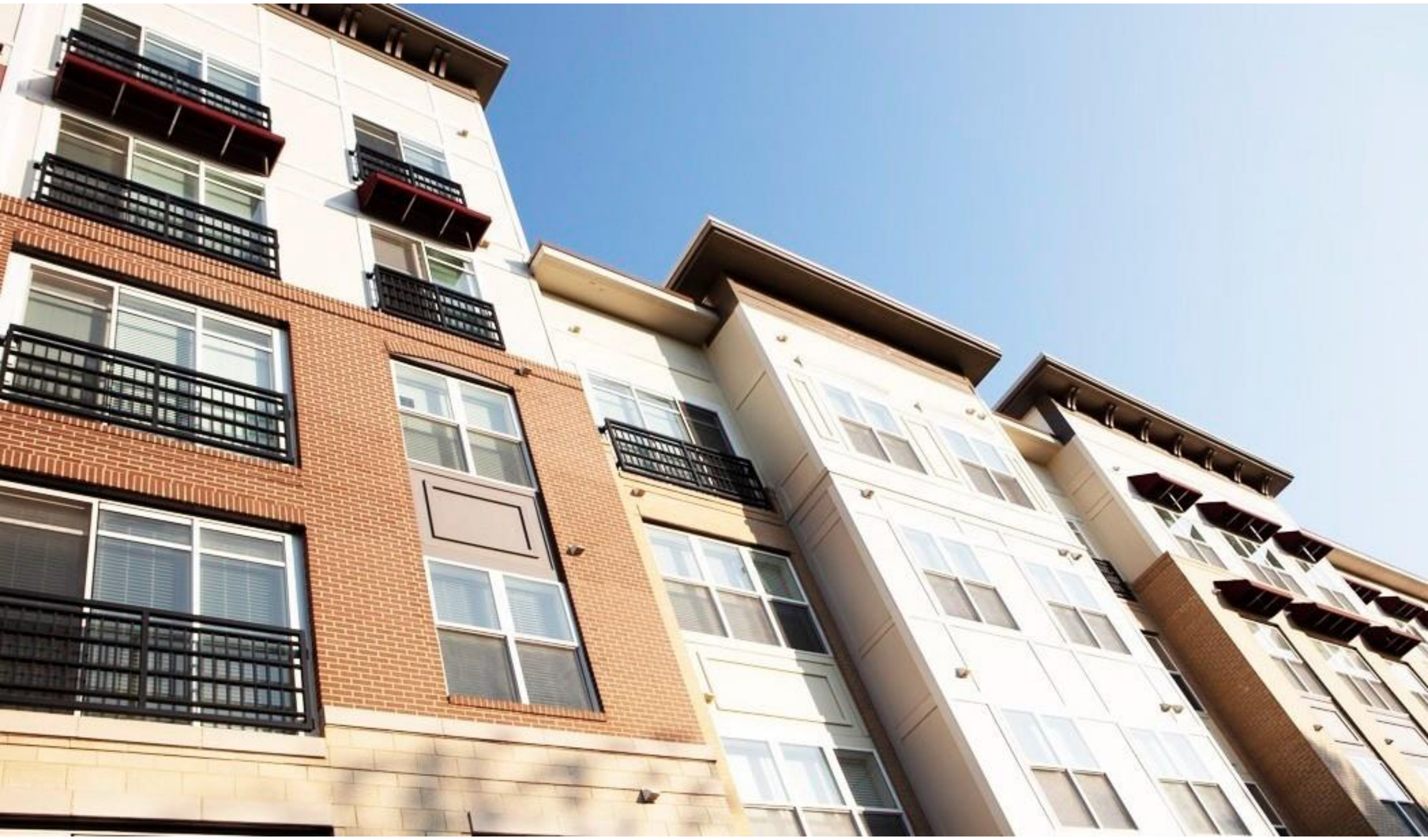

LIBOR Transition Playbook

December 2023

Table of Contents

Summary of Changes

The table below details the list of changes since the June 2023 version of the LIBOR Transition Playbook was published on the Fannie Mae and Freddie Mac websites.

Section	Summary of changes
1. CMOs Additional Considerations	▪ Provided updated guidance on CMO bonds or swaps with interest rate caps transitioning to the ISDA protocol Fallback rate
2. Refinitiv Rebranding	▪ Updated data tables to reflect Refinitiv rebranding

Legal information and disclaimer

Information in the London Interbank Offered Rate (“LIBOR”) Transition Playbook is preliminary and subject to revision and updates from time to time. This document is an indicative summary of our preliminary analysis regarding the potential upcoming LIBOR transition. This document and the analysis may be amended, superseded or replaced by subsequent summaries or actions. The analyses, preliminary views and opinions expressed herein are based on certain assumptions that also are subject to change. Readers should rely on the information contained in the loan documentation, securities offering documents, operative documents, etc. in order to evaluate the rights and obligations for each such loan or security. As a reminder, Fannie Mae and Freddie Mac (the “GSEs”) are in separate conservatorships and their conservator (“FHFA”) has the authority to direct either or both GSEs to take whatever actions it deems appropriate in respect of any LIBOR transition and product or contract.

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Please be aware that the federal Adjustable Interest Rate (LIBOR) Act (the “LIBOR Act”) became law on March 15, 2022. As required by the Act, the Board of Governors of the Federal Reserve System (“Board”) published regulations identifying Board-selected benchmark replacement rates based on the Secured Overnight Financing Rate (“SOFR”) on December 16, 2022. The regulations published by the Board have a significant impact on steps that the GSEs will take in connection with the transition from LIBOR-indexed products to SOFR-indexed products.

The following disclaimer has been provided by London Stock Exchange Group plc (LSEG) and the GSEs take no responsibility for its contents: *FTSE USD IBOR Cash Fallbacks are provided by London Stock*

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1. Overview

1.1 Introduction

❖ Playbook purpose and scope

The GSEs are jointly publishing this LIBOR Transition Playbook to assist stakeholders in preparing for the transition from LIBOR to alternative reference rates ("ARRs"). The Playbook contains information applicable to the following products:

- Single-Family ("SF") Adjustable-rate Mortgages ("ARMs") and securities, i.e., Mortgage-backed Securities ("MBS") and Participation Certificates ("PCs")
- Multifamily ("MF") ARMs, Floating-Rate Loans and securities (i.e., MBS, PCs, and K-Deals)
- Credit Risk Transfer ("CRT") transactions
- Collateralized Mortgage Obligations ("CMOs")

This playbook describes key transition milestones and recommended actions for stakeholders to consider as they manage the upcoming transition from LIBOR. This document serves as a tool to help plan and adapt business policies, procedures, and processes to support products linked to ARRs and prepare for discontinuing the use of LIBOR as an index. Details regarding transition timing and impacts will be periodically updated in this playbook as new information becomes available for various products.

Under the guidance of FHFA, the GSEs have been working together on several aspects of the LIBOR transition. Where appropriate, the GSEs have aligned policies and milestones. However, each GSE's timelines and product details may differ. Readers should take note of these differences, which are further explained in each chapter of this document.

For more details and FAQs on each GSE's transition, refer to LIBOR transition webpages for Fannie Mae and Freddie Mac, respectively.

Please direct any additional questions to your Fannie Mae or Freddie Mac account management teams.

❖ Why is there a need to transition from LIBOR?

LIBOR is the most widely used global interest rate benchmark, and it is deeply embedded in global financial products. The long-term viability of LIBOR has been undermined due to cases of rate manipulation, low volumes for underlying interbank transactions and the reluctance of panel banks to submit quotes used to calculate LIBOR. As a result, the Financial Conduct Authority ("FCA"), the British regulator of the LIBOR benchmark administrator, has warned that:

- Publication of key LIBOR indexes is not guaranteed beyond June 30, 2023
- Sustainability of LIBOR is in question due to the absence of active market support
- The cessation of LIBOR poses a financial stability risk without advanced preparation

On March 5, 2021, the FCA released an announcement regarding the end of LIBOR, which stated the following:

- 1-week and 2-month USD LIBOR will cease to be published or will be deemed no longer representative immediately after December 31, 2021
- All other USD LIBOR tenors either will cease to be published or will be deemed no longer representative immediately after June 30, 2023

- The FCA does not expect that any USD LIBOR setting will become unrepresentative before the relevant dates set out above
- Spread adjustments for USD LIBOR benchmark replacements for non-cash products are set as of March 5, 2021

To prepare for the transition from LIBOR, public sector and private market participants have undertaken a series of benchmark reform initiatives, including design and selection of robust ARRs and incorporating comprehensive fallback language into derivative and cash products.

❖ What is the ARRC?

The Alternative Reference Rates Committee ("ARRC") is a group of private market participants convened by the Board and the Federal Reserve Bank of New York ("NY Fed") to support a successful transition from U.S. Dollar ("USD") LIBOR to an ARR. The ARRC recommended SOFR as a benchmark replacement for USD LIBOR-indexed contracts.

❖ What is SOFR and why are we using it?

SOFR is an overnight interest rate based on USD Treasury repurchase agreements ("repos"). The ARRC recommended SOFR because it is:

- Based on observable market transactions from a robust and well-defined market that was able to weather the global financial crisis
- Produced in a transparent, direct manner
- Produced by the NY Fed, in line with international benchmark standards

❖ What is the LIBOR Act?

The LIBOR Act, signed into law on March 15, 2022, serves to create a uniform process for determining the benchmark replacement for legacy LIBOR-indexed contracts that do not explicitly indicate a benchmark replacement resulting from the cessation of LIBOR. The LIBOR Act authorized the Board to select and adjust benchmark replacements, providing safe harbor for financial institutions, including the GSEs, that use the selected benchmark replacements. On December 16, 2022, the Board published its final rulemaking identifying Board-selected benchmark replacements based on SOFR for certain legacy LIBOR-indexed contracts.

❖ Key industry and regulatory milestones

On March 2, 2020, the NY Fed began daily publication of 30-, 90- and 180-day compound historical averages of SOFR, which are also available from third-party vendors (e.g., Bloomberg and Refinitiv).

On March 17, 2021, the ARRC selected Refinitiv to publish its recommended spread adjustments and spread-adjusted SOFR rates for cash products transitioning away from USD LIBOR.

On July 29, 2021, the ARRC formally recommended the CME Group's forward-looking SOFR Term Rates for business loan activity, where adapting to an overnight rate could be more difficult.

On March 15, 2022, the LIBOR Act was signed into law.

On July 11, 2022, the ARRC welcomed a statement from Refinitiv that it intends to publish ARRC-recommended benchmark replacements based on CME Term SOFR Rates for 1-, 3-, 6- and 12-month tenors.

On December 16, 2022, the Board adopted a final rule implementing the LIBOR Act and confirmed benchmark replacements for certain legacy LIBOR-indexed contracts.

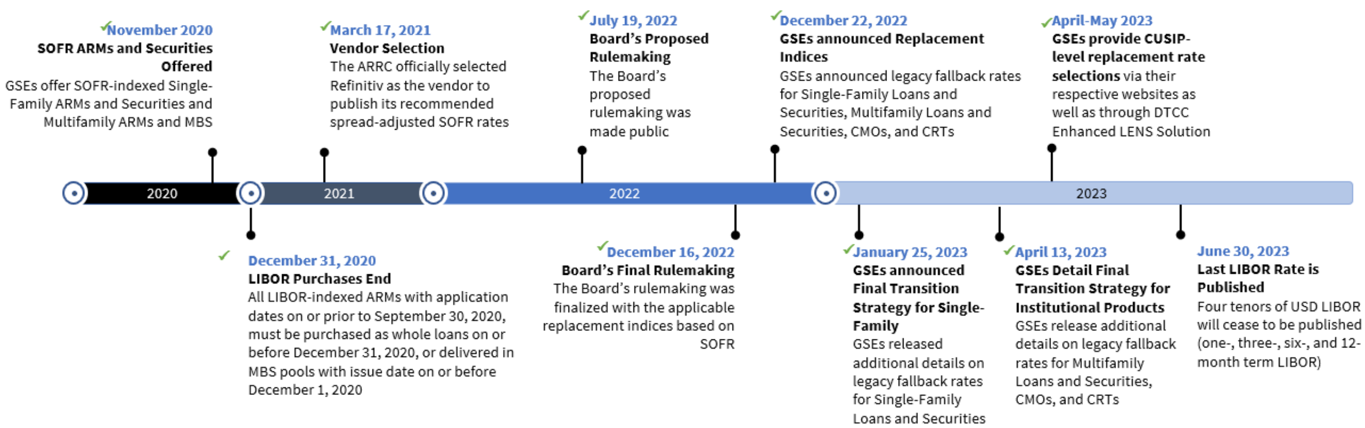
On January 30, 2023, Refinitiv announced its intent to publish, subject to its terms of use and disclaimer, the FHFA-regulated-entity contract fallback rates specified in the Board's final rule.

1.2 LIBOR transition timelines

The GSEs have established milestones leading to the transition from LIBOR, including timelines for beginning acquisition and issuance of SOFR-indexed products, ceasing acquisition and issuance of LIBOR-indexed products, and transitioning legacy products from LIBOR to benchmark replacements.

Transition timelines are defined for major products offered by the GSEs based on timing for finalizing transition strategies and external market dependencies. Milestones will continue to be updated as necessary. For more detailed timelines, refer to the individual chapters for each product.

Figure 1-1: Key transition milestones



1.3 Replacement rate determination and spread methodology summary

The GSEs have aligned replacement rates and spread methodologies used for each legacy product with replacement rates and spread methodologies outlined in the Board's final rule. Figure 1-2 illustrates the LIBOR benchmark replacement for each product as communicated in the final rule.

Figure 1-2: Benchmark replacement rate determinations

Consumer Product Type*	Federal Reserve Board (FRB) Category	Current LIBOR Index	Spread-Adjusted SOFR Replacement Index	RIC	All-In Replacement Rate Calculation
Single-Family Adjustable-Rate Mortgages (ARM) and Related Mortgage Backed Securities	Consumer Loans	1M LIBOR	FTSE USD IBOR Consumer Cash Fallback 1-Month	USDCFCFCTSA1M=	Relevant tenor of CME Term SOFR + applicable tenor spread adjustment (Transition Tenor Spread Adjustment during the first year)
		6M LIBOR	FTSE USD IBOR Consumer Cash Fallback 6-Month	USDCFCFCTSA6M=	
		12M LIBOR	FTSE USD IBOR Consumer Cash Fallback 12-Month	USDCFCFCTSA1Y=	

Institutional Product Type*	Federal Reserve Board (FRB) Category	Current LIBOR Index	SOFR Replacement Index	Fixed Tenor Spread Adjustment	All-In Replacement Rate Calculation
Single-Family and Multifamily Collateralized Mortgage Obligations (CMO)	FHFA-Regulated-Entity Contract	1M LIBOR	30-Day Average SOFR + 1-Month Spread Adjustment	0.11448 (percent)	30-Day Average SOFR + 0.11448 (percent)
		1Y LIBOR	30-Day Average SOFR + 12 Month Spreat Adjustment	0.71513 (percent)	30-Day Average SOFR + 0.71513 (percent)
Single-Family and Multifamily Credit Risk Transfer (CRT) Securities	FHFA-Regulated-Entity Contract	1M LIBOR	30-Day Average SOFR + 1-Month Spread Adjustment	0.11448 (percent)	30-Day Average SOFR + 0.11448 (percent)
Multifamily ARMs (Fannie Mae), Floating Rate Loans (Freddie Mac), and related Mortgage-Backed Securities (MBS)	FHFA-Regulated-Entity Contract	1M LIBOR	30-Day Average SOFR + 1-Month Spread Adjustment	0.11448 (percent)	30-Day Average SOFR + 0.11448 (percent)
		6M LIBOR	30-Day Average SOFR + 6-Month Spread Adjustment	0.42826(percent)	30-Day Average SOFR + 0.42826 (percent)
		12M LIBOR	30-Day Average SOFR + 12-Month Spread Adjustment	0.71513 (percent)	30-Day Average SOFR + 0.71513 (percent)
Derivatives	Derivative Transactions	Various	As defined by the 2020 fallbacks protocol published by the International Swaps and Derivatives Association (ISDA)	0.26161 (percent) (3M)	SOFR compounded in arrears for the appropriate tenor, plus a stated spread adjustment based on the appropriate tenor

In September 2023, Refinitiv announced that rebranding efforts include the renaming of the USD IBOR replacement indices names from "Refinitiv USD IBOR" to "FTSE USD IBOR as reflected in the grid above.

* Product Type relates to categories specified in the FRB's final regulation for the LIBOR Act and is not intended to cover all of the GSEs' products.
Note: FRBNY 30-Day Average SOFR rates can be found on the FRB website.

1.4 Recommended actions market participants should consider

The GSEs encourage all market participants to conduct an operational assessment and start their operational builds as early as possible. Key resources include, but are not limited to:

- ARRC's User's Guide to SOFR
- ARRC's vendor survey
- ARRC's Buy-Side/Asset Owner Checklist
- ARRC's Recommended Best Practices for Vendors on Completing the Transition from LIBOR
- CFPB's Consumer Handbook on Adjustable-Rate Mortgages (CHARM)
- ARRC's LIBOR ARM Transition Resource Guide
- ARRC's Progress Report
- Refinitiv's prototype benchmark replacement data
- Federal Reserve regulation implementing the Adjustable Interest Rate (LIBOR) Act

❖ Accounting and tax considerations

The transition may have an impact on the accounting treatment for existing contracts, hedge accounting relationships, or other transactions that reference LIBOR. The Financial Accounting Standards Board ("FASB") issued a final accounting standard update to provide temporary optional guidance to ease the potential burden in transitioning from LIBOR. The GSEs encourage market participants to evaluate the accounting standards update and the accounting relief that can be applied for transition. See below for the issued accounting standard update and additional implementation information:

- FASB Project – Reference Rate Reform

The transition of legacy LIBOR-indexed transactions may result in tax implications. The GSEs encourage all stakeholders to review regulations issued by the Internal Revenue Service ("IRS") and Treasury to identify potential impacts due to transitioning from LIBOR:

- IRS final rule

❖ Compliance considerations

The transition of legacy LIBOR-indexed transactions may involve compliance risk related to disclosure. Both GSEs maintain processes which provide reasonable assurance that they comply with disclosure laws and regulations.

The following sections of the LIBOR Playbook will focus primarily on the conversion of legacy products referencing LIBOR indices to the corresponding benchmark replacement. For information regarding new SOFR products and additional legacy details, please refer to the appendix.

2. SF ARMs and MBS/PCs

2.1 Introduction

On December 22, 2022, the GSEs announced their selection of CME Term SOFR plus a tenor spread adjustment, published by LSEG (formerly Refinitiv Limited) as an all-in replacement rate, as the benchmark replacement for their LIBOR-indexed SF ARMs and MBS/PCs following the cessation of LIBOR. This decision aligns with the Board-selected benchmark replacements for consumer loans and is applicable to SF ARMs and MBS/PCs for which the GSEs are responsible for selecting the benchmark replacement.

The following section will help you understand:

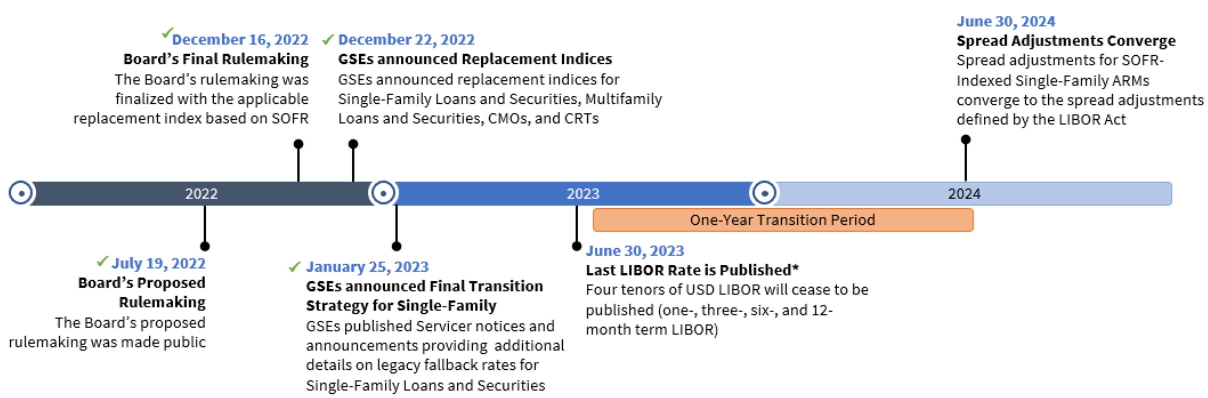
- Key milestone dates for transitioning LIBOR-indexed SF ARMs and MBS/PCs
- Guidance on when LIBOR-indexed SF ARMs will convert to SOFR-indexed SF ARMs
- Guidance on benchmark replacements and associated spread adjustments
- High-level considerations for transitioning legacy LIBOR-indexed ARMs
- Guidance on servicing legacy LIBOR-indexed SF ARMs
- Guidance on legacy SF MBS/PCs

More information on the legacy transition can be found on Fannie Mae's LIBOR Transition website and Freddie Mac's Reference Rates Transition website.

2.2 Transition milestones

The GSEs defined key dates related to the transition of legacy LIBOR-indexed ARMs and MBS/PCs. Milestones will continue to be updated as necessary. Figure 2-1 identifies these key transition milestones.

Figure 2-1: Single-Family LIBOR transition milestones



*The last LIBOR Rate will be calculated by the Intercontinental Exchange (ICE)on June 30th 2023, which will be published in T*he Wall Street Journal* on July 3rd 2023.

2.3 Replacement rate determination and spread methodology

❖ Benchmark replacement determination

The LIBOR Act required the Board to publish regulations identifying a Board-selected benchmark replacement based on SOFR. On December 16, 2022, the Board published its final rulemaking confirming the LIBOR benchmark replacements. For consumer products, the 1-, 3-, 6-, and 12-month LIBOR indices will fall back, respectively, to 1-, 3-, 6-, or 12-month CME Term SOFR with the applicable tenor spread adjustment, published by LSEG (formerly Refinitiv Limited) as an all-in replacement rate, as defined in the LIBOR Act.

❖ SOFR spread adjustment methodology

Under the LIBOR Act, there will be a one-year phase-in period for consumer products in which the transition tenor spread adjustments defined in the LIBOR Act will be incorporated into the replacement rate. The spread adjustment immediately following the cessation of LIBOR will be the difference between the last published LIBOR rate and the corresponding SOFR replacement ("initial spread adjustment"). For every business day following the cessation of LIBOR, the initial spread adjustment will linearly converge to the corresponding transition tenor spread adjustments defined in the LIBOR Act. Figure 2-2 depicts the LIBOR benchmark replacements and spread adjustment methodology for consumer products as defined by the LIBOR Act.

For updates on regulatory and industry efforts to advance the legacy transition, refer to the Board's final rulemaking and ARRC's website.

Figure 2-2: Benchmark replacement guidance for SF LIBOR ARMs and MBS/PCs

Board Final Rule Category	Current LIBOR Index	Spread-adjusted SOFR Replacement Index	RIC	All-In Replacement Rate Calculation
Consumer Loans	1 Month LIBOR	FTSE USD IBOR Consumer Cash Fallback 1-Month	USDCFCFCTSA1M=	1M CME Term SOFR + Transition Tenor Spread Adjustment during the first year; 1M CME Term SOFR + Fixed Tenor Spread Adjustment (0.11448 percent) after first year
	6 Month LIBOR	FTSE USD IBOR Consumer Cash Fallback 6-Month	USDCFCFCTSA6M=	6M CME Term SOFR + Transition Tenor Spread Adjustment during the first year; 6M CME Term SOFR + Fixed Tenor Spread Adjustment (0.42826 percent) after first year
	1 Year LIBOR	FTSE USD IBOR Consumer Cash Fallback 12-Month	USDCFCFCTSA1Y=	1Y CME Term SOFR + Transition Tenor Spread Adjustment during the first year; 1Y CME Term SOFR + Fixed Tenor Spread Adjustment (0.71513 percent) after first year

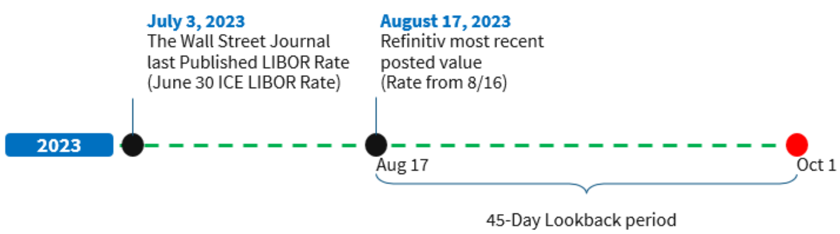
2.4 Preparation for the legacy transition

❖ Converting LIBOR ARMs to SOFR ARMs

The transition date of each legacy LIBOR-indexed ARM will depend on the characteristics of the ARM, such as the next interest rate reset date and its related interest rate at the start of the lookback period.

The scenarios included below provide the expected payments and interest rate reset mechanics for LIBOR-indexed ARMs with different characteristics. The scenarios are not intended to be exhaustive but are intended to provide the reader with representative examples, such that they are able to anticipate changes to ARMs which do conform to the examples included below. The examples should be used as a guide to help readers understand when the interest rate and payment calculations of LIBOR-indexed ARMs switch to the corresponding benchmark replacements for the first time.

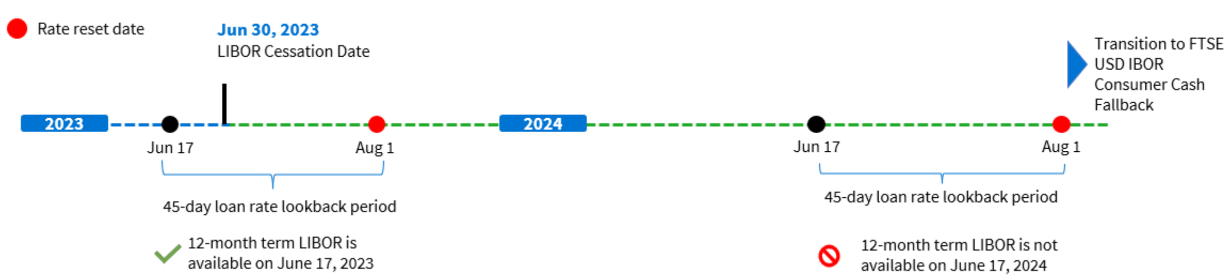
For all Fannie Mae and Freddie Mac owned loans indexed to LIBOR with interest rate adjustments based on a lookback date that occurs after ***July 3, 2023***, servicers must use the applicable, "all-in", "no floor" FTSE USD IBOR Cash Fallback, as published by LSEG (formerly Refinitiv Limited)[v]. **LSEG will be posting replacement indices on their consumer-facing website on a one-day delay, the same way *The Wall Street Journal* published LIBOR indices**. Servicers servicing LIBOR-indexed ARM Notes must use the same lookback date and the most recent index value posted by LSEG, consistent with the LIBOR Index selection today.



❖ Scenario A: LIBOR-indexed ARM, with annual interest rate reset frequency, re-setting on August 1, 2023 and a 45-day loan interest rate lookback period

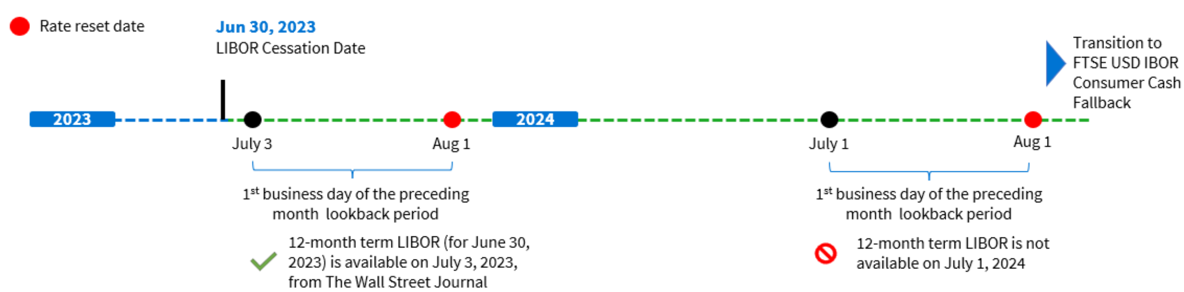
- Loan A is a 10-year seasoned ARM loan indexed to LIBOR, with an annual interest rate reset frequency and next interest rate reset date on August 1, 2023. Loan A has a 45-day loan interest rate lookback period.
- Since LIBOR is still available 45 days prior to the ARM's interest rate reset date (i.e., June 17, 2023), the interest rate calculations (and the related payment calculation) will use the applicable LIBOR index in effect on June 17, 2023.
- The respective benchmark replacement will be used on the subsequent annual interest rate reset date on August 1, 2024 and each reset date thereafter to calculate the interest rate and related payments.

Figure 2-3: Scenario A



❖ Scenario B: LIBOR-indexed ARM, with annual interest rate reset frequency, re-setting on August 1, 2023 and a 1st Business Day of the preceding month loan interest rate lookback period

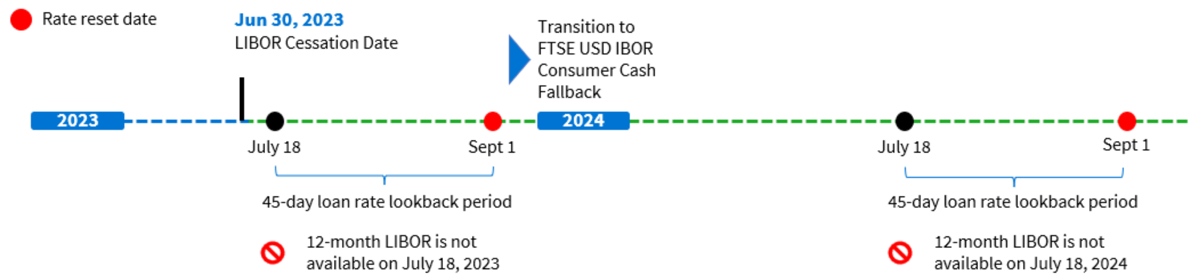
- Loan B is a 10-year seasoned ARM loan indexed to LIBOR, with an annual interest rate reset frequency and next interest rate reset date on August 1, 2023. Loan A has a 1st Business Day of the preceding month loan interest rate lookback period.
- The interest rate calculations (and the related payment calculation) are based on the applicable index value posted on July 3, 2023. Given the one-day delay in index publications, the applicable index will be the LIBOR index posted in *The Wall Street Journal* on July 3, 2023, which will be the LIBOR index value effective June 30, 2023.
- The respective FTSE USD IBOR Consumer Cash Fallback will be used on the subsequent annual interest rate reset date on August 1, 2024 and each reset date thereafter to calculate the interest rate and related payments.



❖ Scenario C: LIBOR-indexed ARM, with annual interest rate reset frequency, re-setting on September 1, 2023 and a 45-day loan interest rate lookback period

- Loan C is a 10-year seasoned ARM loan indexed to LIBOR, with an annual interest rate reset frequency and next interest rate reset date on September 1, 2023. Loan A has a 45-day loan interest rate lookback period.
- Since LIBOR is no longer published after the end of June 2023 and is not available 45 days prior to the ARM's interest rate reset date (i.e., July 18, 2023), the respective FTSE USD IBOR Consumer Cash Fallback will be used to calculate the new interest rate and the related new payment.
- Be sure to use the applicable FTSE USD IBOR Consumer Cash Fallback posted on Refinitiv's consumer-facing website on July 18, which is the value effective July 17.

Figure 2-4: Scenario C



2.5 Servicing legacy LIBOR-indexed SF ARMs

SF ARMs indexed to LIBOR will transition to the benchmark replacements, requiring borrower communications and updated interest rate calculations.

❖ Non-standard notes

If servicers identify any additional LIBOR ARM non-standard notes in their respective GSE servicing books, they are expected to contact the applicable GSE as soon as possible to discern if any specific accommodations are necessary. Servicers have been encouraged to initially focus their reviews on older vintages of loans, loans originated by Sellers no longer in business, and any loans originated under policies and procedures that are known to not require use of Fannie Mae/Freddie Mac uniform instruments. Identified non-standard loans may require a change to mortgage margin or designation to a specific benchmark replacement once LIBOR is no longer in effect. Fannie Mae and Freddie Mac will work with each servicer individually to determine how to best manage through the transition away from LIBOR on any non-standard notes.

❖ SOFR ARM index source

Refinitiv Limited has been selected as the publishing vendor for the Board-selected spread-adjusted term SOFR reference rates.

Figures 2-5 and 2-6 show the changes in the description of SF ARM indices for Fannie Mae and Freddie Mac servicing, respectively.

Figure 2-5: Updated servicing index descriptions for active Fannie Mae SF ARM indices

Active ARM indices	Pre-cessation index descriptions	Post-cessation index descriptions
45	6 MONTH WALL STREET JOURNAL LIBOR RATE	FTSE USD IBOR Consumer Cash Fallback 6-Month
51	6 MONTH WALL STREET JOURNAL LIBOR RATE – MONTHLY AVG	FTSE USD IBOR Consumer Cash Fallback 6-Month
58	6 MONTH WALL STREET JOURNAL LIBOR RATE - DAILY	FTSE USD IBOR Consumer Cash Fallback 6-Month

Active ARM indices	Pre-cessation index descriptions	Post-cessation index descriptions
62	1 MONTH WALL STREET JOURNAL LIBOR - DAILY	FTSE USD IBOR Consumer Cash Fallback 1-Month
75	1 YEAR WALL STREET JOURNAL LIBOR – DAILY	FTSE USD IBOR Consumer Cash Fallback 12-Month
89	1 YR WSJ LIBOR-MONTHLY ON 1ST BUS. DAY	FTSE USD IBOR Consumer Cash Fallback 12-Month

Figure 2-6: Updated servicing index descriptions for active Freddie Mac SF ARM indices

Active ARM indices	Pre-cessation index descriptions	Post-cessation index descriptions
007	LIBOR 6MO	LIBOR Rep 6M
011	LIBOR CO 6MO	LIBOR Rep 6M
017	FRBNY JCD 6M*	LIBOR Rep 6M
036	LIBOR 1MO	LIBOR Rep 1M
038	SLIBOR 6MO	LIBOR Rep 6M
039	SM CD 6MW*	LIBOR Rep 6M
041	LIBOR 1YR	LIBOR Rep 1Y

*Previously transitioned to 6-Month LIBOR

❖ Actions to consider

Servicers will need to incorporate the benchmark replacements into calculations and reconciliations for borrower payments. The calculations will need to be updated on an individual loan basis based on the terms of the ARM, which include:

- Payment adjustment frequency
- Rate adjustment frequency
- Loan payment lookback period
- Loan rate lookback period
- Initial/next payment reset date
- Initial/next interest rate reset date

Figure 2-7: Actions to consider when servicing SF ARMs

Focus areas	Actions to consider
Borrower communications	▪ Provide timely notice of the change in the index to borrowers consistent with loan documents, applicable law and regulations, including those governing payment change notices under Regulation Z ▪ Retain a copy of the notice in the servicing file ▪ Send a copy of the borrower notice to the document custodian with an instruction to maintain the copy with the original LIBOR-indexed note. At least one such notice, must, at a minimum be sent on or after July 1, 2023, and prior to the loan's impacted interest-rate change date ▪ Supplementary notices may be sent prior to July 1, 2023. Servicers may consider using, and amending as necessary, the MBA Borrower Communication Template for Existing LIBOR ARMs (Notice) and MBA Borrower Communication Template for Existing LIBOR ARMs (Letter)
Legal documentation	▪ Provide a copy of the note to the appropriate GSE if there are any variations to the Uniform ARM note's replacement language that was used just prior to recent revisions and request instructions on how to proceed
Use of a new index in rate and payment calculations	▪ Update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate the benchmark replacements' product parameters ▪ Adjust interest accrual calculations for changes in the underlying index
Transfer of servicing	▪ Ensure that servicing transferees have the capability to service loans indexed to the benchmark replacements

2.6 Administering legacy LIBOR-indexed SF MBS/PCs

The LIBOR transition impacts MBS/PCs consisting of pools of LIBOR-indexed ARMs. Unless terminated at or prior to the time of the LIBOR transition, those outstanding MBS/PCs will also transition to the respective CME Term SOFR index and spread adjustment, published by LSEG (formerly Refinitiv Limited) as an all-in replacement rate.

❖ Actions to consider

Investors and vendors will need to maintain awareness of index and calculation changes. For Fannie Mae, SF MBS subtypes and index codes will not change; however, index descriptions associated with subtypes and index codes will be updated in Fannie Mae applications and disclosure reporting. Refer to Figure 2-8 for Fannie Mae index description changes. For Freddie Mac, prefixes and index codes will not change; however, index descriptions associated with prefixes and index codes will be updated to reflect the transition to the replacement indices. Refer to Figure 2-9 for Freddie Mac index description changes.

Figure 2-8: Updated Fannie Mae SF MBS/PC index descriptions for disclosure

Disclosure Index Code	Fannie Mae Existing Description	Updated Description
35	1-Month Wall Street Journal LIBOR Rate (Daily)	FTSE USD IBOR Consumer Cash Fallback 1-Month
42	6-Month Wall Street Journal LIBOR Rate	FTSE USD IBOR Consumer Cash Fallback 6-Month
43	6-Month Wall Street Journal LIBOR Rate (Daily)	FTSE USD IBOR Consumer Cash Fallback 6-Month
44	6-Month Wall Street Journal LIBOR Rate (Monthly AVG)	FTSE USD IBOR Consumer Cash Fallback 6-Month
37	1-Year Wall Street Journal LIBOR Rate (Monthly)	FTSE USD IBOR Consumer Cash Fallback 12-Month
38	1-Year Wall Street Journal LIBOR Rate (Daily)	FTSE USD IBOR Consumer Cash Fallback 2-Month

Figure 2-9: Updated Freddie Mac SF MBS/PC index descriptions for disclosure

Disclosure Index Code	Freddie Mac Existing Description	Updated Description
36	LIBOR_1MO_WSJ	FTSE USD IBOR Consumer Cash Fallback 1-Month
38	LIBOR_1YR_WSJ_DLY	FTSE USD IBOR Consumer Cash Fallback 12-Month
42	LIBOR_6MO_WSJ	FTSE USD IBOR Consumer Cash Fallback 6-Month
43	LIBOR_6MO_WSJ_DLY	FTSE USD IBOR Consumer Cash Fallback 6-Month
44	LIBOR_6MO_WSJ_MNTH_AVG	FTSE USD IBOR Consumer Cash Fallback 6-Month
02	CD_6MO_SEC_MRKT_MNTH_AVG*	FTSE USD IBOR Consumer Cash Fallback 6-Month

**Previously transitioned to 6-Month LIBOR*

Figure 2-10: Actions to consider when administering SF MBS/PCs

Focus Areas	Actions to consider
Investor awareness	▪ Maintain awareness of the updates to impacted pools
Use of a new index in rate and payment calculations	▪ Update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate the benchmark replacements' product parameters

3. Multifamily ARMs (Fannie Mae), Floating-Rate Loans (Freddie Mac), and Securities

3.1 Introduction

On December 22, 2022, the GSEs announced their selection of 30-day compounded Average SOFR ("30-day Average SOFR") plus a fixed tenor spread adjustment as the benchmark replacement for their LIBOR-indexed MF ARMs, Floating-Rate Loans and securities following the cessation of LIBOR. This decision aligns with the Board-selected benchmark replacements for cash transactions that are FHFA-regulated-entity contracts and is applicable to MF ARMs/Floating-Rate Loans and MBS/PCs/K-Deals for which the GSEs are responsible for selecting the benchmark replacement. The following section will help you understand:

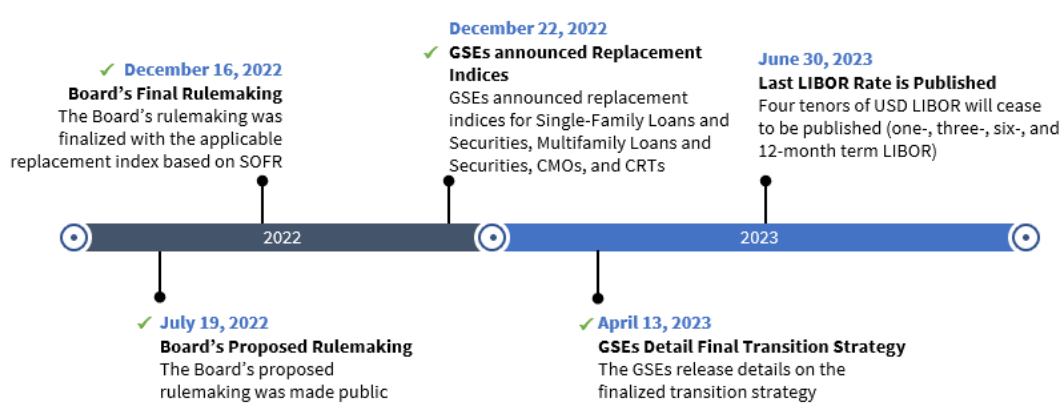
- Key milestone dates for transitioning LIBOR-indexed MF ARMs, Floating-Rate Loans, and securities
- Guidance on when LIBOR-indexed MF ARMs and Floating-Rate Loans will convert to SOFR-indexed MF ARMs and Floating-Rate Loans
- Guidance on benchmark replacements and associated spread adjustments
- High-level considerations for transitioning legacy LIBOR-indexed ARMs and Floating-Rate Loans
- Guidance on servicing legacy LIBOR-indexed MF ARMs and Floating-Rate Loans
- Guidance on legacy securities

More information on the legacy transition can be found on Fannie Mae's LIBOR Transition website and Freddie Mac's Reference Rates Transition website.

3.2 Transition milestones

The GSEs defined key dates related to the transition of legacy LIBOR-indexed MF ARMs, Floating-Rate Loans and securities. Milestones will continue to be updated as necessary. Figure 3-1 identifies these key transition milestones. Unlike Single-Family, Multifamily cessation does not include a 12-month transitional period.

Figure 3-1: Multifamily LIBOR transition milestone



3.3 Replacement rate determination and spread methodology

❖ Benchmark replacement determination

The LIBOR Act required the Board to publish regulations identifying a Board-selected benchmark replacement based on SOFR. On December 16, 2022, the Board published its final rulemaking confirming the LIBOR benchmark replacements. MF ARMs/Floating-Rate Loans and MBS/PCs/K-Deals will fall back to 30-day Average SOFR with a fixed tenor spread adjustment as defined in the LIBOR Act.

❖ SOFR replacement index and spread adjustment methodology

Under the LIBOR Act, a pre-determined fixed tenor spread adjustment will be added to NY Fed-published 30-day Average SOFR following the cessation of LIBOR to determine replacement rates. The following fixed tenor spread adjustments were affirmed by the Board's final rulemaking and will not change:

- 1-month LIBOR replacement – 0.11448%
- 3-month spread adjustment – 0.26161%
- 6-month LIBOR replacement – 0.42826%
- 12-month LIBOR replacement – 0.71513%

These tenor spread adjustments align with the ISDA fallback spread adjustments that were set on March 5, 2021.

Figure 3-2 depicts the LIBOR benchmark replacements and spread adjustment methodology for MF ARMs/Floating-Rate Loans and MBS/PCs/K-Deals.

Figure 3-2: Benchmark replacement guidance for MF LIBOR ARMs/Floating-Rate Loans and MBS/PCs/K-Deals

Board Final Rule Category	Current LIBOR Index	Spread-adjusted SOFR Replacement Index	All-In Replacement Rate Calculation
FHFA-Regulated-Entity Contract	1M LIBOR	30-Day Average SOFR + 1-Month Spread Adjustment	30-Day Average SOFR + 0.11448 (percent)
	6M LIBOR	30-Day Average SOFR + 6-Month Spread Adjustment	30-Day Average SOFR + 0.42826 (percent)
	1Y LIBOR	30-Day Average SOFR + 12-Month Spread Adjustment	30-Day Average SOFR + 0.71513 (percent)

It should be noted that 30-day Average SOFR will be the only SOFR average used as part of the GSE contract replacements for the 1-, 3-, 6- and 12-month tenors of LIBOR. The GSEs will not use the 90- and 180-day averages published by the NY Fed for these purposes.

It should also be noted that the fixed tenor spread adjustment applied to 30-day Average SOFR will match the tenor of the original LIBOR index. There will not be additional adjustment factors accounting for changes in tenor between the original LIBOR rate and the replacement index. For example, when a security originally indexed to 6-month LIBOR transitions to SOFR, it will convert from 6-month LIBOR to 30-day Average SOFR plus the fixed tenor spread adjustment for 6-month LIBOR (0.42826%), with no further adjustments incorporated. Similarly, a security originally indexed to 12-month LIBOR will transition to 30-day Average SOFR plus the fixed tenor spread adjustment for 12-month LIBOR (0.71513%).

For updates on regulatory and industry efforts to advance the legacy transition, refer to the Board's final rulemaking and ARRC's website.

❖ SOFR Interest Rate Calculations and Timelines

As mentioned above, the SOFR-based rate replacing LIBOR on legacy Multifamily LIBOR-based loans and securities consists of 30-day Average SOFR plus the applicable fixed tenor spread adjustment. The LIBOR replacement rates for loans and securities can be calculated by pulling the 30-Day Average SOFR rate as of the loan or security's Determination Date from the NY Fed's website and adding the applicable fixed tenor spread adjustment. The 30-Day Average SOFR rate that appears as of 3:00 p.m. ET should be used for calculations. Please refer to the loan documents for the applicable loan for the margin and any instructions regarding rounding.

The SOFR Determination Date for Multifamily loans and securities is determined by the applicable reset date and lookback period. Refer to your loan or securities documents for more information. The conventions are generally unchanged from the current LIBOR and SOFR interest accrual practices, as shown in the illustrations below.

Figure 3-3: Fannie Mae SARM post-LIBOR Transition loan and bond interest accrual timeline

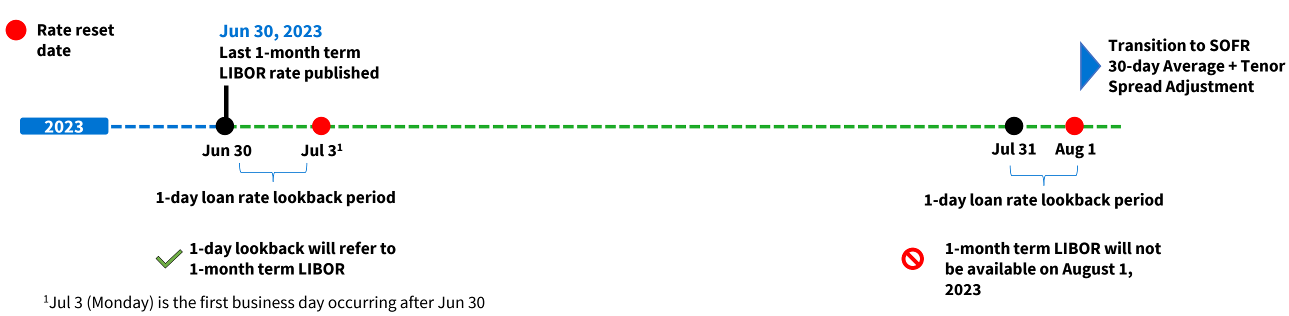


Figure 3-4: Fannie Mae ARM 7-6™ post-LIBOR Transition loan and bond interest accrual timeline

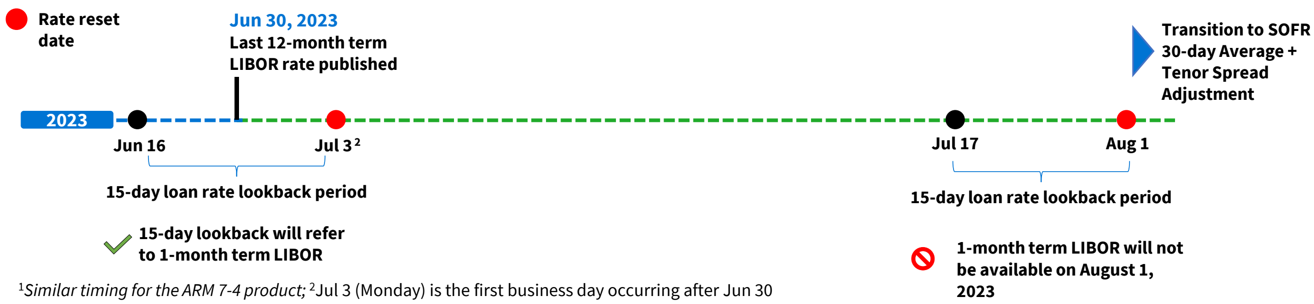


Figure 3-5: Fannie Mae Hybrid ARM post-LIBOR Transition loan and bond interest accrual timeline

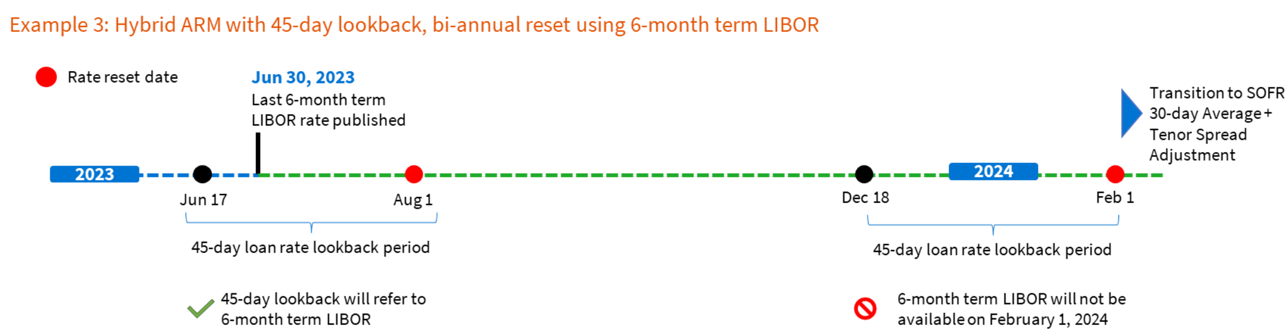
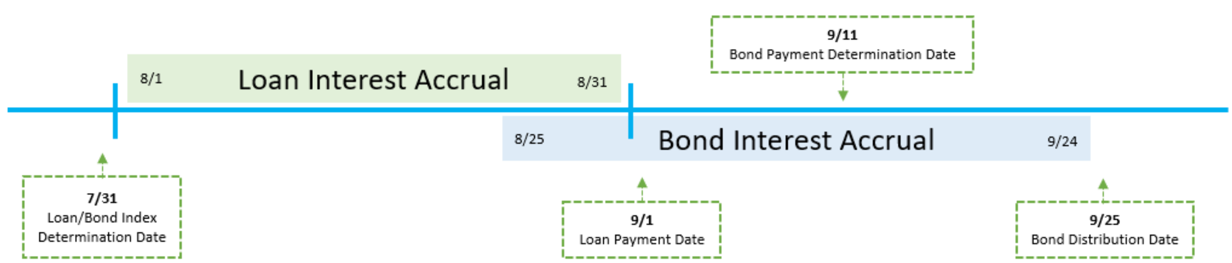


*Figure 3-6: Freddie Mac MBS/PCs/K-Deals post-LIBOR Transition loan and bond interest accrual timeline**



*This timeline is specific to the substantial majority of legacy LIBOR-indexed K, Q, SB, and ML securities; Multi PCs®; and the loans collateralizing them.

3.4 Servicing legacy LIBOR-indexed MF ARMs and Floating-Rate Loans

MF ARMs and Floating-Rate Loans indexed to LIBOR will transition to the benchmark replacement, requiring borrower communications and updated payment calculations.

❖ Non-standard notes

If servicers identify any additional LIBOR ARM or LIBOR Floating-Rate Loan non-standard notes in their respective GSE servicing books, they are expected to contact the applicable GSE as soon as possible to discern if any specific accommodations are necessary. Servicers have been encouraged to initially focus their reviews on older vintages of loans, loans originated by Sellers no longer in business, and any loans originated under policies and procedures that are known to not require use of Fannie Mae/Freddie Mac uniform instruments. Identified non-standard loans may require a change to mortgage margin or designation to a specific benchmark replacement once LIBOR is no longer in effect.

❖ SOFR ARM index source

Figure 3-7 shows the changes in the description of MF ARM indices for Fannie Mae servicing and Figure 3.8 shows the changes in the description for Freddie Mac Floating-Rate Loan indices.

Figure 3-7: Updated index descriptions for active Fannie Mae MF ARM indices

Pre-cessation index descriptions	Post-cessation index descriptions
1 MONTH BRITISH BANKERS LIBOR - DAILY	30-Day Average SOFR + 1-Month Spread Adjustment
6 MONTH WALL STREET JOURNAL LIBOR RATE	30-Day Average SOFR + 6-Month Spread Adjustment
6 MONTH WALL STREET JOURNAL LIBOR	30-Day Average SOFR + 6-Month Spread Adjustment
6 MONTH BRITISH BANKERS LIBOR – DAILY	30-Day Average SOFR + 6-Month Spread Adjustment

Figure 3-8: Updated index descriptions for active Freddie Mac MF Floating-Rate Loan indices

Pre-cessation index descriptions	Post-cessation index descriptions
Intercontinental Exchange (ICE) Rate for the 1 Month London Interbank Offered Rate for US Dollars	30-Day Average SOFR + 1-Month Spread Adjustment
Intercontinental Exchange (ICE) Rate for the 6 Month London Interbank Offered Rate for US Dollars	30-Day Average SOFR + 6-Month Spread Adjustment
12 Month LIBOR as published by the Wall Street Journal	30-Day Average SOFR + 12-Month Spread Adjustment

❖ Actions to consider

Servicers will need to incorporate the benchmark replacements into calculations and reconciliations for borrower payments. The calculations will need to be updated on an individual loan basis based on the terms of the ARM which include:

- Payment adjustment frequency
- Rate adjustment frequency
- Loan payment lookback period
- Loan rate lookback period
- Initial/next payment reset date
- Initial/next interest rate reset date

Figure 3-9: Actions to consider when servicing MF ARMs and Floating-Rate Loans

Focus areas	Actions to consider
Borrower communications	▪ Provide timely notice of the change in the index to borrowers consistent with loan documents, applicable law and regulations, including those governing payment change notices ▪ Retain a copy of the notice in the servicing file
Legal documentation	▪ Provide a copy of the note to the appropriate GSE if there are any variations to the ARM/Floating-Rate Loan note's replacement language that was used just prior to recent revisions and request instructions on how to proceed
Use of a new index in rate and payment calculations	▪ Update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate the replacement index's product parameters ▪ Adjust interest accrual calculations for changes in the underlying index
Transfer of servicing	▪ Ensure that servicing transferees have the capability to service loans indexed to the benchmark replacement
Interest rate calculation and rounding	▪ The interest rate calculation method set forth in the related Multifamily Note must be followed. In most cases, the Multifamily Notes provide that the variable interest rate calculated for each interest period is equal to the Index Rate for such interest period plus the Margin. The Index Rate for a legacy LIBOR loan is equal to the sum of the applicable LIBOR replacement index (the 30-day Average SOFR rate) plus the applicable spread adjustment. Any rounding convention to be applied should be determined pursuant to the terms of the Multifamily Note or otherwise be consistent with Freddie Mac servicing practices.

❖ **Existing third-party caps**

Consult your interest rate cap agreements for specific language on the transition to a new index (e.g., SOFR). Fannie Mae and Freddie Mac expect that each interest rate cap provider will select a benchmark replacement. The borrower's obligation to purchase replacement interest rate caps as required by the loan documents for existing LIBOR-indexed ARMs and Floating-Rate Loans is unaffected.

For updates on industry efforts to advance the legacy transition, refer to the ARRC website. Additional details will be released as the timeline is finalized.

3.5 Administering Legacy LIBOR-indexed MBS/PCs/K-Deals

The LIBOR transition impacts MBS/PCs/K-Deals consisting of pools of LIBOR-indexed ARMs and LIBOR-indexed Floating-Rate Loans. Unless terminated at or prior to the time of the LIBOR transition, those outstanding MBS/PCs/K-Deals will also transition to 30-day Average SOFR with a fixed tenor spread adjustment as defined in the LIBOR Act.

It is important to note that the applicable LIBOR index is all that is changing. Upon LIBOR cessation, the applicable LIBOR index will transition to the applicable spread-adjusted 30-day Average SOFR replacement index. Securities mechanics will not change from those currently in practice on outstanding Multifamily LIBOR-based securities, and bond payments will continue to be made on the 25th day of the month or the succeeding business day.

Please also note that Fannie Mae and Freddie Mac Multifamily will refrain from taking any steps that would result in the conversion of any existing SOFR-indexed ARMs and securities from 30-Day Average SOFR to Term SOFR based on any provision that calls for such conversion when operationally, administratively, and technically feasible.

❖ Determining Person

The fallback language in all legacy Freddie Mac and Fannie Mae LIBOR-based securities documents identifies a Determining Person who is responsible for deciding what the replacement index will be. The Determining Person may be Fannie Mae or Freddie Mac (or Freddie Mac's trustee or certificate administrator with Freddie Mac's consent). In all cases where Fannie Mae or Freddie Mac is the Determining Person or Freddie Mac has consent rights, LIBOR will transition to the applicable spread-adjusted 30-day Average SOFR. In all cases where the Trustee/Certificate Administrator is the Determining Person, we expect the applicable Trustee/Certificate Administrator to select the applicable spread-adjusted 30-day Average SOFR index as the replacement index consistent with the Board's final rulemaking.

❖ Actions to consider

Investors and vendors will need to maintain awareness of index and calculation changes. MF MBS subtypes and index codes will not change, however, index descriptions associated with subtypes and index codes will be updated in Fannie Mae and Freddie Mac applications and disclosure reporting.

Figure 3-10: Actions to consider when administering MF MBS/PCs

Focus areas	Actions to consider
Investor awareness	▪ Maintain awareness of the updates to impacted pools
Use of a new index in rate and payment calculations	▪ Update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate the benchmark replacements' product parameters

❖ Additional Considerations for Freddie Mac MBS/PCs/K-Deals

The following dates are the critical transition dates for Freddie Mac MBS/PCs/K-Deals*:

- <u>June 30</u>: The last day LIBOR will be published and the final index Determination Date where LIBOR will be used for legacy LIBOR loans and securities

- July 31: First index Determination Date where SOFR will be used for legacy LIBOR loans and securities
- September 1: First loan payment date with interest accrual indexed to SOFR
- September 25: First securities Distribution Date with interest accrual indexed to SOFR

*These dates are specific to the substantial majority of legacy LIBOR-indexed K, Q, SB, and ML securities; Multi PCs®; and the loans collateralizing them.

Freddie Mac Multifamily securities will all transition to a spread-adjusted 30-Day Average SOFR rate. For additional nuances to consider, please refer to section 12.7 of the appendix.

Fannie Mae Freddie Mac

4. CRT Transactions

4.1 Introduction

On December 22, 2022, the GSEs announced their selection of 30-day Average SOFR plus a fixed tenor spread adjustment as the benchmark replacement for their LIBOR-indexed CRTs following the cessation of LIBOR. This decision aligns with the Board-selected benchmark replacements for cash transactions that are FHFA-regulated-entity contracts and is applicable to CRTs for which the GSEs are responsible for selecting the benchmark replacement.

Certain CRT deals issued following March 2020 may include contractual language indicating a benchmark replacement of Term SOFR. Please note that Fannie Mae and Freddie Mac will refrain from taking any steps that would result in the conversion of any existing SOFR-indexed CRTs from 30-Day Average SOFR to term SOFR based on any provision that calls for such conversion when operationally, administratively, and technically feasible.

Legacy transition considerations are not applicable to Freddie Mac MF CRTs due to their fixed rate nature. Freddie Mac MF does not plan to issue any LIBOR-indexed CRT deals in the future.

The following section will help you understand:

- Key milestone dates for transitioning LIBOR-indexed CRTs
- Guidance on benchmark replacements and associated spread adjustments
- High-level considerations for transitioning legacy LIBOR-indexed CRTs
- Guidance on legacy LIBOR-indexed CRTs

For more information on legacy transition can be found on Fannie Mae's LIBOR Transition website.

4.2 Transition milestones

The GSEs defined key dates related to the transition of legacy LIBOR-indexed CRTs. Milestones will continue to be updated as necessary. Figure 4-1 identifies key transition milestones for CRTs.

Figure 4-1: CRT transition timeline

4.3 Replacement rate determination and spread methodology

❖ Benchmark replacement determination

The LIBOR Act required the Board to publish regulations identifying a Board-selected benchmark replacement based on SOFR. On December 16, 2022, the Board published its final rulemaking confirming the LIBOR benchmark replacements. Based on this, the GSEs will transition from 1-month

LIBOR to the 30-day Average SOFR rate published by the NY Fed, plus an applicable tenor spread adjustment (0.11448% for one-month tenor). 30-day Average SOFR for an Index Determination Date will be the applicable compounded average of SOFR for 30 days published for such Index Determination Date as such rate appears on the NY Fed's Website at 3:00 p.m. ET.

The first date on which spread-adjusted 30-day Average SOFR rate will be used as the replacement index for LIBOR-indexed CRT transactions will be July 21, 2023. The replacement index will be used for calculating accrued interest during the July 25 – August 24, 2023 Accrual Period, and the payments will be made to bondholders on the August 25, 2023 Payment Date.

❖ SOFR spread adjustment methodology

Under the LIBOR Act, a pre-determined fixed tenor spread adjustment will be applied to the benchmark replacement immediately following the cessation of LIBOR. The spread adjustment will be 0.11448% for the 1-month tenor, meaning the spread adjustment will be fixed at 0.11448% for legacy CRT transactions after June 30, 2023. Figure 4-2 depicts the LIBOR benchmark replacements and spread adjustment methodology for SF and MF CRTs (for Fannie Mae) as defined by the LIBOR Act.

For updates on regulatory and industry efforts to advance the legacy transition, refer to the Board's final rulemaking and ARRC's website.

Figure 4-2: Benchmark replacement guidance for CRTs

Board Final Rule Category	Current LIBOR Index	Spread-adjusted SOFR Replacement Index	All-In Replacement Rate Calculation
FHFA-Regulated-Entity Contract	1M LIBOR	30-Day Average SOFR + 1-Month Spread Adjustment	30-Day Average SOFR + 0.11448 (percent)

4.4 Administering legacy LIBOR-indexed CRTs

❖ Actions to consider

Investors and vendors will need to maintain awareness of potential impacts of the LIBOR transition including index and calculation changes. The GSEs will transition from 1-month LIBOR to the 30-day Average SOFR rate published by the NY Fed, plus an applicable tenor spread adjustment (0.11448% for one month-tenor) as defined in the LIBOR Act.

Figure 4-3: Actions to consider when administering CRTs

Focus areas	Actions to consider
Investor awareness	▪ Maintain awareness of the updates to impacted CRTs
Use of a new index in rate and payment calculations	▪ Update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate the benchmark replacement's product parameters

5. CMOs

5.1 Introduction

On December 22, 2022, the GSEs announced their selection of 30-day Average SOFR plus a fixed tenor spread adjustment as the benchmark replacement for their LIBOR-indexed CMOs following the cessation of LIBOR. This decision aligns with the Board-selected benchmark replacement for cash transactions that are FHFA-regulated-entity contracts and is applicable to CMOs for which the GSEs are responsible for selecting the benchmark replacement.

Certain CMOs issued following July 2020 may include contractual language indicating a benchmark replacement of Term SOFR. Please note that Fannie Mae and Freddie Mac will refrain from taking any steps that would result in the conversion of any existing SOFR-indexed CMOs from 30-Day Average SOFR to term SOFR based on any provision that calls for such conversion when operationally, administratively, and technically feasible.

The following section will help you understand:

- Key milestone dates for transitioning LIBOR-indexed CMOs
- Guidance on benchmark replacements and associated spread adjustments
- High-level considerations for transitioning legacy LIBOR-indexed CMOs
- Guidance on legacy LIBOR-indexed CMOs

More information on the legacy transition can be found on Fannie Mae's LIBOR Transition website and Freddie Mac's Reference Rates Transition website.

5.2 Transition milestones

The GSEs defined key dates related to the transition of legacy LIBOR-indexed CMOs. Milestones will continue to be updated as necessary. Figure 5-1 identifies key transition milestones for CMOs.

Figure 5-1: CMO transition timeline

5.3 Replacement rate determination and spread methodology

❖ Benchmark replacement determination

The LIBOR Act required the Board to publish regulations identifying a Board-selected benchmark replacement based on SOFR. On December 16, 2022, the Board published its final rulemaking confirming the LIBOR replacement. Based on this, the GSEs will transition from 1-month LIBOR to the 30-day Average SOFR rate published by the NY Fed, plus an applicable tenor spread adjustment

(0.11448% for one month-tenor). 30-Day Average SOFR is published daily on the NY Fed's website, and the all-in replacement rate can be calculated by pulling the applicable 30-Day Average SOFR rate and adding the 0.11448% tenor spread adjustment. The 30-Day Average SOFR rate that is available as of 3:00 p.m. ET should be used for calculations.

The first date on which spread-adjusted 30-day Average SOFR rate will be used as the replacement index for Fannie Mae legacy CMO transactions will be July 21, 2023. The replacement index will be used for calculating accrued interest during July 25 – August 24, 2023 Accrual Period, and the payments will be made to bondholders on the August 25, 2023 Payment Date.

The first date on which spread-adjusted 30-day Average SOFR rate will be used as the replacement index for Freddie Mac CMO transactions will be July 13, 2023. The replacement index will be used for calculating accrued interest during the July 15 – August 14, 2023 Accrual Period, and the payments will be made to bondholders on the August 15, 2023 Payment Dat.

SOFR spread adjustment methodology

Under the LIBOR Act, a pre-determined fixed tenor spread adjustment will be applied to the benchmark replacement immediately following the cessation of LIBOR. Figure 5-2 depicts the LIBOR benchmark replacements and spread adjustment methodology for SF and MF CMOs as defined by the LIBOR Act.

For updates on regulatory and industry efforts to advance the legacy transition, refer to the Board's final rulemaking and ARRC's website.

Figure 5-2: Benchmark replacement guidance for CMOs

Board Final Rule Category	Current LIBOR Index	Spread-adjusted SOFR Replacement Index	All-In Replacement Rate Calculation
FHFA-Regulated-Entity Contract	1M LIBOR	30-Day Average SOFR + 1-Month Spread Adjustment	30-Day Average SOFR + 0.11448 (percent)

5.4 Administering legacy LIBOR-indexed CMOs

❖ **Actions to consider**

Investors and vendors will need to maintain awareness of potential impacts of the LIBOR transition including index and calculation changes. The GSEs will transition from 1-month LIBOR to the 30-day Average SOFR rate published by the NY Fed, plus an applicable tenor spread adjustment (0.11448% for one month-tenor).

Fannie Mae has a few Collateralized Mortgage Obligations (CMOs) with interest rate caps or swaps that have corresponding derivatives. The corresponding derivatives for Single-Family and Multifamily CMO CUSIPs transitioned to the ISDA-recommended LIBOR replacement rate (this rate was also selected by the Federal Reserve Board as the replacement rate for derivatives transactions in its final rules), the

30-day Average SOFR calculated in arrears of the interest rate period.

As a result, there may be a mismatch between payments owed on the Fannie Mae CMOs and the derivatives beginning with the August 25, 2023 payment. Under certain circumstances, such a mismatch could result in lower payments on the derivative. Under those circumstances, this could result in lower or delayed payments on the CMO certificates. As specified in the relevant prospectus supplement, the guaranty from Fannie Mae does not apply to amounts owing on the derivative.

Figure 5-3: Actions to consider when Administering CMOs

Focus areas	Actions to consider
Investor awareness	▪ Investors should maintain awareness of the updates to impacted CMOs
Use of a new index in rate and payment calculations	▪ Upon evaluation, update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate the benchmark replacement as necessary

6. Appendix: Introduction to SOFR based new products

6.1 Introduction

To assist stakeholders in preparing for the transition from LIBOR to alternative reference rates ("ARRs"), information and guidance related to the issuance of new contracts have been consolidated into the following appendix sections. The following sections are targeted at readers who need information about the following products:

- Single-Family ("SF") Adjustable-rate Mortgages ("ARMs") and securities, i.e., Mortgage-backed Securities ("MBS") and Participation Certificates ("PCs")
- SF Credit Risk Transfer ("CRT") transactions
- Collateralized Mortgage Obligations ("CMOs")
- Fannie Mae Multifamily ("MF") ARMs and MBS
- Freddie Mac MF Floating-Rate Loans and securities
- MF CRT transactions

The following sections describe key transition milestones and recommended actions for stakeholders to consider as they manage the upcoming transition from LIBOR. The following sections serve as a tool to help plan and adapt business policies, procedures, and processes to support products linked to ARRs and prepare for discontinuing the use of LIBOR as an index.

Under the guidance of FHFA, the GSEs have been working together on several aspects of the LIBOR transition. Where appropriate, the GSEs have aligned policies and milestones. However, each GSE's timelines and product details may differ. Readers should take note of these differences, which are further explained in each chapter of this document.

For more details and FAQs on each GSE's transition, refer to LIBOR transition webpages for Fannie Mae and Freddie Mac, respectively.

Please direct any additional questions to your Fannie Mae or Freddie Mac account management teams.

6.2 SOFR-indexed key milestones

The GSEs have established milestones leading to the transition from LIBOR, including timelines for beginning acquisition and issuance of SOFR-indexed products and ceasing acquisition and issuance of LIBOR-indexed products.

Transition timelines are defined for major products offered by the GSEs based on timing for finalizing transition strategies and external market dependencies. Milestones will continue to be updated as necessary. For more detailed timelines, refer to the individual chapters for each product.

Figure 6-1: Key transition milestones

Product	Fannie Mae		Freddie Mac	
	Offer SOFR products	Cease LIBOR offering	Offer SOFR products	Cease LIBOR offering
SF ARMs and MBS/PCs[1]	Aug. 2020	Dec. 2020[2]	Nov. 2020	▪ **Dec. 2020**: Last LIBOR ARM Guarantor PC Issue Date ▪ **Dec. 2020**[2]: Last LIBOR ARM Settlement Date
SF CRT transactions	Oct. 2021	Dec. 2020	Oct. 2020	Oct. 2020
CMOs	Jul. 2020	Oct. 2020[3]	Jul. 2020	Oct. 2020[3]
Fannie Mae MF ARMs and MBS[1]	Sep. 2020	Dec. 2020	N/A	N/A
Freddie Mac MF Floating-Rate Loans and securities	N/A	N/A	▪ **Dec. 20, 2019**: K-deals ▪ **Sep. 1, 2020**: Floating-Rate Loans ▪ **Dec. 17, 2020:** K-deals backed only by SOFR-indexed Floating-Rate Loans	▪ **Dec. 2020**: Ceased purchase of LIBOR-indexed Floating-Rate Loans and hybrid loans ▪ **End of Q2 2021**: Ceased issuance of LIBOR-indexed securities
MF CRT transactions	TBD	Dec. 2020	Jan. 2021	Dec. 2020

[1] The underlying mortgages needed to have an application date no later than September 30, 2020. Effective June 30, 2022, the GSEs will no longer resecuritize LIBOR-indexed MBS/PCs and Megas/Giants into new issuance LIBOR-indexed bonds

[2] The GSEs stopped accepting LIBOR-indexed pool deliveries after this date.

[3] The GSEs will no longer issue resecuritizations of previously issued LIBOR-indexed certificates (whether CMO or ARM certificates) into new LIBOR-indexed bonds that settle after June 30, 2022.

7. Appendix: Single-Family ARMs

7.1 Introduction

The GSEs have taken the following steps, under FHFA's guidance, to prepare for the transition from LIBOR for SF ARMs:

- Updated existing uniform ARM notes and riders to include fallback and trigger language as recommended by the ARRC
- Designed (in conjunction with the ARRC) new SF ARMs that use the NY Fed's 30-day compound average of SOFR ("30-day Average SOFR") as the underlying index
    - Fannie Mae began accepting delivery of SOFR-indexed ARMs on August 3, 2020, and Freddie Mac began underwriting SOFR-indexed ARMs on October 1, 2020 and accepting delivery of SOFR-indexed ARMs on November 9, 2020
- Stopped accepting delivery of LIBOR-indexed ARM MBS/Guarantor PCs (with the last issue date being December 1, 2020)
- Stopped cash/whole loan purchase of LIBOR-indexed ARMs after December 31, 2020
- Started discussing strategies for the transition of existing LIBOR-indexed ARMs

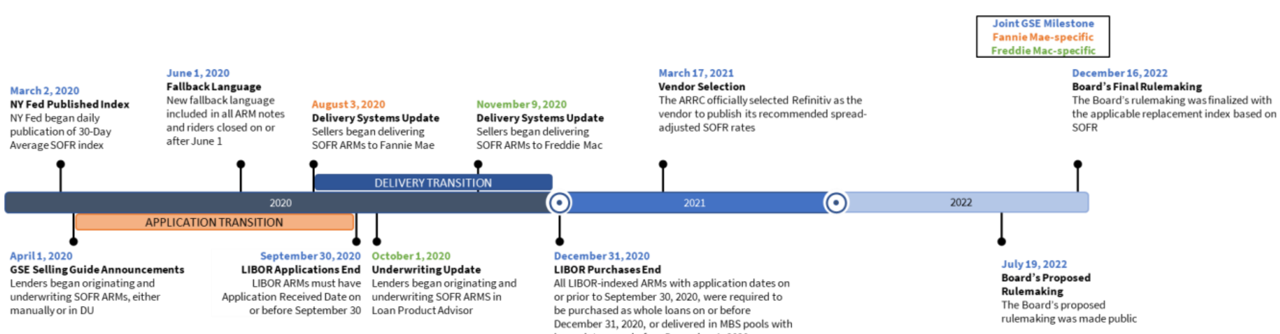
The following section will help you understand:

- Key milestones for the SF ARM LIBOR transition
- Differences and similarities between LIBOR-indexed and SOFR-indexed ARMs
- How to prepare for the origination, selling, servicing and securitization of SOFR-indexed ARMs
- High-level considerations for transitioning existing LIBOR-indexed ARMs

7.2 Transition milestones

The GSEs defined and met key dates related to the origination, commitment, pricing and delivery processes for SOFR-indexed ARMs, as well as dates for the cessation of LIBOR-indexed ARM and MBS/PCs purchases. Additional details and milestones for existing loans will be provided as they become available. Figure 7-1 identifies key transition milestones for SF ARMs.

Figure 7-1: SF ARMs transition timeline



7.3 SOFR-indexed ARM characteristics

❖ Comparing LIBOR and SOFR ARMs

The GSEs designed SF SOFR-indexed ARM products in conjunction with other members of the ARRC

Consumer Products Working Group. These products are based on 30-day Average SOFR, as published by the NY Fed. Sellers and Servicers are instructed to use the final/revised values of the index which should be available no later than 3:00 p.m. ET.

The primary features of SOFR-indexed ARMs and MBS/PCs that differ from LIBOR-indexed ARMs and MBS/PCs are:

- Interest rate index: 30-day Average SOFR
- Initial fixed period: varies, with a minimum initial fixed period of 3 years for SOFR- indexed ARMs
- Interest rate adjustment period: 6 months
- Interest rate adjustment cap: +/-1 percentage point ("%") per subsequent adjustment period
- Margin: will likely differ due to basis and other market-based adjustments
- New ARM plans: introduced for SOFR (Fannie Mae)
- New Cash Contract and Guarantor Pooling Products: introduced to support SOFR- indexed ARMs (Freddie Mac)

Figure 7-2 summarizes key product features for both SOFR and LIBOR ARMs.

Figure 7-2: Key product features of LIBOR and SOFR ARMs

Product Features	LIBOR ARMs	SOFR ARMs
Interest rate index	1-Year WSJ LIBOR	30-day Average SOFR
Initial fixed period	1, 3, 5, 7 or 10 years	3, 5, 7 or 10 years (no 1-year initial fixed period)
Interest rate adjustment period	Changes every 1 year after initial fixed period	Changes every 6 months after initial fixed period
Lookback period	New rate determined 45 days in advance	*No change*
Cap at first adjustment	+/-2% for 3- and 5-year ARMs +/-5% for 7- and 10-year ARMs	*No change*
Cap at subsequent adjustments	+/-2%	+/-1%
Life cap	Up to 5% for Fannie Mae Up to 5% for Freddie Mac	*No change for Fannie Mae* 5% for Freddie Mac
Margin (lender discretion)	2.25% for Fannie Mae Defined on Execution for Freddie Mac	Minimum 1%; Maximum 3%

Fannie Mae has updated ARM plans and a Special Feature code ("SFC") in support of the transition to SOFR, as detailed in Figure 7-3.

Figure 7-3: ARM plans and special feature codes for LIBOR and SOFR ARMs

Plans and Codes	LIBOR ARMs		SOFR ARMs
ARM plans submitted to Desktop Underwriter® ("DU")	**Import** GEN3 GEN5 GEN7 GEN10	**DU User Interface** FM GENERIC, 3 YR FM GENERIC, 5 YR FM GENERIC, 7 YR FM GENERIC, 10 YR	*No change*
ARM plans submitted to Loan Delivery	2720-2729, 2737, 3252		4926, 4927, 4928, 4929
SFC for notes with fallback language	785		None: all SOFR-indexed ARM notes will contain fallback language

Freddie Mac has updated Cash Contract Products, Guarantor Security Products, Guarantor Product Types and an Investor Feature Identifier ("IFI") in support of the transition to SOFR, as detailed in Figure 7-4.

Figure 7-4: Additional guarantor and investor features for LIBOR and SOFR ARMs

Feature	LIBOR ARMs	SOFR ARMs
Loan Product Advisor®	No product information is submitted	No changes
Contract products for Take Out ARM Cash Contract	1/1 1Y LIBOR ARM 2/2/6 3/1 1Y LIBOR ARM 2/2/5 or 6 5/1 1Y LIBOR ARM 2/2/5 or 6 7/1 1Y LIBOR ARM 5/2/5 10/1 1Y LIBOR ARM 5/2/5	3Y 6M 30D Avg. SOFR ARM 2/1/5 5Y 6M 30D Avg. SOFR ARM 2/1/5 7Y 6M 30D Avg. SOFR ARM 5/1/5 10Y 6M 30D Avg. SOFR ARM 5/1/5
Security Products for Take Out ARM Guarantor Contract	NonCnvrt 1/1 1Y LIBOR ARM 2/2/2-6 NonCnvrt 3/1 1Y LIBOR ARM 2/2/2-6 NonCnvrt 5/1 1Y LIBOR ARM 2/2/2-6 NonCnvrt 7/1 1Y LIBOR ARM 2/2/2-6 NonCnvrt 7/1 1Y LIBOR ARM 5/2/5-6 NonCnvrt 10/1 1Y LIBOR ARM 2/2/2-6 NonCnvrt 10/1 1Y LIBOR ARM 5/2/5-6	NonCnvrt 3Y 6M 30D Avg. SOFR ARM 2/1/5 NonCnvrt 5Y 6M 30D Avg. SOFR ARM 2/1/5 NonCnvrt 7Y 6M 30D Avg. SOFR ARM 5/1/5 NonCnvrt 10Y 6M 30D Avg. SOFR ARM 5/1/5
Product types for Take Out ARM Guarantor Contract	1/1 ARM LIBOR 3/1 ARM LIBOR 5/1 ARM LIBOR 7/1 ARM LIBOR 10/1 ARM LIBOR	3/6 SOFR ARM 5/6 SOFR ARM 7/6 SOFR ARM 10/6 SOFR ARM
IFI for notes with fallback language	J23	None: all SOFR-indexed ARM notes will contain fallback language

For more background on how the new SOFR-indexed ARM was developed, refer to Options for Using SOFR in Adjustable Rate Mortgages, published by the NY Fed in July 2019.

❖ **SOFR ARM index calculation**

SOFR-indexed ARMs are based on 30-day Average SOFR, as published by the NY Fed, which is a compounded average of overnight SOFR over the preceding 30 calendar days.

❖ **SOFR ARM index source**

The NY Fed publishes the 30-, 90- and 180-day compounded SOFR averages daily.

❖ **SOFR ARM interest rate calculation**

There is no change as to how the borrower interest rate will be calculated when using 30-day Average SOFR.

7.4 Preparation for SF SOFR ARMs

❖ **Originating and underwriting SF SOFR ARMs**

Generally, the processes for originating and underwriting SOFR ARMs are like the existing processes used to originate and underwrite ARMs tied to any other index, and all existing conventional ARM requirements apply to SOFR ARMs.

❖ **Key concepts**

The GSEs have made multiple specification updates in the latest versions of their automated underwriting systems ("AUS") in support of SOFR ARMs, including adding a new enumeration to represent the use of 30-day Average SOFR.

Fannie Mae has applied the specification updates noted below to DU Specification MISMO 3.4 (DU Spec), while Freddie Mac applied specification updates to Loan Product Advisor specifications v5.0.06. Other existing data requirements (e.g., for margin and index value) will still be required unless otherwise noted.

Lenders should note the AUS updates in Figure 7-5 when preparing for the origination and underwriting of SOFR-indexed loans.

Figure 7-5: GSE automated underwriting systems supporting SOFR ARMs

Requirements	Fannie Mae SOFR ARMs	Freddie Mac SOFR ARMs
Update timeline	Specification updates complete	Loan Product Advisor v5.0.06
AUS version	DU Specification MISMO 3.4 (DU Spec)[4]	LPA v5.0.06

[4] Fannie Mae's EarlyCheck system also uses the DU input file. The guidance provided for DU submissions is also applicable to EarlyCheck.

Requirements	Fannie Mae SOFR ARMs	Freddie Mac SOFR ARMs
Enumerations	▪ “30DayAverageSOFR” added for IndexSourceTypeDescription ▪ **Note:** Use of enumeration is optional, as DU does not require identification of a specific ARM index for underwriting evaluation	“30DayAverageSOFR” added for IndexSourceTypeDescription
ARM index	▪ Populate IndexSourceType using “Other” in DU ▪ Users have the option to populate IndexSourceTypeOtherDescription with “30DayAverageSOFR”	▪ Lenders to use the following data points in Loan Product Advisor: ▪ IndexSourceType = “Other” ▪ IndexSourceTypeOtherDescription ▪ = “30DayAverageSOFR” ▪ The data point IndexSourceType will continue to be required for all ARMs
ARM plan data	▪ Users are still required to submit ARM plans in DU for underwriting evaluation ▪ Submit generic ARM plans using the InvestorProductPlanIdentifier field ▪ Do **not** submit lender ARM plan data or SOFR ARM plan numbers	N/A

In addition, Lenders should note the following with respect to Uniform Mortgage Data Program (“UMDP”) requirements:

- No updates are necessary for the Uniform Loan Application Dataset (“ULAD”), since ARM indexes are not displayed on the Uniform Residential Loan Application (“URLA”)
- There are no planned updates for the Uniform Closing Dataset (“UCD”)
- The new SOFR index will be delivered using IndexType = “Other” and IndexTypeOtherDescription = SOFR
- Data point names for each GSE’s AUS are different from the UCD

For more information on existing SOFR impacts on UMDP requirements, refer to the GSEs' announcements on UMDP updates.

Figure 7-6: Necessary actions for originating and underwriting SF SOFR ARMs

Focus area	Necessary actions
Documentation	▪ Update FAQs and borrower ARM disclosure documentation ▪ Update closing instructions and/or train closing agents, escrow agents and closing attorneys ▪ Review differences in updated procedures for printed notes and eNotes ▪ Test printing of all updated documents (e.g., notes, riders, Closing Disclosure, other disclosures) ▪ Update training manuals for origination staff including originators, processors, underwriters, closers, post-closers, and QC ▪ Update broker and correspondent lending training manuals, policies and documentation

Lender systems, processes and training	▪ Maintain awareness of new field options for standard ARM enumerations (e.g., index type and rate reset period)
	▪ Update Loan Origination System ("LOS")/vendor systems with new SOFR ARM-related enumerations
	▪ Update LOS product, eligibility and pricing rules
	▪ Develop and implement pricing, hedging and execution strategies
	▪ Provide training for staff, including originators, processors, underwriters, closers, post-closers and QC
	  ○ SOFR adjusts every six months, not every year
	  ○ The minimum initial fixed period for SOFR loans is three years
	▪ Provide communications and/or training for brokers, correspondents, eNote vaults, electronic registries, Document Preparation ("Doc Prep") and other third-party vendors

GSE systems	▪ Directly integrated lenders, LOS and other third-party vendors should be coordinating with each GSE to update their interfaces to accommodate new SOFR ARM products
Document custodian	▪ Remember that as part of the note certification process, the GSEs require that the Custodian verify, for ARM notes with the revision date "(rev. 2/20)", the lifetime floor is equal to the ARM's margin as stated in the note; if it does not, the discrepancy will be reported as a documentation issue and the note will not be certified for sale ○ This information is reflected in Fannie Mae's ARM plans, and an annual update of Freddie Mac's Document Custody Procedures Handbook will reflect this requirement

❖ Helpful links

For more information on origination and underwriting, refer to the following resources:

Fannie Mae

- *ARM Plan Matrix*
- *ARM Note Riders and Addenda*

- Legal Documents

Freddie Mac

- Single-Family Seller/Servicer Guide, Chapter 4401
- Single-Family Uniform Instruments

❖ Selling and delivering SOFR ARMs

Generally, the processes for selling and delivering SOFR ARMs is the same as the existing processes used to sell and deliver ARMs tied to any other index. Sellers will see additional dropdown options available in GSE systems to reflect the addition of new SOFR offerings, as applicable.

All existing, conventional ARM requirements apply to SOFR ARMs, including existing Uniform Loan Delivery Dataset ("ULDD") requirements. For more information on existing UMDP requirements as well as updates to support the transition to the SOFR ARM index, refer to the GSEs' announcements on ULDD updates.

❖ Key concepts

The GSEs have updated their respective ULDD specifications in support of SOFR ARMs, similar to the updates made for AUS specifications. Users should note the updates outlined in Figure 7-7 when preparing to sell SOFR-indexed loans to the GSEs.

Figure 7-7: Updates for selling and delivering SOFR-indexed loans to the GSEs

Requirements	Fannie Mae SOFR-indexed ARMs	Freddie Mac SOFR-indexed ARMs
Update timeline	▪ Loan Delivery system updates were made available August 3, 2020	▪ Loan Selling Advisor system updates were made available November 9, 2020
Enumerations	▪ "30DayAverageSOFR" added to IndexSourceTypeDescription	▪ "Other" added to IndexSourceType ▪ "30DayAverageSOFR" added to IndexSourceTypeDescription
ARM Index Data	▪ The new index will be delivered using IndexSourceType = "Other" ▪ IndexSourceTypeOtherDescription = "30DayAverageSOFR"	▪ IndexSourceTypeDescription added as a data point ▪ The new index will be delivered using IndexSourceType = "Other" plus IndexSourceTypeOtherDescription = "30DayAverageSOFR"
ARM plan data	▪ Sellers should submit one of the published SOFR ARM plan numbers in the ULDD sent to Loan Delivery and/or EarlyCheck; do **not** submit "Lender ARM Plan" or DU generic ARM plans	N/A

The GSEs have also updated reference product labels, ARM plans, subtypes and pool prefixes as applicable for new SOFR-indexed MBS/PCs. Refer to the "Securitization of SF SOFR ARMs" section below for more detail.

Figure 7-8: Necessary actions for selling and delivering SOFR ARMs

Focus areas	Necessary actions
Seller systems, processes and training	▪ Train Capital Markets/Secondary Marketing staff to use new pricing screens available for SOFR ARM whole loan commitments, including guaranty fee amounts (“G-fee” amounts for Fannie Mae and Credit Fee in Yield amounts for Freddie Mac) ▪ Identify source for current SOFR rates and update internal system feeds ▪ Ensure SOFR-indexed ARM interest rates are distributed via all existing methods to all channels ▪ Update LOS product, eligibility and pricing rules ▪ Develop and implement pricing, hedging and execution strategies ▪ Provide training for staff (e.g., capital markets/secondary, post-closers, shippers and investor relations) on all aspects of new products ▪ Provide communications and/or training for brokers, correspondents, document custodians, warehouse lenders, disbursement agents, eNote vaults, electronic registries, document file preparers and other third-party vendors ▪ GSEs’ loan delivery UIs are available for manual data entry, if needed
GSE systems	▪ Maintain awareness of how SOFR ARM characteristics are reflected in existing pricing, execution, committing and delivery applications: o Pricing menu options for cash execution o G-fee pricing menu options for MBS execution o Additional options for enumerations and ARM plans for SOFR-indexed ARMs (Fannie Mae) o Additional Cash Contract Products, Guarantor Security Products and Guarantor Product Types for SOFR-indexed ARMs (Freddie Mac)

❖ Helpful links

For more information on LIBOR transition impacts to selling and delivering SOFR ARMs, refer to the following resources:

Fannie Mae

- *Selling Guide*
- *Single-Family Servicing Guide*

Freddie Mac

- *Single-Family Seller/Servicer Guide*

❖ Securitization of SF SOFR ARMs

The GSEs developed new pool prefixes, subtypes (Fannie Mae), and documentation language to support the securitization of SOFR-indexed ARMs. Impacted parties should be ready to operationalize these changes when involved in the purchase, trading or investor reporting of SOFR MBS/PCs and Megas/Giants.

❖ Key concepts

The GSEs introduced new prefixes and subtypes for MBS/Megas and PCs/Giants, as outlined in Figure 7-9.

Figure 7-9: New prefixes and subtypes for GSE MBS/Megas and PCs/Giants

	Fannie Mae			Freddie Mac	
Product	**Prefix**	**ARM plan number**	**ARM subtype**	**Prefix**	**Pool number range**
3-Year	SO	4926	85A	8A	8A0001-8A9999
5-Year	SO	4927	85B	8B	8B0001-8B9999
7-Year	SO	4928	85C	8C	8C0001-8C9999
10-Year	SO	4929	85D	8D	8D0001-8D9999

Freddie Mac is using the existing pool prefix for 30-day Average SOFR ARM Giant PCs.

Figure 7-10: Existing Freddie Mac pool prefix for 30-day Average SOFR ARM Giant PCs

Product description	Prefix	Pool number range
Various indices, WAC ARM Giant	84	840001-849999

In addition, 30-day Average SOFR Hybrid ARM index codes were created by each GSE for MBS/PCs and Mega/Giants disclosure purposes.

- Fannie Mae introduced a new index code (061) and new subtypes for 30-day Average SOFR, which is reflected in its existing MBS disclosure files and referenced in its Single-Family MBS Disclosures Guide and Subtype webpage
- Freddie Mac added index code 61 for 30-day Average SOFR. This index code will be disclosed via the existing disclosure field for loan level (ID L-046) and security level (ID S-51). Refer to the Single-Family Disclosure Guide for disclosure file details

SF legal documentation, including MBS Disclosures, Prospectus and Prospectus Supplements have been updated to include SOFR as an index.

❖ Eligible collateral for Freddie Mac new issue ARM Giant PCs

The 45-day Fixed-rate and 75-day ARM Giant Collateral Prefix Eligibility Chart has been updated to include 30-day Average SOFR-indexed ARMs. In addition, the existing ARM Giant PC pooling rules are available on Freddie Mac's MBS website. Effective June 30, 2022, the GSEs stopped resecuritizing existing LIBOR-indexed CMOs (both Single-Family and Multifamily) and MBS/PCs into new LIBOR-indexed securities. The resecuritization of LIBOR-indexed CMOs and MBS/PCs into appropriately structured new-issue SOFR indexed bonds will continue to be permitted.

Figure 7-11: Necessary actions for updates to eligible collateral for ARM Giant PC

Focus areas	Necessary actions
Documentation	Note updates to base language in prospectus documents, including new index codes
GSE systems	Note the inclusion of a new pool prefix, subtypes and index code to represent new SOFR ARM characteristics

❖ Helpful links

For more information on LIBOR transition impacts on securitization of SOFR ARMs, refer to the following resources:

Fannie Mae

- Pool Prefix Glossary
- ARM MBS Subtypes
- Updated MBS Prospectus language

Freddie Mac

- Prefix Library

❖ Servicing SF SOFR ARMs

While a new underlying index will be used to calculate borrower payments, the calculations themselves will not change.

❖ Key concepts

- Servicers will need to incorporate the new SOFR index into calculations and reconciliations for borrower payments; however, the calculations are not changing
- Servicers will need to incorporate the SOFR index into their current rate and payment adjustment processes

Figure 7-12: Necessary actions for servicing SOFR ARMs

Focus areas	Necessary actions
Use of a new index in rate and payment calculations	Update and test systems, reporting and other processes or activities related to interest rate adjustment calculations to incorporate SOFR into product parameters. These include initial fixed period, current index value, margin, lookback period and rounding method, plus the initial, subsequent and lifetime caps/ceilings and floors, underlying index, reset periods and subsequent caps
Transfer of servicing	Ensure that servicing transferees have the capability to service SOFR loans

❖ Helpful links

For more information on LIBOR transition impacts on servicing of SOFR ARMs, refer to the following resources:

Fannie Mae

- *Single-Family Servicing Guide*

Freddie Mac

- *Single-Family Seller/Servicer Guide*

❖ Cessation of purchase of SF LIBOR ARMs

As of December 31, 2020, the GSEs stopped purchasing LIBOR-indexed ARMs. Lenders, servicers and other relevant parties should have taken the necessary steps from a systems, process and training perspective to discontinue the origination and delivery of LIBOR ARMs.

❖ Key concepts

- The GSEs no longer purchase LIBOR ARMs as whole loans for cash or in exchange for securities provided the related MBS/PC pools.
- Fannie Mae has instructed sellers to deliver SFC 785 for any non-SOFR-indexed ARMs with a note and rider containing new fallback language.

❖ Helpful links

For more information on LIBOR transition impacts on the ability to sell and deliver LIBOR ARMs, refer to the following resources:

Fannie Mae

- *Selling Guide*

Freddie Mac

- *Single Family Seller/Servicer Guide*

8. Appendix: Single-Family CRTs

8.1 Introduction

The purpose of this chapter is to provide market participants guidance on new SOFR-indexed SF CRT issuances and the transition of legacy LIBOR-indexed SF CRT transactions in the future.

8.2 SOFR-indexed SF CRT new issuance and market developments

❖ Objectives

Freddie Mac discontinued issuing LIBOR-indexed SF CRT deals and began issuing SOFR-indexed SF CRT deals in October 2020. Fannie Mae discontinued issuing LIBOR-indexed SF CRT deals in December 2020 and began issuing SOFR-indexed SF CRT deals in October 2021.

Since there is a well-defined SOFR index to determine the coupon payments due on the notes, the move to SOFR-indexed SF CRT issuances has been relatively simple from an operational perspective.

❖ SOFR indices

- The GSEs currently are structuring SOFR-indexed CRT transactions so that they use 30-day Average SOFR (published by the NY Fed) as the reference rate, with a Determination Date of two business days ("2BD") prior to the beginning of the accrual period for CRT securities

Certain CRT deals issued following March 2020 may include contractual language indicating a benchmark replacement of Term SOFR. Please note that Fannie Mae and Freddie Mac will refrain from taking any steps that would result in the conversion of any existing SOFR-indexed CRTs from 30-Day Average SOFR to term SOFR based on any provision that calls for such conversion when operationally, administratively, and technically feasible.

8.3 Timelines and milestones

❖ Related SOFR market development

- SOFR market conventions: On March 2, 2020, the NY Fed began publishing a SOFR index and a calculator for computing compound averages of SOFR
- Development of SOFR derivatives market: The move to SOFR-indexed discounting by CME/LCH has helped improve the liquidity of the SOFR derivatives market

❖ GSE alignment

The GSEs are aligned on the choice of SOFR indexes that will be utilized for future SF CRT securities. This alignment will ensure the SF CRT transitions are consistent between the GSEs and will minimize potential disruptions to the SF CRT market. Specifically, Fannie Mae's CAS program and Freddie Mac's STACR program will be aligned on the following:

- Selection of SOFR as the index for new issuances of SF CRT deals
- SOFR index and methodology (i.e., 30-day Average SOFR)
- Fallback triggers and waterfall for new SOFR issuances

❖ Actions market participants should consider

The GSEs encourage all SF CRT market participants to conduct an internal operational readiness assessment and start any operational build needed to participate in SOFR-indexed SF CRT transactions as early as practicable. Investment guidelines and other key governance documentation should be reviewed to ensure that they can transact in SOFR. Please refer to Section 1.3, “Actions market participants should consider,” for FAQs and other resources related to the SF CRT LIBOR transition.

9. Appendix: CMOs

9.1 Introduction

The ARRC endorsed SOFR as its recommended benchmark replacement to LIBOR in anticipation of the cessation of LIBOR.

To prepare for the cessation of LIBOR, the GSEs adopted a modified version of the ARRC securitization waterfall for new-issue LIBOR-indexed CMOs. The GSEs started offering SOFR-indexed CMOs for settlement in July 2020. Additionally, under the guidance of FHFA, Freddie Mac and Fannie Mae ceased offering new LIBOR-indexed CMOs for issuance. This includes resecuritizations of existing LIBOR-indexed CMOs (both Single-Family and Multifamily) and MBS/PCs into new-issuance LIBOR-indexed bonds effective June 30, 2022. The resecuritization of LIBOR-indexed CMOs and MBS/PCs into appropriately structured new-issue SOFR bonds will continue to be permitted.

9.2 Overview

The GSEs have structured new-issue Delay and Non-Delay SOFR-indexed CMOs that use 30-day Average SOFR published by the NY Fed as the reference rate, with a Determination Date of 2 Business Days (2BD) prior to the beginning of the accrual period for 45-, 55- and 75-day Delay and Non-Delay securities (same as current LIBOR-indexed CMOs).

Certain CMOs issued following July 2020 may include contractual language indicating a benchmark replacement of Term SOFR. Please note that Freddie Mac and Fannie Mae will refrain from taking any steps that would result in the conversion of any existing SOFR-indexed CMOs from 30-Day Average SOFR to Term SOFR based on any provision that calls for such conversion when operationally, administratively, and technically feasible.

9.3 Eligible collateral

For new-issue SOFR-indexed CMOs, the GSEs will accept all collateral that is currently acceptable for LIBOR-indexed structures at each respective entity. For more information on how collateral may be affected by the transition, refer to "Securitization of SOFR ARMs" in section 2.4, "Preparation for SF SOFR ARMs."

9.4 Issuance

❖ **Delay and Non-Delay (30-day Average SOFR)**

The Determination Date for 45-, 55- and 75-day Delay and Non-Delay securities based on 30-day Average SOFR is 2BD prior to the beginning of the accrual period. This is the same as the practice that was used for LIBOR-indexed securities.

9.5 Administration

❖ **Key updates for 45-day, 55-day and 75-day Delay CMOs**

For 45-, 55- and 75-day Delay CMOs based on 30-day Average SOFR (or "Compounded SOFR" per the subsequent timelines), the Determination Date will be 2BD prior to the beginning of the accrual period. This is the same as for LIBOR-indexed CMOs, which also have a Determination Date of 2BD prior to the accrual period (prior month). The graphics on the subsequent pages display the timing.

Figure 9-1: 45-day Delay CMOs

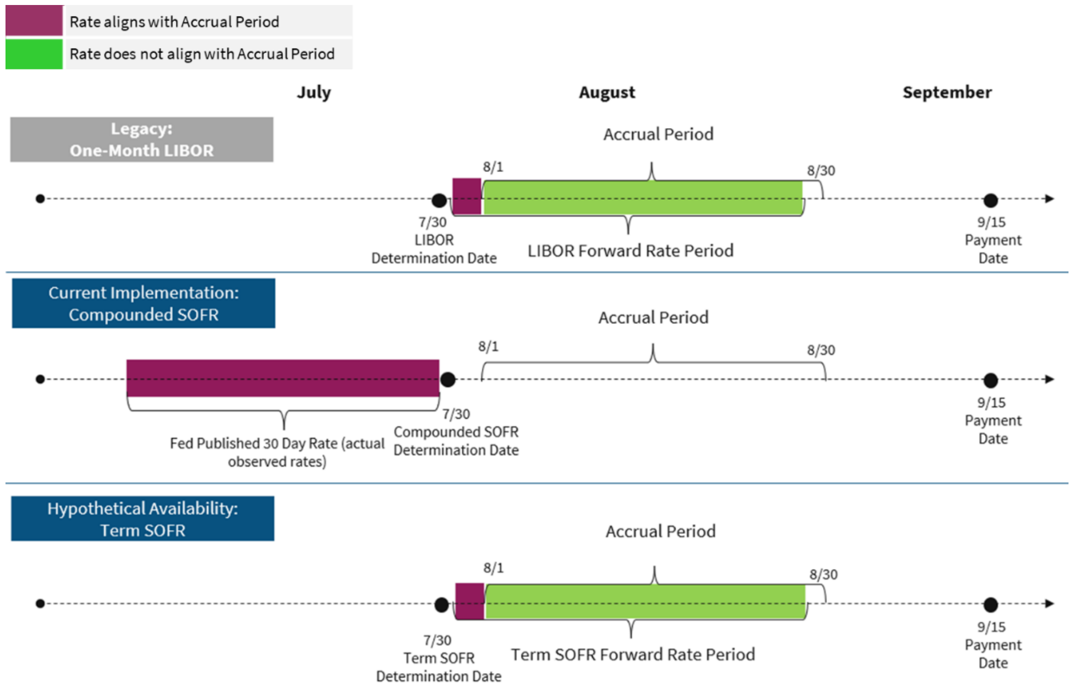


Figure 9-2: 55-day Delay CMOs

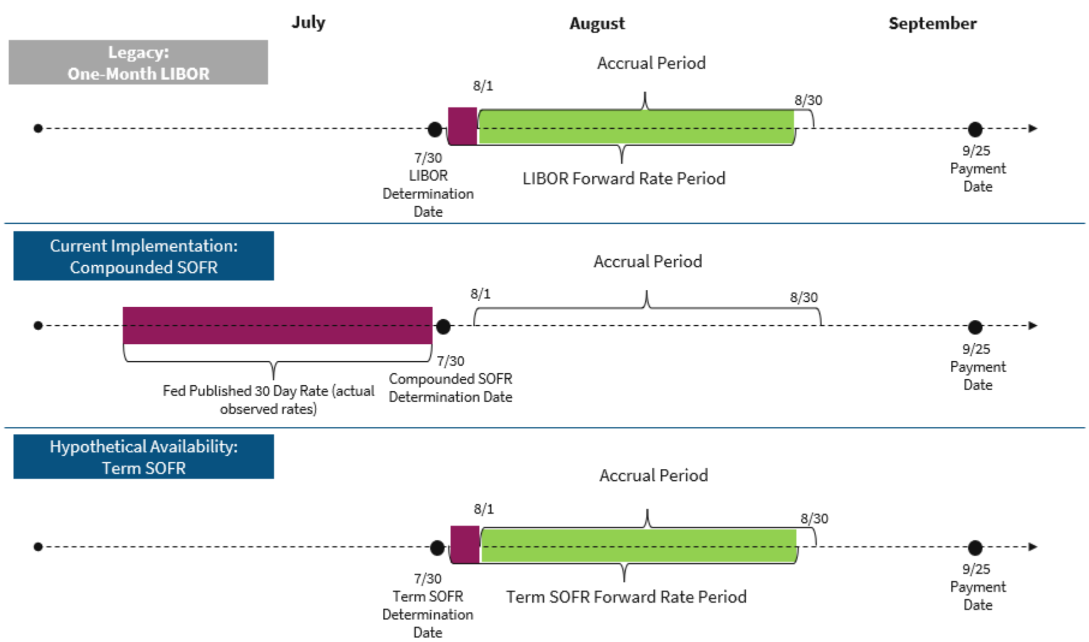
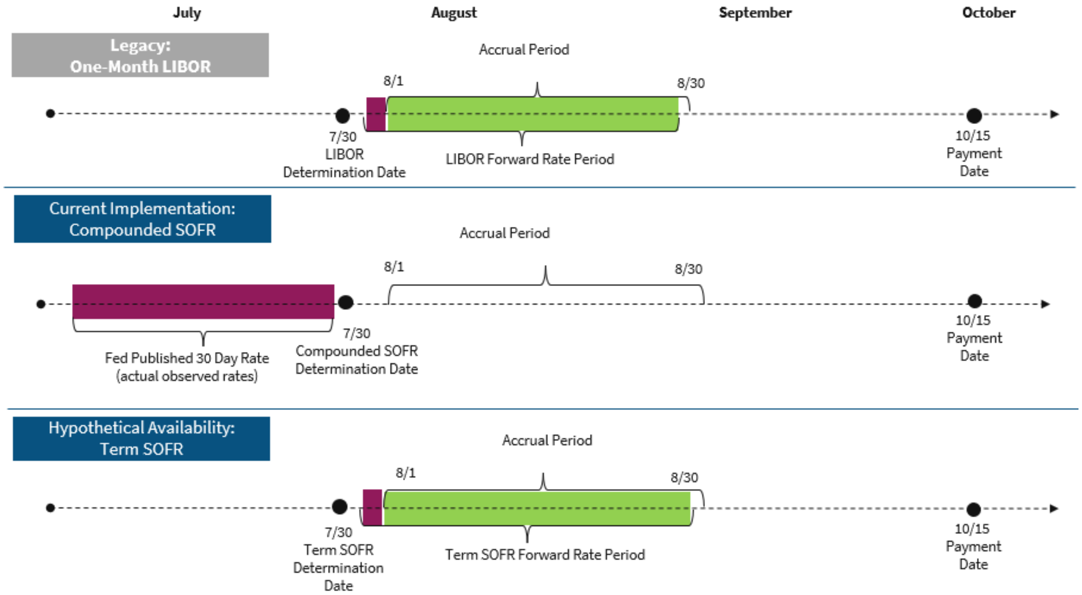


Figure 9-3: 75-day Delay CMOs



❖ Key updates for 45-day, 55-day and 75-day Non-Delay CMOs

For 45-, 55- and 75-day Non-Delay CMOs based on 30-day Average SOFR, the Determination Date will be 2BD prior to the beginning of the accrual period. This is the same as for LIBOR-indexed CMOs, which have a Determination Date of 2BD prior to their respective accrual periods (the 13th for 45-day, or the 23rd for 55-day) of the month preceding payment, or the 13th (75-day) of the second month preceding payment. The graphics on the subsequent pages display the timing.

Figure 9-4: 45-day Non-Delay CMOs

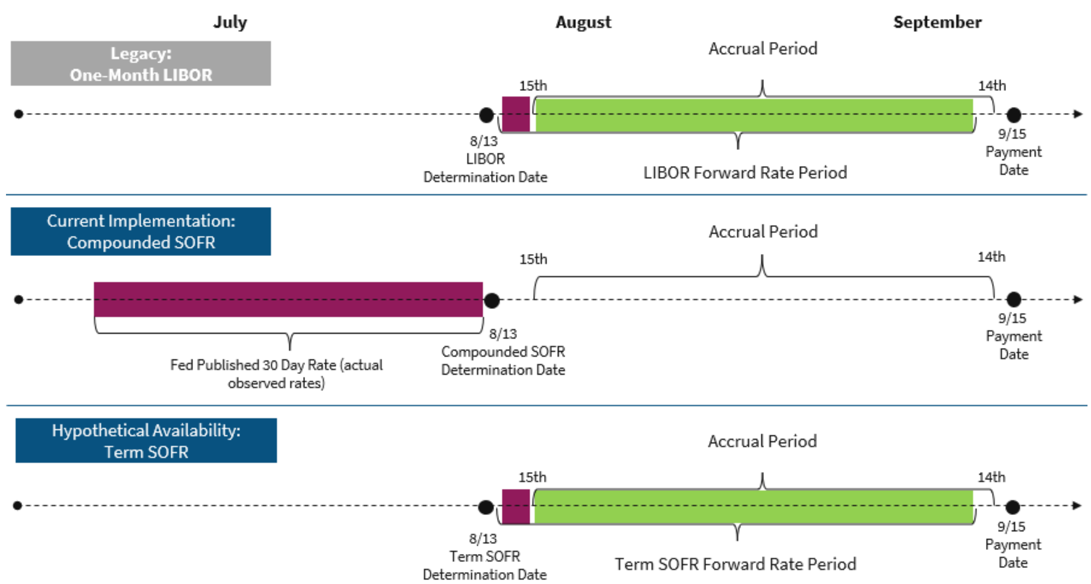


Figure 9-5: 55-day Non-Delay CMOs

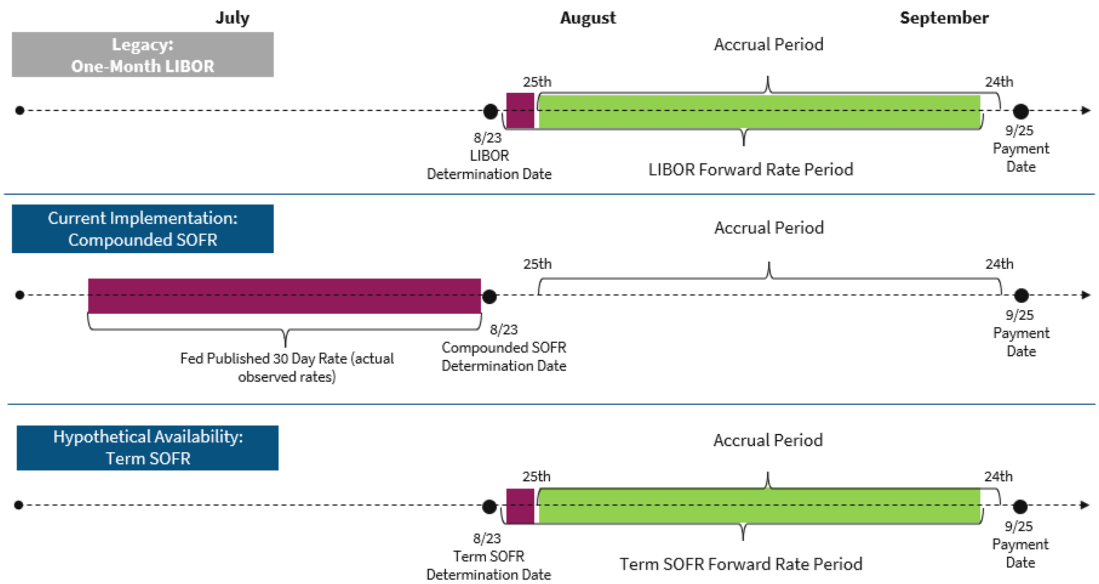
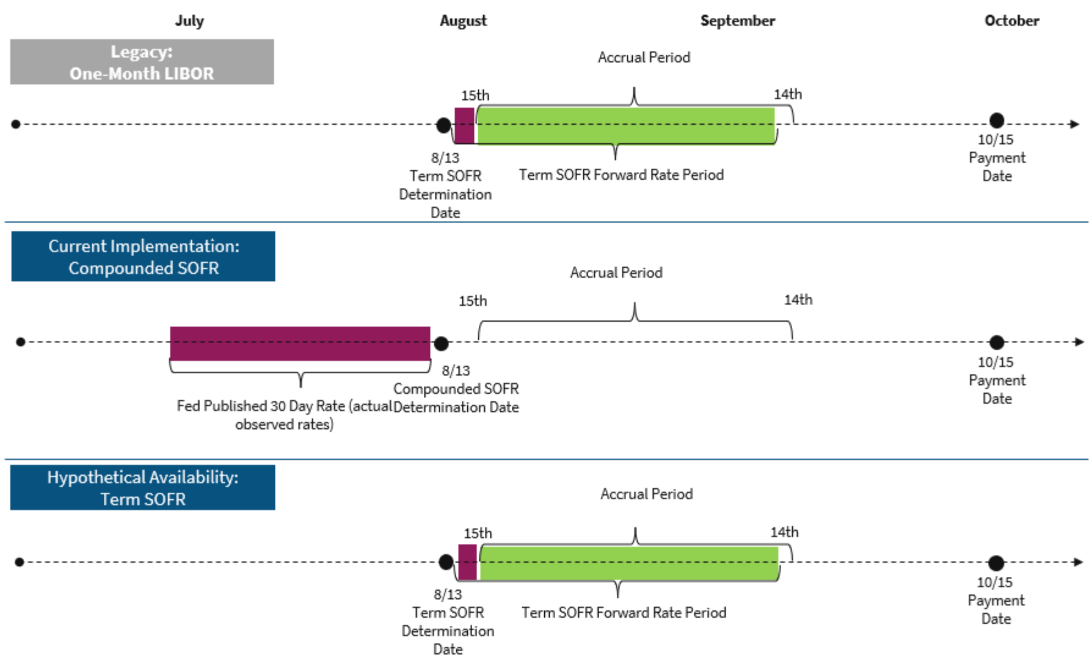


Figure 9-6: 75-day Non-Delay CMOs



9.6 Disclosure changes

❖ Key updates

Index rate disclosure files now contain a new column titled “Current Month Payment Indicator” which contains a “Y” if the rate applies to the current month’s payment factor calculation and an “N” if it does not.

CSS will publish index rate files on the first business day of the month (for all Delay securities), on the

15th of the month minus two business days (for Non-Delay 45- and 75-day securities), and on the 25th of the month minus two business days (for Non-Delay 55-day securities) at 6:30 p.m. ET; the previous schedule had the posting of files at 4:30 p.m. ET for Freddie Mac.

❖ **Actions to consider**

Discuss changes to disclosures with your disclosure vendor to ensure that your system can correctly apply the new "Current Month Payment Indicator" value.

10. Appendix: Multifamily ARMs (Fannie Mae)

10.1 Introduction

The Multifamily borrower community relies on a wide range of variable rate financing options from Fannie Mae. To ensure stability across all product lines, Fannie Mae has developed SOFR-indexed offerings for the Structured ARM ("SARM"), 7/6 ARM and Hybrid ARM products. In addition, Fannie Mae has developed a second capped SOFR-indexed ARM structure to ensure a broad range of financing solutions.

More product information can be found on Fannie Mae's Multifamily website.

❖ **Transition preparation**

To prepare for the transition from LIBOR for MF ARMs, Fannie Mae has:

- Stopped accepting MBS deliveries (the last eligible MBS pool issue date for LIBOR-indexed ARM pools was December 1, 2020)
- Stopped cash/whole loan purchase of LIBOR-indexed ARMs after December 31, 2020
- Stopped accepting LIBOR loans with commitment dates after September 30, 2020
- Developed SOFR-indexed offerings using existing product structures (i.e., SARM, ARM 7/6 and Hybrid ARM products)
- Designed a MF capped ARM product that uses 30-day Average SOFR as the underlying index
- Started developing a comprehensive plan for the transition of existing LIBOR-indexed ARMs on Fannie Mae's book once LIBOR is no longer available
- Continued providing information and training to ensure a smooth transition

10.2 Transition Milestones

Fannie Mae began purchasing SOFR-indexed ARMs on September 1, 2020 and stopped purchasing and securitizing LIBOR-indexed ARMs at the end of 2020. By doing this, Fannie Mae has met demand for variable rate loans without disruption.

Fannie Mae has developed a coordinated strategy, in advance of LIBOR cessation, with the ARRC, FHFA and industry stakeholders to transition legacy LIBOR-indexed instruments.

Figure 10-1: Multifamily LIBOR transition milestones

Timeline	Milestone
September 1, 2020	▪ MF released a new SOFR-indexed capped ARM product and began offering SOFR-indexed SARMs, 7/6 ARMs and Hybrid ARMs ▪ System capabilities are in place for lenders to deliver SOFR-indexed ARMs with an embedded cap and SOFR-indexed uncapped ARMs (see below for notes on the external cap market) ▪ Investors can invest in Fannie Mae-issued MBS based on a capped SOFR-indexed ARM
October 1, 2020	▪ Commitments for LIBOR-indexed ARMs are no longer accepted (i.e., must have been designated as "Committed" in DUS Gateway® on or before September 30, 2020)

Timeline	Milestone
January 1, 2021	▪ Multifamily no longer purchases LIBOR-indexed ARMs (i.e., had to be purchased on or before December 31, 2020 as a Cash Mortgage Loan or MBS Mortgage Loan with an Issue Date on or before December 1, 2020)
June 30, 2023	▪ Legacy LIBOR-indexed ARM products will be converted to a SOFR index at MF's discretion upon LIBOR no longer being representative or available

10.3 SOFR-indexed characteristics

❖ Product conventions

In accordance with the transition timeline, specific product features were made available on Fannie Mae's Multifamily website, as well as during external training sessions that took place through September 2020 and will be made available on an ongoing basis as needed. Product conventions are described at a high level in Figure 10-2.

Figure 10-2: Product conventions

Convention	LIBOR ARMs	SOFR ARMs
Rate determination	Survey of interbank lending	Treasury collateralized repo market
Floating-rate index	1-, 3- or 6-month LIBOR	30-Day Average SOFR
Cap requirement	Embedded or third-party caps available	Embedded or third-party caps available

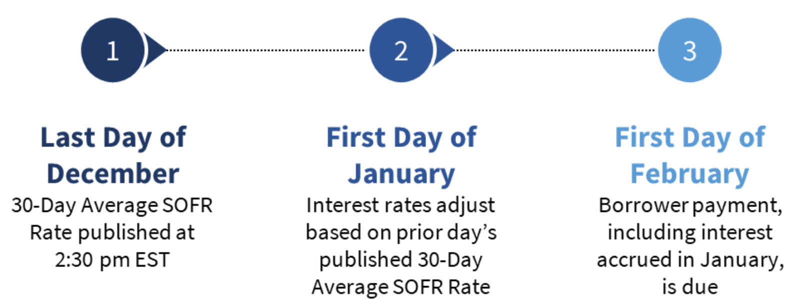
The underlying index for MF SOFR-indexed ARMs, 30-day Average SOFR, is published by the NY Fed. The 30-Day Average SOFR rate that is available as of 3:00 p.m. ET should be used for calculations. ET. The new index is also available from third-party vendors (e.g., Bloomberg and LSEG).

❖ Interest rate calculation

Fannie Mae's MF SOFR-indexed products accrue interest based on the same calendar-month accrual periods that exist for LIBOR-indexed ARMs.

On each interest rate change date, the interest rate is adjusted to equal the sum of the mortgage margin plus the latest index value available as of the date that precedes the interest rate change date by the number of days set forth in the mortgage note (one business day for all MF SOFR-indexed ARM loans). Figure 10-3 exhibits how the interest rate is determined for a January accrual month.

Figure 10-3: Example interest rate timeline



❖ External cap market

The availability of third-party SOFR interest rate caps is necessary for offering and acquiring uncapped MF SOFR-indexed ARMs. At this time, several cap providers are prepared to issue SOFR-indexed interest rate caps. Multifamily is actively engaging with third-party interest rate cap providers to prepare for and understand developments in the market for third-party interest rate caps.

For more information on the transition of existing LIBOR-indexed caps, refer to section 5.5, "Transitioning existing MF LIBOR-indexed ARMs."

❖ MBS features

Fannie Mae has created new ARM plans and subtypes to support SOFR-indexed ARM MBS. These new ARM features have been updated on Fannie Mae's website. Fannie Mae has also created new pool prefixes, which have been added to the Pool Prefix glossary and are described in Figure 10-4.

Figure 10-4: Additional MBS pool prefixes

Prefix	Description
HF	Conventional Adjustable-Rate Mortgages, Secured Overnight Financing Rate, Actual/360 interest day basis calculation; Multifamily
MF	Conventional Adjustable-Rate Mortgages, Secured Overnight Financing Rate, 30/360 interest day basis calculation; Multifamily
HW	Conventional Adjustable-Rate Supplemental Lien Mortgages, Secured Overnight Financing Rate, Actual/360 interest day basis calculation; Multifamily
XF	Adjustable-Rate Mega backed by Conventional Adjustable-Rate Mortgages indexed to the Secured Overnight Financing Rate; Actual/360 interest day basis calculation; Multifamily
YF	Adjustable-Rate Mega backed by Conventional Adjustable-Rate Mortgages indexed to the Secured Overnight Financing Rate; 30/360 interest day basis calculation; Multifamily
XW	Adjustable-Rate Mega backed by Conventional Adjustable-Rate Supplemental Lien Mortgages indexed to the Secured Overnight Financing Rate; Actual/360 interest day basis calculation; Multifamily
HC	Conventional Hybrid Adjustable-Rate Mortgages; initial Fixed-Rate period followed by an Adjustable-Rate period for the remaining term; Secured Overnight Financing Rate, Actual/360 interest day basis calculation; Multifamily
MC	Conventional Hybrid Adjustable-Rate Mortgages; initial Fixed-Rate period followed by an Adjustable-Rate period for the remaining term; Secured Overnight Financing Rate, 30/360 interest day basis calculation; Multifamily
HU	Conventional Hybrid Adjustable-Rate Supplemental Lien Mortgages; initial Fixed-Rate period followed by an Adjustable-Rate period for the remaining term; Secured Overnight Financing Rate, Actual/360 interest day basis calculation; Multifamily

10.4 Preparation for MF SOFR-indexed ARMs

❖ Originating and underwriting MF SOFR-indexed ARMs

Originators and underwriters are impacted by the change in index as well as new terms that arise from SOFR-indexed ARM loan products. Originators also play a central role in educating Multifamily borrowers on Fannie Mae ARM products and impacts resulting from the transition from LIBOR. Specific product terms have been publicly announced and are available on Fannie Mae's website.

❖ Key updates

- Index publication source
- Floating-rate adjustment period
- Cap structure
- Product terms of SOFR-indexed ARMs

Figure 10-5: Necessary actions for origination and underwriting MF SOFR-indexed ARMs

Focus area	Necessary actions
Borrower communications	▪ Work with Fannie Mae to develop communication plans to explain changes resulting from the LIBOR transition and availability of SOFR-indexed ARMs to Multifamily borrowers
System identification and update	▪ Conduct an inventory of impacted processes and systems ▪ Update origination processes and underwriting systems to accommodate MF SOFR-indexed ARMs
Information	▪ Follow industry developments and announcements and determine impacts to origination and underwriting that may arise ▪ Read Multifamily communications and attend product trainings related to MF SOFR-indexed ARMs

❖ Helpful links

The Multifamily Guide has been updated to reflect MF SOFR-indexed ARMs. For more information on LIBOR transition impacts to origination and underwriting, refer to the following resources:

- ARRC website
- Multifamily Guide

❖ Selling and delivering MF SOFR-indexed ARMs

The process for selling and delivering SOFR-indexed ARMs does not vary substantially from the previous process for LIBOR-indexed ARMs. Updates to Fannie Mae systems have been made to align with the availability of SOFR-indexed ARMs.

Lenders should reach out to Fannie Mae to address any issues that may arise from selling and delivering a SOFR-indexed ARM.

❖ Key updates

- LIBOR-indexed ARMs can no longer be purchased at Fannie Mae
- Fannie Mae systems reflect options and dropdowns for SOFR-indexed ARMs
- Options and dropdowns for LIBOR-indexed loan products are no longer available in the systems

Figure 10-6: Necessary actions for selling and delivering MF SOFR-indexed ARMs

Focus areas	Necessary actions
System identification and update	▪ Conduct an inventory of impacted processes and systems ▪ Update selling and delivery systems and processes to accommodate SOFR-indexed ARMs ▪ LIBOR-indexed ARM fields and forms should be removed from selling and delivery systems
Information	▪ Attend trainings and read FAQs and job aids released by Fannie Mae providing details related to selling and delivering SOFR-indexed ARMs

❖ Helpful links

For more information on selling and delivering, refer to the following resource:

- Multifamily Learning Center

❖ Securitization of MF SOFR-indexed ARMs

SOFR-indexed MBS issued by Fannie Mae include new attributes to facilitate securitization and accurate disclosure in the capital markets. The process mirrors the issuance of LIBOR-indexed securities. Investors should understand the differences between LIBOR- and SOFR-indexed ARMs that underpin the MBS they invest in.

❖ Key updates

- As detailed in previous sections, new MF ARM plans have been created and added to Multifamily systems to represent SOFR-indexed ARMs
- Pool prefixes have been created to detail security characteristics
- Legal documentation has been updated to note the inclusion of SOFR as a valid underlying index

Figure 10-7: Necessary actions for securitizing MF SOFR-indexed ARMs

Focus areas	Necessary actions
Investor awareness	▪ Investors should maintain awareness of market developments and impacts that a new underlying index may have when investing in SOFR-indexed MBS
Legal documentation	▪ Review updates to base prospectus documents
Security characteristics	▪ Note the inclusion of pool prefixes and subtypes to represent new SOFR-indexed ARM characteristics

❖ **Helpful links**

For more information on LIBOR transition impacts to securitization of MF SOFR-indexed ARMs, refer to the following resource:

- DUS Disclose

❖ **Servicing MF SOFR-indexed ARMs**

Servicers are required to manage ARM payments throughout the life of newly originated SOFR-indexed loans. Servicing systems require updates to manage calculations and reconciliations for borrower payments using the new index rate. If a servicing transfer is necessary, the existing servicer must also be aware of the ability for new servicers to conduct activities using a new index.

❖ **Key updates**

- Interest payments calculated based on SOFR
- New index location
- Relevant systems and processes require updates to reflect the new index and adjustment period

Figure 10-8: Necessary actions for servicing MF SOFR-indexed ARMs

Focus areas	Necessary actions
Interest payment calculations	▪ Update and test systems, reporting and other processes or activities so that they may: ○ Process/incorporate the SOFR index ○ Adjust interest accrual calculations for changes in the underlying index, reset periods and subsequent caps
Transfer of servicing	▪ Ensure that potential servicing transferees have the capability to service SOFR-indexed ARMs
System updates	▪ Catalogue impacted systems and execute system updates for the delivery of SOFR-indexed ARMs

❖ **Helpful links**

For more information on LIBOR transition impacts to servicing SOFR-indexed ARMs, refer to the following resources:

- Practical Implementation Checklist for SOFR Adoption
- CRE Finance Council LIBOR Transition Updates
- Multifamily Learning Center
- DUS Guide

11. Appendix: Multifamily CRTs

11.1 Introduction

The purpose of this chapter is to provide market participants guidance on new SOFR-indexed MF CRT issuances, which are known as Multifamily Structured Credit Risk Notes ("Multifamily SCR Notes" or "MSCR Notes") for Freddie Mac and Multifamily Connecticut Avenue Securities (MCAS) for Fannie Mae.

11.2 SOFR-indexed CRT new issuance

❖ Objectives

Fannie Mae achieved operational readiness to issue MF SOFR-indexed CRT deals in 2021. Freddie Mac completed its first SOFR-indexed MF CRT issuance, MSCR 2021-MN1, in January 2021. Prior to its first SOFR issuance, Freddie Mac issued three Multifamily SCR Notes, all of which were fixed-rate notes, between 2016 and 2017, so there are no Legacy MF CRT LIBOR securities to transition to a benchmark replacement. Fannie Mae has not yet issued its first SOFR-indexed MF CRT issuance but is operationally ready to do so. Please refer to Section 4.4 Legacy LIBOR-indexed CRTs for more information on Fannie Mae Legacy MF CRT issuances.

❖ SOFR indices

Fannie Mae plans to structure SOFR-indexed MF CRT transactions utilizing the same SOFR based terms and parameters defined in SF's executed CRT transactions and will remain in line with SF CRT ongoing. Please refer to Appendix 8.2 SOFR-indexed SF CRT new issuance and market developments for more information on SOFR-indexed CRTs.

11.3 Alignment with SF CRT

The GSEs, with the support of FHFA, intend to align to the SF CRT offering and minimize potential disruptions to the CRT market. In addition, Freddie Mac's STACR program and MSCR programs and Fannie Mae's MCAS program will be aligned to the following:

- Selection of the index as the replacement of LIBOR for new issuance CRT deals
- Benchmark replacement and methodology
- Fallback triggers and waterfall

Freddie Mac's Multifamily SCR Notes program is looking to attract large investors from STACR. Thus, alignment with SF CRT is essential to ensure broad market acceptance.

12. Appendix: Multifamily Floating-Rate Loans and Securities (Freddie Mac)

12.1 Introduction

Floating-rate and Hybrid loans are a key component of all Multifamily lines of business: Conventional, Seniors Housing, Targeted Affordable Housing ("TAH") and Small Balance Loans ("SBL"). Freddie Mac recognizes the importance of offering financing solutions with diverse loan structures and intends to preserve all existing floating-rate products throughout the transition to SOFR.

Product information is available on Freddie Mac's website.

12.2 Product modifications

Transitioning to SOFR is a complex undertaking, so our objective is to mitigate the complexity by avoiding non-essential product modifications. The summary below includes critical product modifications that support our shared mission to adopt SOFR.

- **Conventional, Seniors Housing, and TAH**

For our Conventional, Seniors Housing, and TAH business lines, SOFR-indexed loans are indexed to a compound average of SOFR. The compound average rate is 30-day Average SOFR (published by the NY Fed), which will then be applied to the upcoming interest accrual period ("SOFR Index").

Certain SOFR-indexed loans and related securities may include contractual language indicating a benchmark replacement of Term SOFR. Please note that Freddie Mac will refrain from taking any steps that would result in the conversion of any existing SOFR-indexed Floating-Rate Loans and related securities from 30-Day Average SOFR to Term SOFR based on any provision that calls for such conversion when operationally, administratively, and technically feasible.

The NY Fed publishes 30-, 90- and 180-day SOFR averages on their website, along with index values for use in calculating the SOFR average of alternative day counts.

Freddie Mac will use the NY Fed's published rates on its website for index determination.

Similar to its LIBOR-indexed loan products, Freddie Mac's SOFR-indexed loans continue to feature calendar-month interest accrual periods. LIBOR is determined on the business day preceding the beginning of the interest accrual period and 30-day Average SOFR is determined after 3:00 p.m. ET on the business day preceding the beginning of the interest accrual period.

Note that even though the SOFR index is determined based on a 30-day "lookback," the rate is applied "in advance" of the applicable interest accrual period. For example, for a January accrual period, the SOFR index will be determined based on the daily SOFR rates from the 30 days preceding the last business day of December.

That index will be applied to calculate interest throughout January, which will then be payable on February 1.

Freddie Mac generally requires all floating-rate loan borrowers to obtain third-party interest rate caps. For existing and new SOFR-indexed, Floating-Rate Loans, these caps will be indexed to SOFR. For existing LIBOR-indexed Floating-Rate Loans, these caps will be indexed to LIBOR and will transition to a SOFR index only in accordance with their governing documents and the loan documents. To address the possibility that LIBOR-indexed caps will not be available at any point after December 31, 2021, we asked primary servicers in mid-2021 to encourage borrowers to replace existing LIBOR-indexed caps before that date with LIBOR-indexed caps that expire on or after LIBOR cessation in June 2023. Doing so would ensure that the affected loans and caps are indexed to the same rate prior to LIBOR cessation. If LIBOR-indexed caps are not available for borrowers with maturing LIBOR-indexed caps, those borrowers may purchase SOFR-indexed replacement caps.

As of January 15, 2021, SOFR-indexed, floating-rate loan borrowers were no longer permitted to purchase initial LIBOR-indexed cap agreements. Instead, only SOFR-indexed cap agreements are permitted.

❖ SBL Hybrid Floating-Rate Loans

Unlike other Multifamily lines of business, Small Balance Loans offer delegated quoting. SOFR-related modifications to the SBL Hybrid loans origination are minor, however, any changes deemed necessary have been tailored to the delegated quote process. Details on the SOFR-indexed SBL Hybrid loan structure have been included below:

SOFR-indexed SBL Hybrids will be indexed to 30-day Average SOFR during the floating-rate period. Freddie Mac will use the NY Fed's published rates on its website for index determination.

It is important to note that the rate reset frequency will remain unchanged and will continue to reset every six months during the floating-rate period. Similarly, interest rate protection will remain unchanged and will continue to have an embedded structure.

If any aspect of the SOFR-indexed SBL Hybrid loan structure is not mentioned in this playbook, no change is currently planned relative to the existing loan structure for SBL Hybrids with a floating-rate period indexed to LIBOR.

12.3 Selling and delivering MF SOFR Floating-Rate Loans

❖ What's changing?

Loan Documents have been revised to reflect the SOFR index.

❖ What's not changing?

The Delivery process will remain unchanged. SOFR will impact the index language in the legal documents and the Purchase team will review to ensure the appropriate index is referenced as agreed to in the Commitment.

12.4 MF floating-rate securities indexed to SOFR

As part of Freddie Mac's broader LIBOR transition efforts, floating-rate K-Deals now include at least one bond class with a coupon indexed to SOFR. The SOFR-indexed bonds are collateralized by loans indexed to either LIBOR or SOFR.

❖ KF SOFR bonds with LIBOR-indexed collateral ("LIBOR-SOFR Bonds")

Freddie Mac Multifamily priced its first floating-rate K-Deal (KF73) with bonds indexed to SOFR and collateralized by LIBOR-indexed loans in December 2019. The intent was to provide support to the SOFR bond market ahead of a SOFR loan offering, create liquidity, and provide proof of concept, thus easing the ultimate transition to SOFR. KF73 provided such proof of concept.

The classes of securities issued are similar to prior LIBOR floating-rate K-Deals with a couple of changes. First, Class A certificates are split into two pro-rata classes of securities:

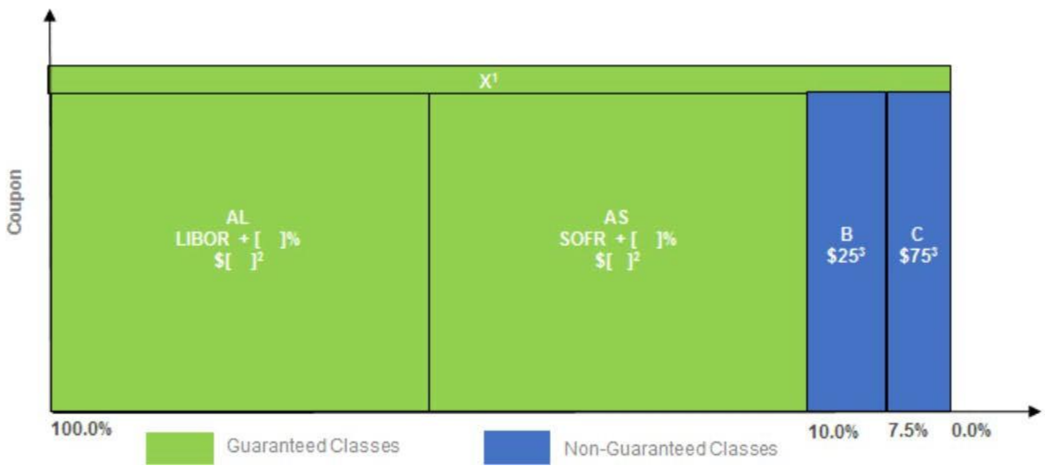
- LIBOR-indexed Class AL
- SOFR-indexed Class AS

Second, Class X Interest calculation has also been updated. Class X (formerly split into Class XI and Class XP) certificate holders receive interest-only payments indexed to LIBOR. Solely for the purpose of determining the interest amount payable to the Class X certificate holders, Class AS is calculated as a LIBOR-indexed bond (not a SOFR-indexed bond).

The Class X Certificates:
1.) Receive interest-only payments indexed to LIBOR and notional to Classes AL, AS, B, and C
2.) are entitled to Static Prepayment Premiums

Class AL is paid pro rata with Class AS. The Class AL and AS Principal Balances are sized based on investor demand.

Figure 12-1: LIBOR-SOFR bond structure[5]



[5] For illustrative purposes only. Class sizes do not reflect actual bond offering.

❖ **Basis risk guarantee**

Should SOFR exceed LIBOR, an additional Freddie Mac guarantee covers any basis mismatch between the SOFR-indexed bonds and the LIBOR-indexed loans:

- Freddie Mac is providing a Basis Risk Guarantee that is in addition to the standard K- Deal Credit Guarantee
- The Credit Guarantee continues to cover credit losses while the Basis Risk Guarantee covers any cash flow shortfalls to the LIBOR-SOFR bonds due to the mismatch between amounts collected on the LIBOR-indexed loans and amounts due on the SOFR-indexed bonds
- Figure 12-2 illustrates what happens in the event SOFR is greater than LIBOR. LIBOR is assumed to be 2.00%, and SOFR is assumed to be 2.05%. In this example, there is not enough interest on the LIBOR loans to pay the SOFR bond coupon creating an interest shortfall. The 2.00% LIBOR loan interest is passed through to certificate holders, and Freddie Mac provides a Basis Risk Guarantee Cap Payment to cover the shortfall of 0.05%

Figure 12-2: Payment Example 1: SOFR is greater than LIBOR

- Interest income received by the Trust from the underlying LIBOR-indexed loans (assumed to be 2.00% for illustrative purposes)
- Interest due to Class AS certificate holders calculated using monthly SOFR (assumed to be 2.05% for illustrative purposes)
- Freddie Mac provides a Guarantee Cap Payment to the Trust to cover the interest shortfall caused by the mismatch between LIBOR loan inflows and SOFR bond outflows due to Class AS certificate holders (0.05%)

Figure 12-3 illustrates the case where LIBOR is greater than SOFR creating an interest excess. LIBOR is assumed to be 2.05%, and SOFR is assumed to be 2.00%. 2.00% of the 2.05% LIBOR loan interest is passed through to certificate holders, and Freddie Mac receives the 0.05% interest excess in the form of a Basis Risk Guarantee Fee.

Figure 12-3: Payment Example 2: LIBOR is greater than SOFR

- Interest income received by the Trust from the underlying LIBOR-indexed loans (assumed to be 2.05% for illustrative purposes)
- Interest due to Class AS certificate holders calculated using monthly SOFR (assumed to be 2.00% for illustrative purposes)
- Freddie Mac receives a Basis Risk Guarantee Fee equal to the interest surplus caused by the mismatch between LIBOR loan inflows and SOFR bond outflows due to Class AS certificate holders (0.05%)

. See Section 12.7 for details on how the LIBOR indexed loans and bonds will convert at LIBOR cessation.

❖ LIBOR-SOFR bond index

The NY Fed publishes 30-, 90- and 180-day SOFR averages on their website along with index values for use in calculating the SOFR average of alternative day counts. Interest due to LIBOR-SOFR Bond classes will be calculated "in advance" of interest being due.

K-F73 through K-F76

Freddie Mac calculates the SOFR rate based on a calendar month compound average using the NY Fed's published index. Said differently, Freddie Mac built a SOFR calculator based on the calculation methodology published by the NY Fed/ARRC on November 4, 2019. Freddie Mac discloses the calculated rates on its website (See "Vendor Readiness" section below for instructions).

K-F77 through K-F94

The applicable SOFR rate is 30-day Average SOFR, which is published by the NY Fed. The 30-Day Average SOFR rate that is available as of 3:00 p.m. ET should be used for calculations.

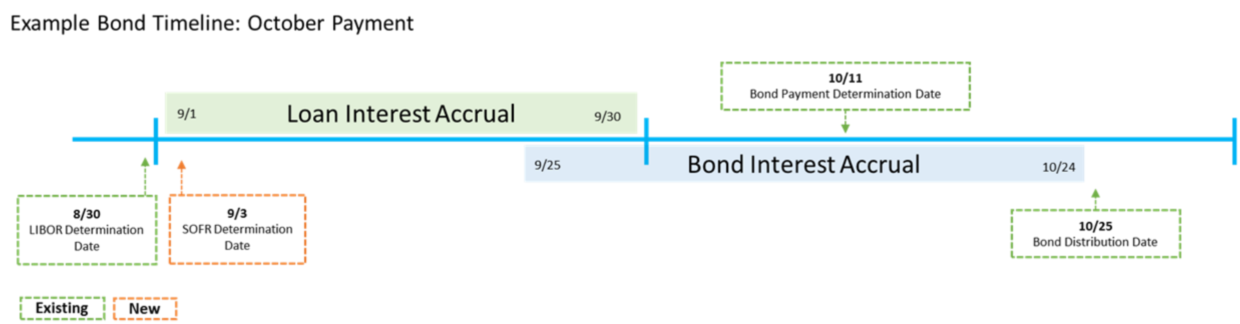
❖ **LIBOR-SOFR bond index determination**

K-F73 through K-F76

The LIBOR-SOFR bond has a SOFR Determination Date on the first business day of the Loan Interest Accrual Period. LIBOR-indexed bonds and LIBOR-indexed loans have a LIBOR Determination Date on the last business day of the month prior to the Loan Interest Accrual Period.

As always, bond payments are made on the 25th day of the calendar month (or the succeeding business day) in which the Loan Payment Date occurs. Figure 12-4 illustrates the loan interest accrual and the bond interest accrual timelines.

Figure 12-4: LIBOR-SOFR loan and bond interest accrual timelines (K-F73 through K-F76)



The current LIBOR-indexed bonds have a LIBOR Determination Date the business day prior to the Loan Interest Accrual Period. Since SOFR is published one business day after its effective date, SOFR-indexed bonds have a SOFR Determination Date on the first business day of the Loan Interest Accrual Period.

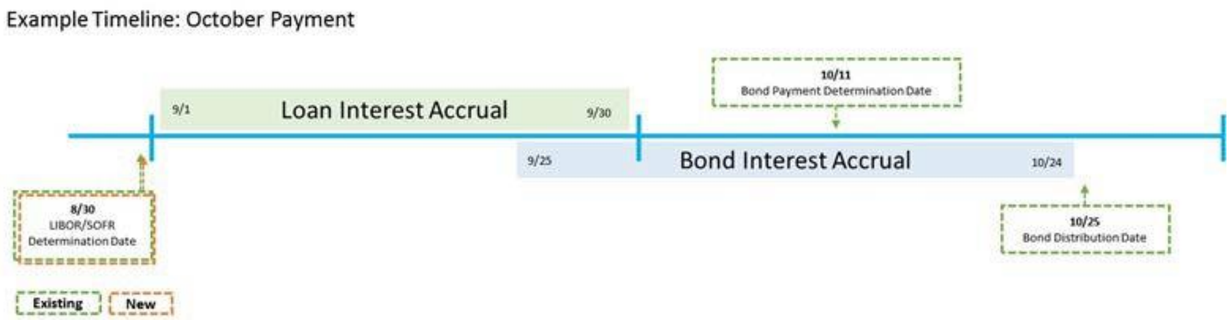
As with LIBOR-indexed bonds, the SOFR index applicable to the LIBOR-SOFR bonds in K-F73 through K-F94 cannot be less than zero.

K-F77 through K-F94

Similar to LIBOR, the SOFR Determination Date is the business day prior to the Loan Interest Accrual Period.

As always, bond payments are made on the 25th day of the calendar month (or the succeeding business day) in which the Loan Payment Date occurs. Figure 12-5 illustrates the loan interest accrual and the bond interest accrual timelines.

Figure 12-5: LIBOR-SOFR loan and bond interest accrual timelines (K-F77 through K-F94)



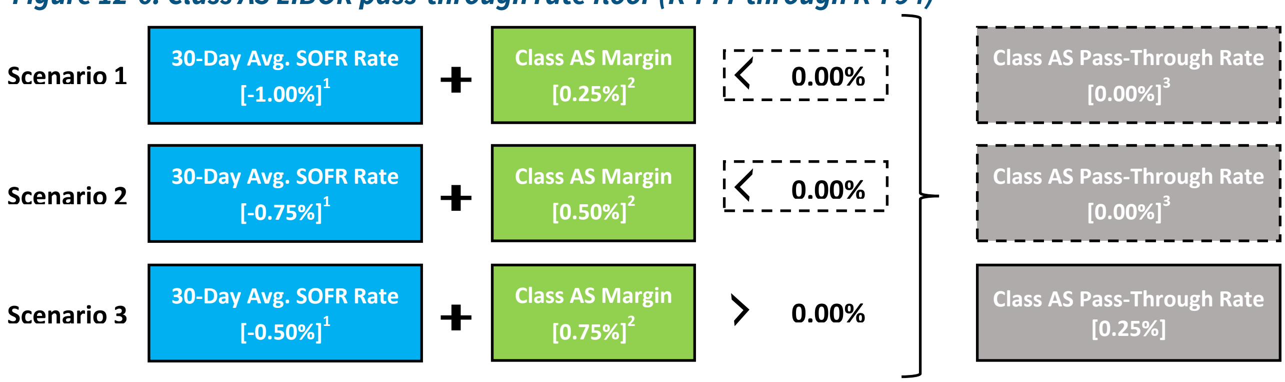
The current LIBOR-indexed bonds have a LIBOR Determination Date the business day prior to the Loan Interest Accrual Period. The SOFR-indexed bonds have a SOFR Determination Date that is also the business day prior to the Loan Interest Accrual Period.

In Figure 12-6, the following assumptions are made for illustrative purposes:

- 30-Day Average SOFR is -1.00%, -0.75% and -0.50%, respectively
- Class AS Margin is 0.25%, 0.50% and 0.75%, respectively

Since the LIBOR-SOFR Bond in K-F77 through K-F94 cannot have a pass-through rate less than zero, the Class AS Pass-Through Rates in Scenarios 1 and 2 are floored at 0.00%. LIBOR-SOFR bonds in K-F77 through K-F94 will in no event have a pass-through rate less than zero.

Figure 12-6: Class AS LIBOR pass-through rate floor (K-F77 through K-F94)



❖ KF SOFR bonds with SOFR-indexed collateral ("SOFR-SOFR Bonds")

Freddie Mac Multifamily began offering SOFR-indexed loans on September 1, 2020 and stopped purchasing LIBOR-indexed loans after December 31, 2020. K-F95 was the first floating-rate K-Deal with bonds indexed to SOFR and collateralized by SOFR-indexed loans.

The current bond structure of the securities issued is similar to existing LIBOR floating-rate K-Deals with the principal variance being that the SOFR-SOFR Bonds (Classes AS, BS, CS, and XS) and their SOFR loan collateral is indexed to the 30-day Average SOFR rate.

Freddie Mac Multifamily may or may not offer LIBOR bonds (Classes AL, BL, CL, and XL) collateralized by LIBOR-indexed loans in the same KF transaction in which SOFR-SOFR bonds are offered. If LIBOR bonds are offered, underlying mortgage loans are group directed such that:

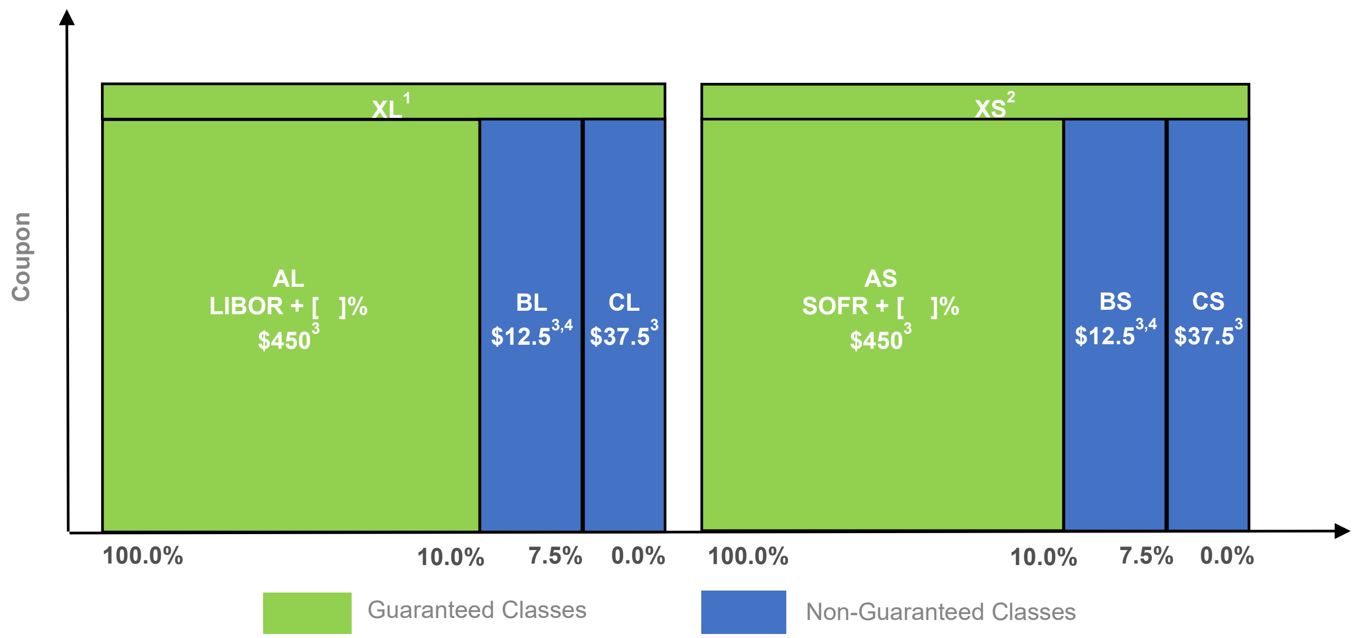
- LIBOR bonds are collateralized exclusively by LIBOR-indexed loans

- SOFR-SOFR bonds are collateralized exclusively by SOFR-indexed loans

Figure 12-7 demonstrates the following characteristics of SOFR-SOFR bond classes:

- The Class XL Certificates 1) receive interest-only payments indexed to LIBOR and notional to Classes AL, BL, and CL, and 2) are entitled to Static Prepayment Premiums
- The Class XS Certificates 1) receive interest-only payments indexed to SOFR and notional to Classes AS, BS, and CS, and 2) are entitled to Static Prepayment Premiums
- MF may not offer Class BL or BS Classes. If Class BL and BS are not offered, Classes AL and AS may extend to the 7.5% credit enhancement level

Figure 12-7: SOFR-SOFR bond structure[6]



❖ SOFR-SOFR bond index

Interest due to SOFR-SOFR bond classes will be calculated “in advance” of interest being due. The applicable SOFR rate is 30-day Average SOFR, which is published by the NY Fed. The 30-Day Average SOFR rate that is available as of 3:00 p.m. ET should be used for calculations.

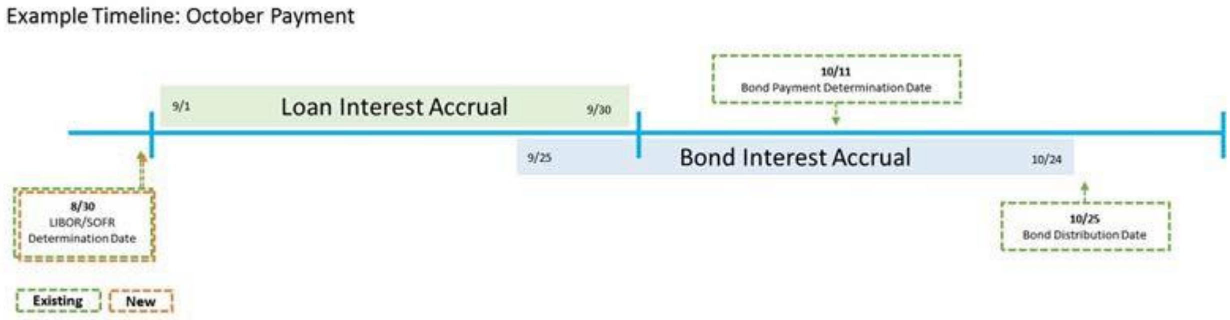
❖ SOFR-SOFR bond index determination

Similar to LIBOR bonds, the SOFR Determination Date is the business day prior to the loan interest accrual period.

As always, bond payments are made on the 25th day of the calendar month (or the succeeding business day) in which the Loan Payment Date occurs. Figure 12-8 illustrates the loan interest accrual and the bond interest accrualtimelines.

[6] For illustrative purposes only. Class sizes to not reflect actual bond offerings.

Figure 12-8: SOFR-SOFR loan and bond interest accrual timeline

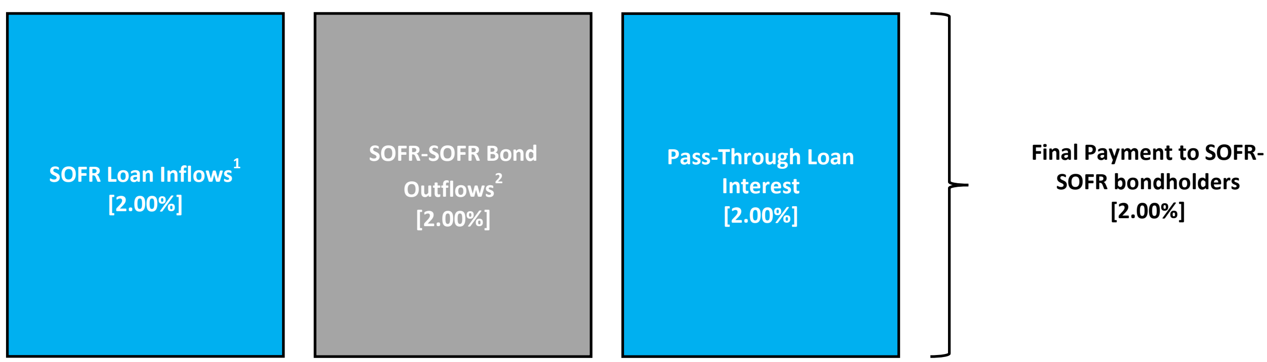


Current LIBOR-indexed bonds have a LIBOR Determination Date the business day prior to the Loan Interest Accrual Period. SOFR-SOFR bonds have a SOFR Determination Date that is also the business day prior to the Loan Interest Accrual Period.

Similar to LIBOR bonds, the SOFR index applicable to SOFR-SOFR bonds cannot be less than zero. The following assumptions are made in Figure 12-9 for illustrative purposes:

- Interest income received by the Trust from underlying SOFR based loans is 2.00%
- Interest due to SOFR-SOFR (class AS, BS, CS, or XS) bondholders calculated is 2.00%

Figure 12-9: SOFR pass-through rate floor (K-F95+)



❖ Vendor readiness

The NY Fed publishes 30-day Average SOFR on its website on or about 2:30 p.m. ET. The 30-Day Average SOFR rate that is available as of 3:00 p.m. ET should be used for calculations. Freddie Mac discloses the calculated rate on its website via the monthly SOFR rate disclosure. The instructions to retrieve the calculated rate from Freddie Mac's website are below.

1. Access Freddie Mac's datafiles via its website
2. In the top right corner, click "Login" to get started. An account must be created prior to accessing the calculated rate
3. After logging in, click the blue dot in the top right corner. From the drop-down menu, select "Data Files and Reports"
4. Using the menu on the left side of the page, select "Reset" from the options below "Multi-Class"
5. Select "Report" at the top of the page (in blue) and then select "Off-Platform Deal Indices"

6. Click "Year" and select "2023"
7. Click “Month” and select the appropriate month
8. Select the desired file name and save it as a text file
9. For example, for January 2020 the title of the data can be found on the far right of the file
10. Copy all of the text in the string. Paste the test string into an Excel as "Text." This will allow the contents to be sorted into appropriate columns, which will make the file functional

❖ PC securities

On account of its pass-through nature, SOFR-indexed Multi PCs will only be issued if the underlying loan for a PC is SOFR-indexed. Freddie Mac cannot issue a SOFR-indexed Multi PC with an underlying loan indexed to LIBOR. Since a Multi PC is a pass-through, the SOFR index on a PC will be the same as the SOFR index on the underlying loan; index determination will be in sync with the index determination on the underlying loan. SOFR-indexed Multi PCs will have the same accrual period and method as the underlying SOFR-indexed loan with a 55-day delay convention.

Freddie Mac has only issued floating-rate Multi PCs indexed to LIBOR in the past. The transition of such LIBOR-indexed Multi PCs will be addressed to be consistent with other legacy MF LIBOR loan and bond approaches.

12.5 Servicing MF SOFR Floating-Rate Loans

This section focuses on Floating-Rate Loans that have been tied to a SOFR index since origination and will not require conversion upon LIBOR cessation.

❖ Reporting and remitting

Generally, servicing of a SOFR-indexed floating-rate loan is not expected to be materially different from the servicing of a LIBOR-indexed loan. In particular, Freddie Mac does not anticipate there will be any impact to the following:

- Floating-rate calculation
- Servicer reporting and remittance deadlines
- Systems and processes used to report to Freddie Mac
- Data reported to Freddie Mac
- Interest day basis and accrual periods
- Custodial accounts tied to underlying loans

A SOFR-indexed loan does present some fundamental differences compared to a LIBOR- indexed loan, including in the following areas:

- Published source of the index value
- Index value availability timing
- Index determination methodology

❖ Master servicing

The servicing impact for SOFR loans is becoming operationally prepared to calculate a SOFR- based interest rate. This occurs at the primary servicing level. Master servicers will need to become familiar with SOFR index calculation protocols and ensure that their primary servicers are equally capable of processing rate changes under the new SOFR index environment.

❖ Transfer of servicing

Similar to any servicing transfer, it is the responsibility of the transferor to ensure the transferee, as the receiving servicer, is aware and able to support SOFR loans without interruption. Particular attention should be taken to confirm transferees know the published source of indices, timing of availability, and calculations.

❖ What actions may servicers take to be ready?

Readiness for SOFR requires an assessment of internal processes and systems prior to implementation. There are a number of industry resources that provide guidance on actions and best practices for the implementation of SOFR, including the following:

- CRE Finance Council ("CREFC") produces updates and guidance associated with SOFR
- The ARRC published "Practical Implementation Checklist for SOFR Adoption" in September 2019

Additionally, the following considerations apply to servicers:

- Servicers should anticipate that more than one SOFR index may be offered (e.g., 30- day, 90-day, calendar month, etc.)
- Servicers should understand how the applicable index is determined and calculated and know the officially published sources for the index
- Servicers will need to determine if their systems are operationally able to process the monthly recalculation of the SOFR index
- Servicers will need to determine if this recalculation can be done automatically or manually to correctly have the entire accrual period calculated using the new floating-rate

12.6 Discontinuation of originating and selling MF LIBOR Floating-Rate Loans

❖ Timeline leading up to the cessation of purchasing LIBOR Floating-Rate Loans

Below are the milestones that have passed relating to our transition of our new products from LIBOR to SOFR.

- September 1, 2020: Freddie Mac ceased issuing quotes for LIBOR-indexed loans; all new floating-rate quotes are for SOFR-indexed loans. For SBL, Optigo® lenders can no longer issue applications for SBL hybrid loans with a floating-rate period indexed to LIBOR; all new hybrid loan applications issued are SOFR-indexed
- November 9, 2020: The last day for submission of underwriting package for LIBOR-indexed floating-rate and hybrid loans to Freddie Mac
- December 11, 2020: Last day for submission of final delivery package for LIBOR-indexed floating-rate and hybrid loans to Freddie Mac
- December 31, 2020: Last day for Freddie Mac to purchase LIBOR-indexed floating-rate and hybrid loans, regardless of the loan application or the date of the note

❖ What's not changing?

The Delivery process will remain unchanged. The Purchase team will review to ensure the appropriate index is referenced as agreed to in the Commitment. As loans are designated for securitization, the Loan Sales team will package the applicable mortgage and servicing files and forward them to the Trustees and Master Servicers.

12.7 Multifamily Legacy LIBOR Transition

- **Freddie Mac Multifamily securities will all transition to a spread-adjusted 30-Day Average SOFR rate with some nuances to consider:**

1. Legacy Floating-Rate K-Deals through KF72, Floating-Rate Multi PCs® and Q008 – These deals only include certificates and underlying loans indexed to 1MO LIBOR. All certificates and bonds will convert to the 30-day Average SOFR plus the 1MO Adjustment Factor upon LIBOR cessation. Please note that the loans collateralizing Q008 are Hybrid ARMs that have all converted to floating-rate and are currently indexed to 1MO LIBOR.
2. KSKY and Floating-Rate KL, KJ, KS (excluding KS09 and KS19) and SASB K-Deals – These esoteric deals may contain both fixed and floating-rate certificates. The floating-rate certificates and their underlying loan collateral are indexed to 1MO LIBOR and will convert to 30-day Average SOFR plus the 1MO Adjustment Factor upon LIBOR cessation. Please note that KSKY is collateralized by taxable and tax-exempt municipal housing bonds issued by the New York State Housing Finance Agency ("NYSFHA"). Pursuant to the underlying municipal housing bond documents, Bank of New York Mellon, in its role as Bond Trustee, selects the fallback rate upon LIBOR cessation with the consent of Freddie Mac. No basis mismatch is expected to exist between the underlying municipal housing bonds and the KSKY certificates.
3. KF73-KF76 – The Class AS certificates are indexed to the calendar month compounded average of published SOFR rates calculated and published by Freddie Mac and will continue to be for the life of each deal. The Class AL and subordinate certificates and all of the underlying loans are indexed to 1MO LIBOR and will convert to 30-Day Average SOFR plus the 1MO Adjustment Factor similar to the legacy LIBOR deals discussed above. The Basis Risk Guarantee for these Class AS certificates will apply for the life of each deal. Any excess interest will flow to the Basis Risk Guarantee Fee paid to Freddie Mac.
4. KF77-KF94 and KS14 - The Class AS certificates are indexed to 30-day Average SOFR. The Class AL and subordinate certificates and all of the underlying loans are indexed to 1MO LIBOR and will convert to the 30-day Average SOFR plus the 1MO Adjustment Factor similar to the legacy LIBOR deals discussed above. The Basis Risk Guarantee for the Class AS certificates will apply for the life of each deal. Any excess interest resulting from the Adjustment Factor that will be added to the fallback index on the loans will flow to the Basis Risk Guarantee Fee paid to Freddie Mac.
5. KF95-KF98 and KF100 - The Class AS certificates and their underlying loans are indexed to 30-day Average SOFR. The Class AL certificates and their underlying loans are indexed to 1MO LIBOR and will convert to 30-day Average SOFR plus the 1MO Adjustment Factor similar to the legacy LIBOR deals discussed above. The subordinate certificates are WAC capped meaning they interest paid to investors will not exceed the weighted-average coupon ("WAC") of the underlying loans.
6. Legacy Small Balance FRESB Deals through SB82 (excluding SB3) – These transactions contain Hybrid certificates at different tenors (5-, 7-, and 10-yr) that pay a fixed-rate until the last underlying Hybrid ARM loan in each related Hybrid ARM loan group converts to a floating-rate

indexed to 6MO LIBOR, at which point, the related, guaranteed Hybrid bonds will convert to 1MO LIBOR. All guaranteed Hybrid bonds and Hybrid ARM loans that have converted to either 1MO or 6MO LIBOR will transition to 30-day Average SOFR plus either the 1MO or 6MO Adjustment Factor as applicable upon LIBOR cessation. Otherwise, the guaranteed Hybrid bonds and Hybrid ARM loans still paying a fixed-rate as of the LIBOR Cessation Date will convert to 30-day Average SOFR plus either the 1MO or 6MO Adjustment Factor as applicable on their respective conversion dates. The Hybrid bonds will continue to be WAC capped. Please note that the FRESB subordinate Class B certificates will receive a fixed-rate from each loan group until the related Hybrid certificates convert to floating-rate indexed to 1MO LIBOR, at which point the rate contributed to the Class B certificates from the related Hybrid ARM loan groups will convert to a floating-rate indexed to 6MO LIBOR. Upon LIBOR cessation, the rate contributed to the Class B certificates from the related Hybrid ARM loan groups will be indexed to 30-day Average SOFR plus the 6MO Adjustment Factor. Any excess interest will flow to the IO bonds.

7. SB83-SB92 – These transactions **do not include floating-rate certificates indexed to LIBOR**. That said, they do contain Hybrid certificates at different tenors (5-, 7-, and 10-yr) that pay a fixed-rate until the last underlying Hybrid ARM loan in each related Hybrid ARM loan group converts to a floating-rate, which may be indexed to either 6MO LIBOR or 30-day Average SOFR. All Hybrid ARM loans indexed to 6MO LIBOR will convert to 30-day Average SOFR plus the 6MO Adjustment Factor on their respective conversion dates, all of which occur after the LIBOR Cessation Date. All Hybrid ARM loans indexed to 30-day Average SOFR will transition to 30-day Average SOFR on their respective conversion dates. The related guaranteed Hybrid Certificates will convert to a floating-rate indexed to 30-day Average SOFR once the last underlying Hybrid ARM loan in each related Hybrid ARM loan group converts to its respective floating rate and will be WAC capped. Please note that the subordinate Class B certificates will receive a fixed-rate from each loan group until the related Hybrid certificates convert to floating-rate, at which point, the rate contributed to the Class B certificates from the related Hybrid ARM loan groups will convert to a floating-rate indexed to 30-day Average SOFR. Any excess interest will flow to the IO bonds.
8. SB3 - This 3rd-party transaction contains Hybrid certificates at different tenors (3-, 5-, 7-, and 10-yr) that pay a fixed-rate until the last underlying Hybrid ARM loan in each related Hybrid ARM loan group converts to a floating-rate indexed to 12MO LIBOR, at which point the related Hybrid certificates will convert to a floating-rate indexed to 1MO LIBOR and are WAC capped. All existing Hybrid certificates and Hybrid ARM loans that have converted to LIBOR will transition to 30-day Average SOFR plus the applicable 1MO or 12MO Adjustment Factor upon LIBOR cessation. Otherwise, the existing Hybrid certificates and Hybrid ARM loans still paying a fixed-rate as of the LIBOR Cessation Date will convert to 30-day Average SOFR plus the applicable 1MO or 12MO Adjustment Factor on their respective conversion dates. The Hybrid bonds will continue to be WAC capped. Please note that the FRESB subordinate Class B certificates will receive a fixed-rate from each loan group until the related Hybrid certificates convert to floating-rate, at which point, the rate contributed to the Class B certificates from the related Hybrid ARM loan groups will convert to a floating-rate indexed to 6MO LIBOR. Upon LIBOR cessation, the rate contributed to the Class B certificates from the related Hybrid ARM loan groups will be indexed to 30-day Average SOFR plus the 6MO Adjustment Factor.

9. ML01-ML04, KS09 and KW04 – These deals include floating-rate Class A certificates indexed to 1MO LIBOR. The underlying loans are fixed-rate. The certificates will transition to 30-day Average SOFR plus the 1MO Adjustment Factor upon LIBOR cessation. The Basis Risk Guarantee for the floating-rate Class A certificates will apply for the life of each deal.
10. Q003, Q007, Q010, Q011, Q013 – Each class of certificates pays a floating-rate based on the WAC of the related loan group collateralizing each class of certificates. The underlying 3rd-party Hybrid ARM loan collateral in each related loan group converts to a floating-rate indexed to either 12MO LIBOR or 6MO LIBOR. All existing Hybrid ARM loans that have converted to either 12MO LIBOR or 6MO LIBOR will transition to 30-day Average SOFR plus the applicable 12MO Adjustment Factor or 6MO Adjustment Factor upon LIBOR cessation. Otherwise, the existing Hybrid ARM loans still paying a fixed-rate as of the LIBOR Cessation Date will convert to 30-day Average SOFR plus the applicable 12MO Adjustment Factor or 6MO Adjustment Factor on their respective conversion dates. The Hybrid bonds will continue to be based on the WAC of the related loan group.

Figure 12-10: Summary of Freddie Mac Multifamily Securities replacement indices

Deal Name	LIBOR Bond Applicable LIBOR Rate	Replacement Index	SOFR Bond Applicable SOFR Rate
Legacy MF Deals through KF72	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	NA
SASB, KSKY, KL, KJ, and KS (excluding KS09 and KS14)	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	NA
KF73-KF76	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	Calendar month compounded average of published SOFR rates
KF77-KF94, KS14	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	Published 30-day SOFR average
KF95-KF98; KF100	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	Published 30-day SOFR average
Deal Name	**LIBOR Bond Applicable LIBOR Rate**	**Replacement Index**	**SOFR Bond Applicable SOFR Rate**
Legacy Small Balance FRESB Deals through SB82 (excluding SB3)	The guaranteed bond classes are indexed to 1 month LIBOR; Class B bonds are inddexed to 6 month LIBOR; All are WAC capped *Note: The SB45, SB49, SB52, and SB56 certificates are composed of mutliple components	The guaranteed bonds will transition to Published 30-day SOFR average + 1 month Adjustment Factor and remain WAC capped; Class B bonds will transition to Published 30-day SOFR average + 6 month Adjustment Factor *Note: The underlying loans will convert to Published 30-day SOFR average + 6 month Adjustment Factor	NA
SB3	The guaranteed bond classes are indexed to 1 month LIBOR; Class B bonds are inddexed to 6 month LIBOR; All are WAC capped	The guaranteed bonds will transition to Published 30-day SOFR average + 1 month Adjustment Factor and remain WAC capped; Class B bonds will transition to Published 30-day SOFR average + 6 month Adjustment Factor *Note: The underlying loans will convert to Published 30-day SOFR average + 12 month Adjustment Factor	NA
Deal Name	**LIBOR Bond Applicable LIBOR Rate**	**Replacement Index**	**SOFR Bond Applicable SOFR Rate**
ML01-ML04, KS09 and KW04	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	NA
Deal Name	**LIBOR Bond Applicable LIBOR Rate**	**Replacement Index**	**SOFR Bond Applicable SOFR Rate**
Q008	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	NA
Q003,Q007, Q010, Q011, Q013	WAC of underlying loan groups with loans indexed to 6 and/or 12 month LIBOR	The Hybrid Bonds will continue to be based on the WAC of the related loan group. Loans in all loan applicable loan groups will convert to the 30-Day SOFR average + the applicable 6 or 12 month Adjustment Factor	NA
Deal Name	**LIBOR Bond Applicable LIBOR Rate**	**Replacement Index**	**SOFR Bond Applicable SOFR Rate**
WV0005 and WV2001	1 month LIBOR	Published 30-day SOFR average + 1 month Adjustment Factor	NA

13. Appendix: Multifamily Credit Risk Transfer Transactions (Freddie Mac)

13.1 Introduction

The purpose of this chapter is to provide market participants guidance on transitioning LIBOR-based MF CRT, which are known as Multifamily Structured Credit Risk Notes ("Multifamily SCR Notes" or "MSCR Notes"), to SOFR-indexed indices.

Freddie Mac completed its first SOFR-indexed MF CRT issuance, MSCR 2021-MN1, in January 2021. Prior to its first SOFR issuance, Freddie Mac issued three Multifamily SCR Notes, all of which were fixed-rate notes, between 2016 and 2017, so there are no Legacy MF CRT LIBOR securities to transition to a benchmark replacement.

14. Summary of Prior Changes

Section	Summary of changes
June 2020	
1.2 LIBOR transition milestones	▪ Updated the date of the first SOFR-indexed CMO issuance from June 2020 to July 2020
4. Collateralized Mortgage Obligations	▪ Updated the date of the first SOFR-indexed CMO issuance from June 2020 to July 2020 ▪ Changed the "Determination Date" to 2 Business Days (2BD) prior to the beginning of the accrual period ▪ Updated graphics to reflect a Determination Date of 2 BD prior to the beginning of the accrual period for 45-day, 55-day and 75-day delay and Non-Delay Compounded SOFR-indexed securities (per investor deck)
July 2020	
3. Single-Family Credit Risk Transfer transactions	▪ Specified that the Determination Date will be 2 Business Days (2BD) prior to the beginning of the accrual period for CRT securities
5. Fannie Mae Multifamily Adjustable-Rate Mortgages and Mortgage-Backed Securities	▪ Clarified that Fannie Mae is currently designing a new MF SOFR-indexed "capped" ARM ▪ Specified that MF SOFR-indexed product terms will be publicly announced in the third quarter of 2020
7. Fannie Mae Multifamily Credit Risk Transfer transactions	▪ Specified that the Determination Date will be 2 Business Days (2BD) prior to the beginning of the accrual period for CRT securities
August 2020	
1. Overview	▪ Freddie Mac Multifamily – Updated LIBOR product dates
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Updated language to reflect that Fannie Mae is now accepting delivery of SOFR-indexed ARMs
4. Collateralized Mortgage Obligations	▪ Updated language to reflect that Fannie Mae and Freddie Mac are now issuing SOFR-indexed CMOs
6. Freddie Mac Multifamily Floating-Rate Loans and Securities	▪ Updated SOFR-indexed loan offering details, including loan structure, interest rate protection, and origination and underwriting process changes
September 2020	

1. Overview	▪ Updated the date to offer SF ARMs and securities products for Freddie Mac from Nov. 16, 2020 to Nov. 9, 2020 ▪ Updated Freddie Mac cessation of SF LIBOR ARMs and securities to include the last LIBOR ARM settlement on Dec. 31, 2020 and the last LIBOR ARM Guarantor PC issue date on Dec. 1, 2020
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Updated the announcement regarding the last MBS/Guarantor PC issue date to indicate that it would be for LIBOR ARMs with a latest settlement date of Dec. 31, 2020 ▪ Changed date from Nov. 16, 2020 to Nov. 9, 2020 for Loan Selling Advisor system updates and made a minor word change (i.e., “similar to” to “like”) ▪ Inserted language and dates regarding Loan Product Advisor’s availability ▪ Deleted “Fannie Mae only” and “Freddie Mac only” language under actions to consider in GSE systems for preparation for SF SOFR ARMs section ▪ Made a minor word change (i.e., “accept” to “purchase”) in Cessation of Purchase of SF LIBOR ARMs section
4. Collateralized Mortgage Obligations	▪ Updated to indicate that the cessation will not apply to RCR/MACR exchange or resecuritizations of previously issued LIBOR-indexed certificates (whether CMO or ARM certificates) as long as such resecuritizations do not increase the exposure of LIBOR-indexed certificates
5. Fannie Mae Multifamily Adjustable-Rate Mortgages and Mortgage-Backed Securities	▪ Updated to indicate that Fannie Mae has developed the Structured ARM, 7/6 ARM, Hybrid ARM and a new MF capped ARM product and released them on Sep. 1, 2020 ▪ Updated to indicate that Fannie Mae has the capability to purchase SOFR-indexed ARMs beginning Sep. 1, 2020 ▪ Specified that product-specific features were made available on Fannie Mae’s Multifamily website as well as during external training sessions ▪ Noted that at this time, at least one cap provider is prepared to issue SOFR-indexed interest rate caps ▪ Removed margin resulting from change in index from key update in originating and underwriting MF SOFR-indexed ARMs ▪ Specified that the Multifamily Guide has been updated ▪ Updated that Fannie Mae systems reflect options and dropdowns for SOFR-indexed ARMs ▪ Specified that servicers are required to manage ARM payments throughout the life of newly originated SOFR-indexed loans ▪ Specified that servicing systems require updates to manage calculations and reconciliation for borrower payments using the new rate
6. Freddie Mac Multifamily Floating-Rate Loans and Securities	▪ Updated Interest rate protection section with details on availability and interest rate caps. Also updated Small Balance Loan Hybrid Floating-Rate Loans section ▪ Deleted details regarding overlap period in the Conventional, Seniors Housing, TAH section. Updated link for “Refinance Test” ▪ Updated to indicate that as of Sep. 1, 2020, Freddie Mac ceased issuing quotes for LIBOR-indexed loans ▪ Made grammatical and tense changes to the section 6

October 2020	
1.2 LIBOR transition timelines	▪ Added a footnote to clarify that the GSEs will no longer accept LIBOR-indexed pool deliveries after December 31, 2020. However, the GSEs may continue to issue LIBOR-indexed MBS products after December 31, 2020 using cash loans with application dates of September 30, 2020 or earlier in its portfolio ▪ Revised footnote 3 to reflect GSE's continued issuance of resecuritizations of previously issued LIBOR-indexed certificates and include details of total unpaid balance of LIBOR-indexed certificates.
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Updated language to clarify that December 1, 2020 is the last issue date for LIBOR-indexed ARM MBS/Guarantor PCs to be delivered to the GSEs with a latest LIBOR-indexed ARM settlement date of December 31, 2020 ▪ Updated language to indicate that the GSEs have stopped accepting LIBOR ARMs with Application Received Dates after September 30, 2020 ▪ Updated the transition timeline graph to clarify the milestone description for December 31, 2020 ▪ Removed language calling out specific plan that the GSEs will stop purchasing after December 31, 2020
4. Collateralized Mortgage Obligations	▪ Updated language to indicate that Freddie Mac and Fannie Mae have ceased offering new LIBOR-indexed CMOs for issuance ▪ Updated the graphs in the administration section to indicate that LIBOR is no longer the current state and Compounded SOFR is no longer a hypothetical implementation
4.7 Approach for transitioning legacy CMOs	▪ Updated language to reflect next steps for legacy LIBOR-indexed CMOs
5. Fannie Mae Multifamily Adjustable-Rate Mortgages and Mortgage-Backed Securities	▪ Updated language to reflect that Fannie Mae now has new SOFR-indexed product offerings available
6. Freddie Mac MF Credit Risk Transfer Transactions	▪ Removed "In the event that Freddie Mac believes it is necessary to issue new SCR Notes again prior to market readiness and interest in MF CRT Floating-Rate securities based on an ARR, Freddie Mac expects the SCR Notes will be a LIBOR Floating-Rate CRT issuance and will be structured in alignment with the STACR program."
November 2020	
1. Overview	▪ Updated dates and details around SOFR and LIBOR product offerings for Fannie Mae MF ARMs and MBS ▪ Removed references to specific ARRs for existing contracts from the overview section and added them to the product-specific sections
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Updated the transition timeline graph to clarify delivery milestones in December 2020 and updated the transition of existing LIBOR ARM loans to TBD

3. Single-Family Credit Risk Transfer transactions	▪ Updated language to indicate Fannie will have the capability to issue SOFR-indexed CRT deals in Q1 2021 ▪ Updated outstanding SF CRT notes that are indexed to one-month LIBOR as of September 30, 2020 at Fannie Mae ($25.6 billion) and at Freddie Mac ($27.5 billion) ▪ Updated the language and SF CRT timeline to indicate the issuance of Freddie Mac's SOFR-indexed CRT
4. Collateralized Mortgage Obligations	▪ Added language on SOFR-indexed CMOs, transitioning from 30-day Average SOFR to Term SOFR, when Term SOFR becomes available
5. Fannie Mae Multifamily Adjustable-Rate Mortgages and Mortgage-Backed Securities	▪ Updated language to indicate that Fannie Mae has stopped accepting LIBOR loans with commitment dates after September 30, 2020 ▪ Updated language to indicate that Fannie Mae has stopped issuing LIBOR-indexed ARM pools with MBS pool issue dates after December 1, 2020 ▪ Updated transition milestone timeline to indicate that timeline for the legacy conversion to an ARR at MF's discretion is TBD ▪ Updated language to clarify that Fannie Mae will purchase both LIBOR- and SOFR-indexed ARMs through the end of 2020
6. Freddie Mac Multifamily Floating-Rate Loans and Securities	▪ Updated language to include SOFR-indexed bonds ▪ Added details on K-F-73, K-F76, K-F77, K-F94, SOFR-SOFR bonds ▪ Updated verbiage and added explanation of remaining key dates
7. Fannie Mae Multifamily Credit Risk Transfer transactions	▪ Updated the "as of date" for the $0.9 billion outstanding CRT notes indexed to one-month LIBOR from June 30, 2020 to September 30, 2020 (exposure remained the same since June)
March 2021	
1. Overview	▪ Incorporated updates related to recent industry announcements regarding LIBOR cessation
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Updated transition timelines to reflect latest market announcements and consultations ▪ Updated and removed language to reflect the GSEs no longer purchasing SF LIBOR-indexed ARMs
3. Single-Family Credit Risk Transfer	▪ Updated figures to reflect the GSEs' current outstanding legacy SF CRT notes ▪ Updated language around the discontinuation of LIBOR-indexed SF CRT deals at the end of Q4 2020 and current structure of SOFR-indexed CRT transactions
5. Fannie Mae Multifamily Adjustable-Rate Mortgages and Mortgage-Backed Securities	▪ Updated and removed language to reflect Fannie Mae no longer purchasing MF LIBOR-indexed ARMs ▪ Updated language around legacy LIBOR-indexed ARM product conversion ▪ Included new actions to consider for selling and delivering MF SOFR-indexed ARMs

6. Freddie Mac Multifamily Floating-Rate Loans & Securities	▪ Updated language to address termination of LIBOR Cap option; removed requirements for purchasing a LIBOR-indexed Cap ▪ Modified tenses to reflect what has been done and what is still to be done ▪ Updated language to indicate that the SOFR-SOFR bond structure that started in K-F95 is the current structure in use ▪ Removed various subsections that contained outdated information ▪ Removed pipeline management, communications, and borrower outreach best practices from section 6.6
7. Fannie Mae Multifamily Credit Risk Transfer	▪ Updated figures to reflect Fannie Mae's current outstanding legacy MF CRT notes
8. Freddie Mac MF CRT Transactions	▪ Updated content to reflect completion of Freddie Mac's first SOFR-indexed MF CRT issuance ▪ Removed "Timeline and milestones" section ▪ Updated Legacy CRT transition section to reflect the plan to not issue any LIBOR based CRT deals in the future
October 2021	
All Sections	▪ Updated formatting throughout document
1. Overview	▪ Updated the cessation date of key LIBOR tenors; added the ARRC's endorsement of the CME Term SOFR Rates to the list of SOFR milestones with a link to the original announcement
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Figure 2-1: Added a milestone for the ARRC's selection of Refinitiv as the vendor for benchmark replacements and updated language in timeline ▪ 2.4 Preparation for SF SOFR ARMs: Updated Freddie Mac's Loan Product Advisor timelines; updated language around 30-day Average SOFR Hybrid ARM Index codes and the SF MBS Disclosures Guide; removed Freddie Mac's guidance to sellers on IFI J23 for non-SOFR-indexed ARMs ▪ 2.5 Transition Existing SF LIBOR ARMs: Added a statement for servicers about non-standard notes
3. Single-Family Credit Risk Transfer	▪ 3.2 SOFR-indexed CRT new issuance: Updated language to reflect the availability of Term SOFR, the issuance of SOFR-indexed CRT transactions, and added language about the determination of the administrative feasibility of Term SOFR ▪ Figure 3-1: Updated timeline to reflect Fannie Mae's operational readiness for SOFR-indexed SF CRT issuance ▪ 3.3 Timeline and milestones: updates to reflect availability of Term SOFR ▪ 3.4 Legacy SF CRT transition: Updated estimates of outstanding SF CRT notes indexed to one-month LIBOR
4. Collateralized Mortgage Obligations	▪ 4.2 Overview: Updated information related to Term SOFR; added language about the determination of the administrative feasibility of Term SOFR ▪ 4.7 Approach for transition legacy CMOs: Added language about the determination of the administrative feasibility of Term SOFR

5. Fannie Mae Multifamily Adjustable-Rate Mortgages and Mortgage-Backed Securities	▪ Figure 5-1: Updated the conversion date for LIBOR-indexed MF ARMs ▪ 5.4 Preparation for MF SOFR-indexed ARMs: Updated index publication source language to show there have not been any recent updates
6. Freddie Mac Multifamily Floating-Rate Loans and Securities	▪ 6.2 Planned product modifications: Added language about the use of Term SOFR and the determination of its administrative feasibility; added a statement about the availability of LIBOR-indexed interest rate caps ▪ Figure 6-1: Moved clarification from figure to footnotes ▪ 6.4 MF Floating-Rate securities indexed to SOFR: Removed an outdated statement about the conversion of LIBOR-indexed loans and bonds ▪ Figure 6-7: Moved clarification from figure to footnotes
7. Fannie Mae Multifamily Credit Risk Transfer	▪ 7-2 SOFR-indexed CRT new issuance: Provided updates related to Term SOFR; added language about the determination of the administrative feasibility of Term SOFR ▪ Figure 7-1: Updated timeline to reflect Fannie Mae's operational readiness for SOFR-indexed MF CRT issuance ▪ 7-3 Legacy CRT transition: updated the "as of" date for estimated outstanding CRT notes indexed to one-month LIBOR
June 2022	
All Sections	▪ Updated formatting, diction, and abbreviations throughout for consistency ▪ Updated language to reflect the Adjustable Interest Rate (LIBOR) Act ▪ Updated language across all products to reflect the GSEs' plan to make an official announcement on their final transition strategies
1. Overview	▪ Updated titles and links to key resources ▪ Updated footnotes to reflect the cessation of resecuritizing existing LIBOR-indexed Single-Family and Multifamily CMOs and MBS/PCs into new-issuance LIBOR-indexed bonds
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Removed language about final LIBOR-indexed SF ARM settlement date ▪ Added milestones for the Board's proposed and final rulemaking and the rulemaking to the SF timeline ▪ Updated timeline to include year 2022 and tentative plans for a legacy transition announcement ▪ Updated margin features for Fannie Mae SF SOFR ARMs
3. Single-Family Credit Risk Transfers	▪ Updated to reflect Fannie Mae beginning to issue SF SOFR-indexed CRTs ▪ Updated timeline to include year 2022 and tentative plans for a final legacy transition strategy announcement
4. Collateralized Mortgage Obligations	▪ Updated language to reflect the cessation of resecuritizing existing LIBOR-indexed Single-Family and Multifamily CMOs and MBS/PCs into new-issuance LIBOR-indexed bonds
7. Fannie Mae Multifamily Credit Risk Transfer	▪ Shortened section to emphasize similarities to Section 3, "Single-Family Credit Risk Transfers," and align with the structure of Section 8, "Freddie Mac Multifamily Credit Risk Transfer Transactions"

January 2023	
All Sections	▪ Updated formatting, diction, and abbreviations throughout for consistency ▪ Updated language to reflect implementation of the Adjustable Interest Rate (LIBOR) Act ▪ Updated all sections to add details related to the legacy transition for each product ▪ Prior sections of the playbook focused on new products have been moved to the appendix
1. Overview	▪ Updated titles and links to key resources ▪ Added section defining the LIBOR Act ▪ Added new section on key industry and regulatory milestones ▪ Updated LIBOR transition timeline view
2. Single-Family Adjustable-Rate Mortgages and Securities	▪ Updated introduction to reflect GSE announcement of CME Term SOFR selection ▪ Updated transition milestones timeline ▪ Updated sections 2.3-2.6 to focus on legacy LIBOR-indexed SF products ▪ Updated milestones for the Board’s final rulemaking on the SF timeline
3. MF ARMs and Securities	▪ Combined Fannie Mae and Freddie Mac MF ARMs and Securities information into one section ▪ Added consolidated transition milestone timeline ▪ Updated content throughout to describe the replacement rate determination and other details related to the transition of LIBOR-indexed MF products
4. CRT Transactions	▪ Consolidated Fannie Mae and Freddie Mac details for SF and MF CRTs into one section ▪ Added consolidated transition milestone timeline ▪ Updated content throughout to describe the replacement rate determination and other details related to the transition of LIBOR-indexed CRTs ▪ Clarified plan to keep all SOFR-indexed CRTs indexed to 30-Day Average SOFR
5. CMOs	▪ Moved CMO details to section 5 ▪ Added consolidated transition milestone timeline ▪ Updated content throughout to describe the replacement rate determination and other details related to the transition of LIBOR-indexed CMOs ▪ Clarified plan to keep all SOFR-indexed CMOs indexed to 30-Day Average SOFR
April 2023	
All Sections	▪ Updated Replacement rate determination sections to include finalized replacement index names, Refinitiv Instrument Codes (for SF) and all-in replacement rate calculations
1. Overview	▪ Added Replacement rate determination summary section, providing a consolidated view of benchmark replacement rate information for all products ▪ Adjusted all instances of “static spread” to “fixed tenor spread” to clarify the application of spread adjustments to replacement rates

2. SF ARMs and MBS/PCs	▪ Updated index description and all-in replacement rate calculation information in Section 2.3
3. MF ARMs and Securities	▪ Updated section 3 to reflect naming conventions for Freddie Mac Multifamily Floating Rate Loans ▪ Updated index description and all-in replacement rate calculation information in Section 3.3 ▪ Updated and restructured Section 3.4 to include additional illustrations of the impact of the transition on Fannie Mae Multifamily MBS products
4. CRT Transactions	▪ Updated 4.3 with additional clarity on spread adjustment to align with updates made to the FAQs ▪ Updated index description and all-in replacement rate calculation information in Section 4.3
3. CMOs	▪ Updated index description and all-in replacement rate calculation information in Section 5.3
June 2023	
1. SF ARMs and MBS/PCs	▪ Updated scenarios illustrating the conversion of legacy LIBOR-indexed ARMs in Section 2.4 ▪ Updated servicing index descriptions for SF ARMs/MBS in Section 2.5 ▪ Updated index descriptions for SF/MBS disclosures in Section 2.6 3. Multifamily ARMs, Floating-Rate Loans, and Securities ▪ Updated loan and bond interest accrual timeline illustrations in Section 3.3
2. Multifamily ARMs, Floating-Rate Loans, and Securities	▪ Updated loan and bond interest accrual timeline illustrations in Section 3.3