

# Duty to Serve Green Advantage<sup>®</sup> Dataset Overview and Explanation

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## Duty to Serve – Green Advantage® Dataset *Overview and Explanation*

The Green Advantage® dataset provides historical utility consumption or baseline data associated with Freddie Mac Multifamily Green Up® and Green Up Plus® loans and includes ongoing energy and water consumption data (Benchmarking Data). The purpose of the Green Advantage dataset is to supply the market with energy and water efficiency data.

Included in the baseline or pre-retrofit data is basic property information provided by Freddie Mac Optigo® lenders prior to loan origination, such as state, county, year built and number of units. Data is also sourced from the Green Assessment® or Green Assessment Plus® reports (collectively, the Green Reports) received as part of the origination process. The Green Reports are created by third-party consultants who meet Freddie Mac's qualification requirements (Green Consultants).

Green Consultants are engaged by Optigo lenders to perform an evaluation of the borrower's property to determine its energy and water efficiency performance and make recommendations for efficiency improvements. Data collected from the Green Reports includes projected cost estimates for improvements selected by borrowers, projected savings estimates expressed in dollars, consumption and percentage savings and an ENERGY STAR® Score and Water Score if available. The reliability of the baseline or pre-retrofit data is inherently subject to the reliability of the data in the Green Reports.

In addition to basic property information and projections from the Green Consultants, the dataset also includes actual savings for a subset of loans. Measurement and Verification (M&V) analysis is the process for quantifying consumption reduction and cost savings attributed to the energy and water efficiency improvements made at a property. In 2020 and 2021, Freddie Mac Multifamily engaged WegoWise by Appfolio (WegoWise) to perform M&V analysis on the Benchmarking Data provided on properties securing Green Up and Green Up Plus (both, Green Up) loans. In order for M&V analysis to be performed, a property must have reported their efficiency improvements as complete as well as submitted enough Benchmarking Data for meaningful savings comparison. Properties meeting these criteria received either an energy, water or combined M&V analysis depending on the improvements made at the property. A small subset of loans received a second year of M&V analysis and the results from all M&V analyses are reported in the dataset.

The dataset includes information from Green Up or Green Up Plus loans funded from program inception and has been updated annually with data through the end of the third quarter in 2021 (August 2016 – September 2021).

The dataset is segmented into two distinct groups. The first group includes loans from program inception through the end of 2017 and the second group includes loans originated from 2018 to 2021. The two groups include both baseline or pre-retrofit data and results from the M&V analysis of Benchmarking Data. The two groups are distinguished by the program requirements and the data collection methods used for each group.

### **Dataset: Group One**

The first group of loans in the dataset includes loans meeting the original program requirements of a 15% savings threshold for either owner- or tenant-paid utilities or whole property consumption.

Baseline data was collected through systems at loan origination and through manual data mining from the Green Reports. The collection of this data took place prior to the implementation of a standardized report format for Green Reports and the creation of a database for Green Up loans. Due to the lack of data standardization, there may be some inconsistencies in data (e.g., improvements nomenclature, combined improvements), including data omissions in a small sample of loans from early Green Reports (e.g., consumption figures, cost savings). A review of the data was performed to check for missing data elements and reasonable cost and savings estimates. Where possible, anomalies or errors were corrected; where correction was not possible, data was removed.

Benchmarking Data is provided annually by either the borrower or a hired third-party consultant (Benchmarking Data Consultant) to facilitate M&V analysis.

### **Dataset: Group Two**

The second group consists of loans meeting the program requirements of either 1) a minimum of 25% whole property consumption savings threshold, or 2) 30% whole property consumption savings threshold with a minimum 15% coming from energy consumption reduction. Whole property consumption calculations reflect the total property consumption, which includes all owner-paid consumption plus all tenant-paid consumption. This calculation is distinct from the requirement for Group One, which allowed the consumption percentage savings to be calculated using either the total owner-paid consumption figures or the total tenant-paid consumption figures. Given that the method for calculating the two requirements differed, the percentage savings figures cannot be combined and should not be compared between the two groups.

In late 2017, Freddie Mac Multifamily introduced a standardized form to be used for all Green Reports, and in mid-2018, we finished creating the Green Up database. The combination of these tools has automated and standardized the data collection process. Group Two relied on this data collection method. The standardized form report creates consistency, and the automated data collection prevents human input error, but the database does not have data validation checks to ensure accuracy or validity of the data being collected from the Green Reports. Similar to Group One, data was reviewed to check for missing data elements and reasonable cost and savings estimates. Where possible, anomalies or errors were corrected; where correction was not possible, data was removed.

Benchmarking Data is provided annually by either the borrower or a Benchmarking Data Consultant to facilitate M&V analysis. For loans originated in 2019 or later, Benchmarking Data must be provided by a Benchmarking Data Consultant.

## Data Review

The baseline or pre-retrofit data is reviewed during the underwriting process to check for accurate property information and to check that figures provided by the Green Consultants in the Green Reports meet program requirements. Additionally, as part of the M&V analysis, WegoWise evaluated the Benchmarking Data for quality and completeness, which included working with the Optigo servicers and borrowers to rectify any discrepancies or anomalies, including outliers. All M&V results received confirmation from those sources as being correctly represented. The third parties providing and evaluating the dataset all meet Freddie Mac's requirements, and Freddie Mac has relied upon them to provide complete and accurate information. The dataset should not be viewed as projections, forecasts, predictions or opinions with respect to value. The dataset is intended for academic analysis and should not be used for financial reporting, accounting reporting or investment decisions. This 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.