Impact Bonds Report
2021
Based on Combined Data Since 2019
Table of Contents

<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Opening Message</td>
</tr>
<tr>
<td></td>
<td>Robert Koontz, Senior Vice President, Head of Multifamily Capital Markets</td>
</tr>
<tr>
<td>5</td>
<td>Freddie Mac Sustainability Strategy</td>
</tr>
<tr>
<td>6</td>
<td>Freddie Mac Multifamily Impact Bonds Strategy</td>
</tr>
<tr>
<td>8</td>
<td>2021 Impact Summary for Multifamily Impact Bonds</td>
</tr>
<tr>
<td>10</td>
<td>Industry Partnerships</td>
</tr>
<tr>
<td>12</td>
<td>Green Bonds</td>
</tr>
<tr>
<td>16</td>
<td>Environmental Impact</td>
</tr>
<tr>
<td>20</td>
<td>Social Impact</td>
</tr>
<tr>
<td>26</td>
<td>Social Bonds</td>
</tr>
<tr>
<td>38</td>
<td>Sustainability Bonds</td>
</tr>
<tr>
<td>40</td>
<td>Social Impact</td>
</tr>
<tr>
<td>44</td>
<td>Environmental Impact</td>
</tr>
<tr>
<td>49</td>
<td>Appendix I: Freddie Mac Overview</td>
</tr>
<tr>
<td>50</td>
<td>Appendix II: Our Research and Duty to Serve</td>
</tr>
<tr>
<td>51</td>
<td>Appendix III: Impact Bonds Reporting Methodology</td>
</tr>
</tbody>
</table>
“Our ability to have a measurable impact is greater than ever before.”

At Freddie Mac, affordability is a key pillar of our mission. It is at the heart of what we do and a core measure of our long-term success.

One way we achieve that goal is through our Impact Bonds platform, which we launched in 2019. Since that time, we’ve worked to align our issuances with the needs of tenants, borrowers and ultimately investors. Each of the loans securitized through our Impact Bond deals has clear social, sustainability or environmental goals and adheres to a strict set of guidelines. This disciplined approach sets us apart in the industry.

Today, we’re immensely proud of our practices, as well as our results, having recently surpassed the $10 billion milestone in Impact Bonds issuances. Our work is having a measurable and positive impact on communities throughout the United States.

As we work to build momentum, we’re doing so with a keen eye toward building bridges within the industry. We’re proud to have joined the advisory board of Nasdaq’s Sustainable Bond Network. We are also now a Nasdaq Environmental, Social and Governance (ESG) Transparency Partner.

We’re also proud that our efforts are garnering well-deserved attention. In 2021, we were recognized by the Climate Bonds Initiative for our work to support green housing finance. This year, Environmental Finance awarded our Housing for the Intellectually and Developmentally Disabled execution as their Social Bond of the Year.

We see these accomplishments as an indication of our success to date, but we have much more to do. Rapidly rising housing costs are creating even greater affordability challenges, exacerbating the disparity in net worth between majority and minority groups. We are dedicated to addressing affordability and housing inequity head on and are appreciative of our investors who are equally committed to these goals. Together, our ability to have a measurable impact is greater than ever before.

Freddie Mac’s commitment to supporting quality affordable rental housing is central to everything we do, and these efforts have strong support from our senior leadership. In 2020, Freddie Mac established a Sustainability Office that manages our corporate sustainability strategy and drives implementation across the company. An example of our work in action includes the release of our inaugural SASB report which ties directly to our four ESG pillars: purpose, planet, people and practices.

Together, we have built an outstanding Impact Bonds program that is steeped in both our mission and our corporate values. We are well positioned to meet growing investor demand for these products.

Robert Koontz
Senior Vice President, Multifamily Capital Markets

Freddie Mac Sustainability Strategy

Freddie Mac’s mission is to provide liquidity, stability and affordability to the housing market. We interpret that mission expansively to meet the country’s broader housing needs by providing equitable access to affordable and sustainable housing. This includes integrating ESG strategies into our business and operations, which we accomplish through four pillars:

**Purpose**
- Mission: Deliver solutions to meet the country’s housing needs in good times and bad, promoting greater access to affordable and sustainable homes and rental properties
  - Address longstanding issues of inequity in housing
  - Provide liquidity, stability and affordability to the housing market, particularly in underserved communities across the country

**Planet**
- Climate: Promote environmentally sustainable single-family and multifamily housing to help reduce climate-related risks and increase affordability
  - Attract impact capital to the housing market
  - Increase resilient, efficient and environmentally sustainable housing

**People**
- Diversity, Equity, Inclusion, Accessibility and Talent: Develop our future workforce and strengthen the housing market through diversity, equity, inclusion and accessibility (DEIA)
  - Build greater DEIA at Freddie Mac
  - Promote DEIA among our partners and suppliers throughout the industry and community

**Practices**
- Sustainable Operation: Provide stability to the housing industry through outstanding risk management
  - Further integrate sustainability in our business and operations
  - Reduce carbon emissions from our operations
Freddie Mac Multifamily Impact Bonds Strategy

Freddie Mac’s commitment to affordable, quality and sustainable rental housing is central to everything we do, including our research, the products, programs and services we offer and much more. Our ongoing support – in all economic conditions and for markets that might otherwise be neglected or underserved – distinguishes us from private funding sources. Driven by a genuine desire to effect change, we confront persistent housing challenges through innovative thinking that helps expand access to housing in all areas of financing.

With that in mind, we offer Impact Bonds offerings, comprising of Green, Social and Sustainability Bonds, which target a specific impact area that relates to certain environmental or social challenges. We have strict criteria and detailed prescreening procedures for each offering.

**Green**
Environmental impact in workforce housing

$4.6 Billion
of total issuance as of December 2021

**Social**
Looking deeper into our mission of supporting affordable housing by targeting additional social impact causes

$2.3 Billion
of total issuance as of December 2021

**Sustainability**
Supporting sustainable communities by financing affordable housing, may include certain environmental features

$3.4 Billion
of total issuance as of December 2021

“Freddie Mac recognizes the measurable impact of green and social financing tools to support affordable, sustainable housing for American families. We are pleased to be recognized by the Climate Bonds Initiative and Environmental Finance for our commitment to impactful housing.”

- Robert Koontz
  Senior Vice President, Multifamily Capital Markets
2021 Impact Summary for Multifamily Impact Bonds
Based on Combined Data since 2019

ENVIRONMENTAL IMPACT

Water improvements are projected to save approximately 485 million gallons of water per year – the equivalent of filling the Lincoln Memorial Reflecting Pool in Washington, D.C., 72 times or the annual water usage for over 5,200 households across America.

Energy reductions are projected to save 359 million kBtu per year – enough energy to power roughly 9,825 homes.

Annual greenhouse gas (GHG) emissions are projected to decrease by nearly 28,922 metric tons – the equivalent of removing 6,232 cars from the road for one year or carbon sequestered by 478,228 tree seedlings grown for 10 years.

SOCIAL IMPACT

Impact Bonds Proceeds Financed:

- 45,198 or 41.7% of the units backing the Impact Bonds are affordable to tenants earning at or below 50% Area Median Income (AMI)
- 68,157 or 62.9% of the units backing the Impact Bonds are affordable to tenants earning at or below 60% AMI
- 96,080 or 88.6% of the units backing the Impact Bonds are affordable to tenants earning at or below 80% AMI
- 52,625 or 48.5% of the units backing the Impact Bonds are located in areas where 25% or more people above 25 years old have at least a bachelor’s degree, and
- 14,879 or 13.7% of the units are located in areas where the population with at least a bachelor’s degree is 1.5x higher than the national average
- 38,840 or 35.8% of the units backing the Impact Bonds are located in areas where life expectancy is at or above national average (78.8 years), and
- 27,790 or 25.6% of the units are located in areas where life expectancy is at or above 80 years old


Financing in High Opportunity Areas

Freddie Mac uses the definition of High Opportunity Areas as described in the Duty to Serve Regulation and the associated Duty to Serve Evaluation Guidance published by the Federal Housing Finance Agency (FHFA). Per Duty to Serve, a High Opportunity Area is an area designated as a Difficult Development Area (DDA) by the U.S. Department of Housing and Urban Development (HUD) or designated as a High Opportunity Area by a state’s Qualified Allocation Plan (QAP).

- Difficult Development Area: Certain areas designated by HUD as a DDA during any year covered by a Freddie Mac Duty to Serve Underserved Markets Plan (Plan) or in the year prior to a Plan’s effective date, with a poverty rate that falls below 10% (for Metropolitan Statistical Areas (MSAs)) or below 15% (for MSAs), are identified by FHFA as High Opportunity Areas. It is important to note that HUD’s DDAs were developed using zip codes (for MSAs) and counties (outside of MSAs) as the geographic units. Because Duty to Serve’s designation using DDAs is at the census tract level, there are some cases of geographic discrepancy.
- Qualified Allocation Plan: Certain census tracts from eligible Low-Income Housing Tax Credit (LIHTC) QAPs are identified by FHFA as High Opportunity Areas. These have a poverty rate that falls below 10% (for MSAs) or below 15% (for non-MSAs).

A list of census tracts can be found using Freddie Mac’s Multifamily Mission Map or on FHFA’s website. A list of eligible LIHTC QAPs can be found here.

Impact Bonds proceeds have financed 56 properties with 8,980 units located in High Opportunity Areas.

Footnotes:

1 On average, each person uses 80-100 gallons of water per day. Our calculations are based on 100 gallons/day/person (https://www.usgs.gov/special-topics/water-science-school/college/water-usage-how-much-water-do-i-use-home-each-day?qt-science_center_objects=0#qt-science_center_objects). The average household size for 2021 is 2.51 people (https://www.census.gov/data/tables/time-series/demo/households.html).

2 In 2020, the average annual electricity consumption for a U.S. residential utility customer was 10,715 kilowatthours (kWh), an average of about 893 kWh per month.

3 Calculated using https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
Nasdaq launched the Sustainable Bond Network in December 2019. Freddie Mac Multifamily is a member of its advisory board and is dedicated to the success of the initiative. Together, we are working to help develop products that are environmentally and socially sustainable.

ENERGY STAR® is a voluntary U.S. Environmental Protection Agency program that helps businesses and individuals save money and protect our climate through enhanced energy efficiency.

Freddie Mac has been an ENERGY STAR partner since 2014. Through our K-G series and Multi PCs®, our Green Bonds consolidate all utility data into the ENERGY STAR Portfolio Manager® system to track properties’ ongoing energy and water performance.
Green Bonds Program Overview

By carefully studying factors that contribute to current housing challenges, we identified opportunities to improve and finance workforce rental housing that:

a. benefits tenants and borrowers through lower monthly expenses; and
b. simultaneously supports the environment through reduced energy and water consumption.

In 2016, we launched the Freddie Mac Multifamily Green Advantage® program, which finances property improvements to make multifamily housing more energy- and water-efficient. Since then, we have been a market leader in providing capital to improve workforce housing.

**ENVIRONMENTAL IMPACT**

Water improvements are projected to save 485 million gallons of water per year – the equivalent of filling the Lincoln Memorial Reflecting Pool in Washington, D.C., 72 times\(^5\) or the annual water usage for over 5,200 households across America\(^6\).

Energy reductions are projected to save 359 million kBtu per year – enough energy to power roughly 9,825 homes\(^7\).

Annual GHG emissions are projected to decrease by nearly 28,922 metric tons, the equivalent of removing 6,232 cars from the road for a year or carbon sequestered by 478,228 tree seedlings grown for 10 years\(^8\).

**SOCIAL IMPACT**

81.3% of units are affordable to families earning at or below 80% AMI.

Improvements are projected to save tenants an average of $251 per unit annually through lower utility costs.

4,536 units are located in High Opportunity Areas.

Please refer to Appendix III on page 51 for a description of our impact reporting methodology.

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\(^{5}\) The Lincoln Memorial Reflecting Pool holds approximately 6,750,000 gallons of water according to https://en.wikipedia.org/wiki/Lincoln_Memorial_Reflecting_Pool

\(^{6}\) On average, each person uses 80-100 gallons of water per day. Our calculation is based on 100 gallons/day/person (https://www.usgs.gov/special-topics/water-science-school/science/water-use-how-much-water-do-i-use-home-each-day?qt-science_center_objects=0&qt-science_center_objects=0), the average household size for 2021 is 2.51 people (https://www.census.gov/data/tables/time-series/demo/families/households.html)

\(^{7}\) In 2020, the average annual electricity consumption for a U.S. residential utility customer was 10,715 kilowatthours (kWh), an average of about 893 kWh per month: https://www.eia.gov/tools/faqs/faq.php?id=97&n=3

\(^{8}\) Calculated using https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
The Four Pillars of the Green Bond Principles

The Freddie Mac Multifamily Green Bonds Framework is aligned with the four core components of the International Capital Market Association’s Green Bond Principles and focuses on our use of proceeds, the process for project evaluation and selection, the management of proceeds and transparency through regular reporting.

Green Bonds Issuance Snapshot

Freddie Mac Multifamily has issued approximately $4.56 billion of Green Bonds since 2019

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Issuance Year</th>
<th>Volume ($ millions)</th>
<th># of Loans</th>
<th># of Units</th>
<th># of Units Affordable at or below 80% AMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-G01</td>
<td>2019</td>
<td>$483.7</td>
<td>19</td>
<td>4,698</td>
<td>3,245</td>
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<tr>
<td>K-G02</td>
<td>2019</td>
<td>$544.1</td>
<td>17</td>
<td>5,183</td>
<td>4,243</td>
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<td>Multi PCs (2019)</td>
<td>2019</td>
<td>$968.5</td>
<td>26</td>
<td>8,399</td>
<td>6,328</td>
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<tr>
<td>K-G03</td>
<td>2020</td>
<td>$594.6</td>
<td>24</td>
<td>5,756</td>
<td>5,037</td>
</tr>
<tr>
<td>K-G04</td>
<td>2020</td>
<td>$633.1</td>
<td>25</td>
<td>5,501</td>
<td>4,684</td>
</tr>
<tr>
<td>Multi PCs (2020)</td>
<td>2020</td>
<td>$27.4</td>
<td>3</td>
<td>474</td>
<td>433</td>
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<tr>
<td>K-G05</td>
<td>2021</td>
<td>$652.6</td>
<td>20</td>
<td>5,209</td>
<td>4,093</td>
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<tr>
<td>K-G06</td>
<td>2021</td>
<td>$451.4</td>
<td>22</td>
<td>4,405</td>
<td>3,975</td>
</tr>
<tr>
<td>Multi PCs (2021)</td>
<td>2021</td>
<td>$204.2</td>
<td>7</td>
<td>2,118</td>
<td>1,908</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$4,559.5</td>
<td>163</td>
<td>41,743</td>
<td>33,946</td>
</tr>
</tbody>
</table>

CICERO

In 2021, CICERO provided a second opinion on our Green Bonds Framework and awarded the framework its Light Green rating, which recognizes us for having transparent and robust selection criteria and proceeds management processes. They also recognize our framework for supporting important steps for emissions reduction and climate resilience in the housing market, as well as our annual reporting.

Per CICERO, “Freddie Mac’s Green Up® and Green Up Plus® loan offerings are successfully mobilizing investments in energy and water efficiency in the US residential building sector at scale.” They add that “Freddie Mac’s Green Up and Green Up Plus loan offerings are building the breadth and depth of publicly accessible utility consumption data for the US residential market by requiring energy and water use data reporting for the whole building on all such loans.”
Environmental Impact of our Green Bonds

Based on the projected consumption savings of energy and water across our Green Bonds securitizations, we are making a meaningful impact on the environment.

Projected Energy Consumption Savings of Green Bonds
Green Bonds proceeds financed energy improvements that are projected to save 359 million kBtu per year. This equates to enough energy to power roughly 9,825 homes.\(^9\) On average, each Green Advantage loan is projected to reduce the property energy usage by 7,904 kBtu per unit per year, which is enough energy to provide lighting for an average household for two years.\(^10\)

Projected Water Consumption Savings of Green Bonds
Green Bonds proceeds financed water improvements that are projected to save over 485 million gallons of water per year, which is the equivalent of filling the Lincoln Memorial Reflecting Pool in Washington, D.C., 72 times\(^11\) or the annual water usage for over 5,200 households\(^12\) across America. On average, each Green Advantage loan is projected to reduce the property water usage by 11,439 gallons of water per unit per year, which is the equivalent water usage for 497 loads of laundry per unit per year.\(^13\)

The reduction in water consumption will help reduce the strain on the country’s aging water infrastructure that is projected to require billions of dollars for future maintenance and improvements.\(^14\) There is an additional opportunity for energy savings to be indirectly impacted, as 2% of national energy consumption is used to provide drinking water and wastewater services each year; and as much as 40% of operating costs for drinking water systems can be for energy.\(^15\) It will also save property owners and tenants money through reduced utility charges, particularly given that water costs tend to and have steadily increased year over year.\(^16\)

\(^9\) In 2020, the average annual electricity consumption for a U.S. residential utility customer was 10,715 kilowatthours (kWh), an average of about 893 kWh per month: https://www.eia.gov/tools/faqs/faq.php?id=97&t=3

\(^10\) https://www.eia.gov/todayinenergy/detail.php?id=10542

\(^11\) The Lincoln Memorial Reflecting Pool holds approximately 6,750,000 gallons of water according to https://en.wikipedia.org/wiki/Lincoln_Memorial_Reflecting_Pool

\(^12\) On average, each person uses 80-100 gallons of water per day. Our calculation is based on 100 gallons/day/person (https://www.epa.gov/special-topics/water-science-school/science/water-qa-how-much-water-do-i-use-home-each-day#top-sciences_center_objects=0&top-sciences_center_objects=0). The average household size for 2021 is 2.51 people (https://www.census.gov/data/tables/time-series/demo/families/households.html)

\(^13\) We assume a standard washing machine uses on average 23 gallons of water per load: https://www.epa.gov/watersense/start-saving


\(^15\) https://www.epa.gov/sustainable-water-infrastructure/energy-efficiency-water-utilities

\(^16\) For additional details, see https://www.circleofblue.org/waterpricing/
Targeted Benefits of Green Improvements

While energy- and water-efficient improvements reduce consumption regardless of where a property is located, the environmental impact from such improvements will be greater in certain markets. For example, the impact of water-saving improvements will be more pronounced for properties located in drought-prone areas. A reduction in a property’s carbon footprint due to energy-saving improvements will be greater when the property is located in an area with more carbon-intensive energy supplies.

Environmental Impact in Areas Experiencing Drought

The map below examines the location of properties that were securitized either via a K-G Deal or as a Multi PC, relative to the intensity of areas experiencing drought as of March 1, 2022.

U.S. Drought Monitor Map and Green Bonds Property Locations

69 properties representing $1.8 billion or 40.4% of the total Green Bonds proceeds are in areas that were experiencing drought or were abnormally dry. The properties in these areas are projected to save over 202 million gallons of water annually. These are critical savings in drought-prone areas. In fact, 20 properties in these areas are projected to save more than 3 million gallons of water annually. While not all loans were originated in drought-prone areas, the water consumption savings outside those areas will still provide positive impacts, particularly as many states are expected to have water shortages not related to drought.17

Environmental Impact based on Carbon Intensity of Energy Supply

Each state has a unique profile of the types of fuel sources used to produce energy. Carbon-producing fuel sources such as coal, petroleum and natural gas vary in the amount of carbon produced and will directly impact a state’s energy-related carbon dioxide (CO2) emissions.

The map below shows the location of properties backing the Green Bonds relative to the carbon intensity of the energy supply within that state. States with a more carbon-intensive energy supply are shaded in dark gray, and states with a lower carbon-intensive energy supply are light gray. The properties are represented based on the projected reduction of annual GHG.

Green Bonds Property Location Relative to Carbon Intensity of Energy Supply

We found that 54 properties, representing $1.6 billion or 35.3% of the total Green Bonds proceeds, are in states with an energy supply carbon intensity that is above the national average of 53.1 kilograms of CO2 per million Btu (kg CO2/MMBtu). The properties in these areas that installed energy improvements are projected to save 10,261 metric tons of CO2 annually. 23 or 42.6% of the 54 properties are projected to save more than 200 metric tons of CO2 annually in these states. Improvements made on properties in these areas will have a greater impact than properties in states where the carbon intensity of the energy supply is lower.

Regardless of the location of the properties backing the Green Bonds, the projected savings will have a meaningful impact. Across all Green Bonds, the implemented green improvements are projected to reduce annual GHG emissions by almost 28,922 metric tons. This is equivalent to the same amount of CO2 as removing 6,232 cars from the road for one year.

17 Reference the Government Accountability Office study, https://www.gao.gov/assets/670/663344.pdf, or more information at the following EPA webpage: https://www.epa.gov/watersense/how-we-use-water

18 Calculated using https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Social Impact of our Green Bonds
Our Green Bonds proceeds financed energy- and water-efficient affordable properties that help tenants save in areas of high utility costs, in High Opportunity Areas and across different property types.

Tenant Utility Savings

Green Bonds proceeds financed energy and water improvements that are projected to save tenants over $9.2 million per year. Tenants are projected to save an average of $251 per unit per year. In-depth data analysis shows 24.2% of tenants are projected to save between $100-$200 per year, 33.3% of tenants between $200-$300 per year and 32.7% of tenants are projected to save $300 or more.

Utilities Savings in Areas of High Electric Utility Costs

Nearly one-third (31%) of all multifamily households nationwide report some type of energy insecurity, such as forgoing or reducing necessities like food and medicine to pay an energy bill or keeping their home at an unhealthy or unsafe temperature. Savings from green improvements help families reduce their energy consumption costs, allowing them to allocate additional funds to other necessities.

The following map shows the average monthly electric utility bills by state, relative to the location of the properties backing our Green Bonds. The properties are represented based on projected tenant savings per unit. States with the most expensive electric bill are dark gray, and those with the least expensive bill are light gray. The national average electric utility bill is $117 per month. By comparison, the average electric utility bill for states with the most expensive bill is $137 per month, or 17% higher than the national average. We found that approximately 62 or 38% of properties backing Green Bonds are in states with the most expensive electric bills. While a reduction in energy consumption has the potential to benefit tenants in all Green Bonds properties, tenants living in properties located in states with the most expensive electric bills will likely see the largest savings. In fact, tenants in 28 or 45.2% of properties in states with the highest electric bills are projected to save more than $300 per unit per year. When looking across all Green Bonds, average savings for property owners are projected to be $98 per unit per year. Tenants are projected to save an average of $251 per unit per year, which is equivalent to more than two months of the national average electric bill.

Financing Workforce Housing

Fundamentally, workforce housing is affordable to the ‘missing middle’ – those making modest incomes in markets across the country. Workforce housing properties tend to be older and have fewer amenities; however, they may also include newer properties intentionally built to be affordable to households with moderate incomes.

For our loan offerings and Impact Bonds, we define workforce housing as units with rents affordable to households making at or below 80% AMI in most markets, with some variation in cost-burdened markets. In many ways, residents of workforce housing are the backbone of their communities. These individuals may be aspiring homebuyers or renters who, as the missing middle, do not qualify for subsidized housing and at the same time cannot afford the market rates for housing in the communities that benefit from their work.

19 We looked at the Residential Energy Consumption Survey and the reported energy insecure households from the number of apartments in buildings with five or more units: https://www.eia.gov/consumption/residential/data/2015/hr/pdf/hr15_1.pdf
Green Bonds Proceeds Financed:

- 9.9% of the units backing the Green Bonds are affordable to tenants earning at or below 50% AMI.
- 30.0% of the units backing the Green Bonds are affordable to tenants earning at or below 60% AMI.
- 81.3% of the units backing the Green Bonds are affordable to tenants earning at or below 80% AMI.

- 59.4% of the units backing the Green Bonds are located in areas where 25% or more people above 25 years old have at least a bachelor’s degree.
- 12.3% of the units are located in areas where the population with at least a bachelor’s degree is 1.5x higher than the national average.
- 48.1% of the units backing the Green Bonds are located in areas where life expectancy is at or above national average (78.8 years).
- 33.6% of the units are located in areas where life expectancy is at or above 80 years old.

Directing Capital Toward Historically Underserved Markets

Affordable and mixed-income housing in one of the following areas can help direct capital to provide stable, quality housing and become a foundation for economic opportunity.

Number of units financed by Green Bonds proceeds located in Duty to Serve Underserved Markets between 2019 and 2021:\(^\text{21}\)

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Rural</th>
<th>High Needs Regions</th>
<th>Persistent Poverty Counties</th>
<th>Qualified Census Tracts</th>
<th>Racially or Ethnically Concentrated Area of Poverty</th>
<th>Qualified Allocation Plan</th>
<th>Difficult Development Area (FHFA)</th>
<th>Opportunity Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-G</td>
<td>306</td>
<td>0</td>
<td>882</td>
<td>7,936</td>
<td>1,112</td>
<td>1,237</td>
<td>2,748</td>
<td>2,244</td>
</tr>
<tr>
<td>Multi PCs</td>
<td>0</td>
<td>0</td>
<td>868</td>
<td>3,347</td>
<td>1,230</td>
<td>1,000</td>
<td>488</td>
<td>1,832</td>
</tr>
<tr>
<td>Total</td>
<td>306</td>
<td>0</td>
<td>1,750</td>
<td>11,283</td>
<td>2,342</td>
<td>2,237</td>
<td>3,236</td>
<td>4,076</td>
</tr>
</tbody>
</table>

\(^\text{21}\) The market categories referenced in this table are defined in the Duty to Serve Underserved Markets Regulation (the Duty to Serve Regulation, 17 CFR 1282.1) and the associated Duty to Serve Regulation, published by FHFA. A list of census tracts for each category can be found using Freddie Mac’s Mission Map or on FHFA’s website. Please refer to the Freddie Mac Impact Dictionary for more information.
Social Bonds

Social Bonds Program Overview

We confront persistent, affordable and workforce housing challenges through innovative re-thinking that helps expand access to housing by involving all areas of financing. To increase our impact and attract capital to support social impact initiatives, we introduced Social Bonds in 2020 to target opportunities that go deeper into our mission of supporting affordable housing.

Our Social Bonds proceeds are dedicated to either:

I. Provide liquidity to:
   • Community Development Financial Institutions (CDFIs)
   • Housing Finance Agencies (HFAs)
   • Small Financial Institutions (SFIs) operating in underserved markets

II. Finance loans for:
   • Properties for underserved populations (persons with disabilities, aging population, refugees and others)
   • Transitional Housing
   • Housing for extremely low-income households (at or below 30% AMI)
   • Minorities, Women and Disabled Individuals-Owned Borrowers (MWHDOB)
   • The Rental Assistance Demonstration (RAD) program

The Four Pillars of the Social Bonds Principles

The Freddie Mac Multifamily Social Bonds Framework is aligned with the four core components of the International Capital Markets Association’s Social Bond Principles and focuses on our use of proceeds, the process for project evaluation and selection, the management of proceeds and transparency through regular reporting.

Freddie Mac engaged an independent third party, Sustainalytics, to evaluate our Social Bonds Framework. This opinion is published on the Freddie Mac Multifamily website and in applicable offering documents.

Sustainalytics is confident that Freddie Mac Multifamily is well positioned to issue Social Bonds and that the Freddie Mac Multifamily Social Bonds Framework is robust, transparent and in alignment with the core components of the Social Bonds Principles.
### Social Bonds Issuance Snapshot

Freddie Mac Multifamily has issued approximately $2.3 billion of Social Bonds since 2020

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Issuance Year</th>
<th>Volume ($ millions)</th>
<th># of Loans</th>
<th># of Units</th>
<th># of Units Affordable at or below 30% AMI</th>
<th># of Units Affordable at or below 50% AMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q-014</td>
<td>2020</td>
<td>$189.5</td>
<td>66</td>
<td>3,795</td>
<td>753</td>
<td>2,871</td>
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<tr>
<td>P-003</td>
<td>2020</td>
<td>$106.6</td>
<td>61</td>
<td>4,585</td>
<td>767</td>
<td>2,919</td>
</tr>
<tr>
<td>M062-M066</td>
<td>2020</td>
<td>$398.9</td>
<td>27</td>
<td>3,289</td>
<td>8</td>
<td>177</td>
</tr>
<tr>
<td>Multi PCs (2020)</td>
<td></td>
<td></td>
<td></td>
<td>1,102</td>
<td>1,369</td>
<td></td>
</tr>
<tr>
<td>P-009</td>
<td>2021</td>
<td>$230.8</td>
<td>7</td>
<td>4,462</td>
<td>0</td>
<td>4,462</td>
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<tr>
<td>P-011</td>
<td>2021</td>
<td>$102.9</td>
<td>37</td>
<td>3,106</td>
<td>870</td>
<td>1,862</td>
</tr>
<tr>
<td>Multi PCs (2021)</td>
<td></td>
<td></td>
<td>90</td>
<td>5,903</td>
<td>7,754</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$2,301.6</td>
<td>297</td>
<td>32,062</td>
<td>9,403</td>
<td>21,414</td>
</tr>
</tbody>
</table>

### Social Impact

Of the units financed with Social Bonds proceeds, 66.8% of units are affordable to families earning at or below 50% AMI.

#### Units Affordable

<table>
<thead>
<tr>
<th></th>
<th># of Units Affordable at or below 30% AMI</th>
<th># of Units Affordable at or below 50% AMI</th>
<th># of Units Affordable at or below 60% AMI</th>
<th># of Units Affordable at or below 80% AMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>9,403</td>
<td>21,414</td>
<td>26,702</td>
<td>28,778</td>
</tr>
</tbody>
</table>

#### Underserved Population

<table>
<thead>
<tr>
<th>Underserved Population</th>
<th># of Loans Supporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>27</td>
</tr>
<tr>
<td>Seniors</td>
<td>78</td>
</tr>
<tr>
<td>Farmworkers</td>
<td>3</td>
</tr>
<tr>
<td>Homeless</td>
<td>10</td>
</tr>
<tr>
<td>Veterans</td>
<td>11</td>
</tr>
<tr>
<td>Transitional</td>
<td>27</td>
</tr>
</tbody>
</table>

---

### RAD Projects

The HUD RAD program was created to give public housing agencies a tool to preserve and improve public housing properties and address the $26 billion nationwide backlog of deferred maintenance. The RAD program also gives owners of three HUD “legacy” programs (Rent Supplement, Rental Assistance Payment and Section 8 Moderate Rehabilitation) the opportunity to enter long-term contracts that facilitate the financing of improvements. For more information visit [https://www.hud.gov/RAD](https://www.hud.gov/RAD).

2,141 units financed by Social Bonds proceeds were with RAD.

### Directing Capital Toward Historically Underserved Markets

Affordable and mixed-income housing in one of the following areas can help direct capital to provide stable, quality housing and become a foundation for economic opportunity.

#### Number of units financed by Social Bonds proceeds located in Duty to Serve Underserved Markets between 2020 and 2021:

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Rural</th>
<th>High Needs Regions</th>
<th>Persistent Poverty Counties</th>
<th>Qualified Census Tracts</th>
<th>Racially or Ethnically Concentrated Area of Poverty</th>
<th>Qualified Allocation Plan</th>
<th>Difficult Development Area (FHFA)</th>
<th>Opportunity Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q</td>
<td>197</td>
<td>0</td>
<td>212</td>
<td>1,922</td>
<td>805</td>
<td>219</td>
<td>468</td>
<td>1,682</td>
</tr>
<tr>
<td>M</td>
<td>303</td>
<td>78</td>
<td>0</td>
<td>1,809</td>
<td>996</td>
<td>0</td>
<td>0</td>
<td>1,310</td>
</tr>
<tr>
<td>P (PC REMIC)</td>
<td>668</td>
<td>168</td>
<td>680</td>
<td>2,725</td>
<td>541</td>
<td>95</td>
<td>539</td>
<td>1,716</td>
</tr>
<tr>
<td>Multi PCs</td>
<td>472</td>
<td>0</td>
<td>876</td>
<td>5,100</td>
<td>2,212</td>
<td>148</td>
<td>866</td>
<td>2,645</td>
</tr>
<tr>
<td>Total</td>
<td>1,640</td>
<td>246</td>
<td>1,768</td>
<td>11,556</td>
<td>4,554</td>
<td>462</td>
<td>1,873</td>
<td>7,353</td>
</tr>
</tbody>
</table>

2,113 of units financed by Social Bonds are located in High Opportunity Areas with 80.5% of these units being affordable to tenants earning at or below 80% AMI.  

11,756 or 36.7% of the units backing the Social Bonds are located in areas where 25% or more people above 25 years old have at least a bachelor’s degree, and 3,435 or 10.7% of the units are located in areas where the population with at least a bachelor’s degree is 1.5x higher than the national average.  

9,141 or 28.5% of the units backing the Social Bonds are located in areas where life expectancy is at or above national average (78.8 years), and 6,441 or 20.1% of the units are located in areas where life expectancy is at or above 80 years old.  

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21 The market categories referenced in this table are defined in the Duty to Serve Underserved Markets Regulation (the Duty to Serve Regulation, 12 CFR 1282.1) and the associated Duty to Serve Evaluation Guidance published by FHFA. A list of census tracts for each category can be found using Freddie Mac’s Mission Map or on FHFA’s website. Please refer to Freddie Mac Impact Dictionary for more information.
P-009 Deal Spotlight

P-009 was an issuance of $230.8 million in Social Bonds supporting 1,267 rental homes across 37 states and the District of Columbia for individuals with intellectual and developmental disabilities.

The proceeds from these Social Bonds help address the significant shortage of community-based homes critical to the care for individuals with disabilities by providing more permanent homes for such individuals rather than sequestering them to hospitals and other such institutions.

This transaction represents our commitment to safe, affordable housing that meets the needs of the community it serves. Our Impact Bonds, and specifically the Social Bonds Framework, encourage innovation to provide solutions that meet the unique needs of underserved communities.

- **90%** financed 4,462 units across 1,267 properties. Nearly 90% of the units are affordable to tenants earning at or below 50% AMI.
- **100%** of the units are reserved for individuals with intellectual and developmental disabilities and allow individuals with disabilities to live and work in their communities.

In spring 2022, this transaction was recognized by Environmental Finance, an online news and analysis service that reports on sustainable investment, green finance and companies active in the environmental market.

**Podcast**

In a recent episode of our Optigo Extras podcast series, our own Luba Kim-Reynolds, head of Multifamily Investor Relations & ESG Initiatives, looks at how our Impact Bonds are channeling capital toward projects that have a measurable community impact. Luba is joined by Anthony Cinquini, managing director at Berkadia, Matt Pettinelli, founder and CEO of CapGrow Partners, and Andrew Tush from our own Targeted Affordable Housing group.

The goal of this podcast is to highlight the unique and impactful products we have. Each of our Social Bonds has an impact story, and we created this podcast to provide insight on how our Social Bonds are supporting Housing for the Intellectually and Developmentally Disabled.

P-009 Properties Highlights

**CapGrow 3 — 370 Alton Carlton Road in Wauchula, Florida**

This property is located in Hardee County, Florida, over 60 miles southeast of Tampa, Florida, a high-needs rural region. High-needs rural regions are commonly underserved areas with persistent poverty. Rural communities have fewer resources available and limited care options for individuals with disabilities. Through financing this property, we are supporting rural regions and providing individuals with disabilities a safe place to live.

**CapGrow 4 — 3312 4th Street Southeast in Washington, D.C.**

This property is located in the Congress Heights neighborhood of Washington, D.C., which we consider an Area of Concentrated Poverty (ACP). An ACP is considered as such if it is in a Qualified Census Tract (QCT) or a Racially or Ethnically Concentrated Area of Poverty (R/ECAP). This means that this area has a significant concentration of poverty and minority populations. Individuals with disabilities in high poverty areas have fewer resources to get the care they need. This property provides affordable housing allowing some of the most underserved populations to have a safe place to live and receive the appropriate care.

**Scioto — 685 Foothill Road in Bridgewater, New Jersey**

This property is located in Bridgewater, New Jersey, just 40 miles west of New York City. This area has been designated by HUD as a DDA. Financing this property is a critical part of supporting not only the intellectually and developmentally disabled community but also DDAs.
P-011 Deal Spotlight

P-011 was an issuance of $102.9 million in Social Bonds. This transaction is Freddie Mac’s second Social Bonds deal with IMPACT Community Capital LLC (IMPACT) and provides it with additional capital for affordable housing investments throughout the country.

Proceeds from the underlying loans are used to finance rental properties in 18 states that serve low- to very low-income residents. In addition to providing affordable housing to low- to moderate-income families, institutions receiving liquidity and properties financed from Social Bonds proceeds work to foster various socioeconomic opportunities for residents and their communities.

Michael Lohmeier, chief investment officer at IMPACT, notes, “As an investment manager focused on social impact, partnering with Freddie Mac enhances our ability to provide capital to underinvested communities and provide our investors investment options to meet their strict guidelines. Freddie Mac’s ability to deliver market-oriented solutions and flexible executions is invaluable to IMPACT and provides both a unique and targeted investment solution.”

Units Affordable

- **28.0%** P-011 proceeds financed properties with 870 or 28.0% of the units affordable to tenants earning at or below 30% AMI
- **59.9%** P-011 proceeds financed properties with 1,862 or 59.9% of the units affordable to tenants earning at or below 50% AMI
- **85.1%** P-011 proceeds financed properties with 2,643 or 85.1% of the units affordable to tenants earning at or below 60% AMI
- **95.5%** P-011 proceeds financed properties with 2,967 or 95.5% of the units affordable to tenants earning at or below 80% AMI

Underserved Population

<table>
<thead>
<tr>
<th>Underserved Population</th>
<th># of Loans Supporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seniors</td>
<td>16</td>
</tr>
<tr>
<td>Disabled</td>
<td>13</td>
</tr>
<tr>
<td>Transitional/Homeless</td>
<td>6</td>
</tr>
</tbody>
</table>

RAD Projects

- P-011 proceeds financed 137 units with RAD

P-011 Properties Highlights

**Bellamoor At The Park — 16515 Old Statesville Road in Huntersville, North Carolina**

Located 15 miles north of Charlotte, North Carolina, Bellamoor At The Park was built in 2019 with all the units age- and income-restricted. This property provides much needed affordable housing for the aging population in the area. All the units at this property are affordable to those making at or less than 60% AMI. In addition to being affordable, Bellamoor At The Park, has 12 units set aside for individuals with disabilities or those who are homeless. Targeting three underserved populations, this property embodies the mission of our Social Bonds.

**The Heights — 14558 Francisquito Avenue in La Puente, California**

Located 18 miles east of Los Angeles, The Heights is an affordable age-restricted property with 72.2% of the units affordable to those making at or less than 50% AMI. Not only is this property affordable, but it also provides housing for homeless, individuals aged 62 and up and those with chronic health conditions. There is a critical need for affordable housing for seniors and a place to live for those in transition and those with health conditions. This property also has social services on-site. By providing housing for these populations, The Heights is having a much-needed impact on the La Puente community.

**Marian Towers Apartments — 17505 North Bay Road in Sunny Isles Beach, Florida**

Marian Towers Apartments is a low-income property in Sunny Isles Beach, Florida, just 11 miles north of Miami Beach. This property is extremely affordable, with nearly 70% of the units affordable to those making at or less than 30% AMI. In addition to being incredibly affordable, there are units reserved for persons with intellectual and developmental disabilities, persons with mobility impairments, persons with hearing or visual impairments and individuals aged 62 and up. Marian Towers Apartments is an older property located in a hurricane-prone area. Through a rehabilitation of the property, a new roof and HVAC were installed. These improvements are critical in maintaining the property’s resilience against climate-related disasters.
Multi PC Properties Highlights

**WN1096 535 4th Avenue — 535 4th Avenue in Brooklyn, New York**

An important part of our Social Bonds is supporting transitional housing. The 535 4th Avenue property has 148 units providing housing for those experiencing homelessness. The property is leased by Women in Need (WIN), a non profit subsidiary of New York City’s Department of Human Services. WIN provides homeless women and their children with safe housing, critical services and the ground-breaking programs they need to succeed on their own. The financing of this property reflects Freddie Mac’s commitment and dedication to social impact as well as the safety for those in transition.

**WA3314 Eagle Heights Village — 2587 East Powell Way in Eagle Mountain, Utah**

Eagle Heights Village is an 80-unit property in Eagle Mountain, Utah, 38 miles south of Salt Lake City. The property is subject to affordability restrictions per the Section 42 LIHTC Land Use Restriction Agreement (LURA) program in relation to 9% tax credit funding. Currently, 75% of the units are rent-restricted, two units are reserved for veterans, nine units are set aside for those with physical disabilities, four units are reserved for victims of domestic violence and five of the units are for those experiencing homelessness. In addition to being affordable and supporting underserved populations, Eagle Heights Village is in a rural High Opportunity Area, further increasing this property’s impact.

**WV0007 Sedona At Lone Mountain — 770 West Lone Mountain Road in North Las Vegas, Nevada**

Sedona At Lone Mountain is a 321-unit property sponsored by Osso Capital. Osso Capital is a New York City-based minority- and women-owned multifamily-focused investment firm led by Olivia John. This property is also located in a High Opportunity Area, more specifically a DDA. This property does not only offer affordable housing, but also participates in Freddie Mac Multifamily’s Credit Building program, designed to help renters establish and increase their credit scores.

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**Tenant Advancement: Rent Reporting for Credit Building**

There are more than 44 million renter households in the U.S. and fewer than 10% of on-time rent payments are reported to the credit bureaus. This is a major reason why renters have credit scores that are substantially lower than homeowners and lower credit scores can put renters at a disadvantage when they seek financing for a car, a home or an education. To help close this credit score gap, we are thrilled to be working with Esusu Financial Inc., whose rent-reporting platform helps renters build credit by seamlessly reporting on-time rent payments directly from property management to the three credit bureaus.

- **~30,000** The Tenant Advancement: Rent Reporting for Credit Building program has provided Esusu’s rent-reporting technology to approximately 30,000 tenant households spanning 284 properties.
- **72%** 72% of tenants participating in the Tenant Advancement: Rent Reporting for Credit Building program saw an increase in their credit score.
- **43** Tenants with existing credit scores who saw an improvement in their credit score had their credit score increase an average of 43 points.
- **~6,000** Over 6,000 credit scores were established for previously credit-invisible renters living in these properties.

Four properties sponsored by Osso Capital in the Las Vegas area participate in the Tenant Advancement: Rent Reporting for Credit Building program. These properties were funded through a series of Social Bonds transactions totaling $170 million and financing 1,139 units with more than 500 of the units affordable at or below 80% AMI. Additionally, as a woman- and minority-owned business, Osso Capital is a perfect fit for our Social Bonds.

- **321** 321 units financed in a High Opportunity Area.
- **320** 320 units financed in an Opportunity Zone.
- **1,000** Osso Capital enrolled over 1,000 units in Esusu’s rent-reporting services across these four properties.
- **102** The average tenant credit score increase across the portfolio was 102 points.
- **116** 116 credit scores were established through rent reporting for renters who were previously credit invisible.
- **44** Focusing on renters with existing credit scores, their credit score increased on average 44 points.


24 Only includes credit scores that increased
Sustainability Bonds

Sustainability Bonds Program Overview

Sustainability Bonds are intended to attract capital to support economic mobility for residents and economic growth for communities.

The availability of affordable and workforce housing is fundamental to sustainable communities since it provides the foundation for creating economic opportunity for residents and communities alike.

Sustainability Bonds proceeds will be used to finance multifamily properties that:

- provide affordable housing to low- to moderate-income families;
- have features and/or are located in areas that further economic opportunity for residents; and
- may include certain environmental impact features

In addition, the Sustainability Bonds are consistent with the following United Nations Sustainable Development Goals:

- Goal 1: No Poverty;
- Goal 7: Affordable and Clean Energy;
- Goal 10: Reduced Inequalities; and
- Goal 11: Sustainable Cities and Communities

ENVIRONMENTAL IMPACT

31 properties that reported projected savings from existing energy- and water-efficiency improvements are, on average, expected to reduce energy consumption by 28% and water consumption by 22%

SOCIAL IMPACT

83.6% of units are affordable to families earning at or below 60% AMI

2,331 units are located in High Opportunity Areas

Sustainability Bonds proceeds financed nine mixed-income properties, or 4.3% of all properties backing the Sustainability Bonds, with units affordable to tenants earning at or below 50% AMI and above 80% AMI
The Four Pillars of the Sustainability Bonds Principles

The Freddie Mac Multifamily Sustainability Bonds Framework is aligned with the four core components of the International Capital Markets Association’s Green Bond Principles (2018) and Social Bond Principles (2020) and focuses on our use of proceeds, the process for project evaluation and selection, the management of proceeds and transparency through regular reporting.

Our use of proceeds
The process for project evaluation and selection
The management of proceeds
Transparency through regular reporting

Sustainability Bonds Issuance Snapshot

Freddie Mac Multifamily has issued approximately $3.4 billion of Sustainability Bonds since 2020

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Issuance Year</th>
<th>Volume ($ millions)</th>
<th># of Loans</th>
<th># of Units</th>
<th># of Units Affordable at or below 60% AMI</th>
<th># of Units Affordable at or below 80% AMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-SG1</td>
<td>2020</td>
<td>$579.1</td>
<td>28</td>
<td>5,881</td>
<td>4,095</td>
<td>5,247</td>
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<tr>
<td>ML-07</td>
<td>2020</td>
<td>$392.4</td>
<td>23</td>
<td>3,879</td>
<td>3,005</td>
<td>3,872</td>
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<tr>
<td>ML-08</td>
<td>2021</td>
<td>$386.0</td>
<td>22</td>
<td>3,920</td>
<td>3,663</td>
<td>3,889</td>
</tr>
<tr>
<td>ML-09</td>
<td>2021</td>
<td>$317.6</td>
<td>26</td>
<td>3,852</td>
<td>3,650</td>
<td>3,809</td>
</tr>
<tr>
<td>ML-10</td>
<td>2021</td>
<td>$354.5</td>
<td>24</td>
<td>3,755</td>
<td>3,386</td>
<td>3,706</td>
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<tr>
<td>ML-11</td>
<td>2021</td>
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<td>17</td>
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<td>2,522</td>
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<td>7,847</td>
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<td>7,514</td>
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<tr>
<td>Total</td>
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<td>$3,392.2</td>
<td>200</td>
<td>34,626</td>
<td>28,347</td>
<td>33,352</td>
</tr>
</tbody>
</table>

Freddie Mac engaged an independent third party, Sustainalytics, to evaluate our Sustainability Bonds Framework. This opinion is published on the Freddie Mac Multifamily website and is available in the applicable offering documents.

Sustainalytics is confident that Freddie Mac Multifamily is well positioned to issue Sustainability Bonds and that the Freddie Mac Multifamily Sustainability Bonds Framework is robust, transparent, and in alignment with the four core components of the Green Bond Principles (2018) and Social Bond Principles (2020).
Social Impact of our Sustainability Bonds
Financing Mixed-Income Properties

Mixed-income housing can help to deconcentrate poverty and/or provide access to neighborhoods of opportunity for low- and moderate-income residents. This type of housing creates economic diversity and expands the availability of quality, affordable housing throughout an area.

Our Sustainability Bonds financed nine mixed-income properties (4.3% of all properties in our Sustainability Bonds), with 66.7% of these properties in ACPs, which are regions that are characterized by persistently high poverty levels, low economic opportunity and high housing costs relative to income. Mixed-income housing in ACPs helps limit turnover and vacancy at the property level, resulting in more stable income than would be experienced by an unrestricted, market-rate property. The creation and preservation of mixed-income housing in ACPs is essential to furthering residential economic diversity, which can lead to greater economic and social mobility for residents, as described in our research series on underserved markets. 25

ML-08 Property Highlights

Monon Lofts — 1102 East 16th Street in Indianapolis, Indiana

Monon Lofts is located in downtown Indianapolis, within the city’s Central Business District. This 142-unit mixed-income property is in an ACP that exemplifies the importance of this type of development. A minimum of 91 units at the property are rent- and income-restricted, with 10 units reserved for tenants earning at or below 50% AMI, 76 units reserved for tenants earning at or below 60% AMI and five units reserved for tenants earning at or below 80% AMI due to a LURA instated by the Indiana Housing Authority. This property has approximately 23% of units affordable at or below 50% AMI and 18% of units affordable to those who make greater than 80% AMI. By having units affordable at differing levels of affordability, Monon Lofts plays a critical role in creating economic diversity and growth in this ACP.

Sustainability Bonds proceeds financed nine mixed-income properties, or 4.3% of all properties backing the Sustainability Bonds, with units affordable to tenants earning at or below 50% AMI and above 80% AMI.

<table>
<thead>
<tr>
<th># of Units Affordable at or below 50% AMI</th>
<th># of Units Affordable at or below 60% AMI</th>
<th># of Units Affordable at or below 80% AMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>19,646</td>
<td>28,947</td>
<td>33,352</td>
</tr>
</tbody>
</table>

Financing Housing in Areas with High Opportunity Characteristics

High Opportunity Areas are located all over the country and are home to roughly 18% of the population, or around 56 million people. 26 These areas, which can provide economic opportunity and economic mobility for residents, are often high-cost areas as they are highly sought after for the benefits they offer. The population and housing demand in these areas increases faster than supply or local policies can accommodate. In our research on High Opportunity Areas, 27 we found five primary indicators of opportunity: access to education, economic growth/jobs, income levels, access to health care and access to transportation. Addressing these factors can foster greater economic mobility and help people achieve positive life outcomes, regardless of their socioeconomic background.

Access to opportunity is not just limited to High Opportunity Areas. Properties backing our Sustainability Bonds have access to public transportation and are in census tracts that have above average life expectancy 28, high educational attainment and/or strong income levels for their market.

Sustainability Bonds financed 2,333 units located in High Opportunity Areas

16,053 or 46.4% of the units backing the Sustainability Bonds are located in areas where 25% or more people above 25 years old have at least a bachelor’s degree, and 6,323 or 18.3% of the units are located in areas where the population with at least a bachelor’s degree is 1.5x higher than the national average.

9,604 or 27.7% of the units backing the Sustainability Bonds are located in areas where life expectancy is at or above national average (78.8 years), and 7,336 or 21.2% of the units are located in areas where life expectancy is at or above 80 years old

Directing Capital Toward Historically Underserved Markets

Affordable and mixed-income housing in one of the following areas can help direct capital to provide stable, quality housing and become a foundation for economic opportunity.

Number of units financed by Sustainability Bonds proceeds located in Duty to Serve Underserved Markets between 2020 and 2021. 29

<table>
<thead>
<tr>
<th>Deal Type</th>
<th>Rural</th>
<th>High Needs Regions</th>
<th>Qualified Census Tracts</th>
<th>Racially or Ethnically Concentrated Area of Poverty</th>
<th>Qualified Allocation Plan</th>
<th>Difficult Development Area (FHFA)</th>
<th>Opportunity Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-5G</td>
<td>726</td>
<td>0</td>
<td>1,013</td>
<td>5,436</td>
<td>784</td>
<td>389</td>
<td>154</td>
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<tr>
<td>ML</td>
<td>588</td>
<td>101</td>
<td>1,876</td>
<td>17,932</td>
<td>3,762</td>
<td>1,369</td>
<td>1,133</td>
</tr>
<tr>
<td>Total</td>
<td>1,314</td>
<td>101</td>
<td>1,876</td>
<td>17,932</td>
<td>3,762</td>
<td>1,369</td>
<td>1,133</td>
</tr>
</tbody>
</table>

26 Additional details and research resources are available in Appendix III
27 https://cdn.freddiemac.com/docs/Residential_Housing_in_High_Opportunity_Areas.pdf
29 The market categories referenced in this table are defined in the Duty to Serve Underserved Markets Regulation (the Duty to Serve Regulation, 12 CFR 1282.1) and the associated Duty to Serve Evaluation Guidance published by FHFA. A list of census tracts for each category can be found using Freddie Mac’s Mission Map or on FHFA’s website. Please refer to the Freddie Mac Impact Dictionary for more information.
Environmental Impact of our Sustainability Bonds

Sustainability Bonds are issued for multifamily properties that meet required social impact criteria and may include certain environmental impact features. This combination contributes to the overall sustainability of these properties.

The environmental features include properties:
1) meeting a high level of required energy-and/or water-efficiency building standards;
2) receiving a nationally recognized Green Building Certification;
3) having existing energy and/or water efficiency improvements; or
4) that are transit-oriented developments, i.e., located within half a mile of public transportation.

Of the 210 properties backing the Sustainability Bonds securitizations, 163 had an environmental impact feature and 35 had more than one feature.

<table>
<thead>
<tr>
<th>Environmental Impact Indicator</th>
<th># of Properties Supporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Standards for Energy Efficiency</td>
<td>4</td>
</tr>
<tr>
<td>Green Building Certifications</td>
<td>9</td>
</tr>
<tr>
<td>Existing Energy/Water Efficiency Improvements</td>
<td>39</td>
</tr>
<tr>
<td>Transit-Oriented Development</td>
<td>151</td>
</tr>
</tbody>
</table>

Building Standards for Energy Efficiency

Properties identified as meeting this environmental impact criteria were built to a higher energy standard than properties built to the baseline building standards. Our Sustainability Bonds Framework focuses on recognizing standards that were generally 15% more efficient when compared with the baseline energy standard. While we are not able to project the savings achieved at these properties, studies have shown that higher energy standards have the potential to significantly impact the environmental savings of a property as well as energy cost savings. 30

Green Building Certifications

Our Framework lists acceptable Green Building Certifications recognized within the industry. 31 Green Building Certifications take a holistic view of sustainability. In addition to focusing on energy and water efficiency, industry-accepted certifications also focus on the impacts of the design, development and operations of the site, with a focus on impacts to the tenants as well as the community. By design, these certifications are focused on improving the sustainability of any property pursuing the certification.

Existing Energy-/Water-Efficiency Improvements

Our Framework recognizes properties at which energy-and/or water-efficiency improvements have already been made. These properties must meet a minimum amount of expected energy and/or water savings based on the implemented improvements. 32 31 properties that reported savings from existing energy-and water efficiency improvements are expected to save roughly 28% in whole-building energy usage along with 22% in whole-building water usage based on the reported types of energy- and water-efficiency improvements implemented. These improvements are particularly important given the average year built for properties receiving improvements is 1987.

The most common improvements implemented at properties include interior and exterior LED lighting, ENERGY STAR certified refrigerators, dishwashers and HVAC systems, and low-flow water fixtures.

30 The Department of Energy evaluated the potential savings impacts of energy efficient building codes and estimates cumulative savings for residential and commercial buildings from 2010-2040 in the amount of $1.25 trillion in energy cost savings and 841 million metric tons of CO2 emissions avoided. For more details see https://www.energycodes.gov/about/results.
32 See Methodology for additional details on Existing Energy-/Water-Efficiency Improvements
K-SG2 Property Highlights

Oak Brook Heights — 201 West Oakley Drive North in Westmont, Illinois

Oak Brook Heights is a 408-unit property located in Westmont, Illinois, just 20 miles west of Chicago. This property ordered a Green Assessment® to evaluate the current energy/water efficiency of the property and what improvements the property owner should install to make the property more efficient. The borrower installed over $250,000 in green improvements to the property, including new HVAC, LED lighting and an ENERGY STAR certified heat pump. These improvements help Oak Brook Heights be more environmentally friendly while lowering utility costs for both tenants and borrowers.

Transit-Oriented Development

Transportation-related GHG emissions accounts for about 27% of the total U.S. GHG emissions, making it the largest source of U.S. GHG emissions. Developing properties that encourage alternate transportation can help reduce transportation-related emissions through decreased vehicle-miles traveled, reduced fuel consumption and increased usage of lower impact transit systems. Freddie Mac has defined transit-oriented development as properties located within a half mile of public transportation.

Our Sustainability Bonds financed 151 transit-oriented developments or 71.9% of all Sustainability Bonds properties financed to date.

There are meaningful potential environmental benefits from transit-oriented developments with some transit-oriented developments estimated to have a 35% lower carbon footprint than conventional developments. Additionally, by nature of being near transit, these properties improve the ability of tenants to access more opportunities such as access to jobs, education, other goods and services.

33 See the EPA, Sources of Greenhouse Gas Emissions, Transportation at https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions-in Appendix III
34 See Methodology for additional details on Transit-Oriented Development in Appendix III
35 Cervero, Robert and Sullivan, Cathleen. Toward Green TODs, August 2010: https://escholarship.org/uc/item/20q8993s
Appendix I: Freddie Mac Overview

Freddie Mac’s mission is to provide liquidity, stability and affordability to the U.S. housing market. Supporting affordable housing and access to credit is integral to this mission. In 2016, we added to our core business a strong focus on energy- and water-efficiency through our Green Advantage program. Our program is continuing to lead the way in the financing of energy- and water-efficiency retrofits in the U.S. rental housing market.

Freddie Mac

Freddie Mac is a government-sponsored enterprise chartered by Congress in 1970, with a mission to provide liquidity, stability and affordability to the U.S. housing market. We do this primarily by purchasing single-family and multifamily residential mortgage loans originated by lenders. In most instances, we package these loans into guaranteed mortgage-related securities, which are sold in the global capital markets, and transfer interest rate and liquidity risks to third-party investors. In addition, we transfer mortgage credit risk exposure to third-party investors through our credit risk transfer programs, which include securities- and insurance-based offerings. We also invest in mortgage loans and mortgage-related securities. We do not originate mortgage loans or lend money directly to mortgage borrowers.

Since 2008, Freddie Mac has been operating in conservatorship, with FHFA as Conservator. FHFA is also our regulator. The conservatorship significantly affects our business and activities.

Freddie Mac Multifamily

Our Multifamily segment provides liquidity and support to the multifamily mortgage market through a variety of activities that include the purchase, securitization and guarantee of multifamily loans originated by our Optigo® network of approved lenders. Our support of the multifamily mortgage market occurs through all economic cycles and is especially important during periods of economic stress. During these periods, we serve a critical countercyclical role by providing liquidity when many other capital providers exit the market. Central to our mission is our commitment to support greater access to quality, affordable and sustainable rental housing, particularly in underserved markets.

Since 1993, we have provided over $833 billion in financing for approximately 101,000 multifamily properties, representing nearly 12 million apartment units. As of December 31, 2021, our multifamily mortgage portfolio comprised $381 billion of securitized mortgage loans, $23 billion of unsecuritized mortgage loans and $11 billion of other mortgage-related guarantees.

Freddie Mac Multifamily ESG Team

Our ESG Initiatives Team (ESG Team) manages the strategy behind our Impact Bonds offerings. This team carefully prescreens each loan, determining whether it conforms to our frameworks. The ESG Team takes the lead as Freddie Mac Multifamily searches for solutions around ESG risks by running working groups on topics such as resiliency. The ESG Team is headed by Luba Kim-Reynolds who joined Freddie Mac in 2016 and created the strategy behind our Impact Bonds offerings and our ESG Initiatives.
Appendix II: Our Research and Duty to Serve

Freddie Mac’s Duty to Serve Underserved Markets Plan outlines our efforts to help increase rental and homeownership opportunities in historically underserved markets and provide access to safe and affordable housing throughout the nation. As part of this initiative, Freddie Mac Multifamily has published a series of reports that assess and address underserved markets, High Opportunity Areas and the impact of our Green Advantage program. You can view the full series on our website at https://mf.freddiemac.com/research/duty-to-serve.

In 2018, we began releasing annual reports that track property improvements made through our Green Advantage program. Click on our 2021 reports below to learn more.

Appendix III: Impact Bonds Reporting Methodology

Green Bonds

Freddie Mac is committed to reporting the impacts associated with properties financed using our Green Advantage options: Green Up and Green Up Plus. In this report, we provide projected environmental and social impacts based on estimates developed prior to the implementation of the green improvements (ex ante projections). The estimates are based on data collected for each property backing the Green Bonds.

While Freddie Mac Multifamily Green Advantage has provided over $64 billion in financing through loans purchased since program inception in late 2016 through the end of 2021, the population included in this report is specific to Green Bonds issued in 2019 through 2021 backed by Green Up and Green Up Plus loans. For more information on our programwide impacts, refer to the 2021 Analysis of Green Improvements in Workforce Housing report.

Program Parameters

The Green Advantage program parameters have evolved each year to meet the requirements set by FHFA for green loan treatment related to the multifamily loan purchasing cap. The chart below provides details of the program requirement by year. The type of data used in this impact report typically allows for aggregation across all Green Bonds issued but the shifts in program parameters limit the asset-to-asset level comparisons.

<table>
<thead>
<tr>
<th></th>
<th>2016-2017</th>
<th>2018</th>
<th>2019-2021</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumption Savings Threshold</strong></td>
<td>15% owner-paid, tenant-paid or whole property energy OR water reduction</td>
<td>25% whole property energy OR water reduction</td>
<td>30% whole property reduction from a MINIMUM 15% energy and 15% energy AND/OR water</td>
</tr>
</tbody>
</table>

Efficiency Improvement Data from Green Reports

Data analysis was performed by compiling basic property-level information with data from the Green Assessment® or Green Assessment Plus® (both, Green Reports) received when a borrower pursues a Green Up or Green Up Plus loan. Basic property-level information is provided by Optigo lenders during loan origination and includes data such as state, county, year built and number of units.
Green Reports
The Green Assessment is a report meeting the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Level I standard with certain additional requirements including the analysis of water performance at the property, the reporting of Portfolio Manager metrics and documentation of existing property conditions. It also includes cost and savings calculations provided through simplified modeling and the use of industry-recognized formulas and standards. The Green Assessment Plus meets all these requirements but also aligns with the ASHRAE Level II protocol, which increases the level of due diligence and analysis required.

The Green Reports are prepared by consultants selected by Optigo lenders and must meet Freddie Mac’s qualification requirements (Green Consultants), including having an understanding of the ASHRAE standards and an industry-recognized certification demonstrating proficiency in energy and water audits.

Green Consultants collect a 12-month period of historical utility consumption data for the whole property (common and individual tenant areas) from the property owner and evaluate the building conditions and the performance of equipment, fixtures and systems on the energy and water consumption at the property through rigorous property inspections. If any of the whole-property data is unavailable, they must collect all common area and at least 10% of tenant-consumption data. Most commonly, the tenant-paid consumption is unavailable, and, in these instances, Green Consultants will make every effort to obtain the data from local utilities, typically requesting aggregated data. If utility providers do not provide the requested data or do not provide it within the required timeline, Freddie Mac will allow Green Consultants to estimate the missing consumption data based on their experience with other buildings of similar use, size, occupancy, construction and location.

Green Consultants input the historical utility consumption data into ENERGY STAR Portfolio Manager (Portfolio Manager), a free online tool maintained by the EPA. Portfolio Manager produces the ENERGY STAR score, Energy Use Intensity, Water Score and Water Use Intensity of the property. Freddie Mac is given access to this data in Portfolio Manager.

Based on the evaluation of the current property conditions and the historical utility consumption data, Green Consultants create a baseline for property performance and make recommended energy and water conservation measures (EWCM). Borrowers choose which EWCM to implement to achieve increased energy and water efficiency at their property. Green Consultants document all results in the Form 1106 and deliver completed Green Reports to Optigo lenders who transmit them to Freddie Mac during the loan due diligence process. We collect the data contained within the Form 1106 through an automated process and use it for our analysis.

Data Quality Framework
Beginning in 2018, Freddie Mac Multifamily worked with WegoWise by AppFolio (WegoWise) in a series of projects to create a framework for our data collection and reporting practices. These projects built the foundation for performing actual savings analysis on properties receiving the energy-and water-efficiency improvements.

Our initial engagement with WegoWise was set up to analyze, at the time, a 10% sample of the overall portfolio to understand the quality of the data received from the Green Reports. This analysis focused solely on historical consumption data provided by the borrowers and entered in Portfolio Manager by the Green Consultants. WegoWise used their own internal data collection practices, developed through its extensive experience benchmarking over 70,000 buildings, to create a data quality assessment framework. Using the framework to evaluate the sample set of properties, the data quality assessment found the data acceptable for ongoing savings analysis and provided recommendations for data quality improvements.

In response to the recommendations made from the initial data quality assessment, Freddie Mac Multifamily worked with WegoWise to develop a Benchmarking Data Collection Best Practices Guide to create more consistent data collection throughout the entire loan process and to produce higher quality data and reports. We have worked to implement these best practices through adjustments to our loan agreements, requiring the collection of both energy and water data, regardless of the type of improvements (energy or water) being implemented at the property. We also require the collection of a minimum of 10% of tenant data. For Green Up loans originated in 2019 and beyond, we require the borrower to engage a third-party data collection firm to collect, input and monitor the Benchmarking Data. We also provided general and individualized training to our servicers along with resources such as on-demand instructional videos for the annual reporting process.

Environmental and Social Impacts
The expected environmental and various social impacts are based on Green Consultant estimates developed prior to the implementation of the EWCM. These estimates include:

• Projected annual consumption savings figures for both energy and water
• Projected annual tenant cost savings in U.S. dollars ($)  
• Projected annual owner cost savings in U.S. dollars ($)  
• Projected cost of equipment and labor to install improvements in U.S. dollars ($)  

GHG emissions projections are calculated within the Form 1106 following the Portfolio Manager methodology. Green Consultants break out the energy-consumption savings by the fuel type used at the property (e.g., electricity, natural gas, etc.), which is then converted to a standard common unit, kBtu, using conversion factors published by Portfolio Manager. This allows consumption from all fuel types to be aggregated into one site energy-consumption savings figure. Using this site energy-consumption value, emissions factors are applied to produce the GHG emissions projections for the property.

Sustainability Bonds
Existing Energy-/Water-Efficiency Improvements
Under Freddie Mac’s Green Retrofits option under Green Advantage, properties must have had energy-and/or water-efficiency improvements made to them within the then-current calendar year and the preceding two calendar years of a borrower having certified to Freddie Mac of the improvements’ completion. The improvements must meet a specified efficiency standard and/or key criteria for that improvement type; typically, the fixture must be ENERGY STAR certified or WaterSense labeled. For ENERGY STAR products, these have been independently certified as energy efficient based on EPA criteria. Similarly, WaterSense products have been independently certified to use 20% less water and perform as well or better than regular models.

Using the inputs provided by the borrower, an expected savings factor is applied based on the number of reported units or buildings receiving the reported retrofits. This calculation produces an expected energy-and/or water-consumption savings figure for the property that must meet a minimum target of 10% or more whole-property energy-and/or water-consumption savings. These expected savings figures are based on average energy-and water-consumption savings data we have collected from the Green Reports received for the Green Up and Green Up Plus loans.

Transit-Oriented Development
We measure walking distance in miles from each property to the nearest transit stop using the Freddie Mac Multifamily Mission Map. Transit stops include bus stops in urban areas, train lines and subway lines, with additional considerations made for properties located in less densely populated areas.

Impact Bonds
Life Expectancy
Life expectancy is often used as a measure of the health of an individual or community. In our report, we obtained life expectancy from the U.S. Census tract of each area in which properties backing Green Bonds are located and ran that data against the national life expectancy average of 78.8 as of 2019. According to the Centers for Disease Control and Prevention and the National Center for Health Statistics, “The methodology used to calculate the U.S. census tract abortion life tables consisted of several stages. First, through a collaboration between the National Vital Statistics System registration areas and the National Center for Health Statistics, death records of U.S. residents (excluding residents of Maine and Wisconsin) for deaths occurring in 2010 through 2015 were geocoded using decedents’ residential addresses to identify and code census tracts. Second, population estimates were produced based on the 2010 decennial census and the 2011-2015 American Community Survey 5-year survey. Third, a methodology that combined standard demographic techniques and statistical modeling was developed to address challenges posed by small population sizes and small and missing age-specific death counts. Last, standard, abbreviated life table methods were adjusted to account for error introduced by population estimates based on sample data.”

Educational Attainment
Access to education is an indicator of opportunity as previously defined through our research. The American Community Survey (ACS), part of the U.S. Census Bureau, was used in order to determine the educational attainment of the population within areas in which properties backing Green Bonds are located. The measures used by ACS are at the U.S. Census tract level. Our focus for this report was on the percentage of people per area with a bachelor’s degree as a measure of educational attainment.

Data Review
The data used in this report was checked for missing data elements and reasonable cost and savings estimates. The Green Report data is also reviewed at underwriting to check for accurate property information and to check that figures in the Green Reports meet program requirements. Where possible, anomalies or errors were corrected; where correction was not possible, where data was not provided or where data was not available, an N/A is listed in the associated property-level data available in the Multifamily Securities Investor Access tool. However, we are not responsible for and do not guarantee the accuracy or validity of any data from the Green Reports provided to Freddie Mac Multifamily and used in developing the property-level dataset. The data or the reported existing energy/water efficiency improvements should not be viewed as projections, forecasts, predictions or opinions with respect to value. The dataset is intended for general information and should not be used for financial reporting, accounting reporting or investment decisions. The dataset should not be construed as an effort to sell or the solicitation of any offer to buy any security in any jurisdiction where such offer of solicitation would be illegal.

36 ENERGY STAR product details available at: https://www.energystar.gov/about/origins_mission/energy_star_overview/about_energy_star_products
37 WaterSense label details available at: https://www.epa.gov/watersense/watersense-label
38 For more details on the savings analysis of our portfolio of Green Up/Green Up Plus loans, see https://mf.freddiemac.com/docs/2021_freddie_mac_multifamily_duty_to_serve_green_report.pdf
39 Freddie Mac Multifamily Mission Map: https://missionmap.freddiemac.com/A/main
40 Calculations are based on available life expectancy data in accordance with the U.S. Census Tract and the Centers for Disease Control and Prevention: https://www.cdc.gov/nchs/data/factsheets/factsheet_NVSS.pdf
41 https://www.census.gov/programs-surveys/acs/about.html
Contact Us

For additional information, please contact the Freddie Mac Multifamily Investor Relations team at MF_CIM_InvestorRelations@freddiemac.com.

Disclaimer

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