CHAPTER 5. CALCULATION OF PAYMENTS

5-1 PURPOSE. This chapter explains the procedures to follow in designing and changing the borrower's payment plan. This process involves calculating the borrower's net principal limit for any month during the life of the loan and determining the payments available to the borrower.

5-2 PERFORMING THE CALCULATIONS. All of the calculations in this chapter may be made with the aid of:

A.A financial calculator (such as a Hewlett-Packard 12C). See Appendix 21 for payment calculation keystrokes;

B.The formulas in Appendix 22; or

C.HECM spreadsheet software containing computation screens, for use on a personal computer. The software is available free of charge from local HUD offices, or from Computer Data Systems, Inc. (CDSI). In order to download the software from CDSI's computer bulletin board, or obtain the software on a floppy disk, please call 301/921-7271.

5-3PAYMENT PLANS. The borrower can choose from among five different payment plans. The lender may not establish a minimum monthly payment or line of credit draw.

A.Tenure. The borrower may receive fixed monthly payments as long as he or she maintains the property as a principal residence.

B.Term. The borrower may receive fixed monthly payments for a term of months selected by the borrower, as long as he or she maintains the property as a principal residence.

C.Line of Credit. The borrower may elect to make withdrawals at times and in amounts of his or her choosing, as long as he or she maintains the property as a principal residence.

D.Modified Tenure. The borrower may combine a tenure payment plan (fixed monthly payments for as long as property is principal residence) with a line of credit. The borrower sets aside a portion of the principal limit as a line of credit from which to draw at times and in amounts of his or her choosing and receives the rest in equal monthly payments for as long as he or she continues to occupy the home as a principal residence.

E.Modified Term. The borrower may combine a term payment plan (fixed monthly payments for a term of months) with a line of credit. The borrower sets aside a portion of the principal limit as a line of credit from which to draw at times and in amounts of his or her choosing and receives the rest in equal monthly payments for a term of months selected by the borrower, as long as he or she maintains the property as a principal residence.

5-4CHANGING PAYMENT PLANS. The borrower may change his or her payment plan throughout the life of the loan, and may receive a cash advance in an amount, when added to the outstanding balance, that does not exceed the principal limit. If the new outstanding balance does not equal the principal limit, such an unscheduled payment would result in a new payment plan, with a new monthly payment or line of credit. A draw under an existing line of credit does not result in a new payment plan.

5-5PRINCIPAL LIMIT. The payments that the borrower can receive from a reverse mortgage are determined by calculating the principal limit.

A.The principal limit is the present value of the loan proceeds available to the borrower. It is determined at closing and increases each month by one-twelfth of the sum of the expected average mortgage interest rate ("expected rate") plus the monthly MIP rate.

B.A borrower may choose any payment plan, as long as the payments plus accrued interest, monthly MIP, and funds set aside, if any, do not exceed the principal limit.

C.When the outstanding balance equals the principal limit, the borrower cannot receive any more payments, but may remain in the property as long as he or she desires. For exceptions to this rule, see Paragraph 5-8C.

5-6 DETERMINING THE BORROWER'S PRINCIPAL LIMIT.

A.The principal limit for a particular borrower is initially determined at closing using a factor from the table included in Appendix 20.

B.The principal limit is determined by multiplying the maximum claim amount by the factor corresponding to the age of the youngest borrower and the expected rate.

C.The age of the youngest borrower should be rounded to the nearest whole year as of the first day of the month that the loan is closed. For example, if the loan closed in April 1993, and the borrower was born on October 12, 1917, the borrower would be 75 years of age. If the borrower was born on September 27, 1917, he or she would be 76 years of age (for purposes of determining the principal limit).

Example: The factor corresponding to a 75 year old borrower and a 7 3/4 percent expected rate is .554. If she occupies a $165,000 house in an area where the maximum mortgage limit is $151,725, the maximum claim amount (the lesser of the house value and the mortgage limit) should be multiplied by .554, resulting in an initial principal limit of $84,055.65.

5-7DETERMINING THE NET PRINCIPAL LIMIT. To determine the maximum amount of payments that a borrower can receive after closing, the net principal limit is calculated.

A.The net principal limit is calculated by subtracting from the principal limit any initial payments to or on behalf of the borrower, such as the initial MIP, closing costs, or cash payment to the borrower, and any funds set aside from the principal limit for monthly servicing fees (see Paragraph 5-7B.) or set asides for repairs after closing (see Paragraph 3-5) and first-year property charges (see HUD Handbook 4330.1). The net principal limit may be drawn by a borrower as monthly payments, or as a line of credit, or both.

B.A set-aside for monthly servicing fees is calculated by determining a fixed monthly fee, and then determining the present value of that fee using the term used for a tenure payment plan (i.e. to the borrower's 100th birthday) and the compounding rate defined below in 5-8B.2. Example: The present value of a fixed monthly servicing fee of $25, given a term of 300 months and a compounding rate of .0825 divided by 12 is $3,192.58. This amount should be subtracted from the principal limit to arrive at the net principal limit that is used for determining monthly payments or a line of credit.

5-8 DETERMINING TERM OR TENURE MONTHLY PAYMENTS.

A.Term or tenure monthly payments are determined using the future value of the net principal limit, the term in months, and the compounding rate in a sinking fund formula for payments made at the beginning of a month. (See Appendix 22 for exact formulas).

B.The future value of the net principal limit is then determined using two additional variables--the number of months in the term of the loan and the compounding rate.

1)The length of the term for term payments is the number of years multiplied by 12. The length of the term for tenure payments is 100 minus the age of the youngest borrower multiplied by 12. (Borrowers over the age of 95 are treated as if they were 95 for purposes of this calculation).

2)The compounding rate is one-twelfth of the sum of the expected rate and the annual rate for the monthly MIP (0.5 percent or .005). Example: If the expected rate is 7.75 percent, the compounding rate is .0825 divided by 12, or .006875.

C.The borrower may choose to receive payments in an amount less than the maximum. If the borrower chooses an amount less than $25.00 per month, the lender may, with HUD concurrence, require the borrower to choose a higher amount or to convert to a line of credit payment plan.

D.Monthly payments to the borrower will usually stop when the outstanding balance, consisting of the payments to the borrower, plus accrued interest, fees, and MIP, equals the principal limit.

1)For term payment plans, the outstanding balance will equal the principal limit at the end of the term. At that point in time the borrower would not receive any more payments from the lender, but would be able to remain in the property as long as he or she desired. For adjustable rate mortgages, payments will continue until the end of the selected term, even if the outstanding balance exceeds the principal limit because the actual average mortgage interest rate exceeds the expected rate. Term Example: Assume that the 75 year old borrower in Paragraph 5-6 has selected a 10-year term payment plan. First, any payments to her, or set-asides, must be subtracted from the principal limit of $84,055.65. Assume that she wishes to finance the initial MIP of $3,034.50 and $2,275.50 of closing costs, for a total initial payment of $5,310, and does not set aside any of the principal limit for a line of credit. The set-aside for the $25.00 per month servicing fee is $3,192.58, resulting in a net principal limit of $75,553.07. Using the formula in Appendix 22 or a financial calculator, the future value of the net principal limit after 120 months is $171,917.09. Using the sinking fund formula for payments at the beginning of the month, the term payment for 120 months is $920.35.

By the same method, the monthly payment for a 90-month term would be $1,120.89 and $727.97 for a 180 month term.

2)For tenure payment plans, the outstanding balance will equal the principal limit in the year that the borrower becomes 100 years of age. If the borrower lives beyond the age of 100, payments will continue. A borrower with a tenure payment plan has a right to receive payments as long as he or she owns and occupies the property as a principal residence. Tenure Example: Assume that the 75 year old borrower mentioned above has selected a tenure payment plan and she wishes to finance the initial MIP and $2,275.50 in closing costs, as in the previous example. Using 300 monthly periods and a compounding rate of .0825 divided by 12, the future value of $75,553 is $590,091.62. Using the sinking fund formula for payments made at the beginning of the month, the monthly payment is $591.63. The borrower would be able to receive $591.63 every month for the rest of her tenure in the property.

5-9 DETERMINING LINE OF CREDIT PAYMENTS.

A.A line of credit is limited by the net principal limit for every month that the mortgage is outstanding.

B.The net principal limit for the first month is determined at closing as described in Paragraph 5-7 above.

C.The net principal limit for any subsequent month is the future value of the principal limit determined using the elapsed number of months as the term and the compounding rate described in Paragraph 5-7C. above, less any funds set aside and the outstanding balance of the loan in that month.

D.The borrower can withdraw the entire net principal limit on the first day of a mortgage. Since the outstanding balance would then equal the principal limit, the borrower would be unable to receive any additional draws, unless exception noted in Paragraph 5-9G. occurs. The borrower could still live in the house as long as he or she chose.

1)The borrower may choose to receive a lump sum up to the maximum amount at closing to satisfy an existing mortgage. This action will effectively increase the borrower's cash flow since they will no longer be obligated to make payments on the existing mortgage.

2)The borrower may choose to receive the maximum amount at closing to pay a contractor who has made repairs in exchange for a lien to be paid off at closing.

E.A minimum balance of $50.00 must remain in the line of credit after a withdrawal in order for the borrower to receive additional draws. If less than $50.00 remains immediately after a line of credit disbursement, then the lender may require that the entire balance be disbursed to the borrower, making the outstanding balance equal to the principal limit, and the borrower would then be unable to receive any additional draws unless and until exception noted in Paragraph 5-9G. occurs.

F.If the maximum amount is not withdrawn at closing, a borrower can make withdrawals at times and in amounts of his or her choosing as long as the withdrawal does not cause the outstanding balance to exceed the principal limit for the month in which the withdrawal is made. The available line of credit is the net principal limit for the month in which the withdrawal is made. Example: Assume the above mentioned 75 year old borrower establishes a line of credit payment plan. She finances $2,275.50 of closing costs plus the initial MIP of $3,034.50, and makes a withdrawal of $5,000 at closing. In addition $3,192.58 is set aside at closing to pay the $25.00 per month servicing fee. Based on her initial principal limit of $84,055.65 less the amount set aside for servicing, and an initial outstanding balance of $10,310.00, this borrower could have withdrawn an additional $70,553.07 at closing. If, instead, she waited until the end of the 12th month to make an additional withdrawal, her available line of credit at that time would be computed as follows. The principal limit 12 months after closing has grown to $91,258.55. Recalculate the servicing set aside at $3,152.41. The outstanding balance at the end of 12 months is $11,505.09, which includes principal, interest, MIP, and servicing charges. Subtract the latter amounts from the principal limit to arrive at an available credit line of $76,601.05.

G.Line of credit payments will usually stop when the outstanding balance equals the principal limit. An exception to this rule occurs if the adjustable note (accrual) rate becomes less than the fixed expected rate used to calculate the principal limit. In this case, even though the outstanding balance on the line of credit reached the principal limit at some point, the principal limit begins to grow more rapidly than the outstanding balance. The difference in interest rates creates an additional amount of principal limit available to the borrower. If this occurs, the borrower may again borrow funds once the principal limit is $50.00 above the outstanding balance.

5-10COMBINING A LINE OF CREDIT WITH TENURE OR TERM PAYMENTS. A borrower may combine a line of credit with tenure or term payments.

A.A line of credit can be combined with monthly payments by setting aside a portion of the principal limit for a line of credit. The net principal limit would then be used to calculate monthly payments in the usual manner.

B.The amount set aside for the line of credit becomes the initial principal limit for the line of credit. This amount will increase each month by the compounding rate.

C.The borrower can receive payments from the line of credit as long as the portion of the outstanding balance attributable to the line of credit (including accrued interest and MIP) does not exceed the principal limit for the line of credit. A lender must keep current records of the outstanding balance attributable exclusively to the line of credit.

D.The principal limit for the monthly payments plus the principal limit for the line of credit will equal the principal limit for a tenure or term payment plan without a line of credit. Example: The 75 year old borrower in the examples above may decide to set aside $5,000 at closing for a line of credit. Assuming that she finances closing costs and the initial MIP, totalling $5,310, and does not use the line of credit until the 10th year, she could receive a monthly payment of $552.48 for as long as she lived in the house, and she could make a lump sum withdrawal equal to the principal limit on the line of credit in the 10th year of $11,377.24.

5-11CHANGING A PAYMENT PLAN. As long as the outstanding balance does not exceed the principal limit, a borrower may receive a cash advance or change from one payment plan to another, subject to the $50.00 limit addressed in Paragraph 5-9E.

A.For a cash advance, the payment is added to the outstanding balance, and the new outstanding balance is subtracted from the current principal limit to determine the net principal limit. To accommodate the cash advance, the borrower may choose either to shorten the remaining term of the mortgage or to lower the monthly payments.

1)To shorten the term, calculate the new term using the future value of the net principal limit, the monthly payment, and compounding rate, as explained in Paragraph 5-7 of this chapter.

2)To lower the monthly payment, calculate the new payment using the future value of the net principal limit, the remaining term, and the compounding rate, as explained in Paragraph 5-7 of this chapter.

B.A new payment plan can be calculated by subtracting the outstanding balance and any funds set-aside from the principal limit to determine the net principal limit and using the net principal limit as described in Paragraphs 5-8, 5-9, or 5-10 of this chapter. Example: The 75 year old borrower in the examples above needs a cash advance of $5,000 in the 60th month of a tenure payment plan under which she had been receiving the full $591.63 a month. The only set-aside at closing was $3,192.58 for servicing fees. A line of credit was not set up at origination, and she did not make any other draws. In this month, the principal limit is $126,794.49. To calculate her new monthly tenure payment, the cash advance of $5,000 is added to her current outstanding balance of $53,614.41 for a total of $58,614.41. This sum and the recomputed servicing set-aside are both subtracted from the principal limit, leaving a net principal limit of $65,225.86. The future value for the net principal limit is then calculated for 240 months (300 months minus 60 months)--the remaining term for tenure payments. This figure is $337,717.50 and is used to calculate a new monthly tenure payment of $551.97. Example (cont.): If the borrower chose, she could instead withdraw an additional $65,225.86, bringing her principal balance to the principal limit in the 60th month. She would not be able to receive any further payments.

5-12PARTIAL PREPAYMENTS. A borrower may prepay all or part of the outstanding balance at any time without penalty. However, no prepayment of an amount in excess of the outstanding balance is allowed.

A.A borrower may choose to make a partial prepayment because his or her financial circumstances have improved and he or she wishes to preserve more of the equity in the property. Any change in subsequent payments to the borrower should be made only at the borrower's request. Repayment in full will terminate the loan agreement.

B.A borrower may choose to use a partial prepayment to increase monthly payments. By reducing the outstanding balance, the borrower increases the net principal limit available for calculating monthly payments in accordance with Paragraph 5-8 of this chapter.

(5-12B.)

Example (cont.): Consider the same 75 year old borrower from the example who needed $5,000 in cash in the 60th month of a tenure payment plan for which no line of credit had been established. The unplanned payment reduced her monthly payments from $591.63 to $551.97. If she were able to make a partial prepayment of $4,550 twelve months later, she could request that her tenure payment be restored to the original amount.

C. A borrower may choose to make a partial prepayment to set up or to increase a line of credit without altering existing monthly payments. By reducing the outstanding balance, the borrower increases the net principal limit. All or part of the increase in the net principal limit may be set aside for a line of credit.

D. A borrower may choose to repay the entire outstanding balance in order to refinance the mortgage with a new reverse mortgage. If the new mortgage is a HECM, the borrower will have to pay a new initial MIP and meet other eligibility criteria. There is no "streamlined" refinancing available for HECMs.

5-13 CALCULATIONS FOR SHARED APPRECIATION MORTGAGES.

A. In exchange for sharing a property's net appreciated value, if any, at the time that a mortgage is due and payable or prepaid, the borrower may receive a lower interest rate than for a comparable mortgage without shared appreciation and, consequently, would receive higher payments.

B. In exchange for bearing the risk that any losses under a mortgage will exceed the maximum claim amount, the lender receives a share of the monthly MIP and also receives a share of net appreciation, if any, at the time that a mortgage is due and payable or prepaid.

C. A lender's potential share of appreciation (the appreciation margin) is limited to 25 percent or less of the increase in a property's value over its value at origination, subject to an effective interest rate cap of 20 percent.

D. A lender's potential share of appreciation is calculated at the time that a mortgage is due and payable or prepaid in full using the outstanding balance (the principal balance plus accrued interest and insurance fees), the appraised value (the property's appraised value at origination), and sales proceeds (minus sales costs and capital improvement expenditures and excluding the amount of any liens) as follows:

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1)If the outstanding balance is less than the appraised value, the appraised value is subtracted from the sales proceeds and multiplied by the appreciation margin.

2)If the outstanding balance is greater than the appraised value, but less than the sales proceeds, the outstanding balance is subtracted from the sales proceeds and multiplied by the appreciation margin.

3)If the outstanding balance exceeds the sales proceeds, there is no net appreciated value. The lender may file a claim for the excess of the outstanding balance over the sales proceeds subject to the maximum claim amount for the specific mortgage. Refer to HUD Handbook 4330.4 for claim procedures.

4)If there is no sale of the property, the current appraised value will be used instead of sales proceeds in subparts 1, 2, and 3 above.

E.A lender's actual share of appreciation is subject to an effective interest rate cap of 20 percent calculated as follows:

1)Add the interest accrued in the 12 months prior to the sale of the property or prepayment in full to the lender's potential share of appreciation calculated above.

2)Divide by the sum of the outstanding balance at the beginning of the 12 month period prior to the sale or prepayment in full and the payments to or on behalf of the borrower (but not including interest) during the 12 month period.

3)If the result is less than or equal to 20 percent, the lender receives all of the potential share of appreciation calculated above.

4)If the result is greater than 20 percent, then the lender's actual share of appreciation is 20 percent of the divisor in subpart 2 above, including the interest accrued in the 12 months prior to sale or prepayment in full.

F.A worksheet in Appendix 19 must be completed by the lender and provided by the borrower at the time of sale or other events causing the lender's share of appreciation to come due. A copy must be maintained in the lender's records for purposes of lender monitoring.

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