Payment Supplement: A Loss Mitigation Option to Provide Payment Relief for FHA Loans in a High Interest Rate Environment

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1. Executive Summary

As of the end of August, there were about 350,000 seriously delinquent FHA borrowers. Some of these borrowers will regain their financial footing, cure their delinquency using a Standalone Partial Claim[1] (PC), and resume making their monthly payments, while others will sell their homes. The remainder, however, will need a loss mitigation option that reduces their monthly payment to an affordable level in order to remain in their home.

As the economic impact of the pandemic came into focus, FHA acted quickly by introducing the FHA COVID-19 Recovery Modification (Recovery Mod), which is a streamlined option designed to reduce the borrower's monthly principal and interest payment by 25% and keep them in their home. However, the combination of the mechanics of an FHA modification and a substantial rise in the mortgage rate has made all government-loan modifications, including the Recovery Mod, ineffective at delivering payment reduction.

To modify a government loan, the servicer must purchase the loan out of the Ginnie Mae pool at par, or 100% of the unpaid principal balance. Then, to re-securitize the modified loan without incurring a loss, the servicer must set the rate on the modified loan to the prevailing market rate so that it can be sold at par. Most seriously delinquent loans have a note rate well below the current market rate (7.00%), so increasing the note rate as part of the modification offsets most or all of the payment reduction provided by the other modification steps. *At current mortgage rates, applying the Recovery Mod to the typical seriously delinquent FHA loan would increase the monthly payment by 8%.*

As a countermeasure, FHA should consider adding a Payment Supplement (**Supplement**) to their loss mitigation options to provide borrowers facing financial hardship with substantial payment reduction in the current and any future high rate environment. The Supplement would use PC insurance funds to provide the borrower with a payment reduction, either for a temporary period or for the remaining life of the loan, without requiring that the loan be bought out of the pool and thereby allowing the borrower to keep their below-market note rate.

For the same typical seriously delinquent FHA loan, after covering missed payments with the PC, a temporary Supplement would use the remaining PC funds to reduce the monthly principal and interest payment by 25% for 6.5 years. Using historical estimates of the impact of payment reduction on subsequent redefaults, we estimate that the 25% payment reduction created by the Supplement option would be expected to reduce the foreclosure rate of recipients by 36% relative to their foreclosure rate had they received a Standalone PC instead. Without the Supplement as an option, delinquent FHA borrowers who indicate they cannot afford their originally scheduled monthly payment would only have a choice between a Standalone PC that provides no payment reduction at all and a Recovery Mod that increases their monthly payment, and many would either have to sell their home or lose it to foreclosure or a foreclosure alternative.

The remainder of this paper is organized as follows: Section 2 describes the FHA modification process and the impact of higher mortgage rates on modifications. Section 3 describes the mechanics of the Supplement option, while Section 4 provides a comparison of the payment reduction delivered by the

[1] FHA provides the servicer with insurance funds to cover the arrearages, a partial rather than full claim against the insurance available; the borrower receives a non-interest bearing subordinate lien for this outstanding balance, with the obligation for full payment to FHA deferred until sale of the property, loan payoff, or loan maturity.

Recovery Mod, a temporary Supplement, and a life-of-loan Supplement for a representative set of loans. Section 5 outlines operational considerations of adding the Supplement, including borrower communications and how early payoff, early termination, and a redefault might be processed. Section 6 covers the expected impact of the Supplement-provided payment reduction on redefaults and foreclosures. Section 7 provides an example of how the Supplement might be incorporated into FHA's home retention options and Section 8 concludes.

2. Background: Modifying Government-backed Mortgages in a High Rate Environment

COVID-19-related financial hardship remains an issue, and many FHA borrowers will require assistance to retain their home. As of the end of August, there were 800,000 past-due FHA borrowers, of which 350,000 were seriously delinquent.[2] Some of these borrowers will regain their financial footing, cure their delinquency using a Standalone PC, and resume their originally scheduled monthly payments, and still others will sell their home. The remainder, however, will need a loss mitigation option that reduces their monthly payment to an affordable level in order to remain in their home.

Just as the COVID-19 pandemic has had a disproportionate impact on lower income, Black, and Latino families, the prevalence of mortgage forbearance and delinquency is higher for lower income, Black, and Latino borrowers. As of September 6, 2022, borrowers in the lowest income quartile were nearly 3.5 times as likely as borrowers in the highest income quartile to be in forbearance or delinquent, while Black borrowers were 2.5 times more likely and Latino borrowers 1.5 times as likely as White borrowers to be in forbearance or delinquent.[3]

Mortgage modifications are the tool of choice to provide payment relief to delinquent borrowers who can no longer afford their monthly mortgage payment. As the economic effects of the pandemic became apparent, FHA acted quickly to create the Recovery Mod, which is designed to reduce the borrower's monthly payment to an affordable level by targeting a 25% reduction in principal and interest (P&I) payment. The Recovery Mod is intended to provide payment relief by applying PC funds toward arrearages, setting the interest rate to the market rate, extending the term to 30 or 40 years, and applying any remaining PC funds as a principal deferment. For COVID-19 affected borrowers, the PC is limited to 25% of the unpaid principal balance (UPB) of the loan as of the date of default.

However, the mechanics of FHA modifications, coupled with the rise in interest rates, have limited the payment relief that can be provided by modifications. In order to provide an FHA borrower with a modification, the servicer must purchase the loan out of the Ginnie Mae MBS pool. The purchase is treated like a prepayment and is at "par", or 100% of the UPB of the loan. As long as the prevailing mortgage rate is below the existing note rate, the servicer can modify the loan by reducing the note rate to the (lower) prevailing mortgage rate, extending the term, and deferring principal, all of which reduce the borrower's monthly payment. The servicer then re-sells the modified loan at par (or slightly above par). The economics (purchase price at or slightly below sale price) allow borrowers to receive a

[2] Source: Version 9.4 SAS System Output (hud.gov).
[3] Among all borrowers with a mortgage. Source: https://www.philadelphiafed.org/-/media/frbp/assets/consumer-finance/reports/22-09_tracking-resolutions-of-mortgage-forbearances-and-delinquencies.pdf.

modification with substantial payment reduction *and* allow servicers to recover the cost of providing and processing the modification.

Today, however, the prevailing mortgage rate is high and the note rate on most loans is well below the prevailing mortgage rate. The modification process for servicers is the same—they purchase the loan out of the pool at par, set the note rate to the prevailing mortgage rate, extend the term to 40 years, and defer principal, and then re-sell the loan for securitization at par (or slightly above par). However, in this case, *providing the (higher) market interest rate increases the monthly P&I payment and offsets some or all of the effects of term extension and principal deferment. The resulting modification may not result in a lower P&I payment.*

In theory, servicers could extend the term on the loan but leave the note rate unchanged. In practice, because the note rate would be well below the prevailing mortgage rate, the servicer would have to sell the resulting loan at securitization for *less than par*, leading to a significant loss for the servicer given that they purchased the delinquent loan at par.

Consider a typical FHA borrower in forbearance. They have a 4.25% mortgage on an original loan amount of $185,000, entered forbearance with 26.5 years remaining on their loan and subsequently missed 18 payments. Had they received a 40-year Recovery Mod in late 2021, when the Freddie Mac Primary Mortgage Market Survey (PMMS) rate was around 3.00%, the modification would have reduced their monthly payment by the 25% target, from $910 to $683.[4] As of mid-October, with PMMS at 6.92%, the same borrower would receive an 8% *increase* in their monthly payment (from $910/month to $983/month) from a Recovery Mod.[5]

More broadly, the share of FHA loan modifications that can meet the 25% P&I reduction target is small—as of September 6, just 9% of 40-year Recovery Mod recipients reached the 25% P&I target reduction and the average P&I reduction delivered was 15%.[6] Since then, PMMS has risen *an additional 125 basis points*, further reducing the amount of payment reduction delivered by the Recovery Mod and the share of modifications that will reach the 25% P&I target.[7]

We have focused the discussion in this section on borrowers affected by the COVID-19 pandemic because they account for the bulk of seriously delinquent FHA borrowers today. However, the discussion that follows is generalizable—the Supplement would be an effective loss mitigation option in a high interest rate environment for any borrower with a government-backed loan facing financial hardship due to any cause. Given that the vast majority of borrowers with a government-backed mortgage have a note rate below 4.00% and well below the prevailing 7.00% mortgage rate, identifying and implementing such a loss mitigation tool is of critical importance.

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[4] On December 23, 2021, the Freddie Mac PMMS rate was 3.05%. Source: Mortgage Rates - Freddie Mac. For this example, missed payments include monthly tax and insurance payments, which are assumed to be 42.5% of monthly principal and interest payments, as well as FHA Mortgage Insurance Premium (MIP) monthly payments equal to 0.85% x UPB / 12.

[5] Source: Mortgage Rates - Freddie Mac.

[6] Source: https://www.philadelphiafed.org/-/media/frbp/assets/consumer-finance/reports/22-09_tracking-resolutions-of-mortgage-forbearances-and-delinquencies.pdf.

[7] Since September 6th, the Freddie Mac PMMS rate has risen from 5.66% to 6.92%, and the FHA modification interest rate, which is based on PMMS rounded to the nearest 1/8th percent, has risen from 5.625% to 6.875%. Source: Mortgage Rates - Freddie Mac.

3. Mechanics of the Payment Supplement

In response to the impact of rising mortgage rates on the effectiveness of the Recovery Mod, FHA should consider adding a Payment Supplement to their loss mitigation options. The Supplement option is tailored to be effective in the current high interest rate environment and would provide borrowers facing ongoing financial hardship with substantial payment relief without requiring the delinquent loan to be bought out of the pool.

The Supplement option would use funds from the PC to reduce the borrower's monthly payment.[8] The Supplement option could have the same target payment or target payment reduction as the other options in the FHA loss mitigation waterfall. For example, if implemented as a COVID-19 loss mitigation option, the Supplement could target the same 25% reduction in P&I as the Recovery Mod, and could provide payment relief beyond the target, if needed to reach affordability. If used as a part of the standard FHA loss mitigation options, the Supplement could aim to reach the same target mortgage payment as FHA-HAMP.[9] For convenience, our analysis is based on reaching the 25% P&I reduction target of the Recovery Mod. Most importantly, the loan need not be bought out of the pool and the existing note rate and term would remain unchanged.[10]

Just as is done with the Standalone PC and the Recovery Mod, FHA would provide PC funds as a zero-interest subordinate lien that would be used first to cover missed payments. Any remaining PC funds used for a Supplement would then be delivered to the servicer and disbursed each month to reduce the borrower's monthly payment for a temporary period or for the remaining life of the loan.

3.A. The Temporary Payment Supplement

If the Supplement were structured to provide temporary relief by reducing the borrower's monthly P&I payment, the period over which the Supplement would be in effect would be calculated as:

> *(1) Supplement Period = (Available PC funds – Missed Payments) / (25% x Scheduled P&I), rounded down to the nearest whole month.*

The terms of the example mortgage referenced above are shown in Table 1 below. We assume the borrower has not yet used their PC, and therefore the available PC funds would be 25% of the UPB at default ($43,370), as permitted under the COVID-19 loss mitigation options. The 18 missed payments, including taxes and insurance (T&I) and FHA Mortgage Insurance Premiums (MIP), would consume $25,556 of PC funds, leaving $17,814 in remaining PC funds for the Supplement.[11]

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[8] Using the PC to temporarily reduce the borrower's monthly payment was suggested as an alternative step in a loan modification by the Urban Institute (Loss Mitigation Toolkit Improvements for Borrowers Exiting COVID-19 Forbearance | Urban Institute). In this paper, we propose using a similar mechanism but without modifying the loan.

[9] See Appendix 4.0 of the FHA Single Family Housing Policy Handbook, available at 4000.1hsgh-062022.pdf (hud.gov).

[10] The loan is not required to remain in the Ginnie Mae MBS pool, as the Supplement option could be provided to loans that have already been bought out of the pool. A borrower that has received the Supplement option but later redefaults could have their loan bought out of the pool if it otherwise qualifies under current Ginnie Mae policy.

[11] Monthly T&I payment is 42.5% of monthly P&I, or $387. Monthly MIP payments are 0.85% x UPB at default / 12 = 0.85% x $173,480 / 12 = $123. Total missed payments = 18 x ($910 + $387 + $123) = $25,556. Figures may not sum due to rounding.

Table 1. Example loan terms at origination, upon entering forbearance, and at Supplement provision.

	Original Loan	
A	Loan Amount	185,000
B	Term (months)	360
C	Rate	4.25%
D	Monthly P&I	910
E	Monthly T&I (42.5% of P&I)	387
F	Annual MIP Rate	0.85%

	At Forbearance	
G	Remaining Term (months)	318
H	Principal Already Paid Down	(11,520)
J	Current UPB (A + H)	173,480
K	MIP Payment at Forbearance	123
L	Total Payment at Forbearance (D + E + K)	1,420

	At Buydown	
M	Missed Payments during Forbearance	18
N	Past Due Amount (L x M)	25,556
P	Remaining PC as a % of UPB at Forbearance	25%
Q	Remaining PC ($, P x J)	43,370
R	Remaining PC - Past Due Amount (Q - N)	17,814
S	Payment Reduction Target (25% of P&I)	228
T	Buydown Period (Months, R / S)	78
U	Total Partial Claim (S x T + N)	43,302

To reach the 25% P&I reduction target would require reducing P&I from $910 to $682, a reduction of $228. The supplement period would be calculated using equation (1) as:

Supplement Period = ($43,370 - $25,556) / (25% x $910) = 78 months, or 6.5 years.

The $17,814 of PC funds that remain after covering missed payments would be used to provide the borrower with a payment reduction of 25% (or $228/month) for 78 months.[12] After 78 months, the borrower's monthly payment would revert back to the original $910. Just as with other uses of the PC, the borrower would owe the PC funds used for the Supplement ($17,814) plus the PC funds used to cover their missed payments ($25,556) as a balloon payment ($43,370), due at payoff or maturity of the mortgage.[13]

In this example, the combination of 18 missed payments and the Supplement would consume the entirety of the borrower's PC. Depending on the loan terms and whether or not the supplement period is capped (discussed below), in certain instances, the Supplement may leave the borrower some PC capacity remaining for use in a future hardship.

3.A.1. Restricting the Supplement to Principal Payments

By statute, the PC must first be used to cover arrearages and then may be used to pay principal, but cannot be used to pay interest.[14] Therefore, we must add a condition that the supplement amount must equal the lesser of (25% x Scheduled P&I) and the principal component of the borrower's next scheduled

[12] As an alternative, the supplement period could be the same for all borrowers, e.g., 5 years, in which case the servicer would solve for the amount of payment reduction as the smaller of (Available PC Funds – Missed Payments) / 60) and 25% of P&I.
[13] Figures in the text may not exactly match figures in the table due to rounding.
[14] See 12 U.S.C. 1715u(b)(2)(B) available at https://www.govinfo.gov/content/pkg/USCODE-2011-title12/html/USCODE-2011-title12-chap13-subchapII-sec1715u.htm.

payment. To meet this condition, the calculation for the temporary Supplement period would need to be amended as follows:

(2) *Supplement Period = (Available PC funds – Missed Payments) / Min (25% x Scheduled P&I, Principal Component of next Scheduled Payment)*

For our example loan, the principal component of the borrower's next $910 scheduled P&I payment (their 61st scheduled payment) is $315. Because the principal amount ($315) exceeds the payment supplement amount ($228), the statutory constraint is not a factor in this example. In general, the statutory constraint will only be a factor for recently originated loans with a high note rate, of which there are relatively few and for which the Recovery Mod would likely provide a relatively high level of payment reduction. For example, holding the other terms of the loan in Table 1 constant, the note rate would have to exceed 5.55% for the statutory constraint to be binding. The payment reduction delivered by the Supplement would not fall below 20% of P&I until the note rate was above 6.45%.

3.A.2. Setting a Minimum and Maximum Supplement Period

The supplement period could be floored at a minimum term, e.g., 3 years, to provide borrowers with sufficient time to overcome their hardship. If the supplement period as calculated above were less than the floor, the supplement period would be set to the minimum period and the amount of payment reduction provided would be reduced. The payment reduction (in dollars) would be recalculated as:

(3) *Payment Reduction = (Available PC funds – Missed Payments) / Minimum Supplement Period*

The supplement period could also be capped at a maximum term, e.g., 10 years, which would allow borrowers with a full PC and few missed payments to retain some PC capacity for a future hardship. If the supplement period as calculated above is greater than the cap, it would be reduced to the cap. To incorporate both a cap and a floor, the supplement period and payment reduction calculations could be amended and calculated in sequence as per the below:

(4) *Supplement Period = Min (Cap, Max (Floor, (Available PC funds – Missed Payments) / Min (25% x Current P&I, Principal Component of next Scheduled Payment)))*
(5) *Payment Reduction = (Available PC funds – Missed Payments) / Supplement Period*

As an alternative, the maximum supplement period could be shorter, e.g., 5 years, but have a renewal feature. As the end of the supplement period approaches, if the customer indicates they cannot afford the original, higher monthly payment, the Supplement could be renewed and extended, as described in Appendix 2. A shorter maximum term with a renewal feature would preserve PC availability for a future hardship but still allow for a longer term Supplement should the borrower face ongoing financial hardship.

If it is possible for the borrower to terminate the Supplement before the end of the supplement period and retain PC funds for use in the event of a future hardship as described in Section 5.D, the maximum supplement period becomes less important. If the maximum supplement period is deemed unnecessary, the cap in equation (4) could be set to the remaining term of the loan.

3.B. A Life-of-Loan Payment Supplement

A Supplement that persists for the remaining life of the loan rather than a temporary period may be a preferable solution, as it would avoid any increase in defaults caused by the increase from the supplement-reduced payment to the originally scheduled payment at the end of the supplement period. However, PC funds are not unlimited, which creates a necessary trade-off: providing the Supplement for the remaining life of the loan will reduce the amount of delivered payment reduction relative to a temporary Supplement. To implement a supplement that persists for the remaining term of the loan, the payment reduction would be calculated as:

(6) *Payment Reduction = Min ((Available PC funds – Missed Payments) / Remaining Term, Principal Component of next Scheduled Payment)*

Note the implementation of the statutory constraint in equation (6), as the PC cannot be used to pay interest. Using our example loan from Table 1, the remaining term in equation (6) would be calculated as the remaining term upon entering forbearance – the number of missed payments, or 318 – 18 = 300 months. The payment reduction that would be provided by a life-of-loan Supplement would then be the smaller of ($17,814 / 300) and $315, or $59. For this loan, the 18 missed payment consume more than half of the PC, so a life-of-loan Supplement would reduce P&I by a modest 7%.

Additional considerations for setting the minimum and maximum supplement periods and a payment step, or gradual payment increase at the end of the supplement period, are covered in more detail in Appendix 1. An alternative implementation of the Supplement with the renewal feature is discussed in Appendix 2.

4. Payment Reduction Delivered by the Payment Supplement

To illustrate the effectiveness of the Supplement, we calculate the payment reduction delivered by the Recovery Mod, a temporary Supplement, and a life-of-loan Supplement for 3 loans with terms that broadly represent the stock of seriously delinquent FHA borrowers. As we show below, for most seriously delinquent FHA loans, a temporary Supplement option can reach FHA's 25% P&I reduction target and would provide the reduced payment for 6 to 10 years. A life-of-loan Supplement would not reach the 25% P&I reduction target, but would provide between 7% and 12% of P&I reduction. In contrast, the Recovery Mod would result in a payment *increase* for most seriously delinquent FHA loans.

The analysis that follows is based on 3 loans with characteristics that are representative of most of the stock of outstanding seriously delinquent FHA loans:

Loan 1: A *recent origination* that has fallen into delinquency, this loan has a 3% note rate, 28 years remaining to maturity, and the full allotment of PC available.[15]

Loan 2: Represents the *typical* delinquent FHA loan and has a note rate of 4.25%, 26.5 years remaining to maturity, and the full PC allotment available. Note that the loan terms for the typical loan match the terms of the example loan used in the previous sections.

[15] This loan could also plausibly represent the loan of a borrower who received a 30-year Recovery Mod but has since re-entered forbearance or fell into delinquency, though this borrower would be likely to have less PC capacity available.

Loan 3: Represents an *older origination*, has a 5.5% note rate and 20 years remaining to maturity. Given the age of this loan, we assume the borrower has faced financial hardship in the past and used their PC in the amount of 10% of UPB.[16]

For each loan, we assume 18 missed payments during forbearance, the monthly tax and insurance payment is 42.5% of monthly P&I, and the Freddie Mac PMMS rate is 6.92% (the rate as of October 13, 2022).[17] We then calculate the P&I reduction provided by the Recovery Mod, a temporary Supplement, and a life-of-loan Supplement, under the COVID-19 PC limit of 25% of UPB at default, and again with the PC limit increased to 30% of UPB. Our results include the amount of P&I reduction, the length of the supplement period, and the remaining PC balance, if any, for each loan. Our implementation of the temporary Supplement option includes a supplement period floored at 3 years and capped at 10 years.

As we will illustrate below, while the Supplement option would be effective under the COVID-19 PC limit of 25% of UPB, it would have the widest availability and provide the greatest amount of payment reduction for the longest duration possible if the COVID-19 PC limit were increased to 30% of UPB.

4.A. Payment Reduction Comparison with a PC Limit of 25% of UPB

The top half of Table 2 shows our results with the PC limited to 25% of UPB. We make 3 observations from these results. First, we note the effects of a higher mortgage rate on the Recovery Mod. *For both the recent origination and the typical loan, the Recovery Mod is counterproductive, as it would result in a payment increase.* Among the existing loss mitigation options, borrowers with these loans would be better served by a Standalone PC, which would cure their delinquency but leave their monthly payment unchanged. To the extent these borrowers are unable to afford their originally scheduled monthly payment, there is no available loss mitigation alternative that can reduce their payment, and they would either have to sell their home or lose their home to foreclosure or a foreclosure alternative. The older origination would receive a modest (5%) payment reduction from the Recovery Mod.

It is important to reiterate that the ineffectiveness of the Recovery Mod is driven by the rise in mortgage rates. Should the mortgage rate fall back to levels last seen in late 2021 (around 3%), the Recovery Mod would reach the 25% P&I reduction target for all 3 loans.

[16] For convenience, we express the used PC amount as a percentage of UPB at the time the borrower entered COVID-19 forbearance rather than at the initial default.

[17] Source: Mortgage Rates - Freddie Mac.

Table 2. Payment reduction from a Recovery Mod at PMMS = 6.92% and the Supplement.

Mortgage Terms			**P&I Change**			
Note Rate	Remaining Term	Previously Used PC (% of UPB)	Recovery Mod	Temporary Payment Supplment	Supplement Period (Years)	Remaining PC (% of UPB)
PC Limit at 25% of UPB						
3.00%	28	0%	**25%**	**-25%**	9.3	0%
4.25%	26.5	0%	**8%**	**-25%**	6.5	0%
5.50%	20	10%	-5%	N/A	N/A	N/A
PC Limit at 30% of UPB						
3.00%	28	0%	**17%**	**-25%**	10.0	4%
4.25%	26.5	0%	**2%**	**-25%**	9.7	0%
5.50%	20	10%	-10%	-4%	3.0	0%

Our second observation is that the temporary Supplement option can reach the 25% P&I reduction target for both the recent origination and the typical loan. The supplement period would last for 9.3 years for the recent origination and 6.5 years for the typical loan, likely providing the borrower ample time to resolve their hardship and regain their financial footing. However, in each case the Supplement consumes the entire remaining PC balance.

Third, because only a portion (15% of UPB) of the PC remains available, the older loan is ineligible for the Supplement option. For the older loan, the 18 missed payments exceed the remaining PC capacity, which we assume would be a disqualifying factor for the Supplement option. In general, should missed payments exceed the available PC amount, we assume the borrower would be ineligible for both a Standalone PC and a Supplement; the only remaining option would be to capitalize the arrearages in excess of the PC, which would require the loan to be bought out of the Ginnie Mae MBS pool and modified using the Recovery Mod. As discussed in Section 5.F, to the extent a subsidy were available and could be used to cover arrearages, it would make the Supplement accessible to more borrowers. FHA may also wish to explore whether a repayment plan could be put in place for the excess arrearage.

4.B. Payment Reduction Comparison with a PC Limit of 30% of UPB

The bottom half of Table 2 shows the payment change provided by the Recovery Mod and a temporary Supplement if the COVID-19 PC limit were increased to 30% of UPB. The payment reduction provided by the Recovery Mod would increase. However, even with this adjustment, the Recovery Mod cannot provide any payment relief to the recent origination or the typical loan. The older origination would now receive a 10% reduction in monthly P&I payments from the Recovery Mod, more than that provided by the temporary Supplement (4%), underscoring the need for multiple loss mitigation solutions.

As described in more detail in Appendix 1, increasing the PC limit to 30% would have two effects on the Supplement option. First, the larger PC would increase the amount of payment reduction delivered or, if the payment reduction target has already been achieved, extend the payment supplement period. For the recent origination and typical loan, the Supplement option can already reach the 25% payment reduction target under the 25% PC limit. Therefore, increasing the PC limit would not increase the

payment reduction but rather extend the supplement period for these 2 loans. For the recent origination, the supplement period is limited by the 10-year cap. Therefore, for this loan, the Supplement would not consume the entire PC, instead leaving 4% of UPB in the PC for a future hardship. For the typical loan and the older origination, the Supplement would consume the entire remaining PC.

Second, the larger PC would result in fewer loans being disqualified from receiving the Supplement option because the missed payments exceeded the available PC. With the higher PC limit in place, the older origination with a partially used PC would now qualify for the Supplement, and would receive a modest (4%) payment reduction. As noted above, the older origination would receive more payment reduction from a Recovery Mod than from a temporary Supplement.

In sum, the results in Table 2 indicate that, regardless of the PC limit, the temporary Supplement option would reach the 25% P&I reduction target for the recent origination and typical delinquent loan. Without the Supplement option in place, borrowers with similar loan terms would receive a Standalone Partial Claim and no payment reduction. As described in detail in Section 6, payment reduction is a powerful tool to reduce future defaults, and we estimate that the 25% P&I reduction provided by the Supplement relative to the Standalone PC would be expected to reduce the foreclosure rate for Supplement recipients by 36%. Borrowers with an older origination and a higher note rate who have previously used their PC would receive the most payment reduction from a Recovery Mod, which would not reach the payment reduction target but still provides some relief even at the current mortgage rate.

4.C. Payment Reduction Provided by a Life-of-loan Supplement

As noted in Section 3.B, the Supplement could be made permanent by using PC funds to reduce the borrower's payment for the remaining life of the loan. Because PC funds are limited, extending the supplement period to the loan term would reduce the amount of payment reduction delivered, thereby decreasing the default-reducing impact of the Supplement.

In Table 3, we show the payment reduction provided by a life-of-loan Supplement for each of our 3 example loans under a PC limit of 25% and 30% of UPB. For the recent origination and the typical loan, extending the supplement period to the remaining term of the loan cuts the P&I reduction from the 25% shown in Table 2 to between 7% and 12%.

Table 3. Payment reduction from a Recovery Mod at PMMS = 6.92% and a Life-of-Loan Supplement.*

Mortgage Terms			**P&I Change**			
Note Rate	Remaining Term	Previously Used PC (% of UPB)	Recovery Mod	Life-of-Loan Payment Supplement	Supplement Period (Years)	Remaining PC (% of UPB)
PC Limit at 25% of UPB						
3.00%	28	0%	**25%**	-9%	26.5	0%
4.25%	26.5	0%	**8%**	-7%	25.0	0%
5.50%	20	10%	-5%	N/A	N/A	N/A
PC Limit at 30% of UPB						
3.00%	28	0%	**17%**	-12%	26.5	0%
4.25%	26.5	0%	**2%**	-10%	25.0	0%
5.50%	20	10%	-10%	-1%	18.5	0%

*The difference between the remaining term and the supplement period in the table is the 18 months of missed payments.

In balancing the trade-off between the amount of payment reduction delivered and duration of the supplement period, three considerations are critical. First, post-loss mitigation loan performance will be a function of the amount of payment reduction provided, and therefore providing deeper payment reduction, even if temporary, may be preferable to providing less but permanent payment reduction. As we will show in Section 6.B, providing 25% of P&I reduction through a temporary Supplement would be expected to reduce subsequent foreclosures over the next 5 years by 36%. If the Supplement were instead applied for the life of the loan and delivered the roughly 10% P&I reduction shown in Table 3, the reduction in foreclosures would be expected to fall to 14%. In the extreme, it would be better to provide the 25% P&I reduction temporarily instead of the roughly 10% P&I reduction permanently if the additional 15 percentage points of P&I reduction prevent the borrower from immediately redefaulting and ending up in foreclosure.

Second, it is important to consider that some borrowers who receive a Supplement will sell their home and move or refinance their mortgage prior to the end of the 6.5 year and 9.3 year supplement periods shown in Table 2. Thus the likelihood of prepayments partially mitigates the concern that the temporary payment relief provided by the Supplement could lead to an increase in future defaults.

Third, the payment reduction delivered by the life-of-loan shown in Table 3 is limited by the considerable arrearages for each example loan. The example loans were chosen to represent borrowers facing COVID-19-related financial hardships who missed 18 payments while in forbearance. In other environments, the typical seriously delinquent borrower may have a much smaller number of missed payments and require a smaller amount of PC funds to cover arrearages, thereby increasing the payment reduction delivered by the life-of-loan Supplement. For example, if we were to reproduce Table 3 for the same loans but where the borrower had missed only 3 payments, the payment reduction delivered by the life-of-loan Supplement would increase from 7% - 12% to 14% - 19%.

5. Operationalizing the Payment Supplement

Note: Making substantial changes to the FHA loss mitigation options will be time-consuming and costly for all stakeholders, including FHA, Ginnie Mae, and the servicing industry. The description and considerations that follow are by no means exhaustive. Given the complexity of adding the Supplement to the FHA loss mitigation options, we suggest that FHA post the Supplement option to the Single Family Housing Drafting Table for industry and stakeholder feedback, with a short comment window.

In this section, we describe how FHA and the servicing industry might operationalize the Supplement option, including borrower communication, the use of a payment supplement account (PSA) to cover the shortfall between the scheduled payment and the borrower's actual reduced monthly payment, early payoff, early termination, and redefault. We also illustrate how the Supplement option could be paired with a government or third-party-provided subsidy to provide payment relief while reducing the use of the PC.

5.A. Borrower Communication

As part of the implementation of the Supplement option, FHA should define the specific requirements for communication with the borrower and documentation for the Supplement in accordance with applicable regulations.

In addition to the standard documents required for a PC, communication with the borrower should incorporate relevant details specific to the Supplement, including a notice that the Supplement will resolve the borrower's delinquency, the reduced monthly payment amount, length of the supplement period, date on which the payment will revert to the originally scheduled P&I (if temporary), amount of Partial Claim funds used for missed payments and the Supplement, and the total size of the balloon payment due at payoff or maturity.

Monthly statements should be adjusted to reflect the reduced monthly payment amount and adjusted payoff amount (described below), and what steps to take if they have resolved their hardship and can resume making their originally scheduled monthly payment. Most importantly, for a temporary Supplement, as the end of the supplement period approaches, notices should be required that notify the borrower of the due date and amount of their first post-Supplement payment.

5.B. Operationalizing the Supplement Option

Once the Supplement is initiated, the mortgage servicer would file a PC, apply the PC funds provided by FHA as required to cover missed payments, and then hold the remaining PC funds for the Supplement ($17,814 in our temporary Supplement example in Table 1) in a PSA on the borrower's behalf. Just as for a Standalone PC, the servicer would record the second lien for the PC amount and then transfer the second lien to FHA's contractor.

During the supplement period, upon receipt of the borrower's reduced monthly payment ($682) each month, the servicer disperses from the PSA the difference between the scheduled P&I payment due to Ginnie Mae ($910) and the borrower's reduced payment ($682), or $228. Servicers would post the total

payment (i.e. the funds received from the borrower plus the drawdown from the PSA) in their servicing system and send the total payment on to Ginnie Mae.[18] After 78 months, the PC funds in the PSA used for the supplement would be exhausted and the borrower's monthly payment would revert to the originally scheduled amount ($910).

The PSA could be implemented as a suspense account, an escrow account, or in other formats. FHA may want to consider the regulatory and operational requirements for servicers associated with each type of account before determining the type of account to use for the PSA. In addition, FHA will need to determine whether the balance in the PSA account should accrue interest and, if so, which party is to be the beneficiary. Importantly, in the event of a servicer default, any PSA balance would need to be remitted to Ginnie Mae so that it can then be transferred to the new servicer.

While the Ginnie Mae investor will continue to receive the passthrough of the full scheduled payment, implementation of the Supplement option may nevertheless require changes to the MBS Guide. At a minimum, it may be helpful for servicers if Ginnie Mae were to confirm that use of the Supplement option does not constitute a loan modification or trigger any additional actions required of the servicer.

As noted in Section 4.B and Appendix 1, implementing the Supplement option with a 30% PC limit would increase the amount of payment reduction delivered by the Supplement option, increase the length of the supplement period, and expand eligibility to more FHA borrowers facing financial distress. From an operational perspective, increasing the COVID-19 PC limit from 25% to 30% of UPB at default may be the easiest change for FHA and the servicing industry to implement.

5.C. Early Payoff

Should the borrower wish to pay off their mortgage prior to the completion of the supplement period, the servicer would subtract the remaining balance in the PSA from the borrower's first mortgage payoff amount. The borrower would remit that amount to the servicer, and the servicer would add the PSA balance to the amount received from the borrower and remit the total to Ginnie Mae to pay off the first lien. The borrower would pay off the full outstanding balance on the second lien, which would reflect the supplement amount plus the amount used to cover missed payments, to FHA (or FHA's contractor).

For example, suppose a borrower with the typical loan presented in Section 4 wanted to pay off their mortgage 12 months after the supplement period began. The relevant amounts are shown in Table 4.

[18] For convenience, we have ignored the servicing strip, MIP, and escrow payments, as there would be no operational changes to these payments.

Table 4. Cash flows in the event of an early payoff.

Early Payoff	
A Months between Buydown and Payoff	12
B UPB at Payoff	164,138
C Total Partial Claim	43,370
D Suspense Account Balance	15,016
E Borrower's First Lien Payoff Amount (B - D)	149,122
F Servicer remittal to Ginnie Mae for 1st Lien (E + D)	164,138
G Borrower remittal to FHA for 2nd Lien	43,370
H Total Borrower Payment (E + G)	192,492
J UPB + PC - Suspense Account Balance (B + C - D)	192,492

Twelve months after the Supplement, the UPB on the loan would be $164,138. The PSA, which started with $17,784, would have been drawn down by the $228 supplement amount 12 times and would have a remaining balance of $17,784 – (12 x $228) = $15,016. The servicer would inform the borrower of their payoff amount, which would equal the UPB on the first mortgage (plus any accrued interest, which is zero in our example) less the remaining balance in their PSA, or $164,138 - $15,016 = $149,122.

To pay off the first lien, the borrower would remit $149,122 to the servicer, the servicer would add the remaining balance in the PSA ($15,016) and send the total ($164,138) on to Ginnie Mae. To pay off the second lien, the borrower would remit the full amount of their PC ($43,340, composed of $25,556 for missed payments and $17,784 for the Supplement) to FHA (or FHA's contractor).[19]

To confirm that our figures sum to the correct total, we note in row H of Table 4 that the total outlay for the borrower would be $192,492, composed of the adjusted payoff amount ($149,122) plus the PC ($43,370). Intuitively, to pay off their first and second lien early, the borrower would owe the UPB on the first lien and the full PC (second lien) less the unused Supplement amount (or PSA balance). In row J of Table 4, we show that the UPB + total PC - PSA balance does in fact equal the borrower's total payment as calculated in row H.

5.D. Early Termination of the Supplement

If permissible and operationally feasible, it is important to allow Supplement recipients who resolve their financial hardship early to end the Supplement prior to completion of the supplement term. If implemented, the early termination would provide borrowers who resolve their hardship prior to the end of the supplement period with a significant benefit—the ability to retain their PC funds for a future hardship. To do so, the borrower would notify their servicer that they can resume making their originally scheduled monthly P&I payment as of the next payment date.

Once the borrower resumes making their originally scheduled payment, the funds in the PSA could be administered in three ways. One possibility is that the servicer could remit the remaining funds in the PSA to FHA as a partial prepayment of the PC. In this case, FHA may wish to clarify whether the partial

[19] Figures in this example may not sum and may differ slightly from the figures in Section 3 due to rounding.

prepayment of the PC would reinstate the borrower's PC capacity by the prepaid amount. This may be suboptimal for the borrower, however, as they would be prepaying a zero-interest rate loan and, should they have a future hardship, would need to go through loss mitigation to access PC funds again and potentially absorb a negative mark on their credit score. Rather than making their full scheduled payment, a borrower may be better off making the supplement-reduced payment to the servicer and depositing the supplement amount in an interest-bearing savings account each month. In the event of a future hardship, funds could be withdrawn as needed.

A second possibility is that the unused Supplement funds would remain in the PSA and could be used by the borrower should a future financial hardship arise. In that case, the full PC amount would remain outstanding.

A third possibility is that the borrower could resume making their scheduled P&I payment and the servicer would continue to remit the supplement amount. In this case, the payment in excess of scheduled P&I would be used for principal curtailment, just as it today. The full PC amount would again remain outstanding.

5.E. Redefault during the Supplement Period

Should the borrower redefault by making no payment or less than the Supplement-adjusted payment during the supplement period, the servicer would hold the PC funds in the PSA constant. Because the PC funds remaining in the PSA have not yet been disbursed, any remaining PC balance at the time of redefault could be used to resolve the new delinquency.

For example, suppose the borrower redefaults and misses 3 payments but can then resume making the supplement-adjusted payment. Assuming the Standalone PC is the first step in the waterfall, funds in the PSA (if sufficient) could be used by the servicer to cover the 3 missed payments that the servicer advanced to Ginnie Mae, and the supplement period would then be shortened accordingly. In our example, if the Supplement reduced P&I by 25%, the supplement period would have to be shorted by 12 months to cover 3 missed payments of P&I, and shortened further if the borrower also failed to make T&I and MIP payments. As an alternative, the supplement period could remain constant and the amount of P&I reduction provided could be reduced for the remainder for the supplement period.

If in our example the borrower who redefaults during the supplement period cannot resume making the supplement-adjusted payment, the remaining balance in the suspense account could be used to provide a deeper payment reduction (if possible) using the appropriate loss mitigation option available at the time of the redefault, including a Supplement with a shorter supplement period. This step may add operational complexity, as the remaining PC funds in the PSA would need to be combined with any remaining PC capacity available to the borrower.

In general, in the event of a redefault, the borrower would be evaluated according to the loss mitigation waterfall in place at the time of redefault, and funds in the PSA account would be applied accordingly.

5.F. Pairing the Supplement Option with a Subsidy

The Supplement option could be paired with a government or third-party-provided subsidy to provide more payment relief, reduce the use of the PC, and reduce the cost of providing the Supplement option to the FHA.

For example, subsidies from the Department of Treasury's Homeowner Assistance Fund (HAF) or any other government- or third-party-provided subsidy could be used in conjunction with the Supplement option according to the following steps. First, use the subsidy to cover missed payments. Second, if the subsidy exceeds the sum of missed payments, apply the remaining subsidy amount in place of the PC to the Supplement, just as described in Section 3. Finally, if necessary to reach the payment reduction target, the servicer would apply PC funds to the Supplement option.

If used as described above, the subsidy would increase the amount of payment reduction provided and/or increase the supplement period. By reducing the amount of PC required to reach the payment reduction target, it would leave the borrower with more PC capacity available in the event of a future hardship. The smaller PC would reduce the cost to FHA of providing the Supplement option.

6. Impact of the Payment Supplement on Expected Loan Performance

Mortgage modifications offer payment reduction to borrowers facing financial hardship precisely because payment reduction improves future expected loan performance. As a consequence, we would expect the payment reduction provided by a Supplement to reduce the redefault rate of Supplement recipients relative to their redefault rate had they received a Standalone PC, which maintains the previous payment with no payment reduction.

6.A. Estimating the Impact of Payment Reduction on Redefaults

To estimate the percentage change in the probability of redefault created by providing the Supplement, we turn to analysis of post-Great Recession modifications. Using a sample of loans that received different modifications, the authors calculate the causal effect of varying amounts of payment reduction on 5-year default rates after controlling for variables that influence loan performance.[20] The results are shown in the chart below. As would be expected, larger payment reductions lead to larger reductions in subsequent default rates. While current economic conditions are different from the post-Great Recession period along many dimensions, we can use the lessons from the past that deeper payment reductions are likely to improve mortgage performance to estimate the impact on default rates from adding the Supplement to FHA's loss mitigation options.

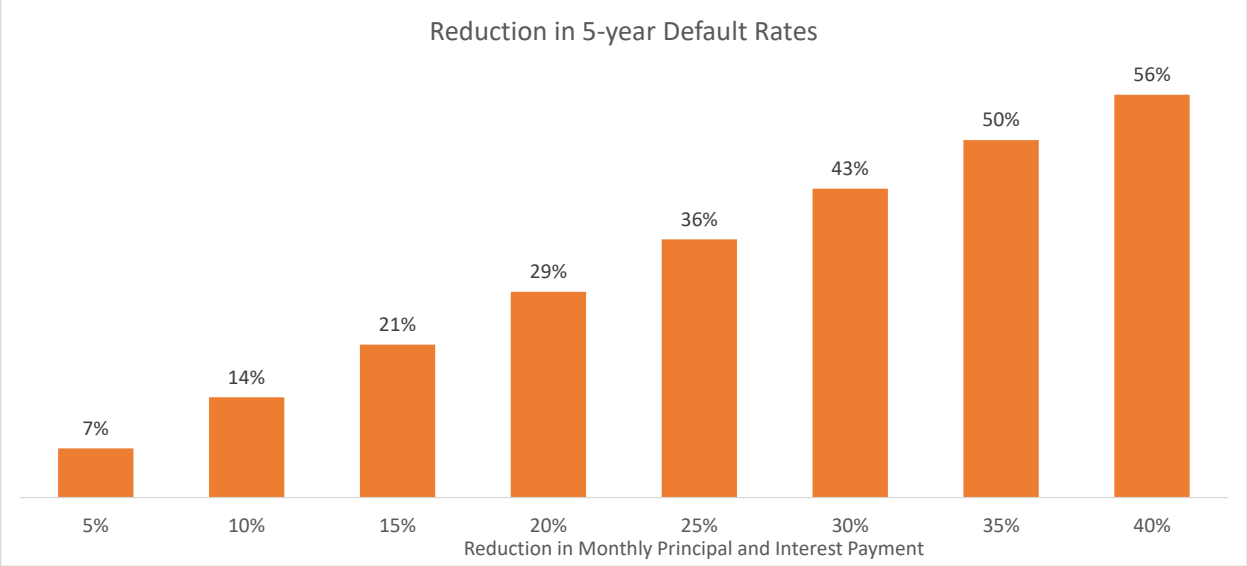
For our purposes, the recent origination and typical loan from Section 4 would receive a temporary Supplement instead of a Standalone PC and, for both loans, the payment reduction provided by the Supplement would be 25% of P&I (Table 2) as compared to none for the Standalone PC. Based on the

[20] Peter Ganong and Pascal Noel, in the online appendix to *Liquidity Versus Wealth in Household Debt Obligations: Evidence from Housing Policy in the Great Recession*, American Economic Review, 110(10): 3100-3138 (2020), estimate the causal effect of a reduction in principal and interest payments on re-defaults (defined as a 90-day delinquency) over the next 5 years.

causal estimates shown in the chart, we would then expect that providing 25% P&I reduction through the Supplement rather than no payment reduction through a Standalone PC for borrowers who state they cannot afford their current payment would reduce their subsequent 5-year default rates by 36%.

If the Supplement were instead applied over the remaining life of the loan, the recent origination and typical loan would receive 7% to 12% in P&I reduction (Table 3), and would be expected to experience a 10% to 17% reduction in 5-year default rates compared to their default rate had they received a Standalone PC. There would be no change in the expected default rate for the older origination, as it would receive more payment reduction from a Recovery Mod than a Supplement implemented as described in Section 4.

Chart. The Causal Effect of Payment Reduction on Subsequent 5-year Default Rates.*



*The data in this chart are derived from the Replication Kit provided for *Liquidity Versus Wealth in Household Debt Obligations: Evidence from Housing Policy in the Great Recession*, American Economic Review, 110(10): 3100-3138 (2020) available at GitHub - ganong-noel/mtg_mods_public: Repkit for Liquidity vs. Wealth in Household Debt Obligations: Evidence from Housing Policy in the Great Recession.

6.B. Estimating the Impact of Payment Reduction on Foreclosures

We can convert the expected change in default probability calculated above into an expected change in foreclosure probability using the following formula:

(7) *Probability (Foreclosure) = Probability (Redefault) x Probability (Foreclosure | Redefault)*

Not every redefault ends in foreclosure, so we use the probability of foreclosure given a redefault to translate redefault rates into foreclosures rates. Because we are interested in the percentage change in foreclosure probability from receiving a Supplement instead of a Standalone PC, we need to calculate:

(8) *Change in Foreclosure Probability = (Probability (Foreclosure | Supplement) – Probability (Foreclosure | PC)) / Probability (Foreclosure | PC)*

To do so, we make the conservative assumption that the probability of foreclosure given redefault is the same for a particular borrower whether they receive a Supplement or a Standalone PC. The assumption is conservative because one would expect a borrower who receives a Supplement and the associated payment relief to have a better chance of using their payment savings to cure a redefault than if they had received a Standalone PC and no payment relief. If we were to use a lower probability of foreclosure given redefault for Supplement recipients, it would reduce the probability of foreclosure calculated in equation (7).

Based on this conservative assumption, we can conclude that the change in foreclosure probability created by adding the Supplement option will be equivalent to the change in the redefault probability. To reach this conclusion, we substitute equation (7) into equation (8) and solve for the change in foreclosure probability. Our conservative assumption allows us to cancel the probability of foreclosure given redefault terms from equation 8, and we find that the expected change in foreclosure probability will equal the expected change in redefault probability. Therefore, we can conclude that *the temporary Supplement would reduce both redefault and foreclosure rates by 36%, while the life-of-loan Supplement would reduce both redefault and foreclosure rates by 10% - 17%.*

6.C. Loan Performance after the end of the Supplement Period

To the extent that a temporary Supplement is implemented, it will be important to consider loan performance in the post-Supplement period as well. After the supplement period ends, the borrower's monthly payment would revert to the original level. At that point, one might expect that the rates of redefault and foreclosure for borrowers who received a Supplement to be less than or equal to the rates of redefault had they received a Standalone PC. Supplement recipients would have had a greater chance to accumulate savings during the supplement period relative to Standalone PC recipients, and after the supplement period ends, would have the identical payment.

However, it is also possible that the payment increase at the end of the supplement period itself causes an increase in default probability, an outcome which is not captured in the analysis above. Borrowers who received a modification through the Home Affordable Modification Program (HAMP) were provided with payment relief through a below-market interest rate for 5 years, after which the interest rate and monthly payment increased. Research on HAMP recipients indicates that a 1 percentage point increase in the interest rate at year 5 caused a 20% increase in subsequent defaults.[21] However, to the extent that borrowers who receive the Supplement option default after the supplement period ends because of the increase in their monthly payment, it is likely that they would have defaulted even earlier had they received a Standalone PC, and that result would be captured in the analysis above.

We address the concern related to post-temporary-Supplement redefaults in the sample waterfall in the next section by providing a gradual payment increase in the post-Supplement period (which is described in detail Appendix 1) and by offering the borrower a permanent option upon request even if it would provide a smaller payment reduction.

[21] As described by Therese Scharlemann and Stephen Shore in *The Effect of Changing Mortgage Payments on Default and Prepayment: Evidence from HAMP Resets*, Real Estate Economics, 50, 1231– 1256 (2022).

7. Incorporating the Payment Supplement in FHA's Home Retention Options

In this section, we provide an example of how FHA might add the Supplement as an option in their Loss Mitigation Home Retention Options. It is important to note that, should FHA decide to incorporate a Supplement option, there are many additional choices that would need to be made. For example, the terms of the Supplement, such as minimum and maximum supplement periods, would need to be set. In addition, after considering the operational complexity and legal permissibility, decisions would need to be made on features such as early termination, renewal, and gradual payment steps. Given the number of considerations associated with the Supplement option, it would be difficult to produce an "optimal" loss mitigation waterfall without first making some if not all of these choices.

With the above considerations in mind, the waterfall that follows is nothing more than one example, provided to show just one method in which the Supplement could be deployed and to raise questions that FHA may wish to consider answering before determining how to structure the Supplement and how the Supplement might best fit into the existing waterfall. *It is important to note that in constructing the waterfall, we consider both low and the current high mortgage rate scenarios, in order to avoid having to adjust the waterfall should the mortgage rate fall. FHA should consider the same.*

Furthermore, the discussion below is purposely agnostic as to the size and calculation of the target payment, the terms and steps of any modification options, and the size of the PC. This agnostic approach will allow the discussion to focus on how the Supplement can be used rather than debating the existing home retention options, which is beyond the scope of this paper. For simplicity, we've assumed only 1 modification option is offered.

Before outlining the steps of the example waterfall, we review five key aspects of providing delinquent borrowers with payment relief and the limitations of the Supplement option, which collectively form the guiding principles for our example waterfall that are enumerated below.

7.A. The Duration of Payment Relief

As described in Section 6, home retention options provide borrowers with payment reduction because payment reduction leads to lower redefault rates. However, to the extent payment relief is temporary, the subsequent increase in payments can cause an increase in redefaults.

1. *When possible, it will be preferable to provide a permanent loss mitigation solution (e.g., a modification or a life-of-loan Supplement) instead of a temporary Supplement.*

Three additional considerations factor into the example waterfall below. First, only in very limited circumstances (e.g., very few missed payments and the entire PC available) will a life-of-loan Supplement offer more than 20% P&I reduction. As described in Section 4.C, applying a life-of-loan Supplement to our 3 example loans under the assumption the borrower has only missed 3 payments would result in payment reductions of between 14% and 19%.

Second, the impact of the future payment increase associated with a temporary Supplement on expected defaults can be reduced by increasing the payment gradually. As described in Appendix 1, rather than increasing all at once in the month following the end of the supplement period, the payment could increase over time. For the typical loan example described in Section 3, in the month following the

end of the supplement period, rather than having the borrower's payment increase from $682 to $910 (a $228 increase) in a single step, it could instead increase by one-third of the supplement amount ($76) to $758. Then, 12 months later, it would increase again by $76 to $834, and 12 months after that increase again by $76, finally reaching the original amount of $910. In this example, rather than increasing in 1 step, the payment increases in 3 steps which are spread out over a 2-year period.

To reduce the probability of redefault due to the post-Supplement payment increase, we include 2 additional payment steps at the end of the Supplement period in the waterfall below. Just as in the example above, the borrower's monthly payment would increase in 3 steps over a 2 year period rather than in a single step at the end of the supplement period. It is important to note that payment steps increase operational complexity, and could be eliminated if the additional complexity is prohibitive.

Third, while temporary payment relief is not a perfect solution, it would be preferable to provide deeper albeit temporary payment relief that gives the borrower time to overcome their hardship and remain in their home than to move directly to foreclosure or a foreclosure alternative.

7.B. The Limitations of PC Funds

PC funds are limited to 30% of UPB at the time of default (or 25% of UPB for the COVID-19 loss mitigation waterfall). Therefore, care must be taken such that PC funds are used judiciously.

2. *If both a modification and a life-of-loan Supplement can reach the target payment, offer the solution that uses the smallest amount of PC funds*.

Note that if a modification or a Supplement doesn't hit the target payment, it will, by definition, have exhausted the PC.

3. *If both a modification and a temporary Supplement can reach the target payment, the modification is the better option because it is permanent and may use less of the PC.*

A modification and a temporary Supplement are most likely to both reach the payment target under three conditions: the prevailing mortgage rate is at or below the existing note rate, the prevailing mortgage rate is low in absolute terms, or the loan has relatively few years remaining to maturity. Under these circumstances, a modification has two advantages over a temporary Supplement.

First, the modification is likely to use a smaller amount of PC funds than a temporary Supplement. If the prevailing mortgage rate is below the note rate or low in absolute terms, setting the note rate to the current mortgage rate and extending the term will provide ample payment relief and reduce the need for principal forbearance provided through the PC. In addition, for loans with relatively few years remaining to maturity, the Supplement is less effective because the size of the PC is a percentage of the UPB at default. Well-seasoned loans will have naturally amortized, have a smaller UPB at default, and therefore a smaller PC, which reduces the amount of payment reduction provided by the Supplement and/or the length of the supplement period.[22]

[22] For borrowers who have defaulted in the past, the PC size will be based on the UBP at initial default and will be larger than as described above. However, these borrowers will have consumed some PC capacity, which will reduce the PC funds available for use today.

Second, the modification is a permanent solution, whereas a temporary Supplement is not. While one might be concerned that the longer maturity modification would carry increased lifetime interest costs for the borrower, the large differential between the note rate and the market rate and/or the relatively low mortgage rate that will likely be a necessary condition in this scenario will blunt any increase in interest costs from a modification.

7.C. Offering Borrowers Flexibility Upon Request

Ultimately, the two most difficult scenarios to incorporate into a prescriptive waterfall are when a modification cannot reach the target payment but a temporary Supplement can or both a modification and a temporary Supplement cannot reach the target payment but offer the borrower similar amounts of payment reduction. In these 2 scenarios, how should FHA choose between the 2 options?

Answering the question is further complicated by the fact that there are nearly an unlimited number of combinations of note rates, remaining terms, missed payments, available PC amounts, PMMS rates, minimum and maximum supplement terms, payment step features, and renewal features that would need to be optimized over in order to answer the question quantitatively. And there is no reason to believe that the quantitative answer, if identified, could be written into a waterfall decision tree or operationalized in a servicing system. With this context in mind, our fourth guiding principal:

4. W*hen a permanent option reduces the payment but cannot achieve the target payment and a temporary Supplement can achieve the target payment, offer the borrower the permanent option upon request*.

Consumers who use a mortgage to purchase their home make choices regarding their monthly payment, interest rates, and interest costs. For example, when considering a purchase, borrowers have to decide between a 30 year mortgage, which offers lower monthly payments, and a 15-year mortgage which usually offers higher payments but a lower interest rate, lower cumulative interest costs, and faster equity accumulation. In addition, borrowers are faced with similar choices when considering a mortgage refinance—is a lower interest rate and lower monthly payments worth the cost and associated term extension?

The loss mitigation process asks borrowers to make additional choices—if delinquency can be cured through a Standalone PC, can they afford the originally scheduled monthly payment? If not, can they afford a reduced payment that is 25% lower than the original payment? Moreover, the Recovery Mod includes an important flexibility—the mortgage term may be extended to less than 40 years at the borrower's request, as long as it achieves the target payment at the shorter term.[23]

In Section 6.C, we make an important distinction between options that create permanent payment reduction and temporary options in terms of how they reduce future redefaults. Therefore, even if a temporary option can reach the target payment, unless it is "long enough" in duration, the borrower may prefer the permanent option that offers less payment reduction. The definition of "long enough" may vary according to a borrower's particular loan terms and hardship circumstances. Therefore, in the waterfall below, we build in flexibility by permitting the borrower to request a permanent option that

[23] As per Step 5 of the Recovery Mod waterfall in 2022-07hsgml.pdf (hud.gov).

offers less payment reduction. As an alternative, FHA could choose to define "long enough" and prescribe when, if ever, a permanent option that offers less payment reduction should be offered ahead of a temporary option that offers more payment reduction.

As noted above, the amount of payment reduction provided is the critical factor that determines subsequent loan performance. However, if the permanent option and the temporary Supplement both fall short of the target payment *and* offer similar amounts of payment reduction, additional considerations may be warranted in choosing between the 2 options. This leads to our fifth and final guiding principal:

5. *When both a permanent option and a temporary Supplement fall short of the target payment, offer the option that creates the lowest payment; upon request, offer the borrower the alternate option.*

When both the modification and the Supplement fall short of the target payment, it may be unclear which alternative is most appropriate. If the amounts of payment reduction provided are similar, the borrower may prefer the alternative that provides slightly less payment reduction based on the terms of their mortgage, the mortgage rate, and their financial circumstances. Therefore, the sample waterfall below includes a provision that, upon request, the borrower may be offered the solution that provides less payment reduction.

For example, when the mortgage rate is high, a modification is likely to increase the borrower's interest costs over the expected life of the loan and slow the pace of equity accumulation. In that case, the borrower may prefer a Supplement, even if it provides slightly less and temporary payment relief. Conversely, when the mortgage rate is low and well below the existing note rate, the opposite may be true—the modification could potentially reduce the borrower's interest cost over the expected life of the loan and increase the pace of equity accumulation relative to a Supplement—and the borrower may prefer a modification that provides slightly less but permanent payment relief to a temporary Supplement that provides slightly more payment relief.

Given the complexity of finding a quantitative solution to the question posed at the outset, we avoid a recommendation that suggests "offer a temporary Supplement only if the payment reduction exceeds the payment reduction created by a permanent option by at least x%." The determination of x% in this calculus is arbitrary and, depending on how the Supplement is calibrated, the optimal value of x% will vary significantly. Therefore, we conclude that it would be better to let the borrower, with their particular financial circumstances and loan terms in mind, request a temporary or permanent option that provides less payment reduction than to be prescriptive regarding a single solution that may be optimal in aggregate but suboptimal at the borrower and loan level.

7.D. A Sample Waterfall for FHA's Loss Mitigation Home Retention Options

Sample Loss Mitigation Home Retention Waterfall:

Step:	Action and Decision Point:	If Yes:	If No:
1	**Complete Calculations.**	Offer the Modification. If	Proceed to Step 2.

	Calculate the target payment, PC funds available and sum of missed payments, including P&I, T&I, and MIP. Does the sum of missed payments exceed available PC funds?	borrower affirms they can afford the payment, complete the Modification; otherwise proceed to Home Disposition.	
2	**Original Payment Resumption.** Does the borrower indicate they have the ability to resume their originally scheduled mortgage payment?	Complete the Standalone PC option.	Proceed to Step 3.
3	**Permanent Options.** Can both the Modification and a Life-of-Loan Supplement reach the target payment?	Offer the option that uses the smallest amount of PC funds and proceed to Step 9.	Proceed to Step 4.
4	**Modification.** Does the Modification reach the target payment?	Offer the option and proceed to Step 9.	Proceed to Step 5.
5	**Life-of-Loan Supplement.** Does the Life-of-Loan Supplement reach the target payment?	Offer the option and proceed to Step 9.	Proceed to Step 6.
6	**Temporary Supplement 1.** Does a Temporary Supplement with a 3 year minimum term followed by 3 payment steps over 2 years reach the target payment?	Offer the option and proceed to Step 9.	Proceed to Step 7.
7	**Temporary Supplement 2.** Does a Temporary Supplement with a 1-year minimum term reach the target payment?	Offer the option and proceed to Step 9.	Proceed to Step 8.
8	**Lowest Available Payment.** Compare the payment created by the Modification, Life-of-loan Supplement, and Temporary Supplement 2. Offer the option with the lowest payment. Does the borrower request a different option in response to an interest rate increase, term extension, or temporary payment reduction associated with the offered option?	Offer the alternate option that creates the next lowest payment and proceed to Step 9.	Proceed to Step 9.
9	**Borrower Affirmation.** Does borrower affirm they can afford the payment associated with an option that has been offered?	Complete the option.	If borrower has been offered a temporary option *and* requests a permanent option, proceed to Step 10. Otherwise, proceed to Step 11.
10	**Request for Permanent Option.**	Complete the option.	Proceed to Step 11.

	Calculate the payment created by a Life-of-Loan Supplement and a Modification. Offer the option that creates the lowest monthly payment. Does the borrower affirm they can afford the payment that has been offered?		
11	**Minimum Target Payment.** Did one of the options reach the target payment *and* is the target payment greater than the Minimum Target Payment?	Reduce the target payment to the Minimum Target Payment and Proceed to Step 3.	Proceed to Home Disposition.

Our Supplement of choice (Step 6) has a minimum term of 3 years followed by 3 payment steps over a 2-year period and no maximum period. To the extent the Supplement in Step 6 cannot reach the target payment, an additional Supplement option with a 1-year minimum term (Step 7) is included as a last resort before home disposition. We include the Supplement with a 1-year minimum period because it can provide 3 to 4.5 times the P&I reduction compared to the Supplement with a 3-year minimum period followed by 3 payment steps.

Steps 8 incorporates guiding principle 5. A borrower would reach Step 8 in the waterfall if none of the options can achieve the target payment, in which case the borrower would be offered the option that creates the lowest available payment. To the extent that option is a modification and includes an interest rate increase and/or lengthy term extension, the borrower could instead request a temporary alternative that provides slightly less payment reduction but does not increase their interest rate or loan term. Conversely, if the option that creates the lowest available payment is a temporary Supplement and the borrower needs permanent payment reduction, they can request the permanent option that creates the lowest available payment (a modification or life-of-loan Supplement) instead.

Step 9 incorporates guiding principle 4, as it includes flexibility for a borrower who is offered a temporary Supplement but does not affirm they can afford the resulting payment, which could be due in part to the payment increase at the end of the supplement period. If the borrower requests a permanent option instead, they would be offered the permanent option (modification or a life-of-loan Supplement) that creates the lowest available payment.

In recognition that some borrowers may need payment relief beyond the 25% P&I reduction target, FHA included in the Recovery Mod the flexibility to exceed the payment reduction target at the end of the COVID-19 waterfall. In that spirit, for those borrowers who need payment relief beyond the target payment, we include a final step in the waterfall with a lower, minimum target payment. For example, should the target payment be based on a 25% P&I reduction, the minimum target payment could be based on a 35% P&I reduction. In Step 11, if one of the waterfall options can achieve the target payment but the borrower does not affirm it is affordable, the new and lower minimum target payment would be established. Then, the servicer re-enters the waterfall at Step 3 and attempts to find an option that can reach the minimum target payment.

Based on the premise that mortgage delinquency itself is a sufficient indicator of hardship, the sample waterfall is streamlined—no documentation is required from the borrower. As an alternative, for

borrowers who indicate they cannot afford the target payment, FHA could amend Step 11 to include the collection of documentation that could be used to establish a lower target payment based on the borrower's income.

Should FHA choose to incorporate the Supplement into the COVID-19 waterfall, Step 7 of the Recovery Mod could be adjusted so that if the target payment is not achieved, the servicer would move to step 5 in the sample waterfall above.

FHA may consider adjusting the sample waterfall for loans where the remaining term is less than 10 years to favor the Supplement. Even in a high rate environment, a modification can offer ample payment relief to a borrower with a loan with 10 years remaining to maturity by extending to term to 30 or 40 years. However, under these circumstances, the modification would increase the interest expense and slow the equity accumulation for the borrower. As such, FHA may want to include a step that allows borrowers to request a temporary or life-of-loan Supplement that provides material payment reduction but does not reach the target payment over a modification that reaches the target payment but increases their note rate and extends their loan term by 20 or 30 years.

7.E. Applying the Sample Waterfall

To illustrate how sample waterfall would work, we apply it to our 6 example loans. The results are shown in Table 5 below. We use the Recovery Mod as the sole modification option and a 25% P&I reduction to calculate the target payment. For each loan, we assume the borrower indicates they cannot resume their originally scheduled mortgage payment ("no" in Step 2) but can afford the target payment.

For all 6 loans, neither the Recovery Mod nor a life-of-loan Supplement can reach the 25% P&I reduction target, which means Steps 3 through 5 cannot be used to resolve their delinquency.

The recent origination and typical loan would be resolved at Step 6 of the waterfall. With the PC limit set to 25% of UPB, the recent origination would receive a Temporary Supplement and a 25% P&I reduction for 8.3 years, followed by 3 payment steps over 2 years. With a PC limit of 30% of UPB, the supplement period would be extended to 12.2 years. The typical loan would receive a 25% P&I reduction for either 5.5 or 8.7 years, depending on the PC limit, followed by 3 payment steps over 2 years.

Table 5. Resolving Example Loans Using the Sample Waterfall.

Mortgage Terms			**P&I Change**			
Note Rate	Remaining Term	Previously Used PC (% of UPB)	Recovery Mod	Temporary Payment Supplement	Supplement Period (Years)	Remaining PC (% of UPB)
PC Limit at 25% of UPB						
3.00%	28	0%	**25%**	**-25%**	8.3	0%
4.25%	26.5	0%	**8%**	**-25%**	5.5	0%
5.50%	20	10%	-5%	N/A	N/A	N/A
PC Limit at 30% of UPB						
3.00%	28	0%	**17%**	**-25%**	12.2	0%
4.25%	26.5	0%	**2%**	**-25%**	8.7	0%
5.50%	20	10%	-10%	-13%	1.0	0%

The older origination is more difficult to resolve because the borrower has already used some of their PC funds, and highlights the difficulty of finding a loss mitigation solution that provides substantial payment reduction to borrowers who have limited PC capacity remaining.

If the PC limit is 25% of UPB, the missed payments exceed the remaining PC capacity ("yes" in Step 1) and the only choice available to the borrower is a Recovery Mod, which in this case reduces the monthly payment by 5%. A 5% P&I reduction may not be sufficient for many COVID-19 affected borrowers with loan terms similar to the older origination and, unless either the PC limit is increased, a subsidy is available that can be applied to missed payments, or FHA incorporates a repayment plan for missed payments in excess of available PC funds, they will face home disposition.

If the PC limit is 30% of UPB, available PC funds exceed the sum of missed payments, so the borrower would be eligible for a Supplement. However, the bulk of the PC funds would be applied against missed payments, leaving just $1,650 for a Supplement. As a result, the Supplement option with a 3-year minimum period in Step 6 cannot reach the target payment; it can only reduce P&I by 3%. Moving on to Step 7, the borrower would be evaluated for a Supplement with a 1-year minimum period, which would reduce P&I by 13% for 1 year. While the Supplement with a 1-year minimum period is unable to achieve the target payment, in this example it provides 4.5 times the P&I reduction compared to the Supplement option with a 3-year minimum period. A Supplement that provides 13% P&I reduction for just 1 year is far from a perfect solution, but it would give the borrower an opportunity to overcome their hardship and remain in their home rather than to moving directly to foreclosure.

Proceeding to Step 8, the servicer would offer the borrower a 1-year Supplement with a 13% reduction in P&I, as it creates a lower payment than the Recovery Mod (10% P&I reduction) and a life-of-loan Supplement (1% P&I reduction). Should the borrower request a permanent solution instead, they would be offered the Recovery Mod and a 10% reduction in P&I.[24]

8. Conclusion

The mechanics of an FHA modification, combined with a high mortgage rate, has rendered the Recovery Mod ineffective at providing payment relief for many borrowers with government-backed mortgages. For the typical seriously delinquent FHA loan, at the current mortgage rate (7.00%), the Recovery Mod would increase the borrower's monthly payment by 8%. The existing set of FHA loss mitigation options does not include a tool that can provide delinquent borrowers facing financial hardship with payment relief in an environment with a high mortgage rate.

As a countermeasure, FHA should consider the addition of a Payment Supplement to their loss mitigation options. The Supplement would use PC funds to reduce the borrower's monthly payment,

[24] Because the supplement period is short and the payment increase after 1 year can lead to redefault, a borrower may request the permanent payment reduction created by the Recovery Mod. In this example, the trade-off under consideration would be a $34 lower monthly payment for 1 year followed by the original payment created by the temporary Supplement against a permanent modification that increased interest costs and slowed equity accumulation. If we assume a 7 year expected life, the modification would increase interest costs by $25,000 and the payoff amount at the 7 year point by $9,000 relative to the 1-year Supplement.

either for the remaining life of the loan or for a temporary period. The Supplement would be an effective substitute for both the Recovery Mod and a Standalone PC, as the Supplement can provide seriously delinquent FHA borrowers with substantial payment relief: a temporary Supplement applied to the same typical seriously delinquent FHA loan would results in a 25% reduction in monthly P&I payments for 6.5 years.

There is compelling evidence that providing substantial payment reduction to delinquent borrowers leads to lower redefault rates. Based on that evidence, we estimate that the 25% P&I reduction provided by the Supplement in the example above would be expected to reduce the probability of foreclosure for the recipient by 36% relative to their foreclosure probability had they received a Standalone PC and no payment relief. Without the Supplement option in place, many seriously delinquent FHA borrowers who indicate they cannot afford their originally scheduled monthly payment would receive either a Standalone PC and no payment reduction or a Recovery Mod and a payment increase, and many would either have to sell their home or lose it to foreclosure.

Appendix 1. Calibrating the Terms of the Supplement Option

The PC limit, the minimum and maximum supplement periods, and the presence (or absence) of a payment step after the supplement period ends will determine how many borrowers are eligible for a Supplement, the size and duration of the payment reduction, and subsequent loan performance. Accordingly, FHA should consider increasing the COVID-19 PC limit, carefully calibrating the minimum and maximum supplement periods, and adding payment steps at the end of the supplement period to achieve the desired balance among five important measures:

1. Breadth of borrower eligibility;
2. Payment reduction;
3. Length of supplement period;
4. Retaining PC capacity for a future hardship, when possible; and
5. Loan performance.

A1.A. Increasing the COVID-19 Partial Claim Limit

While not necessary for the Supplement to be an effective loss mitigation option, the impact of the Supplement option would be maximized if the COVID-19 PC limit were raised from 25% to 30% of UPB. The larger 30% of UPB PC limit would result in the Supplement option having the widest availability and providing the greatest amount of payment reduction for the longest duration possible.

The PC limit determines how many borrowers will be eligible for the Supplement option because the option is only available if the borrower's remaining PC funds exceed the sum of their missed payments. Borrowers whose missed payments exceed their remaining PC capacity will need the excess capitalized, which requires that the loan be bought out of the pool and modified, making the borrower ineligible for the Supplement option. Therefore, providing the Supplement option in conjunction with a PC limit set to the statutory maximum of 30% of UPB would increase the number of qualifying borrowers.

In addition, providing the Supplement option with a PC limit of 30% of UPB would increase the amount of payment reduction provided and/or lengthen the supplement period. To the extent that the Supplement option cannot reach the 25% P&I reduction for COVID-19 affected borrowers, increasing the PC limit to 30% of UPB would increase the amount of payment reduction provided. For those COVID-19 affected borrowers for whom the Supplement can already reach the 25% P&I reduction target, the supplement period would be extended if the PC limit were increased to 30% of UPB.

In either case, adding the Supplement option would increase the cost to FHA due to the additional interest expense associated with increased PC usage. However, the larger payment reduction and longer supplement period would lead to fewer redefaults and fewer foreclosures, as discussed in Section 6. Thus, the savings resulting from fewer future claims may offset some or all of the additional interest expense, providing a net benefit to FHA.

A1.B. Calibrating the Minimum and Maximum Supplement Period

In the examples provided in Section 4, we used a minimum supplement period of 3 years and maximum supplement period of 10 years. However, FHA may choose to implement shorter or longer minimum and maximum periods or no maximum at all. In calibrating the minimum and maximum supplement periods, FHA should consider how to achieve the appropriate balance among four of the measures noted above: (1) ensuring that borrowers receive sufficient payment reduction and (2) a supplement period that is long enough for them to regain their financial footing yet (3) short enough such that, when possible, some borrowers can retain some PC capacity for a future hardship, and (4) managing the impact on the FHA's costs.

To illustrate how the minimum and maximum supplement periods influence these 4 measures, we calculate the impact of the Supplement option with the minimum supplement period set to 1 year and the maximum supplement period set to 5 years. Table 6 shows the resulting payment reduction amount, supplement period, and remaining PC for our 3 example loans under a PC limit of 25% and 30% of UPB. Similarly, we repeat the calculations using a minimum supplement period of 10 years and a maximum supplement period of 20 years, with the results shown in Table 7. Table 8 is a repeat of Table 2, where the minimum and maximum supplement periods are set to 3 and 10 years respectively.

Table 6. Impact of the Supplement with a 1 year minimum and 5 year maximum supplement period.

Mortgage Terms			**P&I Change**			
Note Rate	Remaining Term	Previously Used PC (% of UPB)	Recovery Mod	Temporary Payment Supplement	Supplement Period (Years)	Remaining PC (% of UPB)
PC Limit at 25% of UPB						
3.00%	28	0%	**25%**	**-25%**	5.0	6%
4.25%	26.5	0%	**8%**	**-25%**	5.0	2%
5.50%	20	10%	-5%	N/A	N/A	N/A
PC Limit at 30% of UPB						
3.00%	28	0%	**17%**	**-25%**	5.0	11%
4.25%	26.5	0%	**2%**	**-25%**	5.0	7%
5.50%	20	10%	-10%	-13%	1.0	0%

Table 7. Impact of the Supplement with a 10 year minimum and 20 year maximum supplement period.

Mortgage Terms			**P&I Change**			
Note Rate	Remaining Term	Previously Used PC (% of UPB)	Recovery Mod	Temporary Payment Supplement	Supplement Period (Years)	Remaining PC (% of UPB)
PC Limit at 25% of UPB						
3.00%	28	0%	**25%**	**-24%**	10.0	0%
4.25%	26.5	0%	**8%**	**-16%**	10.0	0%
5.50%	20	10%	-5%	N/A	N/A	N/A
PC Limit at 30% of UPB						
3.00%	28	0%	**17%**	**-25%**	13.2	0%
4.25%	26.5	0%	**2%**	**-24%**	10.0	0%
5.50%	20	10%	-10%	-1%	10.0	0%

Table 8. Impact of the Supplement with a 3 year minimum and a 10 year maximum supplement period.

Mortgage Terms			**P&I Change**			
Note Rate	Remaining Term	Previously Used PC (% of UPB)	Recovery Mod	Temporary Payment Supplment	Supplement Period (Years)	Remaining PC (% of UPB)
PC Limit at 25% of UPB						
3.00%	28	0%	**25%**	**-25%**	9.3	0%
4.25%	26.5	0%	**8%**	**-25%**	6.5	0%
5.50%	20	10%	-5%	N/A	N/A	N/A
PC Limit at 30% of UPB						
3.00%	28	0%	**17%**	**-25%**	10.0	4%
4.25%	26.5	0%	**2%**	**-25%**	9.7	0%
5.50%	20	10%	-10%	-4%	3.0	0%

A1.B.1. Minimum Supplement Period

The minimum supplement period provides a floor for the supplement period and can impact the amount of payment reduction delivered to the borrower. Regarding the supplement period, the minimum should be set to ensure that borrowers facing financial hardship are provided with payment relief for a sufficiently long period that allows them to regain their financial footing and resume making their originally scheduled monthly payment. The durations of financial hardships are notoriously difficult to predict and exhibit significant variation; intuition suggests a minimum supplement period of at least 1 year.

In addition to setting a floor on the supplement period, the minimum supplement period can impact the amount of payment reduction delivered by the Supplement option when the floor is in effect. That is, when the supplement period calculated using equation (2) is less than the minimum, the payment reduction is reduced according to equation (3).

The impact of a longer minimum supplement period on our example mortgages is evident in Table 7, which shows the results of a minimum supplement period of 10 years and a maximum supplement period of 20 years. Comparing the results in Table 7 to the results in Table 8 (3 year minimum and 10 year maximum supplement period) shows how the supplement periods would be extended to the 10 year minimum, if necessary. The payment reduction provided would be smaller, as the same amount of PC funds would be stretched over a longer period. With a 10-year minimum supplement period, the Supplement option can only reach the 25% P&I reduction target for the recent origination with a PC limit equal to 30% of UPB; the Supplement option falls slightly short of the 25% P&I reduction target for the recent origination with the PC limit equal to 25% of UPB and for the typical loan.

In general, a *longer* minimum supplement period will result in *less* payment reduction provided to some borrowers. In the extreme, if the supplement period were set to the remaining term of the loan, most borrowers would receive a more modest amount of payment reduction, as shown in Table 3.

In contrast, a *shorter* minimum supplement period will result in *more* payment reduction provided to those borrowers. For example, choosing a minimum supplement period of 1 year, as in Table 6, would

increase the amount of payment reduction the Supplement option would deliver to the older origination if the PC limit were increased to 30% of UPB. In this case, the Supplement option would reduce the borrower's monthly P&I payment by 13%, more than the Recovery Mod.

A1.B.2. Maximum Supplement Period

The maximum supplement period will determine in part how much PC is used to provide payment relief and therefore how much, if any, PC will be available to the borrower in the event of a future hardship. In addition, the maximum supplement period will determine the incremental cost of providing the Supplement option relative to a Standalone PC. To achieve a balance between these two measures and to ensure that the recipient has sufficient time to regain their financial footing, the maximum supplement period should likely be at least 5 years.

To the extent FHA wanted to preserve PC funds for a future hardship for some borrowers, they could choose a shorter maximum supplement term. For example, as shown in Table 6, if the maximum supplement period were set to 5 years, the Supplement option could reach the 25% P&I reduction target while still preserving PC capacity of between 2% and 11% of UPB, depending on the loan terms and the PC limit. In contrast, with the maximum supplement period set at 10 years (Table 2), the Supplement uses the entire remaining PC capacity for every loan except the recent origination with a 30% PC limit. Note that for the older origination, even with the 5 year maximum supplement period, the borrower would be ineligible for a Supplement if the PC limit were 25% of UPB and the Supplement would consume their entire PC if the PC limit were 30% of UPB.

We should note that, during the supplement period, the need for retaining PC capacity is mitigated because of the way PC funds are disbursed in the Supplement option, as per Section 5.B. That is, even if the Supplement consumes the borrower's entire PC, because the PC funds are disbursed monthly during the supplement period, in the event of a redefault prior to the end of the supplement period, PC funds can be redeployed as necessary. In addition, if the borrower is able to terminate the Supplement before the end of the supplement period and retain their unused PC funds for use in the event of a future hardship as described in Section 5.D, the maximum supplement term becomes less important. For these reasons, FHA may choose to implement the Supplement with no maximum supplement period.

Choosing a shorter maximum supplement period would reduce the incremental cost to FHA of providing the Supplement option. For any loan that can reach the 25% P&I reduction target with the Supplement option, shortening the supplement period would reduce the amount of PC funds used for the Supplement and consequently also reduce the interest cost borne by FHA.

A1.C. Adding Payment Steps at the end of the Supplement Period

To address the concern that the payment increase at the end of supplement period could cause an increase in redefaults, FHA could choose to spread the payment increase over time.

A Supplement recipient who is provided with a temporary 25% P&I reduction will experience a 33% increase at the end of the supplement period when their payment reverts to the originally scheduled amount. Returning to the results from Section 4, suppose a borrower with the typical loan receives a

Supplement that provides a 25% P&I reduction. Instead of $910, they will pay $682 per month for 78 months. In month 79, their monthly payment will revert to $910. The $228 increase on the $682 reduced payment amount is an increase of 33%.

Instead, payment steps could be added to the end of the supplement period such that the payment increased gradually each year for the next few years, which would help the borrower adjust to the higher payments by spreading them out over time. For the typical loan, 2 payment steps could be added at the end of the supplement period.[25] In month 79 (step 1) the monthly payment would increase by $228 / 3 = $76, or from $682 to $758. In month 91 (step 2) the payment would increase again by $76 to $834, and in month 103 (step 3) the payment would increase for the final time by $76 to $910, finally reaching the pre-Supplement amount.

However, because PC funds are limited, providing payment steps at the end of the supplement period must either reduce the amount of P&I reduction delivered or the length of the supplement period itself, so the example above would not hold. Instead, the amount of PC funds that would need to be reserved to provide the payment steps would be adjusted as follows:

> *(9) PC Funds for Payment Steps = Supplement Amount x Months between Steps x (Number of Steps – 1) / 2*

We can then illustrate the full effect of adding 3 payment steps to the end of the supplement period on our typical loan. The results are shown in Table 9 below. A Supplement with a 3-year minimum and a 10-year maximum period and just 1 payment step would result in a 25% P&I reduction for 78 months. If instead the Supplement were implemented with 3 payment steps with 12 months between each step, equation (9) indicates that PC funds in the amount of $228 x 12 x (3 – 1) / 2 = $2,736 would need to be reserved for the step period. After accounting for the payment steps, there would be $17,814 - $2,736 = $15,078 in PC funds remaining for the Supplement itself, which means the supplement period would be reduced from 78 months in the original example to $15,078 / $228 = 66 months.

Incorporating the shorter supplement period into our typical loan example indicates that after 66 months of payments at $682, the payment would increase in month 67 (step 1) to $758, in month 79 (step 2) to $834, and finally in month 91 (step 3) to the original $910.

Table 9. Payment Supplement for a Typical Loan with a 2-year Step.

Buydown		**Buydown with Payment Steps**	
Missed Payments during Forbearance	18	Buydown Amount	228
Past Due Amount	25,556	Steps	3
Remaining PC as a % of UPB at Forbearance	25%	PC Funds for Steps	2,736
Remaining PC	43,370	PC Funds for Buydown	15,078
Remaining PC - Past Due Amount	17,814	Buydown Period	66
Payment Reduction Target (25% of P&I)	228	Buydown P&I (months 1 - 66)	682
Buydown Period (Months)	78	Payment after Step 1 (months 67 - 78)	758
Total Partial Claim	43,302	Payment after Step 2 (months 79 - 90)	834
		Payment after Step 3 (months 91+)	910

[25] In this example, there are only 2 additional steps because the payment steps up at month 79 regardless.

As shown above, for the typical loan, incorporating 2 additional (and 3 total) payment steps at 12-month intervals would shorten the supplement period by 12 months. In general, each additional payment step provided beyond the 1 step that is already part of the Supplement, assuming 12-month intervals between payment steps, would reduce the supplement period by 6 months unless the minimum supplement period is binding.

Note that while payment steps following the supplement period would be expected to reduce defaults created by a one-time payment increase at the end of the supplement period, they would increase the operational complexity of implementing the Supplement.

Appendix 2: Implementing the Supplement Option with a Renewal Feature

As an alternative, FHA could offer the Supplement option in shorter increments that could be renewed periodically in the event of continuing hardship.

Rather than having the payment reduction and supplement period calculated based on the inputs in equations (4) and (5), FHA could instead offer the Supplement option in shorter (e.g., 12 month) increments. PC funds would be used to temporarily reduce the borrower's monthly payment as described in Section 3, but the initial supplement period would be limited to a shorter term which would in turn reduce the PC funds used for the initial Supplement. Should the borrower's hardship continue beyond the initial term, the Supplement could be extended in increments (e.g., 12 months) up to a maximum term limit (for example, 7 or 10 years), or as long as the borrower has PC funds available.

The renewal feature would require the servicer to contact the borrower as the end of the supplement period approached to determine whether the borrower could resume their originally scheduled P&I payment or, to the extent they have PC funds available, needed the supplement period to be extended for another term. FHA could consider requiring the borrower to document their income and hardship in order to be granted an extension and, if desired, the amount of payment reduction provided during the extension could be calculated based on the borrower's income.

The renewal feature would benefit the borrower by providing the Supplement option only for as long as necessary, which would preserve PC capacity for a future hardship. The renewal feature would also make the Supplement less costly for FHA, as the PC amount used for the Supplement with the renewal feature would in aggregate be less than the PC amount used by the Supplement implemented as described in Section 3.

Note that there is less need for the renewal feature if a borrower is able to end their Supplement early and the PC funds remain available for a future hardship, as described in Section 5.D. Moreover, the renewal feature would add considerable operational complexity for FHA and servicers because, if renewed, the Supplement would be provided to borrowers and administered multiple times rather than just once.