Freddie Mac is dedicated to improving the U.S. housing finance system. Our single-family credit risk transfer (CRT) program, established in 2013, is designed to reduce credit risk exposure to U.S. taxpayers while providing unique opportunities for the private sector to participate in the U.S. single-family residential credit market.

The goal of this handbook is to familiarize the private sector with Freddie Mac's complementary capital markets and (re)insurance CRT executions, STACR and ACIS. It also provides a close up of Freddie Mac's risk management framework and quarterly U.S. housing statistics.

--Mike Reynolds, Vice President, Single-Family Credit Risk Transfer
## Contents

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Development of an Asset Class
Freddie Mac’s Role in U.S. Housing Finance

Freddie Mac was chartered by the federal government in 1970 to provide liquidity, stability, and affordability to the housing market.

1. **Lenders originate loans.**
   Lenders include banks, credit unions, mortgage brokers and others. They originate loans per the Single-Family Seller/Servicer Guide and sell loans to Freddie Mac.

2. **Freddie Mac overlays its credit risk management framework on purchased loans, ensuring loan quality.**
   Underwriting and Quality Control processes take advantage of proprietary data models and intelligent automation to ensure all loans meet Freddie Mac underwriting standards.

3. **Interest rate risk is passed through to investors by guaranteed Uniform Mortgage Backed Securities (UMBS).**
   Investors include Federal Reserve, money managers, hedge funds, banks, credit unions and more.

4. **Credit investors gain exposure to the U.S. mortgage market through innovative risk-sharing offerings.**
   Investors include money managers, hedge funds, (re)insurers, REITS, insurance companies and other investors.
Sustainable Business Model

Old Model:
- Mortgage Lenders
- Credit Risk
- Interest Rate Risk
- Freddie Mac
- Credit Risk
- Interest Rate Risk
- Freddie Mac
- Credit Risk
- Interest Rate Risk
- Investors

New Model:
- Mortgage Lenders
- Credit Risk
- Interest Rate Risk
- Freddie Mac
- Credit Risk
- Interest Rate Risk
- Freddie Mac
- Credit Risk
- Interest Rate Risk
- Investors

Buy and Hold Credit Risk

Buy and Transfer Credit Risk

Interest Rate Risk Transfer
- Uniform Mortgage Backed Securities (UMBS): pass-through securities representing an undivided interest in a pool of residential mortgages which transfer interest rate risk to investors. Freddie Mac guarantees the timely payment of interest and scheduled principal on all UMBS’ issued by Freddie Mac.

Credit Risk Transfer
- Structured Agency Credit Risk (STACR®) Trust: Freddie Mac’s flagship securitization credit risk sharing vehicle. STACR transactions transfer risk to the private capital markets through the issuance of unsecured and non-guaranteed notes. The bankruptcy-remote trust makes periodic payments of principal and interest on the notes to investors.
- Agency Credit Insurance Structure (ACIS®): Freddie Mac’s flagship insurance-based credit risk sharing vehicle. ACIS transactions are insurance policies issued by or ceded to global (re)insurance companies to cover a portion of credit risk on the STACR or standalone reference pools. Freddie Mac pays monthly premiums to (re)insurers, based on their tranche participation, in exchange for claim coverage on their portion of the reference pool.
Timeline

Development of an Asset Class

2012

Established Market
• Issued first STACR and ACIS transactions (60-80% LTV fixed-rate collateral)

2013

Developed Concept
• Freddie Mac Single-Family CRT team established

2014

Generated Momentum
• Introduced HQ series (>80% LTV)

2015

Expanded Opportunity
• Issued first ACIS 15-year standalone transaction

2016

Created Scale and Depth
• Began transferring actual loss in lieu of fixed severity

2017

Broadened Focus
• Issued first STACR HARP transaction

2018

Strengthened Structure
• Issued first STACR Trust transaction
• Issued Class B-2 notes and extended STACR term to 30 years

2019

Leveraged Success
• Issued first FTR transaction (seasoned B-2 notes)
• Released Clarity data intelligence portal
• Issued first STACR REMIC Trust transaction

2020

Transition to SOFR based transactions

2021

Driving to Exit Conservatorship

Freddie Mac | 2021
Development of an Asset Class

Single-Family CRT by the Numbers

- **8** Years Since First Transaction
- **149** Transactions Issued Across Single-Family CRT Offerings
- **280** Unique Investors in Single-Family CRT Offerings

- **$74 Billion** Risk Transferred to Private Capital on Single-Family Mortgages
- **$2.1 Trillion** Single-Family Mortgages with Credit Risk Protection
- **51%** Credit Enhanced Portion of Single-Family Credit Guarantee Portfolio

**Source:** Freddie Mac, as of Q1 2021.

**Note:** Includes STACR, ACIS, certain senior subordination securitization structures, and certain lender risk-sharing transactions.
CRT Issuance and Portfolio Coverage

CRT Issuance Protected UPB ($Billions)

Mortgage Portfolio with Credit Enhancement ($Billions)

Source: Freddie Mac, as of 03/31/2021.
Development of an Asset Class

Key Offerings

SECURITIES

**STACR®**
Structured Agency Credit Risk
Freddie Mac Single-Family’s flagship CRT offering, where non-guaranteed notes are issued across multiple tranches, and reference pool performance determines payments.

Series
- **DNA**: On-the-run, original LTV of 61-80%
- **HQA**: On-the-run, original LTV of 81-97%
- **HRP**: HARP and Relief Refi collateral
- **FTR**: Off-the-run, seasoned B collateral
- **SPI**: Fully collateralized non-synthetic transactions

(RE)INSURANCE CONTRACTS

**ACIS®**
Agency Credit Insurance Structure
Freddie Mac’s flagship (re)insurance offering provides (re)insurers the opportunity to gain broad exposure to the U.S. housing market alongside STACR investors.

Series
- **DNA**: On-the-run, original LTV of 61-80%
- **HQA**: On-the-run, original LTV of 81-97%
- **SAP**: 15/20/30-year collateral
- **ARMR**: HARP and Relief Refi collateral
- **FTR**: Off-the-run, seasoned B collateral
- **AFRM**: Forward transactions
Clarity Updates

Freddie Mac’s data intelligence portal for investors

Clarity 2.0 is Here
- Deal Compare - Users will be able to compare up to three CRT deals or benchmarks across six categories on a single screen.
- A new way to compare deals within the Proxy Cohort dashboards.
- A User Guide and Glossary will help users better navigate the site’s functionality.

Data Visualizations Bring Raw Numbers To Life
Clarity’s data visualizations enhance understanding with crisp, clear information design that makes it easy to spot trends and zero in on key figures.

Advanced Filters For Quick Performance Analysis
Clarity’s preset configurations offer quick, clear views into Freddie Mac CRT data and make it easy for any user to get valuable insights quickly. Easily export and download charts to your desktop – it’s that simple.

Clarity.FreddieMac.com
STACR and ACIS
1. Transaction Overview
Transaction Overview

CRT Business Process

**Loan Origination**
Lenders originate loans to borrowers according to Freddie Mac origination guidelines. Freddie Mac purchases such loans and guarantees securities backed by the loans.

**UMBS Packages**
Loans purchased by Freddie Mac are grouped and sold to Uniform Mortgage Backed Securities (UMBS) investors, transferring interest rate risk away from Freddie Mac.

**CRT Eligibility**
Loans backing the guaranteed securities (UMBS) are subject to additional CRT eligibility requirements and screened for underwriting defects and performance deficiencies before being included in a CRT transaction.

**Transaction Issuance**
The capital structure contains multiple risk options. Freddie Mac maintains “skin in the game” by retaining all or a portion of each tranche, thus aligning Freddie Mac and investor interest with reference pool performance.
Reference Pool Creation Illustration

Transaction Overview

Total Loans Securitized in UMBS Q1
$81 billion

Reference Pool Eligibility Criteria
- 100% fully amortizing
- Fixed-rate
- 1-to-4 unit
- First lien mortgage loans
- Original terms of 241-360 months
- No loans originated under Relief Refinance programs
- Meets transaction specific LTV criteria (61-80 LTV for DNA; 81-97 LTV for HQA)
- REMIC election made

Initial Cohort
$28 billion

Loan Performance Removals
- Incomplete data reconciliation
- Corrected data
- Repurchased
- Removed by QC process
- Paid in full
- Failed delinquency criteria
- Bankruptcy

Reference Pool
$26 billion

STACR & ACIS Transaction

STACR & ACIS Transaction
STACR and ACIS are complementary programs issued from the same reference pool for On-the-Run transactions.
The Class M-2A and Class M-2B Notes and corresponding Reference Tranches relate to the Class M-2 Notes. The Class M-2A and Class M-2B Notes are exchangeable for the Class M-2 Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM. In addition, certain Classes of MAC Notes can be further exchanged for other Classes of MAC Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM.

The Class B-1A and Class B-1B Notes and corresponding Reference Tranches relate to the Class B-1 Notes. The Class B-1A and Class B-1B Notes are exchangeable for the Class B-1 Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM. In addition, certain Classes of MAC Notes can be further exchanged for other Classes of MAC Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM.

The Class B-2A and Class B-2B Notes and corresponding Reference Tranches relate to the Class B-2 Notes. The Class B-2A and Class B-2B Notes are exchangeable for the Class B-2 Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM. In addition, certain Classes of MAC Notes can be further exchanged for other Classes of MAC Notes, and vice versa, as further described in the Term Sheet and Preliminary PPM.
ACIS Structure

**Direct Policy**
Freddie Mac enters into/executes a primary insurance policy directly with Insurers

- Insurer #1
  - Collateral Trust
- Insurer #2
  - Collateral Trust
- Insurer #3
  - Collateral Trust
- Insurer #4
  - Collateral Trust

**Indirect Policy**
Freddie Mac enters into/executes a primary insurance policy with cell company

- Cell Company
  - Net amount of claims and premiums flow through cell
    - Cell issues quota share reinsurance contract to the reinsurers
      - Reinsurer #1
        - Collateral Trust
      - Reinsurer #2
        - Collateral Trust
      - Reinsurer #3
        - Collateral Trust
      - Reinsurer #4
        - Collateral Trust

Reinsurers, based on their license, have option to contract directly or indirectly (via cell company) with Freddie Mac.
## Transaction Example and Program Comparisons

### Transaction Overview

<table>
<thead>
<tr>
<th>Tranche</th>
<th>Loss Coverage</th>
<th>Expected Ratings</th>
<th>Balance</th>
<th>WAL</th>
<th>Principal Window</th>
<th>WAL</th>
<th>Principal Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attach</td>
<td>Detach</td>
<td></td>
<td>STACR</td>
<td>ACIS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M-1</td>
<td>200</td>
<td>300</td>
<td>Investment Grade</td>
<td>$279m</td>
<td>$90m</td>
<td>2.13</td>
<td>8-46</td>
</tr>
<tr>
<td>M-2</td>
<td>125</td>
<td>200</td>
<td>Rated</td>
<td>$208m</td>
<td>$69m</td>
<td>5.47</td>
<td>46-88</td>
</tr>
<tr>
<td>B-1</td>
<td>75</td>
<td>125</td>
<td>Rated/Not Rated</td>
<td>$139m</td>
<td>$45m</td>
<td>8.94</td>
<td>88–120</td>
</tr>
<tr>
<td>B-2</td>
<td>25</td>
<td>75</td>
<td>Not Rated</td>
<td>$164m</td>
<td>$20m</td>
<td>10.02</td>
<td>120–120</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>$790m</td>
<td>$224m</td>
<td>*Assume stated CPR &amp; 0 CDR; WAL in years, principal window in months</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** For illustrative purposes only
1. 10-year legal final up to 2015-DN1
2. 12.5-year legal final from 2015-DNA1 to 2018-DN1
3. 30-year legal final from 2018-DNA3 to 2021-DNA1
4. 2015-DNA1 – 2021-DNA1, Earlier of: (a) 10% or less pool factor or (b) on or after the 120th payment date (10 years)

<table>
<thead>
<tr>
<th>STACR</th>
<th>ACIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity</td>
<td>12.5-year legal final from 2021-HQA1 to Present</td>
</tr>
<tr>
<td>Early Termination</td>
<td>10% or less pool factor</td>
</tr>
<tr>
<td>Qualified Buyer</td>
<td>Qualified Institutional Buyer “QIB”</td>
</tr>
<tr>
<td>Coupon/Premium</td>
<td>• 1 Month Libor plus spread (pre 10/2020)</td>
</tr>
<tr>
<td></td>
<td>• 30-day Average SOFR plus spread (post 10/2020)</td>
</tr>
<tr>
<td>Liquidity</td>
<td>8-10 broker/dealers make active markets daily</td>
</tr>
<tr>
<td>Performance Triggers</td>
<td>• Minimum Credit Enhancement Test</td>
</tr>
<tr>
<td></td>
<td>• Delinquency Test</td>
</tr>
<tr>
<td></td>
<td>• Cumulative Net Loss Test</td>
</tr>
<tr>
<td>Other</td>
<td>• 144A Compliant</td>
</tr>
<tr>
<td></td>
<td>• Minimum Denomination $10,000</td>
</tr>
<tr>
<td></td>
<td>• Minimum Increment $1</td>
</tr>
</tbody>
</table>
## Disposition Loss

### Allocation of Disposition Loss

<table>
<thead>
<tr>
<th></th>
<th>Disposition Loss =</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(+) UPB at time of removal from the Reference Pool (including prior principal forgiveness)</td>
</tr>
<tr>
<td>2</td>
<td>(-) Net Sales Proceeds</td>
</tr>
<tr>
<td>3</td>
<td>(+) Delinquent Accrued Interest (Non-Capitalized) Interest Bearing UPB * min(Note Rate – 35bps, Accounting Net Yield) * (# of Months Delinquent/12)</td>
</tr>
<tr>
<td>4</td>
<td>(+) Taxes and Insurance</td>
</tr>
<tr>
<td>5</td>
<td>(+) Legal Costs</td>
</tr>
<tr>
<td>6</td>
<td>(+) Maintenance and Preservation Costs (e.g. Property Inspection, HOA, Utilities, Rental Receipts, REO Management, etc.)</td>
</tr>
<tr>
<td>7</td>
<td>(-) MI Proceeds (Total Claim Amount * Coverage %)</td>
</tr>
<tr>
<td>8</td>
<td>(+) Miscellaneous Expenses (e.g. BPO, other sales expenses not included in item 2 above)</td>
</tr>
<tr>
<td>9</td>
<td>(-) Miscellaneous Credits (e.g. Positive Escrow, Insurance Refunds, Hazard Claim Proceeds, Make Whole Events, etc.)</td>
</tr>
</tbody>
</table>

**Note:** For illustrative purposes only.
## Modification Loss

### Allocation of Modification Loss

<table>
<thead>
<tr>
<th>Modification Hierarchy</th>
<th>Investor Impact</th>
<th>Borrower Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term Extension</td>
<td>No Impact</td>
<td>Loan term is extended to reduce borrower monthly payments</td>
</tr>
<tr>
<td>Interest Rate Reduction</td>
<td>Loss of interest from rate change</td>
<td>Reduces monthly payment</td>
</tr>
<tr>
<td>Principal Forbearance</td>
<td>Loss of interest as principal with forbearance is non-interest bearing</td>
<td>Suspension of mortgage payments for a specific period of time which is paid as a balloon payment upon termination of the loan</td>
</tr>
</tbody>
</table>

 Modification Loss =  

1. (+) Modification Costs  
   e.g. Interest Short Fall (Passed to investors on a monthly basis included in modification loss amount)
2. (+) Bankruptcy Cramdown Costs (Passed to investors on a monthly basis included in write down loss amount)

### Note:
For illustrative purposes only.
2. Investors and Liquidity
**Investor Participation at Issuance**

**Investors and Liquidity**

### M-1
- **2020-DNA**: 9% Hedge Fund, 89% Money Manager, 1% Insurance
- **2021-DNA**: 5% Hedge Fund, 95% Money Manager, 1% Insurance
- **2020-HQA**: 1% Hedge Fund, 82% Money Manager, 13% Insurance
- **2021-HQA**: 1% Hedge Fund, 100% Money Manager

### M-2
- **2020-DNA**: 2% Hedge Fund, 76% Money Manager, 2% Insurance
- **2021-DNA**: 2% Hedge Fund, 82% Money Manager, 4% Insurance
- **2020-HQA**: 20% Hedge Fund, 73% Money Manager, 20% Insurance
- **2021-HQA**: 7% Hedge Fund, 87% Money Manager, 6% Insurance

### B-1
- **2020-DNA**: 3% Hedge Fund, 52% Money Manager, 44% Insurance
- **2021-DNA**: 4% Hedge Fund, 69% Money Manager, 27% Insurance
- **2020-HQA**: 3% Hedge Fund, 46% Money Manager, 51% Insurance
- **2021-HQA**: 7% Hedge Fund, 78% Money Manager

### B-2
- **2020-DNA**: 4% Hedge Fund, 26% Money Manager, 70% Insurance
- **2021-DNA**: 2% Hedge Fund, 46% Money Manager, 53% Insurance
- **2020-HQA**: 3% Hedge Fund, 34% Money Manager, 64% Insurance
- **2021-HQA**: 3% Hedge Fund, 38% Money Manager, 60% Insurance

**Source**: Freddie Mac, as of March 2021. **Note**: In addition to the participation shown above, ACIS is generally responsible for 25% of each tranche issued for (Re)insurer participation. 

**Investors by Transaction**
- Hedge Fund
- Money Manager
- Insurance
- REIT
- Sovereign Fund
- Bank/Credit Union
STACR Trading Volume

Monthly Trading Volume Over Trailing 12 Months

Average Trading Volume per Month

<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal ($billions)</th>
<th>% of Outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>0.3</td>
<td>48%</td>
</tr>
<tr>
<td>2014</td>
<td>0.6</td>
<td>20%</td>
</tr>
<tr>
<td>2015</td>
<td>1.1</td>
<td>13%</td>
</tr>
<tr>
<td>2016</td>
<td>1.5</td>
<td>11%</td>
</tr>
<tr>
<td>2017</td>
<td>1.9</td>
<td>12%</td>
</tr>
<tr>
<td>2018</td>
<td>1.7</td>
<td>8%</td>
</tr>
<tr>
<td>2019</td>
<td>2.0</td>
<td>8%</td>
</tr>
<tr>
<td>2020</td>
<td>2.4</td>
<td>9%</td>
</tr>
<tr>
<td>2021</td>
<td>2.4</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: Freddie Mac, as of March 2021. Note: Trading volumes reflect the sum of all buy and sell trades.
Investors and Liquidity

**STACR Issuance and Ratings**

<table>
<thead>
<tr>
<th>Current Outstanding ($billions)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative Issuance</td>
<td>$50.7B</td>
</tr>
<tr>
<td>Deals</td>
<td>66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Outstanding ($billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated</td>
</tr>
<tr>
<td>Unrated</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

**Cumulative Issuance**

Source: Freddie Mac and Bloomberg, as of March 2021.
STACR Returns Summary

As of February 26, 2020

- CRTx RNI Upper Mezzanine
- CRTx RNI Lower Mezzanine
- CRTx RNI Subordinate
- S&P Index
- Bloomberg Barclays US Corp HY Index

Total Return Annualized

As of April 9, 2021

- CRTx RNI Upper Mezzanine
- CRTx RNI Lower Mezzanine
- CRTx RNI Subordinate
- S&P Index
- Bloomberg Barclays US Corp HY Index

Source: CRTx® is a registered trademark and RNI™ (Rolling New Issue) is a trademark of Mark Fontanilla & Co., LLC., which tracks CRT securities issued in the most recent 12 months. S&P Index and Corp HY Index are sourced from Bloomberg.
Investors and Liquidity

ACIS Issuance

Flagship CRT offering and portfolio management tool
More than $20 billion coverage placed since inception

Cumulative ACIS Issuance

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021 YTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-2015</td>
<td>0.8</td>
<td>3.6</td>
<td>6.2</td>
<td>9.2</td>
<td>11.8</td>
<td>17.9</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20.3</td>
</tr>
</tbody>
</table>

- Pre 2016
  - Pioneered first reinsurance transactions in GSE CRT market
  - Developed key relationships with global reinsurers, brokers, and service providers
  - Created an insurance Cell structure

- 2016-2019
  - Diversified reinsurer panel
  - Launched ACIS Standalone (SAP), ACIS Forward (AFRM), ARMR series (HARP), and sold seasoned B2 risk (FTR)
  - Executed first Introduced 5-year call option

- 2020
  - 3rd largest quarter of issuance in program history ($1.7 B in Q3)
  - Priced ACIS 2020-AFRM1 in June 2020, restarting ACIS issuances after COVID-19 pandemic hit
  - 60+ Transactions in 8 years

- 2021
  - Largest quarter of issuance in program history ($2.4 B in Q1)
  - 2021 SAP1 was the largest ACIS deal in program history at $1.04B

Source: Freddie Mac, as of March 2021.

Source: Freddie Mac, as of March 2021.
STACR NAIC Price Breakpoints & Designations

- 50 STACR REMIC Trust notes have NAIC Price Breakpoints.
- 30 STACR Trust notes have NAIC Price Breakpoints.
- 71 STACR Debt notes, including 6 STACR HRP notes, have NAIC Designations.

Source: NAIC.

Note: The National Association of Insurance Commissioners 2020 Mortgage Reference Securities Report is not a market substitute for or functional equivalent of the credit ratings of rating agencies and is not produced to permit investors to compare the likelihood of default or of full and timely payment between one or more securities. Complete listing of NAIC Price Breakpoints and NAIC Designations as of year end 2020 for STACR transactions.
3. Portfolio Trends and CRT Performance
Proxy Cohort Performance

Low LTV Series

High LTV Series

Source: Freddie Mac Clarity/Proxy Cohort, as of March 2021. For illustrative purposes only.

Notes: Data included in the tables above are derived from the most recent release of Freddie Mac’s Single-Family Loan Level Dataset (SF LLD). Historical losses are weighted in proportion to the applicable deal’s cohorts of FICO and either OLTV or ELTV. Cumulative losses do not include modification losses. For more information, please reference the SF LLD website.

* Specified class takes 100% loss, assuming no principal payments.
Disaster Matrix Examples

Source: Freddie Mac Clarity/CRT/Performance/Disaster Matrix, as of April 2021. For illustrative purposes only.
### Collateral Profile: Low LTV Series

<table>
<thead>
<tr>
<th>Deal</th>
<th>OLTV</th>
<th>ELTV</th>
<th>FICO</th>
<th>DTI</th>
<th>Investor %</th>
<th>DTI &gt; 45 %</th>
<th>FICO &lt; 680 %</th>
<th>Home Possible %</th>
<th>ACE %</th>
<th>Forbearance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021-DNA3</td>
<td>74</td>
<td>68</td>
<td>763</td>
<td>33</td>
<td>4.4%</td>
<td>10.0%</td>
<td>3.5%</td>
<td>0.7%</td>
<td>47.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2021-DNA2</td>
<td>74</td>
<td>68</td>
<td>761</td>
<td>33</td>
<td>4.3%</td>
<td>10.2%</td>
<td>3.7%</td>
<td>0.6%</td>
<td>50.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2021-DNA1</td>
<td>74</td>
<td>67</td>
<td>761</td>
<td>33</td>
<td>3.8%</td>
<td>10.1%</td>
<td>3.2%</td>
<td>0.8%</td>
<td>48.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>2020-DNA6</td>
<td>74</td>
<td>66</td>
<td>757</td>
<td>34</td>
<td>5.1%</td>
<td>10.7%</td>
<td>4.3%</td>
<td>0.7%</td>
<td>44.9%</td>
<td>0.4%</td>
</tr>
<tr>
<td>2020-DNA5</td>
<td>75</td>
<td>66</td>
<td>757</td>
<td>34</td>
<td>7.0%</td>
<td>11.6%</td>
<td>4.5%</td>
<td>1.0%</td>
<td>35.1%</td>
<td>0.8%</td>
</tr>
<tr>
<td>2020-DNA4</td>
<td>75</td>
<td>65</td>
<td>751</td>
<td>36</td>
<td>8.1%</td>
<td>15.4%</td>
<td>6.2%</td>
<td>1.8%</td>
<td>23.3%</td>
<td>1.5%</td>
</tr>
<tr>
<td>2020-DNA3</td>
<td>75</td>
<td>64</td>
<td>753</td>
<td>35</td>
<td>7.7%</td>
<td>14.9%</td>
<td>5.9%</td>
<td>1.8%</td>
<td>20.2%</td>
<td>1.9%</td>
</tr>
<tr>
<td>2020-DNA2</td>
<td>76</td>
<td>64</td>
<td>751</td>
<td>36</td>
<td>8.2%</td>
<td>16.2%</td>
<td>7.3%</td>
<td>3.3%</td>
<td>12.5%</td>
<td>5.1%</td>
</tr>
<tr>
<td>2020-DNA1</td>
<td>76</td>
<td>63</td>
<td>746</td>
<td>36</td>
<td>12.1%</td>
<td>16.8%</td>
<td>9.0%</td>
<td>3.4%</td>
<td>7.7%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Average</td>
<td>75</td>
<td>66</td>
<td>755</td>
<td>35</td>
<td>6.7%</td>
<td>12.9%</td>
<td>5.3%</td>
<td>1.6%</td>
<td>32.2%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Source: [Freddie Mac Clarity/Origination/Characteristics](https://www.freddiemac.com/clarity), as of April 2021. More data fields available in Clarity. Note: Amounts shown are current.
# Collateral Profile: High LTV Series

<table>
<thead>
<tr>
<th>Deal</th>
<th>OLTV</th>
<th>ELTV</th>
<th>FICO</th>
<th>DTI</th>
<th>Investor %</th>
<th>DTI &gt; 45 %</th>
<th>FICO &lt; 680 %</th>
<th>Home Possible %</th>
<th>ACE %</th>
<th>Forbearance %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021-HQA1</td>
<td>91</td>
<td>84</td>
<td>754</td>
<td>35</td>
<td>0.1%</td>
<td>7.8%</td>
<td>2.9%</td>
<td>7.6%</td>
<td>16.7%</td>
<td>0.2%</td>
</tr>
<tr>
<td>2020-HQA5</td>
<td>91</td>
<td>82</td>
<td>752</td>
<td>35</td>
<td>0.2%</td>
<td>8.2%</td>
<td>3.3%</td>
<td>9.6%</td>
<td>7.8%</td>
<td>0.8%</td>
</tr>
<tr>
<td>2020-HQA4</td>
<td>92</td>
<td>79</td>
<td>750</td>
<td>36</td>
<td>0.4%</td>
<td>11.5%</td>
<td>3.5%</td>
<td>14.9%</td>
<td>0.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>2020-HQA3</td>
<td>92</td>
<td>78</td>
<td>750</td>
<td>36</td>
<td>0.3%</td>
<td>11.2%</td>
<td>3.8%</td>
<td>16.2%</td>
<td>0.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>2020-HQA2</td>
<td>93</td>
<td>78</td>
<td>746</td>
<td>37</td>
<td>0.3%</td>
<td>12.4%</td>
<td>4.8%</td>
<td>26.4%</td>
<td>0.0%</td>
<td>6.4%</td>
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<tr>
<td>2020-HQA1</td>
<td>93</td>
<td>77</td>
<td>743</td>
<td>37</td>
<td>0.5%</td>
<td>13.4%</td>
<td>6.3%</td>
<td>28.9%</td>
<td>0.0%</td>
<td>7.6%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>92</strong></td>
<td><strong>79</strong></td>
<td><strong>749</strong></td>
<td><strong>36</strong></td>
<td><strong>0.3%</strong></td>
<td><strong>10.7%</strong></td>
<td><strong>4.1%</strong></td>
<td><strong>17.3%</strong></td>
<td><strong>4.1%</strong></td>
<td><strong>3.1%</strong></td>
</tr>
</tbody>
</table>

**Source:** [Freddie Mac Clarity/Origination/Characteristics](http://example.com), as of April 2021. More data fields available in Clarity. **Note:** Amounts shown are current.
Cumulative Net Losses by Series

DNA Weighted Average Cumulative Loss bps: 0.41

HQA Weighted Average Cumulative Loss bps: 0.23

Source: Freddie Mac Clarity/Performance/Loss Details, as of April 2021. For illustrative purposes only.
### Portfolio Trends and CRT Performance

#### Transition Matrix by Series

#### Low LTV Series, Actual Loss

<table>
<thead>
<tr>
<th>Prior Loan Status</th>
<th>Current</th>
<th>D30</th>
<th>D60</th>
<th>D90</th>
<th>D120</th>
<th>D150</th>
<th>D180+</th>
<th>Modified</th>
<th>REO Acq</th>
<th>Credit Event</th>
<th>Defect</th>
<th>Prepaid</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>94.75%</td>
<td>0.26%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.01%</td>
<td>4.98%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D30</td>
<td>58.12%</td>
<td>20.54%</td>
<td>16.67%</td>
<td>0.04%</td>
<td>0.02%</td>
<td>0.03%</td>
<td>0.06%</td>
<td>0.03%</td>
<td>4.51%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D60</td>
<td>17.66%</td>
<td>8.86%</td>
<td>20.70%</td>
<td>50.76%</td>
<td>0.08%</td>
<td>0.03%</td>
<td>0.09%</td>
<td>0.04%</td>
<td>1.60%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D90</td>
<td>13.70%</td>
<td>2.26%</td>
<td>4.15%</td>
<td>16.61%</td>
<td>0.11%</td>
<td>0.11%</td>
<td>0.01%</td>
<td>0.04%</td>
<td>1.82%</td>
<td>100.00%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>D120</td>
<td>9.52%</td>
<td>0.68%</td>
<td>1.27%</td>
<td>3.97%</td>
<td>12.46%</td>
<td>70.55%</td>
<td>0.21%</td>
<td>0.16%</td>
<td>1.79%</td>
<td>100.00%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>D150</td>
<td>11.83%</td>
<td>0.42%</td>
<td>0.59%</td>
<td>1.13%</td>
<td>2.25%</td>
<td>10.43%</td>
<td>70.89%</td>
<td>0.68%</td>
<td>0.01%</td>
<td>1.76%</td>
<td>100.00%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D180+</td>
<td>8.62%</td>
<td>0.17%</td>
<td>0.14%</td>
<td>0.10%</td>
<td>0.11%</td>
<td>0.27%</td>
<td>99.00%</td>
<td>0.40%</td>
<td>0.01%</td>
<td>1.19%</td>
<td>100.00%</td>
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<tr>
<td>Mod</td>
<td>91.38%</td>
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<td>1.35%</td>
<td>1.15%</td>
<td></td>
<td></td>
<td>1.23%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### High LTV Series, Actual Loss

<table>
<thead>
<tr>
<th>Prior Loan Status</th>
<th>Current</th>
<th>D30</th>
<th>D60</th>
<th>D90</th>
<th>D120</th>
<th>D150</th>
<th>D180+</th>
<th>Modified</th>
<th>REO Acq</th>
<th>Credit Event</th>
<th>Defect</th>
<th>Prepaid</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>94.03%</td>
<td>0.31%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.01%</td>
<td>5.04%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D30</td>
<td>53.16%</td>
<td>23.05%</td>
<td>19.93%</td>
<td>0.01%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.02%</td>
<td>3.78%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D60</td>
<td>17.46%</td>
<td>9.35%</td>
<td>19.49%</td>
<td>51.80%</td>
<td>0.10%</td>
<td>0.07%</td>
<td>0.00%</td>
<td>0.17%</td>
<td>1.46%</td>
<td>100.00%</td>
<td></td>
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</tr>
<tr>
<td>D90</td>
<td>12.68%</td>
<td>2.21%</td>
<td>4.82%</td>
<td>16.17%</td>
<td>62.56%</td>
<td>0.05%</td>
<td></td>
<td>0.07%</td>
<td>1.51%</td>
<td>100.00%</td>
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<td></td>
</tr>
<tr>
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<td>9.41%</td>
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<td>1.27%</td>
<td>3.63%</td>
<td>12.35%</td>
<td>70.66%</td>
<td>0.18%</td>
<td>0.39%</td>
<td>1.11%</td>
<td>100.00%</td>
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<tr>
<td>D150</td>
<td>10.96%</td>
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<td>0.78%</td>
<td>0.73%</td>
<td>2.29%</td>
<td>11.45%</td>
<td>70.93%</td>
<td>0.59%</td>
<td></td>
<td>1.76%</td>
<td>100.00%</td>
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</tr>
<tr>
<td>D180+</td>
<td>8.90%</td>
<td>0.22%</td>
<td>0.15%</td>
<td>0.09%</td>
<td>0.14%</td>
<td>0.38%</td>
<td>88.21%</td>
<td>0.71%</td>
<td>0.02%</td>
<td>1.23%</td>
<td>100.00%</td>
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<td></td>
</tr>
<tr>
<td>Mod</td>
<td>83.33%</td>
<td>4.48%</td>
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<td>0.20%</td>
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<td>0.61%</td>
<td>100.00%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: [Freddie Mac Clarity/Performance/Transition Matrix](https://www.freddiemac.com/clarity/transition_matrix), as of April 2021. For illustrative purposes only.
## Serious Delinquency by Series

**DNA Delinquent Status (% of Current Balance)**

- **D90**
- **D120 - D150**
- **D180+ (Including BK/FC/REO)**

**HQA Delinquent Status (% of Current Balance)**

- **D90**
- **D120 - D150**
- **D180+ (Including BK/FC/REO)**

Source: [Freddie Mac Clarity/Performance/Delinquency](https://www.freddiemac.com/clarity/), as of April 2021. Stacked column charts created using D90, D120, D150, D180+ and REO data segments.
Voluntary Prepayment Rates by Series

Source: Freddie Mac monthly remittance data, as of March 2020.

Source: Freddie Mac monthly remittance data, as of January 2021.
DNA Third-Party Base Expected Default and Loss

Collateral Expected Default and Loss at Issuance to Maturity

Disclaimer: The estimates shown above are for informational purposes only and delivered solely as reference material with respect to Freddie Mac. There is no assurance that the actual losses of the Reference Obligations will mirror the estimates shown above. The information contained in these materials may be based on assumptions regarding market conditions and other matters that may be of a proprietary nature to the model owners and unknown to Freddie Mac. The model owners have consented to Freddie Mac’s use and presentation of the estimates shown here, but do not make any representations that the information is accurate or complete. Neither Freddie Mac, nor the model owners, take responsibility for or make representations regarding the reasonableness of the underlying assumptions that form the basis of the estimates shown here or the likelihood that the estimates shown will coincide with actual market conditions or events and the estimates should not be relied upon for such purposes.

*Values indicated are based on a 12.5-year term to maturity; other deal values indicated are based on a 30-year term to maturity
Portfolio Trends and CRT Performance

**HQA Third-Party Base Expected Default and Loss**

Collateral Expected Default and Loss at Issuance to Maturity

<table>
<thead>
<tr>
<th>Collateral</th>
<th>20-HQA2</th>
<th>20-HQA3</th>
<th>20-HQA4</th>
<th>20-HQA5</th>
<th>21-HQA1*</th>
</tr>
</thead>
<tbody>
<tr>
<td>BoA</td>
<td>9</td>
<td>23</td>
<td>15</td>
<td>23</td>
<td>15</td>
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<tr>
<td>Credit Suisse</td>
<td>155</td>
<td>142</td>
<td>207</td>
<td>106</td>
<td>131</td>
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<tr>
<td>JP Morgan</td>
<td>25</td>
<td>21</td>
<td>13</td>
<td>14</td>
<td>7</td>
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</tbody>
</table>

Disclaimer: The estimates shown above are for informational purposes only and delivered solely as reference material with respect to Freddie Mac. There is no assurance that the actual losses of the Reference Obligations will mirror the estimates shown above. The information contained in these materials may be based on assumptions regarding market conditions and other matters that may be of a proprietary nature to the model owners and unknown to Freddie Mac. The model owners have consented to Freddie Mac's use and presentation of the estimates shown here, but do not make any representations that the information is accurate or complete. Neither Freddie Mac, nor the model owners, take responsibility for or make representations regarding the reasonableness of the underlying assumptions that form the basis of the estimates shown here or the likelihood that the estimates shown will coincide with actual market conditions or events and the estimates should not be relied upon for such purposes.

*STACR 2021-HQA1 values indicated are based on a 12.5-year term to maturity; other deal values indicated are based on a 30-year term to maturity.
Estimated LTV Numbers

On-going positive house price appreciation allows borrowers to build equity, thereby reducing loan-to-value ratio and credit risk.

- Home Value Explorer® (HVE®) is a Freddie Mac AVM tool that generates an estimate of property value
- HVE provides extensive coverage of all 50 states and more than 3,100 counties with its database of ~100 million property records
- For more information on HVE visit: sf.freddiemac.com/tools-learning/home-value-suite/overview

Source: Freddie Mac, as of April 2021. **Weighted average life was 28 months at issuance, typical transaction is between 9-12 months.
Credit Risk Management Framework
1. Overview
Credit Risk Management Overview

Freddie Mac – Risk Management

Underwriting Standards
- Documentation Standards and Credit Eligibility Requirements
- Delegated Underwriting Guidelines
- Seller Representations and Warranties
- Loan Advisor®

Quality Control
- Post-Close Credit Review
- Quality Assurance
- Compliance Review
- Performing Loan and Non-Performing Loan Quality Control Review
- Due Diligence Review
- Underwriting Defects Repurchase Process

Seller/Servicer Management
- Seller In-House Quality Control
- Seller Servicer Approval Standards
- Loan Servicer Performance Monitoring and Scorecard
- CORE Reviews

CRT is supported by an advanced risk management framework
**Freddie Mac Loan Advisor®** is a smart, end-to-end technology solution built to provide greater certainty about the quality of loans and offer insight into loans’ purchase eligibility early in the loan production process. Loan Advisor’s advanced analytics and modeling capabilities automate processes, catch errors and identify opportunities to reduce risk.

Freddie Mac’s goal is to have 100% of loans processed through Loan Product Advisor or Loan Quality Advisor.

Loan Advisor is set up so the Exclusionary List is only accessible by approved Seller-Servicers.

Loans sold to Freddie Mac must have documented evidence of the mortgagor’s ability to repay and of the value of the property.

Appraisal independence rules insulate the appraiser from influence by other parties involved in processing or originating the loan.

Representations & Warranties require the seller-servicer to repurchase the loan if there is a material underwriting defect discovered, subject to certain limits.

*does not include bulk deals
Underwriting Standards

Loan Product Advisor®

Loan Product Advisor (LPA) is the cornerstone of Loan Advisor. LPA takes advantage of proprietary data models and intelligent automation to promote loan compliance with Freddie Mac underwriting standards.

Features innovative tools and offerings leveraging algorithms to enhance the origination process

Home Value Explorer® (HVE)
An automated Freddie Mac tool used to determine values of properties inside and outside of Freddie Mac.

Automated Collateral Evaluation (ACE)
An offering that eliminates the need for a traditional appraisal for properties that have valuations validated by HVE.

Asset and Income Modeler (AIM)
An Automated Underwriting System (AUS) solution used to verify borrower assets and income. AIM is the first and only AUS solution in the industry to also assess self-employed income.

Generates an assessment of a loan’s credit risk and overall quality

✓ Minimum credit score requirements
✓ Maximum debt-to-income ratio limits
✓ Maximum loan-to-value ratio limits
✓ Elimination of risky products (IOs, pay option ARMs, no documentation and balloons)
Quality Control (QC)

Freddie Mac performs QC across all purchased loans, including those that are credit enhanced by any of the CRT programs. Losses are mitigated through a comprehensive QC program across performing and non-performing loans, including third-party QC processes by lenders.

Performing Loan QC

- Regularly perform QC on a random and targeted basis to test the quality of recently purchased loans, including added focus on key elements of particular interest or concern (e.g., loan attributes or sellers).
- Freddie Mac benchmarks every loan we purchase against our valuation model and appraisals are assessed within our automated system, Loan Collateral Advisor® for instantaneous feedback to the originator.
- CRT transactions perform a separate Due Diligence review.

Non-Performing Loan QC

- Freddie Mac also reviews mortgage loans that default within the first few years after purchase or guarantee.

Seller In-House QC

- Each loan seller must have an in-house QC program that has written procedures and operates independently of the sellers’ origination and underwriting functions.
- Freddie Mac reviews, monitors, and provides feedback on sellers’ QC and origination practices, including performing on-site reviews of its largest sellers.
## Seller/Servicer Management

Freddie Mac believes that a well-rounded view of servicing performance supports a broad and in-depth analysis of both performing and non-performing loans.

### Account Plans
- Focused on covered National, Regional and Community Servicers, Independent Mortgage Bankers, Specialty Servicers, Master Servicers and Subservicers.
- Sets goals and objectives, establishes agreed-upon action plans and milestones.

### File Reviews, Rewards and Remedies
- Identifies servicing performance gaps and trends, encourages and rewards quality servicing.
- Helps identify and resolve issues and provides consequences for poor data quality and servicing processes.

### Servicer Success Scorecard
- Covers Master, Interim, Sub and Consolidated servicing modes.
- Performance evaluation specific to servicer segments (ranked groups), uses synthetics and ranks.
- Provides loan level data and analyses.
- **SHARP**\(^\text{SM}\) – **Servicer Honors and Rewards Program** enables eligible servicing clients to receive annual rewards based on completion of the Servicer Success Scorecard.

### Counterparty Operational Risk Evaluation (CORE)
- Identifies SF counterparty operational risk issues and monitors remediation.
- Provides assessment of Counterparty’s compliance with Guide Requirements.
- Conducts on-site due diligence of Servicers’ preparedness for large MSR transfers.
- Works closely with account managers and Single-Family Operations to ensure review scope addresses new/emerging risks.
2. Loss Mitigation
Loss Mitigation

Loss Mitigation Waterfall

1. Forbearance
   Provides a temporary reduction or suspension of payments to give borrowers a specified period of time to improve their financial situation. No mod loss impact.

2. Reinstatement
   The most desirable resolution for a temporary hardship. Reinstatement is the act of restoring a delinquent Mortgage to current status.

3. Repayment Plan
   Gives the borrower a defined period of time to reinstate the Mortgage following a temporary hardship by paying normal regular payments plus an additional agreed upon amount in repayment of the Delinquency.

4. Payment Deferral
   A relief option for borrowers who became delinquent due to a short-term hardship that has since been resolved. Past due payments are deferred (non-interest bearing) and will be due at maturity, payoff date, or upon transfer or sale of the Mortgaged Premises.
   - COVID-19 Payment Deferral
     Leverages a similar concept to the Payment Deferral solution. An eligible borrower will be brought current by deferring delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the Mortgage maturity date, payoff date, or upon transfer or sale of the Mortgaged Premises.
   - Disaster Payment Deferral
     As with the Payment Deferral and the COVID-19 Payment Deferral, under the terms of a Disaster Payment Deferral an eligible Borrower will be brought current by deferring delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the Mortgage maturity date, payoff date or upon transfer or sale of the Mortgaged Premises.

5. Flex Modification
   An affordable modification that provides significant payment relief to eligible borrowers, leverages requirements of the Freddie Mac Standard and Streamlined Modifications.

6. Applicable Credit Events
   Credit Events such as short sale, third party sale, deed-in-lieu, foreclosure
Loss Mitigation

REO Overview

**Mission:** effectively manage Freddie Mac’s credit losses in a way that maximizes financial recoveries and supports community stabilization.

Credit Loss Management

- Improve Collateral Values
- Manage Expenses
- Maximize Remedies

Community Stabilization

- Preserve, Maintain, & Repair
- Price Homes At Fair Market Value
- Non-Profit / Owner Occupant Priority
REO Business Model & Process

Freddie Mac utilizes an asset management firm to perform the core REO disposition activities using the firm’s vendor network.

**REO Core Process**
The outsourcer and their vendors are required to use Freddie Mac systems, follow detailed policies & procedures, and utilize proprietary methodologies for valuation, pricing, and repair decisioning.

**REO Support & Financial Functions**
Freddie Mac staff perform oversight monitoring, support, and financial functions.

**Freddie Mac: Oversight | Support | Financial Functions**

- Listing Brokers
- P&M Vendors
- General Contractors
- Eviction Attorneys
- Title & Closing Agents

- Asset Management Firm
  (Outsourced)
Loss Mitigation

REO Core Competencies

Efficient & Controlled Processes
Mature, efficient, and controlled disposition processes that helped us effectively manage our REO portfolio during the last financial crisis. Processes are continually refined as business and market conditions change.

Valuation & Pricing Methodologies
Extensive disposition data and analytics used to develop pricing models and disposition strategies to maximize collateral recoveries.

Risk Management
Proven financial, liability and reputation risk management practices.

“Good Neighbor Policy”
REO homes are properly maintained and priced to protect communities. Nonprofit / Owner Occupant exclusive purchase opportunities.

Experienced Staff
Experienced and tenured staff & management team.
## Servicing Disaster Relief Timeline

<table>
<thead>
<tr>
<th>Disaster strikes</th>
<th>90 day forbearance begins</th>
<th>Servicer establishes Qualified Right party Contact (QRPC) to determine effect of disaster on homeowner</th>
<th>Servicer works with borrower to transition from forbearance into the appropriate modification option to cure the delinquency; (forbearance can continue for a maximum of 12 months)</th>
<th>If borrower was current or less than 31 days delinquent at time of the disaster and the servicer has established QRPC three main modifications are available:</th>
</tr>
</thead>
</table>

### Disaster Modifications

<table>
<thead>
<tr>
<th>Extend Modification</th>
<th>Disaster Payment Deferral</th>
<th>General Modifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrower resumes close to contractual payment</td>
<td>Advanced escrow and escrow shortage is spread over up to 60 months in a repayment plan</td>
<td>Flex Modification</td>
</tr>
<tr>
<td>Term is only extended by number of payments missed</td>
<td>Delinquencies (including advanced escrow) are capitalized</td>
<td>Targeting a payment reduction of 20% or greater</td>
</tr>
<tr>
<td></td>
<td>Term is extended up to 480 months</td>
<td>May provide interest rate relief</td>
</tr>
<tr>
<td></td>
<td>Only available for borrowers affected by disaster</td>
<td>May result in principal forbearance</td>
</tr>
</tbody>
</table>

- **Only available for borrowers affected by disaster**

---

Freddie Mac | 2021

---
Servicing Guidelines for Disaster Relief

Freddie Mac Disaster Policy goes into effect when:

A property located in a county, parish or municipality has been declared by the President of the United States to be a Major Disaster Area where federal aid in the form of Individual Assistance is being made available (Eligible Disaster Area*).

<table>
<thead>
<tr>
<th>Servicers must assist borrowers with Freddie Mac-owned mortgages who work or reside in the designated eligible disaster area*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suspend Payments</strong></td>
</tr>
<tr>
<td>for up to 12 months</td>
</tr>
<tr>
<td><strong>Waive Fees</strong></td>
</tr>
<tr>
<td>for being late and assessment of new penalties during forbearance, trial, or repayment plan periods</td>
</tr>
<tr>
<td><strong>Disburse Insurance</strong></td>
</tr>
<tr>
<td>proceeds</td>
</tr>
</tbody>
</table>

*Disaster policy also goes into effect if damaged property is outside of FEMA area, but has an insurable loss.
Sustaining Homeownership During COVID-19 Workout Options – What Are They?

Relief Options

**Reinstatement:** An option to catch up on all the missed payments at once in a single lump-sum payment.

**Repayment:** An option to spread out past due amount on the mortgage over a set time frame (e.g., 3, 6, 9 or up to 12 months) and added onto the existing mortgage payments.

**Payment Deferral:** An option to defer up to two monthly delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the mortgage maturity date, payoff date, or upon transfer or sale of the mortgaged premises.

**COVID-19 Payment Deferral** (Effective July 1, 2020): An option to defer up to twelve monthly delinquent amounts to create a non-interest bearing balance that will become due at the earlier of the mortgage maturity date, payoff date, or upon transfer or sale of the mortgaged premises. The hardship must be related to COVID-19.

Modification Options

**Flex Modification:** An option for borrowers who can no longer afford their pre-forbearance payment. It adds unpaid balances from a forbearance period to an unpaid loan balance. The payment reduction is calculated depending on the LTV.

Visit the [COVID-19 Resources web page](#)
3. Home Possible
Home Possible® Overview

Home Possible® offers flexibility to meet a variety of borrowers’ needs.

**Borrower Profile**

First-time homebuyers, move-up borrowers, and retirees

Effective July 28, 2019 all HP loans have the same income limits of 80% AMI, regardless of where the mortgage premise is located

**Key Features**

- Purchase and no cash out refinancing.
- Maximum 97 percent LTV/TLTV/HTLTV. 105 percent TLTV with Affordable Second.®
- Sweat equity allowed for the entire amount of down payment and closing costs.
- Mortgage insurance options
- Loan Product Advisor or manual underwriting
- No reserves required for 1-unit properties for manually underwritten mortgages.
- Maximum credit fee in price of 1.5 percent, with no credit fee in price on many loans.

**Borrower Benefits**

- Stable monthly payments with fixed-rate mortgages
- Flexible sources of funds for down payment
- Reduced mortgage insurance coverage for LTV ratios greater than 90%
- Minimum down payment of 3% allowed.
### Home Possible® Overview

<table>
<thead>
<tr>
<th>Feature</th>
<th>Home Possible</th>
<th>Standard Conventional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eligible Mortgages</strong></td>
<td>15, 20, and 30-year fixed</td>
<td>15, 20, and 30-year fixed</td>
</tr>
<tr>
<td></td>
<td>5/1, 5/5, 7/1 and 10/1 CMT- and LIBOR-indexed</td>
<td>5/1, 5/5, 7/1 and 10/1 CMT- and LIBOR-indexed ARMS</td>
</tr>
<tr>
<td></td>
<td>ARMS</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum LTV</strong></td>
<td>1 Unit: 97%</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>2-4 Unit: 95%</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum TLTV</strong></td>
<td>105% affordable second</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>97% secondary financing</td>
<td></td>
</tr>
<tr>
<td><strong>Occupancy</strong></td>
<td>1 to 4 unit primary residence</td>
<td>Primary residence, second home, or investment property</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Property Type</strong></td>
<td>1 to 4 unit: Single-Family, Condos, PUDs,</td>
<td>1 to 4 unit: Single-Family, Condos, PUDs, Manufactured</td>
</tr>
<tr>
<td></td>
<td>Manufactured Housing (1-unit primary residences)</td>
<td>Housing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Income</strong></td>
<td>Boarder income (1-unit properties only)</td>
<td>All income considered</td>
</tr>
<tr>
<td><strong>Mortgage Insurance</strong></td>
<td>Lender Paid Single Premium MI and Financed Single</td>
<td>Lender Paid or Borrower Paid</td>
</tr>
<tr>
<td></td>
<td>Premium MI allowed</td>
<td></td>
</tr>
<tr>
<td><strong>Underwriting Method</strong></td>
<td>Loan Product Advisor® (LPA) or Manual – LPA flags</td>
<td>LPA or LQA</td>
</tr>
<tr>
<td></td>
<td>Home Possible eligible loans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>No Credit Score Borrowers</strong></td>
<td>Borrowers with no credit score can be evaluated</td>
<td>At least one borrower on the transaction must have a</td>
</tr>
<tr>
<td></td>
<td>through LPA</td>
<td>usable credit score</td>
</tr>
<tr>
<td><strong>Income Limit</strong></td>
<td>Determined by LPA; Non-LPA HP eligibility is</td>
<td>No Income Limits</td>
</tr>
<tr>
<td></td>
<td>determined by the HP Income and Eligibility Tool</td>
<td></td>
</tr>
<tr>
<td><strong>Geographic Limit</strong></td>
<td>No Geographic Limits</td>
<td>No Geographic Limits</td>
</tr>
</tbody>
</table>

### Mortgage Insurance Coverage Levels

<table>
<thead>
<tr>
<th>Coverage Level</th>
<th>Home Possible Fixed Rate &gt;20yrs</th>
<th>Non-Home Possible Fixed Rate &gt;20yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Custom*</td>
</tr>
<tr>
<td>&gt;80% &amp; ≤85% LTV</td>
<td>12%</td>
<td>6%</td>
</tr>
<tr>
<td>&gt;85% &amp; ≤90% LTV</td>
<td>25%</td>
<td>12%</td>
</tr>
<tr>
<td>&gt;90% &amp; ≤95% LTV</td>
<td>25%</td>
<td>16%</td>
</tr>
<tr>
<td>&gt;95% &amp; ≤97% LTV</td>
<td>25%</td>
<td>18%</td>
</tr>
</tbody>
</table>

*If custom mortgage insurance is chosen, in addition to all other applicable delivery fees, the custom mortgage insurance delivery fee applies, including on Home Possible Mortgages.
Credit Risk Transfer Handbook

U.S. Housing Market Overview
U.S. Housing Market Overview

Home Value Trends

Total Value of U.S. Real Estate Held by Households¹ ($ Trillions)

Value of Housing Stock

+ $24.1T

(Previous peak seen in 4/06)

+ $7.9T

$21.1

$10.9

Single-Family Mortgage Debt Outstanding

Source: Federal Reserve Board’s Financial Accounts of the United States, Table B. 101. Data as of Dec 31, 2020. Note: Value of U.S. housing stock includes homes with and without underlying mortgages. U.S. home equity is the difference between the value of the U.S. housing stock and the amount of U.S. single-family mortgage debt outstanding.

National Home Prices

Cumulative Increase of 35.1% Since June 2006 (NSA Series)

2020 Q4 Not Seasonally Adjusted (NSA) Index Growth: (3.79%)

2020 Q4 Seasonally Adjusted (SA) Index Growth: (3.27%)

Freddie Mac House Price Index (December 2000=100)

Source: Freddie Mac’s Single-Family credit guarantee portfolio. Quarterly growth rates are calculated as a 3-month change based on the final month of each quarter. Historical growth rates change as new data becomes available. Values for the most recent periods typically see the largest changes. Cumulative increase, based on the NSA series, calculated as the percent change from June 2006 to March 2021. Source: Freddie Mac.

Note: Value of U.S. housing stock includes homes with and without underlying mortgages. U.S. home equity is the difference between the value of the U.S. housing stock and the amount of U.S. single-family mortgage debt outstanding.
Origination Trends

Annual Single-Family Mortgage Originations ($trillions)

Source: Freddie Mac Q2 2021 Economic and Housing Research Outlook. Note: Totals may not add due to rounding. Includes only 1st lien loans (F=forecast).

Largest Age Cohorts in the U.S.

Source: U.S. Census Bureau.
Fannie Mae Housing Market Support

Number of Families Fannie Mae Helped to Own Or Rent A Home\(^1\)

<table>
<thead>
<tr>
<th></th>
<th>1Q20</th>
<th>2Q20</th>
<th>3Q20</th>
<th>4Q20</th>
<th>1Q21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>637</td>
<td>1,028</td>
<td>1,338</td>
<td>1,598</td>
<td>1,365</td>
</tr>
<tr>
<td>Single-Family refinance borrowers</td>
<td>111</td>
<td>201</td>
<td>340</td>
<td>936</td>
<td>940</td>
</tr>
<tr>
<td>Single-Family purchase borrowers</td>
<td>217</td>
<td>609</td>
<td>813</td>
<td>308</td>
<td>134</td>
</tr>
<tr>
<td>Multifamily rental units</td>
<td>309</td>
<td>218</td>
<td>185</td>
<td>291</td>
<td>134</td>
</tr>
</tbody>
</table>

Number of Single-Family Loan Workouts\(^2\)

<table>
<thead>
<tr>
<th></th>
<th>1Q20</th>
<th>2Q20</th>
<th>3Q20</th>
<th>4Q20</th>
<th>1Q21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Forbearance agreements (^3)</td>
<td>1</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Payment deferrals (^3)</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Other (^3)</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>Single-Family refinance borrowers</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>Single-Family purchase borrowers</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>Multifamily rental units</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>38</td>
</tr>
</tbody>
</table>

Source: Fannie Mae, as of 03/31/2021. Notes: Totals may not add due to rounding.
1. Based on the company’s purchases of loans and issuances of mortgage-related securities. For the periods presented, a borrower may be counted more than once if the company purchased more than one loan (purchase or refinance mortgage) relating to the same borrower.
2. Consists of both home retention actions and foreclosure alternatives.
3. Categories are not mutually exclusive, and a borrower in one category may also be included in another category in the same or another period. For example, a borrower helped through a home retention action in one period may subsequently lose his or her home through a foreclosure alternative in a later period.
## Housing Market Outlook

### U.S. Housing Market Overview

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>Annual Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
</tr>
<tr>
<td>30-year PMMS (%) a.</td>
<td>3.5</td>
<td>3.2</td>
<td>3.0</td>
<td>2.8</td>
</tr>
<tr>
<td>Total Home Sales (M) b.</td>
<td>6.2</td>
<td>5.1</td>
<td>7.1</td>
<td>7.6</td>
</tr>
<tr>
<td>House Price Growth (%) c.</td>
<td>1.7</td>
<td>1.0</td>
<td>4.3</td>
<td>3.7</td>
</tr>
<tr>
<td>Total Originations ($B) d.</td>
<td>$675</td>
<td>$975</td>
<td>$1,140</td>
<td>$1,250</td>
</tr>
<tr>
<td>Purchase Originations ($B) d.</td>
<td>$268</td>
<td>$316</td>
<td>$405</td>
<td>$400</td>
</tr>
<tr>
<td>Refinance Originations ($B) d.</td>
<td>$407</td>
<td>$659</td>
<td>$735</td>
<td>$850</td>
</tr>
</tbody>
</table>

### Source
Freddie Mac Economic and Housing Research group, as of April 2021 ([http://www.freddiemac.com/research/forecast/20210414QuarterlyEconomicForecastPage](http://www.freddiemac.com/research/forecast/20210414QuarterlyEconomicForecastPage)). Send comments and questions to chief_economist@freddiemac.com.

### Notes
- Quarterly and annual forecasts (or estimates) are shown in shaded areas; totals may not add due to rounding; annual forecast data are averages of quarterly values.
- a. Monthly average of monthly interest rates (not seasonally-adjusted); reported as an annual rate.
- b. Millions of housing units; total sales are the sum of new and existing single-family, condo/co-op home sales; quarterly averages of monthly, seasonally-adjusted levels (reported at an annual rate).
- c. Quarterly growth rate of Freddie Mac's House Price Index; seasonally-adjusted; annual rates for yearly data.
- d. Billions of dollars (not seasonally-adjusted). Includes only 1st lien mortgage originations.
# Freddie Mac Key Contacts and Resources

<table>
<thead>
<tr>
<th>Credit Risk Transfer</th>
<th>Fixed Income Marketing</th>
<th>Websites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mike Reynolds</strong></td>
<td><strong>Sonya Sheth</strong></td>
<td><strong>CRT.FreddieMac.com</strong></td>
</tr>
<tr>
<td>Vice President</td>
<td>Fixed Income Marketing Manager</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:Michael_S_Reynolds@freddiemac.com">Michael_S_Reynolds@freddiemac.com</a></td>
<td><a href="mailto:Sonya_M_Sheth@freddiemac.com">Sonya_M_Sheth@freddiemac.com</a></td>
<td>(571) 382-4376</td>
</tr>
<tr>
<td>(571) 382-4852</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Christian Valencia</strong></td>
<td><strong>Humza Boxwalla</strong></td>
<td><strong>Clarity.FreddieMac.com</strong></td>
</tr>
<tr>
<td>Vice President</td>
<td>Fixed Income Marketing Associate II</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:Christian_Valetcia@freddiemac.com">Christian_Valetcia@freddiemac.com</a></td>
<td><a href="mailto:Humza_boxwalla@freddiemac.com">Humza_boxwalla@freddiemac.com</a></td>
<td>(703) 714-3340</td>
</tr>
<tr>
<td>(571) 382-3727</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Charlotte Gladwin</strong></td>
<td><strong>Jeff Shue</strong></td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td>Director</td>
<td></td>
</tr>
<tr>
<td><a href="mailto:Charlotte_Gladwin@freddiemac.com">Charlotte_Gladwin@freddiemac.com</a></td>
<td><a href="mailto:Jeffrey_Shue@freddiemac.com">Jeffrey_Shue@freddiemac.com</a></td>
<td>(571) 382-3023</td>
</tr>
<tr>
<td>(571) 382-3732</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mike Timmick</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Director</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:Michael_Timmick@freddiemac.com">Michael_Timmick@freddiemac.com</a></td>
<td></td>
<td>(571) 382-4988</td>
</tr>
<tr>
<td>(571) 382-4988</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Freddie Mac has made available the Single-Family Loan-Level Dataset as part of a larger effort to increase transparency; The dataset includes loan-level origination and monthly loan performance data on over 45.5 million loans. [freddiemac.com/research/datasets/sf_loanlevel_dataset.page](freddiemac.com/research/datasets/sf_loanlevel_dataset.page)

Additionally, Freddie Mac releases a STACR Loan-Level Dataset for all deals on a monthly basis. Access the data files, disclosure file layout, and glossary here: [crt.freddiemac.com/offerings/stacr.aspx#overview-details](crt.freddiemac.com/offerings/stacr.aspx#overview-details)

In 2019, CLARITY launched bringing further insight into Freddie Mac’s CRT program. Origination and Performance metrics are available with new enhancements scheduled. [clarity.freddiemac.com/](clarity.freddiemac.com/)

Additional information about Freddie Mac’s Single-Family CRT offerings including: issuance calendars, historical performance presentations, NAIC designations and more can be found at: [crt.freddiemac.com/](crt.freddiemac.com/)
Resources

## Market Support Tools

Freddie Mac’s credit risk offerings have deep market support. Analyze and Model transactions using these tools:

<table>
<thead>
<tr>
<th>Credit Suisse</th>
<th>Milliman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locus Tool</td>
<td>M-Pire</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>J.P. Morgan</th>
<th>RiskSpan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morgan Markets</td>
<td>Edge</td>
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<table>
<thead>
<tr>
<th>Bloomberg</th>
<th>CoreLogic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminal/BTM Model</td>
<td>Property Data Leader</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LSEG</th>
<th>TheNumber</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield Book</td>
<td>Analytics and Data Management</td>
</tr>
</tbody>
</table>
Disaster Relief Servicing Resources

COVID-19 CRT FAQs
crt.freddiemac.com/_assets/docs/covid-19-crt-faqs.pdf

COVID-19 Resources
sf.freddiemac.com/about/covid-19#latest-updates

Freddie Mac Disaster Relief Reference Guide
freddiemac.com/learn/pdfs/service/disaster_mod.pdf

Natural Disaster Relief web page:
freddiemac.com/singlefamily/service/natural_disasters.html

Managing Hazard Insurance Losses reference:
freddiemac.com/learn/pdfs/service/mhil.pdf

Guide Chapter 8404
freddiemac.com/app/guide/chapter/8404

Seller/Servicer Guide
guide.freddiemac.com/app/guide/
Appendix

Credit Risk Transfer Handbook
STACR Trust Structure

Payments of principal and interest on notes

Freddie Mac STACR Trust

Credit premium and credit protection reimbursement payments

Credit protection payments

Earnings/liquidation proceeds of eligible investments

Proceeds of sale of notes

Eligible Investments

STACR Transaction

Payments of principal and interest on notes

Proceeds of sale of notes
Appendix

Transition to SOFR-Indexed CRT Issuance

- Reducing LIBOR exposure and LIBOR transition risk for investors has been a high priority for Freddie Mac
- Freddie Mac has been a market leader in LIBOR transition and successfully issued floating rate notes (FRNs), agency CMOs, Multi-family K-deals and a STACR deal that are indexed to SOFR

• Closely engaged CRT investors to get feedback on LIBOR replacement index

Freddie Mac Intentions
• Announced our intention to begin issuing SOFR-indexed CRT deals in Q4 2020

May 2020

Market Readiness
• Conducted a joint GSE market survey to gauge the market readiness for SOFR-indexed CRT

June 2020

Index Methodology
• Published SOFR index methodology for new CRT issuance, and affirmed SOFR readiness with key market participants

Q3 2020

Inaugural SOFR CRT
• STACR 2020-DNA5 was Freddie Mac’s inaugural SOFR-indexed CRT transaction
• Freddie Mac discontinued issuance of LIBOR-indexed CRT deals

October 2020

SF CRT Legacy Libor Transition in 2023

2019

Freddie Mac discontinued issuance of LIBOR-indexed CRT deals

Future
Transaction Considerations

Safe Harbor Statements

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Transaction Considerations

Disclaimer

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