Section II: Summary of Findings and Comparison with FY 2004 Actuarial Review

This section presents the economic value and capital ratios of the Fund for FY 2005 and provides an explanation of how the results of this year's Review compare with those of last year.

A. The FY 2005 Actuarial Review

The FY 2005 Actuarial Review assesses the actuarial soundness of the MMI Fund as of the end of FY 2005 (September 30, 2005) in terms of whether the Fund has maintained at least the two percent capital ratio required by NAHA, and projects the status of the Fund through FY 2012. The objectives of our analysis include:

- evaluating the historical experience of the fund, including loan termination experience due to claims and prepayments, and losses associated with those terminations;

- estimating future loan termination rates and their corresponding losses and projecting future cash flows of the existing Fund portfolio and future books of business;

- determining the adequacy of current and future capital resources to meet estimated cash requirements.

We conducted this review by estimating the economic relationships of historical loan performance using historical data provided by FHA, applying the appropriate policy parameters, and using forecasts of future macroeconomic conditions.

The econometric and cash flow models developed are similar in most respect to those of last year with some modifications for this FY 2005 Review. The analysis reflects loan level data on the Fund's experience reported through March 2005. These models also incorporate a set of economic assumptions and forecasts for future years. The model applies the historical average claim loss severity rates that were claimed over FY 2000 and FY 2004 for each of the six FHA mortgage product types to estimate future claim loss rates. (For descriptions of the individual models and assumptions, see Appendices A through D.) Our major findings are as follows:

- as of the end of FY 2005, the MMI Fund had an estimated economic value of **$21.621 billion** and an unamortized insurance-in-force of **$358.871 billion**;

- the FY 2005 book of business has added an estimated **$0.570 billion** in present value to the economic value of the MMI Fund;

- we estimated that the capital ratio was **6.02 percent** as of September 30, 2005, and projected that it will be **6.62 percent** as of September 30, 2012. Based on these estimates, we conclude that the Fund would continue to exceed the NAHA-mandated 2.00 percent capital ratio in the foreseeable future.

Our current projections indicate that the Fund's economic value will continue to increase in the future, rising by an average of 6.54 percent in each successive fiscal year through FY 2012. Due to the expected interest rate increases and the associated reduction in the prepayment rate of the existing books of business, the insurance in force of the fund would increase by an even slower average rate of 5.14 percent per annum through FY 2012. The higher growth rate of the economic value than that of the IIF implies that the Fund's reported capital ratio will gradually increase to 6.62 percent at the end of FY 2012. Exhibit II-1 provides estimates of the Fund's economic value, insurance in force, and capital ratio through the end of FY 2012.

Exhibit II-1

Projected MMI Fund Performance for FYs 2005 to 2012 ($ Millions)

Fiscal Year	Economic Value of the Fund[a]	Capital Ratio (%)	Volume of New Endorse-ments[b]	Insurance in Force[c]	Economic Value of New Book of Business	Investment Return on Fund Balances
2005	21,621	6.02	58,264	358,871	570	
2006	22,702	6.16	54,664	368,763	318	764
2007	24,130	6.40	54,965	377,235	499	929
2008	25,729	6.58	57,065	390,895	534	1,065
2009	27,434	6.70	60,973	409,701	486	1,219
2010	29,286	6.70	69,231	436,918	476	1,377
2011	31,361	6.66	79,308	470,685	523	1,552
2012	33,680	6.62	88,898	508,753	578	1,741

[a] All values are as of the end of each fiscal year. The economic value for future years (FYs 2006 through 2012) is equal to the economic value of the Fund at the end of the previous year, plus the current year's interest earned on previous business, plus the economic value of the new book of business.
[b] Based on Federal Housing Administration's projection as of June 2005.
[c] Estimated based on the data extract on March 31, 2005.

B. Change in the Estimated Strength of the Fund

Exhibit II-2 displays the components of the Fund's current economic value and capital ratio for the FY 2004 Review and the FY 2005 Review. The FY 2004 Review estimated that the Fund had $21.977 billion in economic value at the end of FY 2004 to cover future claim losses.

Exhibit II-2

Estimates of MMI Fund Economic Value as End of FY 2005 ($ Millions)		
Item	**End of FY 2004[a]**	**End of FY 2005**
Cash	$ 4,874	
Investments	23,424	
Properties and Mortgages	1,462	
Other Assets and Receivables	460	
Total Assets	30,220	
Liabilities	7,397	
Total Capital Resources	22,823	
Net Gain from Investments		509[b]
Net Insurance Income in FY 2005		(167)
Total Capital Resources		**23,165**
PV of Future Cash Flows		(1,544)
Economic Value	**21,977[c]**	**21,621**
Unamortized Insurance-In-Force	397,285[c]	358,871
Current Capital Ratio	5.53%[c]	**6.02%**
Amortized Insurance-In-Force		332,393
Current Capital Ratio with Amortized Insurance-In-Force		**6.50%**

[a] Source: Audited Financial Statements for FY 2004.

[b] Estimated by assuming the total capital resources as of the end of FY 2004 earns a total investment return equal to 1-year Treasury Constant Maturity Rate, which averaged 2.23 percent during FY 2005. (Source: Board of Governors of the Federal Reserve System).

[c] From the FY 2004 Actuarial Review.

The FY 2005 Review estimates that the fund had total capital resources of $23.165 billion at the end of FY 2005 and that the present value of future cash flows was -$1.544 billion. Thus, the Fund had $21.621 billion in economic value, which can be used to cover unanticipated future claim losses of the existing portfolio.

As seen in Exhibit II-2, the current economic value of MMIF Fund decreased by a factor of 0.98 from that of last year's Review and the current Fund's capital ratio actually increased by a factor of 1.09 over that of last year's Review. That is, the capital ratio increased from 5.53 percent to 6.02 percent. This is because the insurance in force decreased even more than that of the economic value due to the high level of refinancing activity continuing from FY 2004 and the significantly lower origination volume of the FY 2005 book of business. Exhibit II-3 compares the two Reviews by annual books of business. It shows that the present value of future cash flows deteriorates from the FY 2004 projection. The deterioration is mainly from the FYs 2003-2004 books of business because these two books have a high concentration in loans with down payment gift assistance from entities other than relatives. The current Review shows that the total present value of future cash flows from prior books of business is negative $1.544 billion.

Exhibit II-3

Present Value of Future Cash Flows by Book of Business, FY 2004 Review, FY 2005 Review, and Difference ($ Millions)			
Book of Business	**2004 Review[a]**	**2005 Review[b]**	**Difference[c]**
1976	0	0	0
1977	1	0	-1
1978	2	1	-1
1979	3	2	-2
1980	2	1	-1
1981	1	1	0
1982	0	0	0
1983	2	2	0
1984	-1	-1	0
1985	-2	-2	0
1986	-7	-5	2
1987	-10	-7	3
1988	-7	-5	2
1989	-9	-6	3
1990	-13	-8	5
1991	-15	-9	6
1992	-21	-13	8
1993	-34	-20	14
1994	-43	-26	17
1995	-30	-17	12
1996	-80	-43	37
1997	-103	-55	48
1998	-158	-97	61
1999	-292	-175	117
2000	-330	-198	132
2001	-261	-116	145
2002	-237	-120	117
2003	434	221	-213
2004	391	-406	-796
Total	-817	-1,100	-283

[a]Values as of the end of FY 2004
[b]Values as of the end of FY 2005
[c]Numbers do not add due to rounding for this and some subsequent Exhibits.

C. Decomposition of Changes from the FY 2004 Review to the FY 2005 Review

This section describes the sources of change in estimates between the FY 2004 Review and the FY 2005 Review for the FY 2005 economic value and the FY 2011 capital ratio. Separating out the effects of interrelated approaches and assumptions can be done only up to a certain degree of accuracy. The interrelationships among the approaches and assumptions prevent us from identifying and analyzing these as purely independent effects as these are sometimes jointly determined. However, this section still presents a reasonable allocation of all changes from last year, by source of change. The purpose of the decomposition is twofold. First, it describes the change in the economic value from FY 2004 to FY 2005. Second, it explains changes between the current estimate of the capital ratio in FY 2005 and the estimate for FY 2005 that was presented in the FY 2004 Review.

1. Change in Economic Value from FY 2004 to FY 2005

The FY 2004 Review estimated the economic value of the Fund as of the end of FY 2005 at $24.430 billion, and the projected FY 2005 and FY 2011 capital ratios to be 5.82 percent and 6.71 percent, respectively. We now estimate the end of FY 2005 economic value of the MMI Fund to be $21.621 billion, which represents a decrease of $2.809 billion from the estimate reported in the FY 2004 Review. This 11.5 percent decrease in the estimated economic value of the MMI Fund is accompanied by an even larger decrease in the unamortized IIF of 15 percent and resulted in the estimated capital ratio increasing by 0.2 percentage points, from 5.82 percent in the FY 2004 Review to 6.02 percent in the FY 2005 Review.

2. Current Estimate of FY 2005 Economic Value Compared with the Estimate Presented in the FY 2004 Actuarial Review

The FY 2004 Review projected that the FY 2005 book of business and investment return on the Fund's balances would add $1.722 billion and $0.731 billion, respectively, to the economic value of the Fund, resulting in a projected FY 2005 economic value of $24.430 billion. This year's estimate of the FY 2005 economic value is $2.809 billion lower than the economic value projected for FY 2005 in last year's Review.

Exhibit II-4 provides a summary of the decomposition of changes in the current economic value of the Fund and in the FY 2011 capital ratio from the FY 2004 Review to the FY 2005 Review. The most significant driver of this decrease is due to the impact of the rising share of loans with gift letters in the newer books of business. Because the loans with gift letters experienced considerable higher claim rates than otherwise seemingly identical loans with no downpayment gifts, the newer books of business turn out to be much riskier and yield lower economic values and initial capital ratios. The second major factor causing the decrease in economic value is the lower-than-estimated origination volume for FY 2004 book of business and the lower estimate of

origination volume of the FY 2005 and future business volumes. Other modifications in the econometric models and loss severity assumptions reduced the economic value even further. Finally, the high overall claim rates experienced during FY 2004, partially contributed by the new accelerated claims operation, also lead to higher projected short-term claim rates across all books of business and resulted in a reduction in the FY 2005 economic value.

Exhibit II-4

Summary of Changes in MMI Fund Estimated Economic Value Between FY 2004 and FY 2005 ($ Millions)				
	Change in FY 2005 Economic Value	FY 2005 Economic Value	Change in FY 2011 Capital Ratio (%)	Corresponding FY 2011 Capital Ratio (%)
FY 2004 Economic Value Presented in the FY 2004 Review		$21,977[a]		
FY 2005 Economic Value Presented in the FY 2004 Review, Excluding the FY 2005 Book of Business:	$731	$22,708		
Plus: Forecasted Value of 2005 Book of Business Presented in the FY 2004 Review	$1,722			
Equals: FY 2005 Economic Value Presented in the FY 2004 Actuarial Review		**$24,430**		**6.71%**
Plus: a. Update Origination Volume in the FY 2004	-$403	$24,027	0.01%	6.72%
Plus: b. Update Actual Conditional Claim Rates and Conditional Prepayment Rates in the FY 2004	-$155	$23,872	-0.03%	6.69%
Plus: c. Change by switching to FY 2005 loan level multinomial logit econometric model	-$247	$23,625	1.67%	8.36%
Plus: d. Change due to updated economic forecast	-$137	$23,488	-0.46%	7.90%
Plus: e. Change by Loss Severity Assumptions for Six Products to FY 2005	-$184	$23,304	-0.10%	7.80%
Plus: f. Change by incorporating performance difference of loans with different gift sources	-$1,763	$21,541	-1.35%	6.45%
Plus: g Change by new refund policy	$80	$21,621	0.21%	6.66%
Equals: Estimate of FY 2005 Economic Value	**-$2,809**	**$21,621**	**-0.05%**	**6.66%**

[a] Economic value as the end of FY 2004.

3. Decomposition of the Differences of Economic Value and Capital Ratio of the Current Review and Those of the FY 2004 Review

We decomposed the change in the estimated status of the Fund to adjust for the actual FY 2004 origination volume and for the FY 2004 actual conditional prepayment and conditional claim rates. Then we showed the change due to the reduced size and composition of future books of business. Furthermore, we decomposed the change in the estimated status of the fund that resulted from model modifications made in the current FY2005 Review and from new economic

forecasts. Exhibit II-4 summarizes the individual effects of the changes on the Fund's economic value and capital ratio in FYs 2005 and 2011.

a. Updated Origination Volume of FY2004

The first component of change depicted in Exhibit II-4 is with respect to the Fund's economic value and capital ratio due to the updated origination volume for FY 2004. The actual realized origination volume of the FY 2004 book is 18.42 percent less than the forecasted volume reported in the FY 2004 Review. The loan distribution among key characteristics also varies slightly from last year's forecast, with a higher portion of streamline-refinanced loans than last year's projection. Since the realized origination volume of FY 2004 is significantly lower than the one forecasted in last year's Review, it contributes less economic value to the Fund, causing the FY2005 economic value to decrease by $0.403 billion.

b. Updated Actual Mortgage Termination Experiences

The second element of change delineated in Exhibit II-4 contributing to the Fund's economic value and capital ratio is the updated conditional prepayment and conditional claim rates that were observed during FY 2004. The record high prepayment rate experienced during FYs 2003 and 2004 caused the UPB of most recent books of business to reduce dramatically. However, due to the long lag time between default and claim, many loans that defaulted back in 2002 and 2003 have just gone through the foreclosure and claim cycle and became realized as claims in FY 2004. As the number of claim cases remained stable but the total loan count in the portfolio decreased, a substantially higher conditional claim rate was realized in FY 2004. Meanwhile, the accelerated claim disposition (Section 601) Demonstration, which accelerates the processing speed of claim cases, further increased the number of claims realized during 2004. The high overall prepayment and claim rates experienced during FY 2004 lead to higher short-term claim rates across all books of business, thereby resulting in the reduction in the economic value for FY 2005 by $0.155 billion and the reduction in the projected capital ratio for FY 2011 by 0.03 percent.

c. Change in Projection Model Specifications and Updated Origination Volume of FY 2005 and Projected Future Books of Business

To conduct this year's Review, we followed last year's econometric and the discounted cash flow models, with some changes on model specifications. (For descriptions of model specification assumption changes, see Appendices A and B). The loan-level multinomial logit econometric models allow good fits to the age functions of the claim rates during the early years of the mortgage life, and effectively capture the nature of the competing risk between prepayments and claims. The future cash flows are simulated and discounted quarterly. In addition, we also updated the origination volume and composition of the projected 2005 and

future books of business. Compared to the FY 2004 Review, FHA's 2005 forecast of origination volume for FY 2005 and FY 2011 books of business decreased 40 percent and 30 percent respectively. This substantial reduction in the forecasted future books of business is in line with the current status of the FHA market share. The FHA market share continued to decrease from 12.18 percent in FY 2002 to 3.77 percent in FY 2005. However, there is little research regarding the causes and the consequences of this decreasing share phenomenon. While the original LTV concentration moved toward the higher-risk categories, this risk attribute has been reflected in the econometric models we developed for this Actuarial Review.

d. Changes in Economic Environment

The one-year Treasury rate rose from 2.09 percent on June 30, 2004 to 3.36 percent on June 30, 2005. On the other hand, the ten-year rate declined from 4.62 percent on June 30, 2004 to 4.36 percent on June 30, 2005. Although this suggests an overall flatter yield curve, the slope of the yield curve in the very short run actually became steeper than in last year's economic forecast by the Global Insight. Similar to the long-term Treasury rate, mortgage interest rates also dropped slightly. The average conventional 30-year fixed-rate mortgage commitment rates posted by Freddie Mac decreased from 6.13 percent in the second quarter of 2004 to 6.02% in the second quarter of 2005. This lower mortgage rate caused the prepayment rate to remain high throughout FY 2005.

In spite of the slightly decreasing trend on the ten-year Treasury rate and the 30-year mortgage commitment rate during the second quarter of 2004 and the second quarter of 2005, Global Insight, Inc. forecasted all their interest rates to rise sharply during the next few years. By the end of the projection period of this Review, FY 2012, the one-year Treasury rate is expected to rise to a stable level of 5.35 percent. Moreover, Global Insight projects that the rate increase would happen immediately after the end of FY 2005. Within one year, the market mortgage rate is projected to rise from 6.02 percent as of second quarter of 2005 to 6.77 percent at second quarter of 2006. This rapidly rising interest rate means there will be less incentive for existing mortgage borrowers to refinance. The rising interest rate environment, therefore, indicates that the prepayment rate of the mortgages in the MMI Fund would slow down, making the insurance in force of the existing portfolio drop more slowly. The extended duration of the existing MMI Fund portfolio implies that more loans would remain in the portfolio. On the other hand, the smaller origination volume forecasted by FHA for new books of business will lead to slower growth in the overall insurance in force of the MMI Fund.

According to Global Insight, the house price growth rate between the second quarter of 2004 and the second quarter of 2005 was 6.25 percent. However, this growth rate is forecasted to decrease from the current level to 3.18 percent by the fourth quarter of 2005 and to decrease further to below 2 percent in 2006. Due to this immediate housing market slowdown projection, the performances of the FYs 2005 and 2006 books of business are expected to be weaker than the older books. That is, the lower projected house price growth rate would lead to an increase in the future probability of negative equity, which in turn leads to an increase in the projected number of claims. As a result, the economic value of FY 2005 decreased by $0.137 billion from last year's projection. Due to the change in the economic forecast, the capital ratio of FY 2011 decreases by 0.46 percentage points to 7.90 percent.

e. Change Due to Loss Severity Assumption for Six FHA Mortgage Products

In the FY 2004 Review, we applied the average claim loss rate of 35 percent, which was the average experienced in FY 2002 and FY 2003, to estimate future claim losses for all FHA-insured mortgage loans. Also, we assumed the average claim loss rates observed would remain in the future. For this year's Review we estimated loss severity rates by using the historical average loss severity rates of loans being claimed during the FYs 2000 – 2004 for the same loan type. Furthermore, differentiation stratified by LTV categories was also explored but shows an insignificant pattern. These new loss severity assumptions are 36.96 percent for 30-year non-streamline refinance fixed rate mortgages, 48.76 percent for 15-year non-streamline refinance fixed rate mortgages, 34.11 percent for non-streamline refinance adjustable rate mortgages, 30.88 percent for 30-year streamline refinance fixed rate mortgages, 46.17 percent for 15-year streamline refinance mortgages, and 30.59 percent for streamline refinance adjustable rate mortgages. Given the overall higher loss rates than that of last year's assumption, the economic value of the MMIF Fund for FY 2005 decreased by $0.184 billion and the corresponding capital ratio for FY 2011 was reduced by 0.10 percentage points.

f. Change Due to Higher Concentration of Gift Loans in Newer Books

One noticeable trend revealed in this year's data extract is the rapidly rising concentration of loans with gift letters in the newer books of business. FHA allows a borrower to use outright gifts of cash toward the down payment requirement. The cash gift could be from the borrower's relative, employer or labor union, a charitable organization, a government agency, a public entity that has a program to provide homeownership assistance to low- and moderate-income families or first-time home buyers, or a close friend with a clearly defined and documented interest in the borrower. However, the gift donor may not be a person or entity with an interest in the sale of the property, such as the seller, real estate agent or broker, builder, or any entity associated with them.

A recent HUD sponsored publication[2] documented potential application problems associated with loans with down payment assistance from non-profit, religious, or community sources. HUD's internal analysis also showed that these loans experienced relatively higher claim rates than loans with downpayment assistance from other sources or no gift. Our independent study indicates that higher claim rates were observed on all gift sources except that from the borrower's relatives. The higher concentration of recent books in higher claim rate gift sourced loans is incorporated into our econometric model.

As shown in Section IV, the higher concentration of loans with downpayment assistance of gifts from non-relative sources now represent substantial share of FHA's newer books of business. The claim rates of these loans appear to be much higher than other non-gift loans and loans with gift from relatives. When we refined econometric model to incorporate this change in business concentration, the estimated economic value for FY 2005 decreased to $21.541 billion, an incremental decrease of $1.763 billion. Assuming all future books of business to have the similar high concentration of gift letter loans, we projected the capital ratio of the MMI Fund to be 6.45% by the end of FY 2011, indicating a slower growth comparing with the capital ratio of 7.80% before this adjustment. The high claim rate of the gift-letter loans translated into a reduction of 1.35 percentage points in FY 2011's capital ratio.

This is a fairly new phenomenon which has had a major economic impact on the fund and we suggest the situation be closely monitored.

g. Change Due to the Elimination of Upfront Mortgage Insurance Premium Refund Policy

In January 2005, FHA eliminated the upfront mortgage insurance premium refund except for borrowers who refinance to another mortgage insured by FHA. This elimination of refund is effective for loans endorsed on or after December 8th, 2004. In addition, the refund schedule for borrowers who refinance with a new FHA-insured mortgage on or after this same date is modified to a three year time period. This policy change reduces the future premium refund cash out flows of the MMI Fund. Holding everything else constant, it will lead to an increase of the economic value and capital ratio. We estimate that this policy change will bring the FY 2005 economic value from $21,541 billion to $21,621 billion, an incremental increase of $0.08 billion. The FY 2011 capital ratio is expected to rise by 0.21 percentage to 6.66 percent.

D. The Impact of Hurricane Katrina occurred August 2005

Hurricane Katrina, the deadliest hurricane in the United States since 1900, landed near Buras, Louisana in the early morning of August 29 after crossing the Gulf of Mexico, where it

[2] "An Examination of Downpayment Gift Programs Administered by Non-Profit Organizations," March 1, 2005, Concentrance Consulting Group.

intensified rapidly to a Category 5 hurricane. Katrina brought intensive damages around the area of the states of Alabama, Mississippi, and especially Louisiana.

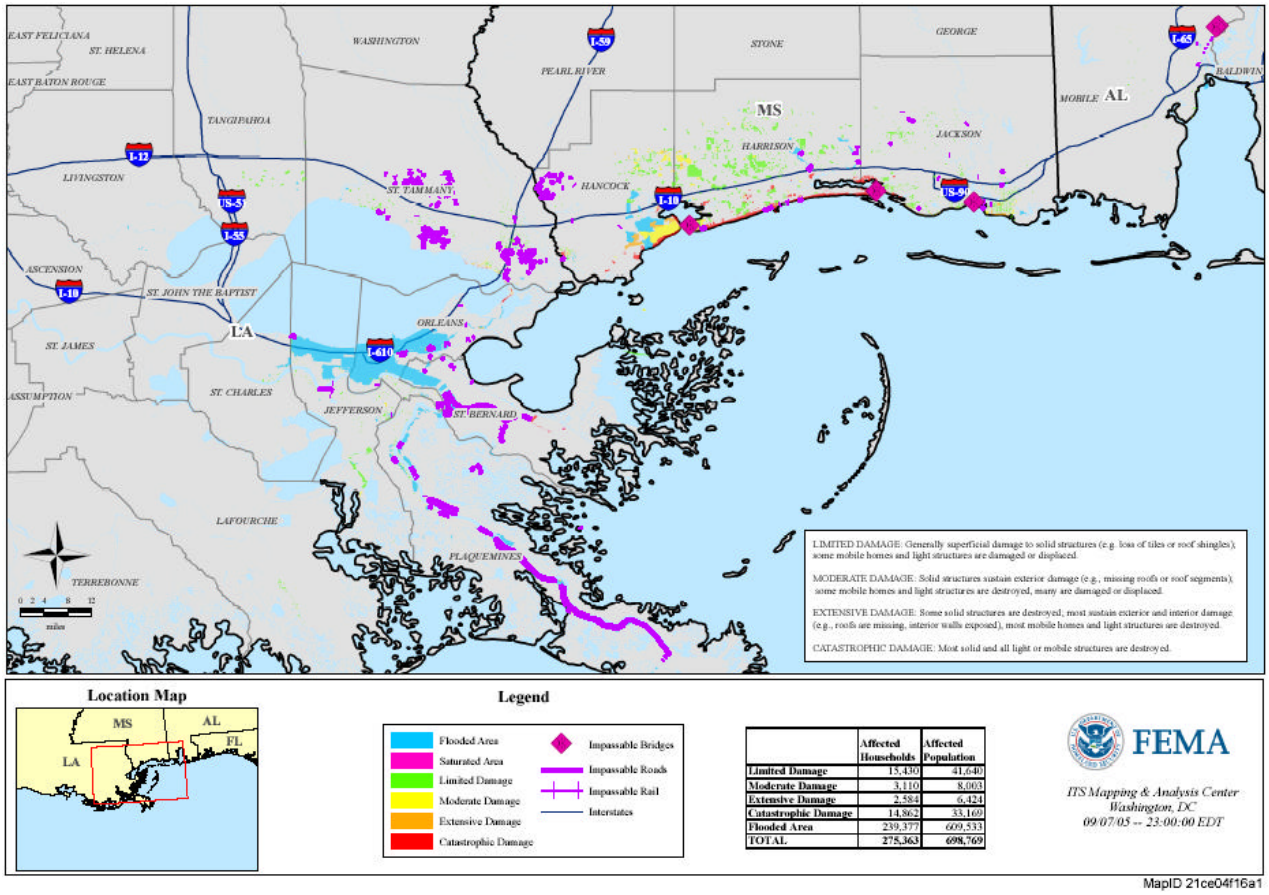
The areas determined eligible for individual assistance by the Federal Emergency Management Agency (FEMA) are:

- Alabama: Baldwin, Mobile, and Washington Counties.
- Mississippi: Amite, Forrest, George, Greene, Hancock, Harrison, Jackson, Lamar, Marion, Pearl River, Perry, Pike, Stone, Walthall, and Wilkinson Counties.
- Louisiana: The parishes of Acadia, Ascension, Assumption, Calcasieu, Cameron, East Baton Rouge, East Feliciana, Iberia, Iberville, Jefferson, Jefferson Davis, Lafayette, Lafourche, Livingston, Orleans, Pointe Coupee, Plaquemines, St. Bernard, St. Charles, St. Helena, St. James, St. John, St. Mary, St. Martin, St. Tammany, Tangipahoa, Terrebonne, Vermilion, Washington, West Baton Rouge, and West Feliciana.

As of March 31, 2005, 1.56% of the still-active loans insured by FHA were originated from the above counties. This is roughly $5.17 billion out of the still active unamortized IIF of $358.87 billion as of the end of 2005, were originated from these adversely affected areas.

Exhibit II-6 below shows that there were 11 counties remaining seriously flooded as of September 7, 2005, ten days after the landfall of the Hurricane. About $3.08 billion unamortized IIF of the MMI Fund are associated with these underwater counties. Since the estimate of the total damage is not yet available and the recovery plan is still unclear at this time, we can only estimate the potential impact to the MMI Fund by making some assumptions. We assume that one quarter of the housing underlying these mortgage loans would receive compensation neither from natural hazard insurance policies nor from FEMA recovery subsidy and would never be rebuilt. Assuming a 100% of loss severity rate on these loans, we estimate that Hurricane Katrina could cause FHA a total loss of $0.77 billion over FYs 2006 and 2007. Under these rather severe assumptions, the FY 2005 Economic Value of the MMI Fund could be further lowered to about $20.842 billion and the FY 2005 Capital Ratio lowered to 5.83%. However, since the national recovery plan is still very preliminary at the time of this Review, it is unclear that such losses would actually occur. Rather, this analysis suggests a possible severe downside result of the hurricane. As a result of the uncertainty, the impact of the Hurricane Katrina is excluded from the Base Case analysis of the FY 2005 Actuarial Review.

Exhibit II-6



Source: http://www.gismaps.fema.gov/2005pages/katrina.shtm