscape: The Spatial and Temporal Diffusion of Green Building Policies in U.S. Cities." *Journal for Sustainable Real Estate*, Vol 3, No. 1 – 2011.