

Foreclosure Needs Score Methodology Appendix

November 2008

To help State governments identify areas of greatest need for Neighborhood Stabilization Program (NSP) funding, LISC researchers calculated a foreclosure needs score that incorporates factors specified in the authorizing legislation. This document describes how this score is calculated.

NOTE: LISC has prepared a separate file showing the relative foreclosure needs scores at the ZIP Code level with each state. Those data are similar, but not entirely comparable with the CDBG Jurisdiction data discussed below. To access foreclosure needs scores at the ZIP Code level within each state, visit www.housingpolicy.org/foreclosure-response.html.

The [Congressional legislation](#) authorizing creation of the NSP requires States and local jurisdictions to allocate funding to areas (1) with the greatest percentage of home foreclosures; (2) the highest percentage of homes financed by a subprime mortgage related loan; and (3) identified by the grantee as likely to face a significant rise in the rate of home foreclosures. The legislation also allows grantees to add related factors they deem important.

Absent a single national source of data on these factors, researchers drew on information from four different sources:

- U.S. Census Bureau estimates of the total number of housing units by county;
- American Community Survey counts by county of the owner-occupied housing units with mortgages, and of single-family rental housing units;
- Residential Finance Survey on the share of U.S. single-family rental homes with mortgages
- Mortgage Bankers Association's National Delinquency Survey State-level reports on numbers of prime and subprime mortgages and their delinquency and default rates;
- ZIP Code level June 2008 reports from McDash Analytics (a vendor of loan performance data from the nation's largest loan servicers) on the performance of prime and subprime loans; and
- Special tabulation of the U.S. Postal Service data created by the US Department of Housing and Urban Development.

The indicators themselves include:

- First-lien mortgages in foreclosure as a percentage of all units with a residential mortgage;
- Subprime first-lien mortgages as a percentage of all units with a residential mortgage;
- First-lien mortgage delinquencies of 30 days or more as a percentage of all units with a residential mortgage (used to anticipate future foreclosures); and

Foreclosure Response is a collaborative project of:

- Vacancies as a percent of occupied units in ZIP codes with high rates of subprime loans (to reflect the program's emphasis on vacant properties).

Our treatment of these variables is similar to [HUD's method for calculating relative need](#) across states and local governments for the purpose of making the initial funds allocation. Most important was our method of weighting the percentage of foreclosures, subprime loans, and delinquencies by the actual counts of these same factors. This ensures that very small places with high percentages of foreclosures do not receive very large amounts of funding, in total disregard of the number of units involved.

To transform data and calculate the needs score, researchers:

- (1) Converted ZIP Code level mortgage data to block group-level data.

McDash Analytics releases its data at the ZIP Code level, but the analysis needed to begin with block group data since block groups are the building blocks of the CDBG jurisdiction boundary definitions. To do this, we used a crosswalk between ZIP Codes and block groups based on each block group's share of ZIP+4 areas in a given ZIP Code.

The indicators included the number of mortgage loans, delinquencies, foreclosures, and real-estate owned (REO) properties. All loan and foreclosure counts are restricted to first-lien mortgages only. Delinquent loans are loans overdue by 30 days or more. Foreclosures include loans where banks have begun the foreclosure process, but have not sold the property to another owner. REO properties are counted separately, and while not directly used in the score calculation, are included on the final data file for reference.

- (2) Weighted number of loans from McDash to correct for undercounting of outstanding mortgages

McDash data are incomplete, as are all other data sources. To correct for this, we weighted up the number of loans from the McDash file to the estimated number of total housing units with a mortgage.

We calculated the total housing units with a mortgage for owner-occupied and renter-occupied units separately. For owner-occupied homes, we multiplied the [2007 US Census county-level estimates of total housing units](#) by the share of all homes that have owner-occupied mortgage loans outstanding from the [2006 American Community Survey \(ACS\)](#). To estimate rental units with mortgages, we assumed based on the [2002 Residential Finance Survey](#) that 40 percent of the single-family rental homes (as reported in the ACS) had mortgages. The two components were added together to estimate the number of total mortgage loans outstanding per county. We then applied the distribution of each county's mortgage loans across block groups from the 2000 Decennial Census. Original McDash percentages of foreclosures, subprime loans and delinquent loans in each block group were used to calculate new counts based on the adjusted total of outstanding mortgages.

(3) Further adjusted the interim McDash subprime loan counts to match counts from the [Mortgage Bankers Association \(MBA\)](#), the single best source on the number of subprime loans.

The MBA's [June 2008 National Delinquency Survey \(NDS\)](#) provides more accurate state-level percentages of subprime loans, so we multiplied the MBA shares by our estimated number of outstanding mortgage loans to create control counts for subprime loans by state. The state adjustment was applied to each block group's number of subprime loans, so our state counts of subprime loans equaled the MBA totals.

(4) Adjusted interim state totals of foreclosures and delinquencies with results from the NDS.

In the states where McDash counts of foreclosures and delinquent loans fell short of the NDS totals for these categories, the counts were pro-rata adjusted across all block groups to produce counts equal to the MBA totals. (In some states, the NDS showed lower delinquency or foreclosure percentages than calculated from McDash, in which case the higher estimates were retained.) These steps ensured a reasonable correspondence between estimates from two different sources of mortgage loan, delinquency, and foreclosure information, and while doing so, maintained the relative inter-jurisdictional proportions.

(5) Summed block group data to CBDG jurisdiction-level data and calculated percentages.

Based on a HUD correspondence file listing the block groups that made up the 2005 CDBG jurisdictions, we summed the block group data up to jurisdiction-level counts of the mortgage loan categories. We then calculated the three key measures used in the needs score: percent of loans in foreclosure, percent of loans that are subprime, and the percent of loans that are delinquent.

(6) Calculated an initial score for each CDBG jurisdiction

To account for the incidence as well as the concentration of each measure, we created three product indicators:

- Percent of loans in foreclosure weighted by number of foreclosures
- Percent of subprime loans weighted by number of subprime loans
- Percent of delinquent loans weighted by number of delinquent loans.

In other words, the percent of foreclosures was multiplied by the number of foreclosures, and so on.

We next needed to standardize the three products since the ranges of the values varied greatly. To create comparable values that would give the indicators equal weight, we calculated what share each jurisdiction's product represented of the total product summed across all CDBG jurisdictions.

We summed these three shares for each place to create an initial allocation score.

(7) Adjusted each initial score by a local vacancy factor.

Following HUD's example, each jurisdiction's initial score was multiplied by the ratio of the local vacancy rate in high subprime ZIP Codes to the overall state vacancy rate in high subprime ZIP codes.

High-subprime ZIP Codes are those that fell in the top quartile nationwide of the percent of first-lien mortgages that are subprime. In these ZIP Codes, more than 16.7 percent of loans are subprime. The vacancy rate adjustment to the initial score was capped at 10 percent, making the minimum adjustment equal to 0.9 and maximum equal to 1.1.

(8) Created a final score for each jurisdiction, indicating need relative to other CBDG jurisdictions within the same state.

Using the adjusted initial scores in (7), we assigned a final score of 100 to the CBDG jurisdiction with the highest adjusted initial score in each state, which identified it as the neediest jurisdiction. Each remaining jurisdiction was assigned a final score based on the ratio of its adjusted initial score to the adjusted initial score of the neediest jurisdiction. For example, Detroit's initial score of 80 made it Michigan's neediest jurisdiction, earning it the top final score of 100. A jurisdiction with an adjusted initial score 20 would receive a final score of 25 (20 being 25 percent of 80).

Geographic Note: The latest CBDG jurisdiction boundary definitions that were available to LISC at the time of this analysis were from 2005. Between 2005 and 2008, 24 additional jurisdictions qualified for the program and five jurisdictions were dropped. Only one of the excluded areas, Homestead, FL received a local NSP allocation. Most of these were small areas (see Appendix A). For the states with jurisdiction changes, updating our analysis using the jurisdiction list would alter the final scores (although would most likely not effect the neediest jurisdiction's score of 100). However, our method of weighting the need indicators by the number of loans would minimize the effect of the updated areas on the overall rankings, so we decided that the current scores would be of sufficient use to local communities to publish this version. If a 2008 boundary file becomes available in the near-term, we plan to update this analysis.