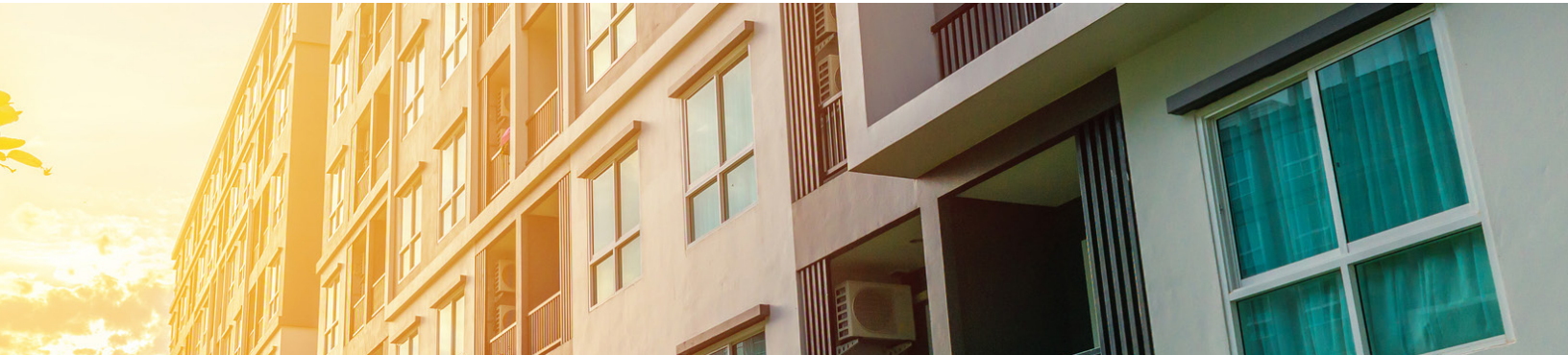




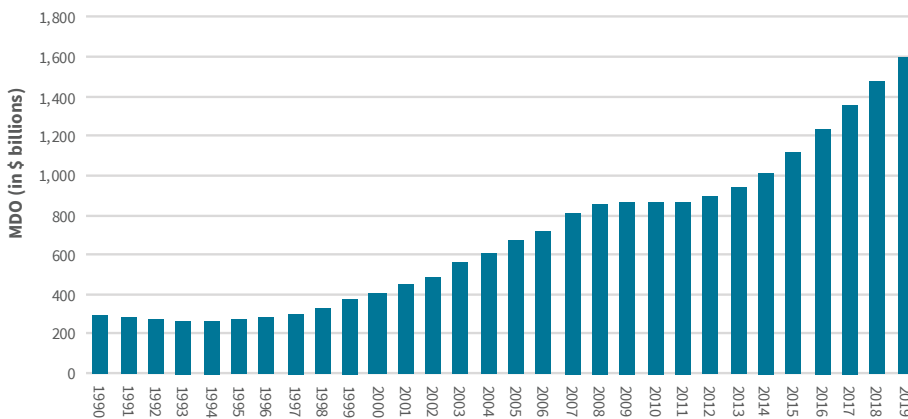
# Celebrating 30 Years of the Fannie Mae Delegated Underwriting & Servicing (DUS) Program

Updating the investment community on Fannie Mae mortgage products and programs



According to the Mortgage Bankers Association’s (MBA) analysis of the Federal Reserve Board Flow of Funds data for Q4 2019, the multifamily portion of mortgage debt outstanding (MDO) accounted for approximately 21.0 percent of the \$1.6 trillion total MDO, or \$329 billion. **Figure 1** displays the growth of multifamily MDO since 1990.

Figure 1: Multifamily MDO from 1990 to 2019\*



\* Includes debt and commercial mortgage-backed securities.

Fannie Mae, the largest government-sponsored enterprise provider of financing for the multifamily market, supports affordable multifamily housing by providing financing for acquisition or refinance of individual properties or groups of properties. Furthermore, Fannie Mae provides this financing through a nationwide network of Delegated Underwriting and Servicing (DUS®) lenders. Through the DUS lenders, Fannie Mae either finances or guarantees the financing of several types of multifamily properties, including apartment buildings, manufactured housing communities, seniors housing, dedicated student housing, affordable housing, and cooperatives with five or more individual units. The loans are then securitized into MBS that carry Fannie Mae’s guaranty of timely payment

## MAY 2020

DUS® MBS offer Fannie Mae’s guaranty of timely payment of principal and interest, lower spread volatility relative to many other products, liquidity enhanced by the large number of dealers engaged in market-making, stable cash flows that are easy to model, and superior call protection.



of principal and interest, which can be sold to investors and traded in the secondary market.

Thirty years ago, in 1988, Fannie Mae began purchasing multifamily loans through its DUS program and holding these loans in portfolio. In August 1994, the company began securitizing DUS loans and created DUS Mortgage-Backed Securities (DUS MBS). DUS MBS offer Fannie Mae’s guaranty of timely payment of principal and interest, lower spread volatility relative to many comparable products, liquidity enhanced by the large number of dealers engaged in market making, stable cash flows that are easy to model, and superior call protection. In 2019, Fannie Mae multifamily MBS issuance volume was approximately \$70 billion.

This edition of MBSenger details the growth and development of Fannie Mae’s DUS program over the years. Specifically, we review the notable characteristics of Fannie Mae’s DUS program, highlighting the DUS MBS product and exploring the performance features of these securities that fixed-income investors may find beneficial. We also examine the key aspects of other types of Fannie Mae Multifamily securities.

**Table 1: Types of multifamily mortgaged properties eligible for DUS MBS**

| Property type  | Description   |
|--|---|
| Standard conventional multifamily                                | A multifamily loan secured by a residential property composed of five or more dwelling units and in which generally no more than 20 percent of the net rentable area is rented to, or to be rented to, non-residential tenants.   |
| Multifamily affordable housing and Low-Income Housing Tax Credit | A multifamily loan on a mortgaged property encumbered by a regulatory agreement or recorded restriction that limits rents, imposes income restrictions on tenants, or places other restrictions on the use of the property.   |
| Seniors housing  | A multifamily loan secured by a mortgaged property that is intended to be used for elderly residents for whom the owner or operator provides special services that are typically associated with either “independent living” or “assisted living.” Some Alzheimer’s and skilled nursing capabilities are permitted. |
| Manufactured housing community                                   | A multifamily loan secured by a residential development that consists of sites for manufactured homes and includes utilities, roads, and other infrastructure. In some cases, landscaping and various other amenities, such as a clubhouse, swimming pool, and tennis and/or sports courts are also included.       |
| Cooperative blanket  | A multifamily loan made to a cooperative housing corporation and secured by a first or subordinate lien on a cooperative multifamily housing project that contains five or more units.  |
| Dedicated student housing  | Multifamily loans secured by multifamily properties in which college or graduate students make up at least 80% of the tenants.  |

To review specific details of each multifamily mortgaged property type, please refer to our Multifamily MBS Prospectus, which can be found under [Prospectus & Related Documents](#) on our website.

<sup>1</sup> Our Bond Credit Enhancement product provides credit enhancement for tax-exempt bonds issued by state and local housing finance agencies and is often used to finance Low-Income Housing Tax Credit (LIHTC) properties and preserve older HUD-assisted properties.

## The DUS program

Initiated in 1988, the DUS program grants approved lenders the ability to underwrite, close, and sell loans on multifamily properties to Fannie Mae without prior Fannie Mae review. These DUS lenders must abide by rigorous credit and underwriting criteria, and their firms are continuously subject to ongoing credit review and monitoring. Additionally, DUS lenders usually retain a risk position in the loans that they sell to Fannie Mae. Under the DUS program, approved lenders can originate fixed-rate, adjustable-rate, balloon, fully-amortizing, and partial-and full-term interest-only multifamily mortgage loans. These DUS loans can be financed through MBS or Bond Credit Enhancement.<sup>1</sup> **Table 1** identifies the types of multifamily properties used as collateral for loans that may be securitized into DUS MBS.

The most common final balloon maturities for fixed-rate multifamily loans are 5, 7, 10, 12, and 15 years, while adjustable-rate mortgage loans usually have final balloon maturities of 5, 7, or 10 years. The most common DUS MBS is a 10/9.5 fixed-rate (a 10-year balloon with 9.5 years of yield maintenance), followed by the 7/6.5 fixed-rate (a 7-year balloon with 6.5 years of yield maintenance). Since mid-2011, our ARM 7-6™, which provides variable-rate financing with an embedded cap and an option to convert to a fixed-rate mortgage loan, has become a popular product, as well.



## DUS lenders

As of May 1, 2020, Fannie Mae had 24 DUS lenders, which are listed in **Table 2**.

**Table 2: List of DUS lenders**

|  |
|--|
| Arbor Commercial Funding I, LLC                |
| Barings Multifamily Capital LLC                |
| Bellwether Enterprise Real Estate Capital, LLC |
| Berkadia Commercial Mortgage LLC               |
| Capital One Multifamily Finance LLC            |
| CBRE Multifamily Capital, Inc.                 |
| Citi Community Capital                         |
| Dougherty Mortgage LLC                         |
| Grandbridge Real Estate Capital, LLC           |
| Greystone Servicing Corporation Inc.           |
| HomeStreet Capital Corporation                 |
| Jones Lang LaSalle Multifamily, LLC            |
| JP Morgan Chase and Co.                        |
| KeyBank National Association                   |
| M&T Realty Capital Corporation                 |
| Newmark Knight Frank                           |
| NorthMarq Capital                              |
| Orix Real Estate Capital, LLC                  |
| PGIM Real Estate Finance                       |
| PNC Real Estate                                |
| Regions  |
| Truist   |
| Walker & Dunlop, LLC                           |
| Wells Fargo Multifamily Capital                |

There are stringent qualifications for consideration to be a DUS lender. Each lender must maintain acceptable levels of capital and liquidity in relation to its Fannie Mae obligations. Generally, each lender must demonstrate real growth in its net worth and improvement in its liquidity as the size of its Fannie Mae servicing portfolio and its exposure relating to any other business activities increase. Lenders must also:

- Maintain an established business of originating and servicing multifamily mortgage loans.
- Hold a license or other authority to do business in each jurisdiction where required, and the license or other authority must not be suspended or revoked by any governmental body or regulatory entity.
- Employ qualified underwriting, originating, and servicing personnel, as it is the lender's responsibility to underwrite and service the mortgage loans it sells to Fannie Mae.
- Continue adequate internal audit and management control systems to evaluate and monitor the overall quality of its multifamily loan production and servicing activities.
- Possess a financial condition acceptable to Fannie Mae.
- Maintain fidelity/surety bonds with errors and omissions insurance in amounts acceptable to Fannie Mae.

Furthermore, DUS lenders are subject to quarterly and/or annual reviews to ensure that they continue to meet Fannie Mae's DUS lender eligibility requirements.

## Credit quality of DUS mortgage loans

Eligible multifamily properties must be income-producing multifamily rental properties or cooperatives with a minimum of five individual units. These multifamily properties must be existing, recently completed, or in need of moderate rehabilitation. A DUS mortgage loan tends to range in size from \$1 million to \$50 million and is generally "non-recourse"<sup>2</sup> to the borrower. Additionally, DUS loans generally are assumable after a review of the proposed transferee, although a one-percent transfer fee payable to Fannie Mae is commonly charged, which is not passed on to the MBS investor.

Each mortgage is underwritten to a three-tier credit structure based on debt service coverage ratio (DSCR) and loan-to-value ratio (LTV). **Table 3** summarizes the LTV and DSCR values for each tier for standard conventional multifamily loans. DSCR and LTV requirements are subject to change based on market conditions.

<sup>2</sup> Non-recourse: In the event of default, the lender agrees to take the pledged property as satisfaction for the debt and to have no claim on any other assets of the borrower.



If a DSCR or LTV value rises above any tier level, investors should refer to Fannie Mae disclosure of the DSCR and LTV for each MBS to determine the credit performance of the loans backing the security. Stricter underwriting standards apply to other asset classes, such as seniors housing, student housing, and manufactured housing. Various asset classes are described in the associated Multifamily MBS Prospectus.

**Table 3: Tier level credit characteristics**

| Rating | Minimum DSCR                                  | Maximum LTV ratio                           |
|--------|---|---|
| Tier 2 | Generally no lower than 1.25                  | Generally no higher than 80%                |
| Tier 3 | Usually falling within a range of 1.35 – 1.55 | Usually falling within a range of 65% – 55% |
| Tier 4 | Usually in excess of 1.55                     | Usually below 55%                           |

\* These figures are not an indication of the DSCR or LTV characteristics that will apply to any given MBS, regardless of tier. The DSCR, LTV, and tier for each MBS are disclosed in the offering documents for that MBS.

In addition to tier assignments, each property underlying the multifamily MBS is subject to three assessments:

1. An appraisal of the property is performed by a licensed appraiser selected by the DUS lender. Appraisals must conform to Uniform Standards of Professional Appraisal Practice (USPAP) standards. Fannie Mae does not approve specific appraisers. The DUS lender is responsible for selecting the appraiser and is solely accountable for their performance.
2. Either an environmental assessment or an American Society for Testing and Materials (ASTM) screen is required, and an ongoing operations and maintenance plan may also be required to ensure the property is operated in an environmentally sound manner.
3. A physical needs assessment must be completed by a qualified evaluator designated by the DUS lender. If tenant safety, marketability, or property conditions are compromised by unacceptable circumstances, repairs may be ordered. Generally, if the repairs are not completed by the time of closing, a reserve fund for payment of the repairs may be established.

DSCR and Net Cash Flow (NCF) is collected by Fannie Mae and disclosed on an annual basis. It is important to note that the underwriting guidelines in the DUS Guide are guidelines and not rigid requirements. A waiver or exception may be granted if it is deemed by Fannie Mae to be prudent given the applicable circumstances.

## DUS loss-sharing arrangements

Fannie Mae delegates the responsibility for under-writing and servicing DUS loans to the DUS lenders. Lenders enter into loss-sharing agreements with Fannie Mae that specify the method of sharing any losses on the loans that they deliver and/or service. These arrangements vary among transactions, ranging from the DUS lender bearing a specified first loss percentage for a transaction to the DUS lender having no loss sharing obligation for a transaction. The most common loss sharing of DUS loans is pari-passu, in which the lender bears one-third of the losses, and Fannie Mae is responsible for the remaining two-thirds.

This loss-sharing element is an incentive for DUS lenders to monitor and manage credit exposure on an active basis. As seen in **Figure 2**, the Fannie Mae multifamily serious delinquency rate reflects the company’s rigorous standards, with rates at 0.04 percent as of December 31, 2019.

**Figure 2: Serious delinquency rates**



\*Includes multifamily loans 60 days or more past due and is calculated based on the UPB of delinquent multifamily loans owned by Fannie Mae or underlying Fannie Mae — guaranteed securities, divided by the UPB of family loans owned by Fannie Mae or underlying Fannie Mae securities.



## DUS MBS securities

DUS MBS securities carry Fannie Mae’s guaranty of timely payment of principal and interest. Principal and interest payments are paid on the MBS monthly on the 25th calendar day (if the 25th calendar day is not a business day, then the next business day). Upon maturity, the entire outstanding unpaid principal balance is paid to the investor on the 25th of the month of maturity.

The Fannie Mae guaranty on DUS MBS mirrors that provided for single-family Fannie Mae MBS. Fannie Mae has never missed a scheduled payment of principal and interest on any of its mortgage-backed securities, single-family or multifamily. It is important to note that Fannie Mae DUS MBS are not guaranteed by the United States and do not constitute a debt or obligation of the United States or any of its agencies or instrumentalities other than Fannie Mae. Fannie Mae alone is responsible for making payments under its guaranty.

DUS MBS are classified by a multifamily prefix to identify the type of multifamily mortgage loans that are included in a specific pool. **Table 4** lists the top three most commonly assigned multifamily pool prefixes from 2017 – 2019.

DUS MBS pools are not restricted to a minimum or maximum unpaid principal balance, nor is there a restriction on the number of loans allowed into a single DUS MBS pool at issuance. Typically, each DUS MBS pool contains one DUS loan but can incorporate multiple DUS loans made by the same lender to the same or affiliated borrowers.

## Multifamily Megas

Fannie Mae introduced the DUS MBS Mega program in August 1996 to provide the ability to combine DUS MBS pools into a single, larger pool, which facilitates additional geographic and borrower diversity as well as ease of operational administration. In a DUS MBS Mega, DUS MBS securities with the same prefix are pooled

together. The combination of Fannie Mae MBS coupons typically will be restricted to an inclusive 100 basis point range from the highest to lowest Fannie Mae MBS coupon.

## Fannie Mae GeMS program

Fannie Mae Guaranteed Multifamily Structures (Fannie Mae GeMSTM)<sup>5</sup> are structured multifamily securities created from multifamily MBS collateral selected by Fannie Mae’s Multifamily Capital Markets Desk. The program was launched in 2011 and includes Multifamily Megas and REMICs. The program attracts additional capital to multifamily finance from larger institutional investors who might not find the characteristics of smaller, single-loan DUS MBS attractive. GeMS provide par-priced, block size, structured securities with collateral diversity and customized cash flows to meet investor demand. In 2019, Fannie Mae issued \$9.6 billion in GeMS.

## Day count conventions for payment of interest

The day count describes the method in which accrued interest and coupon payments are calculated. DUS MBS have one of two day count conventions: 1) count the actual days per month and use a 360-day calendar year, Actual/360; or 2) count 30 days for each month and use 360 days per year, 30/360. The difference between the two methods is that the amount of each monthly payment that is allocated to interest will be based on 30 days in a month for the 30/360 method and on the actual number of calendar days during the month for the Actual/360 method. In a 31-day month, more of the monthly payment amount will be allocated toward interest using the Actual/360 method than will be allocated toward interest using the 30/360 method. Because there are actually 365 or 366 days in a year, loans using the Actual/360 method amortize more slowly and generate more interest than loans at the same note rate using the 30/360 method.

**Table 4: Top three Fannie Mae MBS/DUS pool prefixes assigned from 2017 – 2019**

| Prefix | Definition  | "At-Issuance UPB (\$ billions)" | % of Total MBS/DUS |
|--------|---|---------------------------------|--------------------|
| HY     | Conventional, Balloon, Actual/360 interest day basis calculation; Multifamily; maturing or due in greater than seven (7) years.                             | \$147.0                         | 73%                |
| HA     | Conventional, Adjustable Rate, Actual/360 interest day basis calculation, Multifamily, maturity dates vary.   | \$24.7                          | 12%                |
| HX     | Conventional, Short-Term Balloon, Level-Payment Mortgages, Actual/360 interest day basis calculation; Multifamily; maturing or due seven (7) years or less. | \$19.5                          | 10%                |



As a result, a fully amortizing loan accruing interest on the Actual/360 basis is likely to have an outstanding principal balance on the stated maturity date of the loan.

Consult the Multifamily Prospectus to see if the related loan has an interest basis of Actual/360 or 30/360 and to ascertain the interest accrual method. For both day count convention methods, the investor is paid principal and interest on the 25th calendar day of each month. If the 25th calendar is not a business day, the payment is made on the next business day.

## Prepayment protection

As part of the DUS program, each DUS loan generally has voluntary prepayment protection provisions. For fixed-rate loans, the prepayment premium is usually a yield maintenance premium or a declining percentage of the unpaid principal balance. For adjustable-rate loans, the prepayment premium may be a declining percentage or a fixed percentage of the unpaid principal balance. Other methods for calculating prepayment premiums are also possible. The prospectus will specify whether the loans in an MBS pool have prepayment premiums and, if so, will specify the method for calculating the prepayment premiums. The prospectus will also state whether certificate holders share in any prepayment premiums collected on prepaid loans in the pool and, if so, will describe the method of allocation.

- I. Yield maintenance, the most common form of prepayment protection, allows for full prepayments along with a yield maintenance prepayment premium payable by the borrower. The yield maintenance prepayment premium for each mortgage loan is payable during a period of time — the yield maintenance period. If a borrower voluntarily prepays a mortgage loan during the yield maintenance period, the yield maintenance prepayment premium is based on a standard calculation. Please refer to page 7 for calculation details and examples.

It is important to note that Fannie Mae calculates the share of the prepayment premium to be retained by the company and the share of prepayment premium to be passed on to the investor. Fannie Mae will pass the yield maintenance prepayment premium to the investor only to the extent that collected premiums remain after the company has deducted its full portion. Fannie Mae does not guarantee payment of any prepayment premiums, and Fannie Mae will only pass through the MBS investor's

portion of a yield maintenance payment to the extent it is collected. If a borrower prepays a mortgage loan on or after the yield maintenance end date, Fannie Mae will not pay any portion of the prepayment premium to the investor.

The yield on the Treasury reference note or securities used to compute the yield maintenance prepayment premium effectively increases this premium by the present value of the spread differential between a DUS MBS and U.S. Treasury securities. If the yield on the Treasury reference note or securities is calculated to be zero, the number 0.00001 may be deemed to be the yield on the Treasury reference note.

If the borrower prepays during the three months after the end of the yield maintenance period, the borrower may be charged a one-percent prepayment premium based on the amount of prepaid principal. Prepayment premiums paid in connection with prepayments occurring after the yield maintenance end date are not passed through to MBS investors. Fannie Mae publishes monthly yield maintenance information, which investors can use to calculate their share of yield maintenance for those MBS paying yield maintenance in the current month. The report is described in greater detail in the appendix of this document.



## Illustration of the yield maintenance fee calculation for a 10-year DUS loan with 9.5 years of yield maintenance

### Characteristics of multifamily loan to be voluntarily prepaid:

- Fannie Mae multifamily mortgage loan note rate = 4.35%.
- MBS Pass Through Rate = 3.00%.
- \$1,118,222.29 of principal prepaid voluntarily on April 25, 2012.
- Yield maintenance end date = October 25, 2018.
- Remaining term of yield maintenance = 6.5 years.

### Constant maturity treasury (CMT) rate calculation:

The CMT rate date for this example is March 21, 2012, which is the 25th business day prior to the payoff date of April 25, 2012. The rate is calculated for the remaining term of yield maintenance by interpolating between two CMT rates. In this example, interpolating a 6.5 year period between the 5-year CMT rate and the 7-year CMT rate.

CMT rate data is sourced from the U.S. Treasury Statistical Release H.15 (Selected Interest Rates), which can be found at the following link: [federalreserve.gov/releases/h15/data.htm](http://federalreserve.gov/releases/h15/data.htm).

If publication of the Fed Release is discontinued by the Federal Reserve Board, Fannie Mae will determine the yield rate from another source selected by Fannie Mae.

### CMT interpolation equation and calculation:

Where:  $\frac{[(a-b)/(x-y)]*(z-y)+b}{1}$  (rounded to three decimal places)

a = yield for the longer U.S. Treasury constant maturity

b = yield for the shorter U.S. Treasury constant maturity

x = term for the longer U.S. Treasury constant maturity

y = term for the shorter U.S. Treasury constant maturity

z = number of years remaining until the yield maintenance end date (months divided by 12)

Example:

a = 1.71%, the yield for the 7-year U.S. Treasury constant maturity on March 21, 2012.

b = 1.15%, the yield for the 5-year U.S. Treasury constant maturity on March 21, 2012.

x = 7, the term for the longer U.S. Treasury constant maturity.

y = 5, the term for the shorter U.S. Treasury constant maturity.

z = 6.5 (or 78/12), the number of years remaining until the yield maintenance end date (months divided by 12).

Yield rate =  $\frac{[(1.71-1.15)/(7-5)]*(6.5-5)+1.15}{1} = 1.57$

### Yield maintenance example using interpolated CMT rate:

Since the borrower voluntarily prepays during the yield maintenance period, the yield maintenance prepayment fee equals the greater of:

(a) 1% of the amount of principal being prepaid  
 $= 1\% \times \$1,118,222.29 = \$11,118.22$  **OR**

(b) the product obtained by multiplying  
 $= \$1,118,222.29$  **by**

(1) the amount of principal being repaid  
 $= \$1,118,222.29$  **by**

(2) the result of  
 (a) the interest rate on the mortgage loan minus the yield rate (interpolated CMT)  
 $= 4.35\% - 1.570\% = 2.78\%$  **by**

(b) the present value factor calculated by using the present value formula.

$$= \frac{1 - (1+r)^{-n/12}}{r}$$

where r = yield rate on the interpolated CMT and

where n = number of months remaining between (A) the date of prepayment and (B) the prepayment end date

$$= [1 - (1 + 1.1570\%)^{(-78/12)}] / 1.1570\% = 6.13372$$

**Total** =  $\$1,118,222.29 \times 2.78\% \times 6.13372$   
 $= \$190,676.42$

The total yield maintenance prepayment fee paid by the borrower is **\$190,676.42**.

### Investor portion of yield maintenance:

Incorporating variables above, the investor's share of the yield maintenance prepayment premium will equal the following:

(1) The amount of principal being repaid (UPB at the date of prepayment), **times**

(2) The difference between (A) the MBS Pass Through Rate and (B) the yield on the applicable U.S. Treasury constant maturity (as calculated previously), **times**

(3) The present value factor (as calculated previously)  
 $= \$1,118,222.29 \times (3.00\% - 1.570\%) \times 6.13372$   
 $= \$98,081.73$

In this example, the investor receives **\$98,081.73** as compensation for prepayment.



Defeasance is an alternative prepayment option selected at the time of origination that allows a property to be released from the mortgage lien prior to maturity in exchange for Fannie Mae or U.S. Treasury securities.

Defeasance reduces the risk of reinvesting prepayment proceeds in an uncertain interest rate environment, since the property release does not interrupt the original expected cash flow to investors in securities backed by loans with defeasance.

- II. Another prepayment premium option is a variable premium schedule known as a declining premium or a fixed premium. The declining premium is based on a percentage of the current unpaid principal balance and the percentage declines with the passage of time.
- III. Prepayment lock-outs prohibit the borrower from voluntarily prepaying a loan for any reason, except for payments resulting from casualty or condemnation.

The various prepayment protection methods on DUS loans provide considerable compensation to investors and reduce the incentive for a DUS loan to be repaid before the prepayment end date (curtailment). Voluntary partial prepayments generally are prohibited on DUS loans. Involuntary prepayments such as condemnation awards or insurance proceeds may occur. Investors can determine the prepayment premium or yield maintenance formula that applies to the loan underlying a particular MBS by reading the Prospectus Documents for that MBS type.

## DUS MBS investor benefits

A wide range of investors, including insurance companies, money managers, commercial banks, credit unions, and state and local governments, find Fannie Mae DUS MBS an attractive investment.

DUS MBS offer Fannie Mae's guaranty of timely payment of principal and interest, lower spread volatility relative to many other comparable fixed income products, liquidity enhanced by the large number of dealers engaged in market making, stable cash flows that are easy to model, and prepayment protection.

## Other Fannie Mae Multifamily MBS

In addition to the types of DUS MBS already described, Fannie Mae issues the following types of Multifamily MBS.

### Multifamily DUS Structured Transactions

Commonly executed with large REIT customers, multifamily credit facilities provide both long-term and short-term flexible financing for a pool of cross-collateralized and cross-defaulted multifamily mortgage loans. The properties securing the mortgage loans within the pool may be substituted, added, or released based on certain criteria, and additional borrowing on existing properties may be permitted if certain conditions are met. Structured Transactions are typically \$50 million and over in size, have a minimum term of five years, and may consist of both a fixed-rate portion and/or an adjustable-rate portion.

### Multifamily Green Financing

Fannie Mae Green Mortgage loans are generally securitized as a single Green Fannie Mae DUS Mortgage-Backed Security (Green MBS). This allows investors to know that the Green MBS is either backed by a property with a Green Building Certification or a property with improvements to reduce energy and water usage. Our Green MBS has all the benefits of our traditional DUS MBS, including transparency, superior call protection, stable cash flows, and more.

Since first issuing a green bond in 2012, Fannie Mae has issued \$75 billion in green bonds and \$9 billion in re-securitizations. With \$22.8 billion in green bond issuances in 2019, Fannie Mae has been recognized for the third consecutive year as the largest issuer of green bonds in the world by the Climate Bonds Initiative.





## Appendix

### Multifamily MBS disclosures

This document describes many of the general characteristics of Fannie Mae Multifamily MBS; before investing in any Fannie Mae MBS, one should read and be sure to understand the disclosure documents published at issuance. These disclosure documents provide at-issuance information that allows potential investors to evaluate the risks and benefits of investing in Fannie Mae Multifamily MBS. Fannie Mae also provides ongoing disclosure about the performance of the loans that underlie the MBS. Disclosure documentation and other online resources are available on [DUS Disclose](#).

### Multifamily Master Trust Agreement and Multifamily MBS Prospectus

Fannie Mae fixed-rate and adjustable-rate multifamily MBS are issued under our Multifamily Master Trust Agreement. The [Master Trust Agreement](#), together with its exhibits and supplements, is the principal authority that defines the rights and responsibilities of Fannie Mae and of the MBS certificate holders in relation to each MBS trust created under that particular master document. In general, the Trust Agreement sets forth the terms related to the MBS issuance, the loans or participation interests in the MBS pool, and the payment terms for the MBS certificates.

All Multifamily MBS are offered pursuant to our [Multifamily MBS Prospectus](#), which describes the general terms of the Multifamily MBS program, the general characteristics of the Multifamily MBS, the policies for purchasing delinquent loans out of MBS trusts, and other important aspects of our Multifamily MBS program. Additionally, the related disclosure documents are accessible online.

## DUS Disclose

In December 2017, we replaced Multifamily Securities Locator Service (MFSL) with DUS Disclose®. DUS Disclose is our new disclosure website where investors can obtain comprehensive information about multifamily securities, including the performance of the loans backing multifamily MBS and related delinquency statistics and financial information.

DUS Disclose provides the following features:

- Increased at-issuance and ongoing disclosure to align with the industry.
- Enhanced information for Credit Facility and Bulk Delivery transactions.
- More detailed property financial statement disclosure to align with the industry.
- Additional security, loan, and property information in a downloadable format.
- Improved web experience, including a more user-friendly interface.

Training materials, including videos and job aids, are located on the Learning Center page in DUS Disclose.

By entering the multifamily pool number or CUSIP, an investor can quickly obtain at-issuance disclosure documents for a specific security. The advanced search feature allows investors to customize a downloadable search result, which will include extensive pool information, such as factors, loan details, and weighted-average statistics. You can also search terminated pools using the advance search functionality.

The following example shows the new screen for Security Details and Loan Information backing the Multifamily DUS MBS 10/9.5 pool AN6077 in DUS Disclose.



# Fixed pool example – AN6077

HY

MBS

Transaction ID: AN6077    CUSIP: 3138LJXF2    Product: DUS    Int. Type: Fixed    Status: Active    Issuance UPB: \$3,525,000.00    Loans: 1 (1)    Properties: 1 (1)    Resecuritization: Eligible

[Security Detail](#)

[Login or register for more options.](#)    [Documents](#)    [Notifications](#)

**Security Timeline**

| Issue      | Settlement | First Payment | Resecuritized   | Next Distribution |  | Maturity   |
|------------|------------|---------------|---|-------------------|--|------------|
| 07/01/2017 | 07/19/2017 | 08/25/2017    | 10/01/2017 <span style="font-weight: bold;">BM1871</span> | 04/25/2018        |  | 07/01/2027 |

**Security Details**

**Current Balance & Rate** (updated on the 4th business day of the month)

|                       |                      |                               |  |
|-----------------------|----------------------|-------------------------------|--|
| UPB<br>\$3,483,986.57 | Factor<br>0.98836498 | Paying PTR<br>2.900% (2.900%) | WA Accruing Note Rate<br>4.450% (4.450%) |
|-----------------------|----------------------|-------------------------------|--|

| Issuance                   |                              |                               |                  | Current DSCR & Terms |                                 |
|----------------------------|------------------------------|-------------------------------|------------------|----------------------|---------------------------------|
| WA Loan Term<br>120 months | WA Amort. Term<br>360 months | WA Orig. I/O Term<br>0 months | WA LTV<br>75.00% | WA NCF DSCR<br>1.37x | WA Remaining Term<br>111 months |

**Loan 1717472030** [Loan Detail](#)

|  |  |   |  |  |
|--|--|---|--|--|
| <p>Loan Seller<br/><b>Bellwether Enterprise Mortgage Investments, LLC</b></p> <p>Payment Status<br/><b>Current</b></p> | <p>Original UPB<br/>\$3,525,000.00</p> <p>Purpose<br/><b>Refinance</b></p> | <p>Current UPB<br/>\$3,488,375.40</p> <p>Tier<br/><b>Tier 2</b></p> | <p>Green Financing Type<br/>Cross-Collateralized Loan(s)</p> | <p>Lien Position<br/><b>First</b></p> <p>Cross-Defaulted Loan(s)</p> |
|--|--|---|--|--|

**Loan Timeline**

| Note Date  | First Payment |  |  |  | Maturity   |
|------------|---------------|--|--|--|------------|
| 08/22/2017 | 08/01/2017    |  |  |  | 07/01/2027 |

| Loan Terms |                  |                  |                   | Prepayment Protection |      |            |
|------------|------------------|------------------|-------------------|-----------------------|------|------------|
| Fixed Rate | Paying Note Rate | Paying PTR       | Accrual Method    | Prepayment Type       | Term | End Date   |
|            | 4.450% (4.450%)  | 2.900% (2.900%)  | Actual/360        | Yield Maintenance     | 114  | 12/31/2028 |
| Term       | Original         | Remaining        | Amortization      | 1% Fixed Prepayment   | 3    | 03/31/2027 |
|            | 120 months       | 112 months (120) | 360 months        | No Prepayment (Open)  | 3    | 07/01/2027 |
|            |                  |                  | Original I/O Term |                       |      |            |
|            |                  |                  | N/A               |                       |      |            |

At Issuance DSCR & LTV



### Daily/monthly New Issuance file

The New Issuance file contains security, loan, property, and Credit Facility deal-level information on newly issued Fannie Mae Multifamily Mortgage-Backed Securities (MBS), as well as security- and collateral-level information for newly issued Fannie Mae Mega securities. The daily file is a cumulative file of all the securities published that day. The monthly file is a cumulative file of all securities published for the month.

### Daily/monthly Corrections file

The daily New Issuance Corrections file is a file created to communicate corrections to securities made within the first 90 days of issuance. The file contains security, loan, property, and Credit Facility deal-level information on newly issued Fannie Mae Multifamily Mortgage-Backed Securities (MBS). The daily file is a cumulative file of all securities that had a correction for that day. The monthly file is a cumulative file of all securities that had a correction during the month.

### Monthly Ongoing file

The monthly Ongoing file is a collection of current security, loan, and property information to users. The file will be available on or around the 23rd calendar day of each month.

### Ongoing Supplemental file

The Ongoing Supplemental file contains additional security, Credit Facility deal, loan, and property information that Fannie Mae would like to provide to users but are not available in the monthly Ongoing files.

### Multifamily DUS prepayment history report

This report includes a view of prepayment activity by original balance and loan count presented in several different data categories. The report shows active loans and liquidated loans acquired from January 2000 to the stated calendar quarter for each given category. It also includes the type of prepayment, including voluntary and involuntary prepayment, as well as loans that have paid at maturity.

The data categories in the reports are as follows:

- Origination vintage.
- Loan term at origination.
- Loan size at origination.
- Original loan-to-value.
- Geographic region: Midwest, Northeast, Southeast, Southwest, and West.
- Multifamily asset class: Conventional/co-op/affordable, seniors, dedicated student, and manufactured housing communities.

Investors, researchers, and other market participants can use this information to analyze the performance of Multifamily MBS and whole loans including prepayment behavior, credit performance, and other multifamily market trends. This provides investors insight into the credit performance of the Multifamily DUS fixed-rate loan business and may help in analyzing the risks associated with an investment in Multifamily MBS.

### Fannie Mae Quarterly Credit Supplement

Fannie Mae publishes a Quarterly Credit Supplement as part of our 10-Q and 10-K. This Supplement provides investors detailed information about the credit performance of multifamily securities and other aspects of Fannie Mae's business.



## Other Multifamily MBS resources for market participants

Information about Fannie Mae Multifamily MBS is easily obtainable from a number of other sources as well:

Website: [fanniemae.com](https://www.fanniemae.com)

Email: [fixedincome\\_marketing@fanniemae.com](mailto:fixedincome_marketing@fanniemae.com)

Investor helpline: 1-800-2FANNIE

Mail: Fannie Mae

c/o Fixed-Income Securities Marketing,  
1100 15th Street, NW  
Washington, DC 20005

## Top Fannie Mae multifamily disclosure website links

### DUS Disclose

Provides pool information, loan information, collateral information, and at-issuance documents (including the Schedule A, Base Prospectus, Prospectus Supplement Narrative, and Pool Statistics) for a specific pool or CUSIP.

[mfdusdisclose.fanniemae.com/#/home](https://mfdusdisclose.fanniemae.com/#/home)

### Daily/Monthly New Issuance file

The New Issuance file contains security, loan, property, Credit Facility Deal level information on newly issued Fannie Mae Multifamily MBS, as well as security and collateral level information for newly issued Fannie Mae Mega securities.

[mfdusdisclose.fanniemae.com/#/resources/datacollections](https://mfdusdisclose.fanniemae.com/#/resources/datacollections)

### Monthly Ongoing file

The monthly ongoing file communicates current security, loan, and property information to users.

[mfdusdisclose.fanniemae.com/#/resources/datacollections](https://mfdusdisclose.fanniemae.com/#/resources/datacollections)

### DUS Prepayment history report

Provides a view of prepayment activity by original balance and loan count presented in several different data categories.

[fanniemae.com/portal/funding-the-market/mbs/multifamily/dusprepayment-history.html](https://www.fanniemae.com/portal/funding-the-market/mbs/multifamily/dusprepayment-history.html)

## Multifamily Master Trust Agreements and Trust Indentures

Provides a link to the Trust Agreements and Trust Indentures for Fannie Mae MBS, both single-family and multifamily.

[fanniemae.com/portal/jsp/mbs/documents/mbs/trustindentures/index.html](https://www.fanniemae.com/portal/jsp/mbs/documents/mbs/trustindentures/index.html)

## Multifamily Prospectuses

Provides a link to Fannie Mae MBS Prospectuses, both single-family and multifamily.

[fanniemae.com/portal/jsp/mbs/documents/mbs/prospectus/index.html](https://www.fanniemae.com/portal/jsp/mbs/documents/mbs/prospectus/index.html)

## Fannie Mae GeMS Archives

This page provides links for News Releases and Term Sheets for GeMS deals beginning from January 2011.

[fanniemae.com/portal/jsp/mbs/mbsmultifamily/gems\\_archive.html](https://www.fanniemae.com/portal/jsp/mbs/mbsmultifamily/gems_archive.html)

## Fannie Mae Credit Supplement

Fannie Mae publishes the Credit Supplement quarterly as part of the 10-Q and 10-K. This provides detailed information about the credit performance of multifamily securities.

[fanniemae.com/portal/about-fm/investor-relations/quarterly-annual-results.html](https://www.fanniemae.com/portal/about-fm/investor-relations/quarterly-annual-results.html)

## Ongoing Supplemental file

Provides additional security, Credit Facility Deal, loan and property information.

[mfdusdisclose.fanniemae.com/#/resources/datacollections](https://mfdusdisclose.fanniemae.com/#/resources/datacollections)



## TIPS: Bloomberg and Fannie Mae MBS/DUS

- To view security level information for a DUS pool on Bloomberg, type in the following: **FN (pool number) <MTGE> <GO>** and then type in **<DES>** for data, including coupon, maturity date, current amount, and factor.

| FN 465947 103-21 <sup>3</sup> / <sub>8</sub> 103-19/103-23 <sup>3</sup> / <sub>8</sub> Yield 2.320/2.269 Coupon 3.550% BVAL |  |
|---|--|
| As of 12 Oct Fannie Mae Pool Prepay OCPY  |  |
| FN 465947 Mtge  | Export   |
| Page 1/3 Security Description   |  |
| US POOL   | 4.840(38)82 CUSIP 31381NTC7 Pool Level Buy Sell                |
| Summary Comments Notes  |  |
| Pool  | FN 465947  |
| Type  | (HY) Actual / 360 Balloon Conv >7 years Level pay              |
| Traits  | Balloon, ACT/360   |
| 1) Seller Wells Fargo Bank, N.A.  |  |
| 2) Pool Information   |  |
| Coupon  | 3.550 WAC* 4.840 Orig WAC 4.840                                |
|   | WARM 38 Orig WAM 120   |
|   | WALA 82  |
| 3) Collateral Information   |  |
| WAOLS   | 13,949,000 Orig Amort 360 Prop Name Metro Art Luxury Apartm... |
| WALS*   | 12,351,028 Rem IO -- Prop Addr 10901 Whipple Street            |
| Orig Date   | 12/01/2010 Tier -- City North Hollywood, CA                    |
|   | DSCR (2016) 1.46 Prop Type Standard Multifamily                |
| LO End Date   | -- NOI (2016) \$1.3MM Num Units 66                             |
| Orig Pen*   | YM(114),0(6) Orig LTV* 70.8 Units <60% --                      |
| Rem Pen*  | YM(32),0(6) Occ (2016) 98% Green Bond N                        |
| Delinquency Percent   |  |
|   | 30D 0.0  |
|   | 60D 0.0  |
|   | 90+D 0.0   |
| 13) States %UPB   |  |
|   | California 100.0   |

Fannie Mae is not responsible for the information appearing on the Bloomberg screens.

- To view the Schedule A for a DUS pool, perform Step 1 above and then select **“Notes.”** The Schedule A (Schedule of Loan Information) includes notable at-issuance data, such as:

- Property type
- U.S. Treasury yield rate
- Prepayment premium term
- Interest day basis
- Annual net operating income
- Loan-to-value percent
- Debt service coverage ratio
- Tier
- Property characteristics:
  - Property city/state/ZIP code
  - Total number of units
  - Appraised value
  - Occupancy percent
  - Year built

| FN 465947 103-21 <sup>3</sup> / <sub>8</sub> 103-19/103-23 <sup>3</sup> / <sub>8</sub> Yield 2.320/2.269 Coupon 3.550% BVAL |   |
|---|---|
| As of 12 Oct Fannie Mae Pool Prepay OCPY  |   |
| FN 465947 Mtge  | Export  |
| Page 3/3 Security Description   |   |
| US POOL   | 4.840(38)82 CUSIP 31381NTC7 Pool Level Buy Sell |
| Summary Comments Notes  |   |
| Mortgage Notes  |   |
| Pool Number   | 465947  |
| Fannie Mae Loan Number  | 1712766905                                      |
| Lender Name (aka Seller Name)   | Wells Fargo Bank, N.A.                          |
| Loan Issuance Upb Amount  | 13,949,000.00                                   |
| Security Issue Date   | 12/01/2010                                      |
| Loan Interest Accrual Method Code   | Actual/360                                      |
| Loan First Payment Due Date   | 01/01/2011                                      |
| Loan Maturity Date  | 12/01/2020                                      |
| Loan Lien Priority Code   | 1st   |
| Loan Balloon  | Yes   |
| Loan Note Signed Date   | 11/04/2010                                      |
| Loan Interest Type Code   | Fixed   |
| Loan Purpose  | Purchase  |
| Original Upb  | 13,949,000.00                                   |
| % Of Initial Pool Balance   | 100   |
| Loan Original Amortization Term   | 360   |
| Loan Interest Only  | N   |

Fannie Mae is not responsible for the information appearing on the Bloomberg screens.



3. To run simple cash flow analysis, perform Step 1 above and then type in **<QY> <GO>**. This Bloomberg screen defaults to the appropriate delay and seasoning for the loan and provides simple price yield analysis to maturity. To price the security to call, Bloomberg allows you to shorten the balloon date to the end of the yield maintenance period.

The Cash Flow Table **<CFT>** is a new screen Bloomberg implemented to provide users a different approach to model cash flows over the **<QY>** screen.

| QUICK YIELD ANALYSIS                    |                 |                                |                                      | PAGE 1 OF 6                   |
|---|-----------------|--------------------------------|--------------------------------------|-------------------------------|
| FN                                      | POOL 465947     | 3.55%                          |                                      | BVAL                          |
| Price 103-23 <sup>8</sup>               |                 | 103.74502                      | Static Prepayment Assumption         |                               |
| Yield (bond eq.)                        |                 | 2.269                          | BP <sub>32</sub>                     | Mod Dur Val.01 dP/dY          |
| Yield (monthly)                         |                 | 2.258                          | 1.04                                 | 2.88 .030 3.00                |
| SETTLE                                  | Z               | -spread                        | EFFECTIVE values for 100BP Bmk shift |                               |
| 10/18/17                                | 17 days accrued | 0.1676                         | YLD CHG                              | 100.0 .0 CPY                  |
| Macaulay Dur                            | Avg Life        | Half Life                      | 106.7963                             | 100.8000                      |
| 2.92                                    | 3.07            | 3.19                           | ( STATIC )                           | 2.89 0.10 3.00                |
| OAS= 60.9 DUR= 2.9 CVX= .1 (CMT Ver2.0) |                 |                                |                                      |                               |
| Net 3.55                                |                 | Gross 4.84                     | Prepay .0                            | CPY                           |
| Svc: 1.290                              |                 | Age 6: 10 record payment delay |                                      |                               |
|   |                 | Term 30: 0                     | 12/ 1/10                             | n/a                           |
|   |                 | WAM 23: 2                      | 12/ 1/40                             | 12/25/40 54( 24)              |
|   |                 | Lockout                        | :                                    | " "                           |
|   |                 | Balloon                        | 3: 2                                 | 12/ 1/20 12/25/20 54( 24) 100 |

| CFT                            |                     |   |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
|--------------------------------|---------------------|---|--|------------|---------------|----------|-------------|------|------|-----|---------|----------|------------|-----------|---------|----------|---------|----------|--------|--------|------------|------------|---|---|---|---|---|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|---------------|------------|--------|---|--------|---|--------|-------|----------------|------------|--------|---|--------|---|--------|-------|----------------|------------|--------|---|--------|---|--------|-------|----------------|------------|--------|---|--------|---|--------|-------|----------------|------------|--------|---|--------|---|--------|-------|----------------|------------|--------|---|--------|---|--------|-------|
| Enter all values and hit <GO>  |                     |   |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| FN                             | 465947              | Mtge  | Scenarios  | Stratify   | Actions       | Settings | Yield Table |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| US POOL                        | 4.840(38)82         | CUSIP   | 31381NCT7  | Pool Level | As of 10/2017 |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 10/2...                        | CPR                 | VPR   | CDR  | SEV        | 30D           | 60+      | 90+         | Bkpr | Frcl | REO | CumLoss | 1st Proj | 11/25/2017 | Day Count | ACT/360 |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 1M                             | 0                   | 0   | --   | --         | 0             | 0        | --          | --   | --   | --  | --      | Freq     | Monthly    | Delay     | 24      |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 1) Price-to-Yield H6M          |                     |   |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| settle                         | 10/18/2017          | Orig Bal 13,949,000 USD Your Orig Bal 13,949,000                |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| Prepay                         | 0                   | Prev Bal 12,351,028 Your Prev Bal 12,351,028                    |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| Vary                           | 0                   | Accrued 0.1676 for 17 days, Start 10/01/17, Delay 24, WAL 3.071 |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| Show precise amount Monthly    |                     |   |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| Price                          | 103-23 <sup>8</sup> | 2.2686  | <table border="1"> <thead> <tr> <th>Dates</th> <th>Balance</th> <th>Sched</th> <th>Unsched</th> <th>Interest</th> <th>Penalty</th> <th>Cashflow</th> <th>Coupon</th> </tr> </thead> <tbody> <tr> <td>Totals</td> <td>12,351,028</td> <td>12,351,028</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>1. 11/27/2017</td> <td>12,328,981</td> <td>22,047</td> <td>0</td> <td>37,756</td> <td>0</td> <td>59,803</td> <td>3.550</td> </tr> <tr> <td>2. 12/26/2017</td> <td>12,305,185</td> <td>23,796</td> <td>0</td> <td>36,473</td> <td>0</td> <td>60,270</td> <td>3.550</td> </tr> <tr> <td>3. 01/25/2018</td> <td>12,282,947</td> <td>22,238</td> <td>0</td> <td>37,616</td> <td>0</td> <td>59,854</td> <td>3.550</td> </tr> <tr> <td>4. 02/26/2018</td> <td>12,260,617</td> <td>22,331</td> <td>0</td> <td>37,548</td> <td>0</td> <td>59,879</td> <td>3.550</td> </tr> <tr> <td>5. 03/26/2018</td> <td>12,233,248</td> <td>27,369</td> <td>0</td> <td>33,853</td> <td>0</td> <td>61,222</td> <td>3.550</td> </tr> <tr> <td>6. 04/25/2018</td> <td>12,210,710</td> <td>22,538</td> <td>0</td> <td>37,396</td> <td>0</td> <td>59,934</td> <td>3.550</td> </tr> <tr> <td>7. 05/25/2018</td> <td>12,186,437</td> <td>24,273</td> <td>0</td> <td>36,123</td> <td>0</td> <td>60,397</td> <td>3.550</td> </tr> <tr> <td>8. 06/25/2018</td> <td>12,163,704</td> <td>22,733</td> <td>0</td> <td>37,253</td> <td>0</td> <td>59,986</td> <td>3.550</td> </tr> <tr> <td>9. 07/25/2018</td> <td>12,139,241</td> <td>24,463</td> <td>0</td> <td>35,984</td> <td>0</td> <td>60,447</td> <td>3.550</td> </tr> <tr> <td>10. 08/27/2018</td> <td>12,116,311</td> <td>22,930</td> <td>0</td> <td>37,109</td> <td>0</td> <td>60,039</td> <td>3.550</td> </tr> <tr> <td>11. 09/25/2018</td> <td>12,093,286</td> <td>23,025</td> <td>0</td> <td>37,039</td> <td>0</td> <td>60,064</td> <td>3.550</td> </tr> <tr> <td>12. 10/25/2018</td> <td>12,068,539</td> <td>24,747</td> <td>0</td> <td>35,776</td> <td>0</td> <td>60,523</td> <td>3.550</td> </tr> <tr> <td>13. 11/26/2018</td> <td>12,045,315</td> <td>23,224</td> <td>0</td> <td>36,893</td> <td>0</td> <td>60,117</td> <td>3.550</td> </tr> <tr> <td>14. 12/26/2018</td> <td>12,020,375</td> <td>24,940</td> <td>0</td> <td>35,634</td> <td>0</td> <td>60,574</td> <td>3.550</td> </tr> </tbody> </table> |            |               |          |             |      |      |     |         | Dates    | Balance    | Sched     | Unsched | Interest | Penalty | Cashflow | Coupon | Totals | 12,351,028 | 12,351,028 | 0 | 0 | 0 | 0 | 0 | 1. 11/27/2017 | 12,328,981 | 22,047 | 0 | 37,756 | 0 | 59,803 | 3.550 | 2. 12/26/2017 | 12,305,185 | 23,796 | 0 | 36,473 | 0 | 60,270 | 3.550 | 3. 01/25/2018 | 12,282,947 | 22,238 | 0 | 37,616 | 0 | 59,854 | 3.550 | 4. 02/26/2018 | 12,260,617 | 22,331 | 0 | 37,548 | 0 | 59,879 | 3.550 | 5. 03/26/2018 | 12,233,248 | 27,369 | 0 | 33,853 | 0 | 61,222 | 3.550 | 6. 04/25/2018 | 12,210,710 | 22,538 | 0 | 37,396 | 0 | 59,934 | 3.550 | 7. 05/25/2018 | 12,186,437 | 24,273 | 0 | 36,123 | 0 | 60,397 | 3.550 | 8. 06/25/2018 | 12,163,704 | 22,733 | 0 | 37,253 | 0 | 59,986 | 3.550 | 9. 07/25/2018 | 12,139,241 | 24,463 | 0 | 35,984 | 0 | 60,447 | 3.550 | 10. 08/27/2018 | 12,116,311 | 22,930 | 0 | 37,109 | 0 | 60,039 | 3.550 | 11. 09/25/2018 | 12,093,286 | 23,025 | 0 | 37,039 | 0 | 60,064 | 3.550 | 12. 10/25/2018 | 12,068,539 | 24,747 | 0 | 35,776 | 0 | 60,523 | 3.550 | 13. 11/26/2018 | 12,045,315 | 23,224 | 0 | 36,893 | 0 | 60,117 | 3.550 | 14. 12/26/2018 | 12,020,375 | 24,940 | 0 | 35,634 | 0 | 60,574 | 3.550 |
| Dates                          | Balance             | Sched   | Unsched  | Interest   | Penalty       | Cashflow | Coupon      |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| Totals                         | 12,351,028          | 12,351,028  | 0  | 0          | 0             | 0        | 0           |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 1. 11/27/2017                  | 12,328,981          | 22,047  | 0  | 37,756     | 0             | 59,803   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 2. 12/26/2017                  | 12,305,185          | 23,796  | 0  | 36,473     | 0             | 60,270   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 3. 01/25/2018                  | 12,282,947          | 22,238  | 0  | 37,616     | 0             | 59,854   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 4. 02/26/2018                  | 12,260,617          | 22,331  | 0  | 37,548     | 0             | 59,879   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 5. 03/26/2018                  | 12,233,248          | 27,369  | 0  | 33,853     | 0             | 61,222   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 6. 04/25/2018                  | 12,210,710          | 22,538  | 0  | 37,396     | 0             | 59,934   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 7. 05/25/2018                  | 12,186,437          | 24,273  | 0  | 36,123     | 0             | 60,397   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 8. 06/25/2018                  | 12,163,704          | 22,733  | 0  | 37,253     | 0             | 59,986   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 9. 07/25/2018                  | 12,139,241          | 24,463  | 0  | 35,984     | 0             | 60,447   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 10. 08/27/2018                 | 12,116,311          | 22,930  | 0  | 37,109     | 0             | 60,039   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 11. 09/25/2018                 | 12,093,286          | 23,025  | 0  | 37,039     | 0             | 60,064   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 12. 10/25/2018                 | 12,068,539          | 24,747  | 0  | 35,776     | 0             | 60,523   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 13. 11/26/2018                 | 12,045,315          | 23,224  | 0  | 36,893     | 0             | 60,117   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| 14. 12/26/2018                 | 12,020,375          | 24,940  | 0  | 35,634     | 0             | 60,574   | 3.550       |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| GOVT                           | 14:58               | 6M  | 1.24   | 1Y         | 1.39          | 2Y       | 1.49        | 3Y   | 1.64 | 5Y  | 1.91    | 7Y       | 2.11       | 10Y       | 2.28    | 30Y      | 2.81    |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |
| Disc 30/360 3Y 99-31 5Y 99-27+ |                     |   |  |            |               |          |             |      |      |     |         |          |            |           |         |          |         |          |        |        |            |            |   |   |   |   |   |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |               |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |                |            |        |   |        |   |        |       |

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