Targeting Neighborhood Stabilization Funds to Community Need: An Assessment of Georgia's Proposed Funding Allocations

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Purpose of the Report

This report assesses how well the State of Georgia's proposed formula for allocating federal Neighborhood Stabilization Funds distributes those funds to Georgia counties based on their level of need.

The Housing and Economic Recovery Act of 2008 provided $3.92 billion in funding to state and local governments to assist in the redevelopment and recovery of abandoned and foreclosed homes. The statute directed that those funds be targeted to the states and communities with the greatest needs, as defined by:

- The number and percentage of home foreclosures in each State or unit of general local government;
- The number and percentage of homes financed by a subprime mortgage related loan in each State or unit of general local government; and
- The number and percentage of homes in default or delinquency in each State or unit of general local government. (2301(b)(3))

The federal government allocated a total of $153 million to the state of Georgia, including nine direct grants to urban entitlement jurisdictions within the state ($75.9 million) and an allocation of $77.1 million to the State of Georgia, which at the state's discretion, may be awarded to "all units of general purpose local government, including those cities and counties eligible to participate in the traditional 'CDBG Entitlement Program' of HUD."[1]

The Housing and Economic Recovery Act of 2008 directs grantees that "they should give priority emphasis in targeting the funds they receive to 'those metropolitan areas, metropolitan cities, urban areas, rural areas, low- and moderate-income areas, and other areas with the greatest need, including those—

(A) with the greatest percentage of home foreclosures;
(B) with the highest percentage of homes financed by a subprime mortgage related loan; and
(C) identified by the State or unit of general local government as likely to face a significant rise in the rate of home foreclosures." (2301(c)(2))

In identifying the communities in Georgia with greatest need and determining potential allocations to those communities, the Georgia Department of Community Affairs (DCA) calculated need on a county basis and determined that need on the basis of the following indicators:

- The percent and number of actual residential foreclosures (including remnant Residential Owned Properties (REOs);
- The percent and number of subprime mortgages used to purchase residential properties;
- The residential vacancy rate and;
- The number of households with less than 50 percent of the HUD area median income with housing cost burdens.

[1] Georgia Department of Community Affairs, Neighborhood Stabilization Program: Proposed Substantial Amendment for the State of Georgia, November 13, 2008, p. 6.

According to the DCA's proposed NSP plan, "these combinations of variables not only measure the current residential foreclosure and abandonment problem, DCA believes they are predictive of future foreclosure and abandonment problems."[2]

To assess how well DCA's proposed NSP formula targets funds to the Georgia communities with the greatest needs related to the mortgage foreclosure crisis, this report examines the proposed funding distribution and its fit with a broad range of indicators and compares the targeting performance of the DCA formula to six alternative formulas that incorporate additional indicators, revised weights, and different mathematical expressions in the formula constructions. The findings show that while the DCA formula does a reasonably good job of targeting funds to needy communities, there are alternative formulas that do a better job of directing funds to needy communities and are more responsive to a wider variety of dimensions of need related to the mortgage foreclosure crisis. In some instances, while the overall performance of the DCA proposed formula and the formula alternatives considered is reasonably comparable, there are notable differences in the proposed grant allocations to individual jurisdictions based on the formula alternative selected. This heightens the importance of selecting a formula distribution mechanism that is sensitive to the many dimensions of the mortgage foreclosure crisis and also one that incorporates the most reliable and timely data available.

Defining Need for Foreclosure Assistance

DCA's proposed formula for allocating NSP funds to local jurisdictions is comprised of seven formula elements. The elements, their definitions, time periods, and data sources are as follows:[3]

1. **Notices of Trustees' Sale (NTS).** The Notices of Trustees' Sale is defined as assignment of a property for disposal through sale or auction to a trustee.

   Time period: January 2008 – September 2008
   Data source: RealtyTrac

2. **Real Estate Owned (REO) Properties**. REO property is the consequence of attempts to dispose of properties in default that have failed in obtaining a sale, short sale, or auction sale and the property ownership goes to the investor or lender.

   Time period: January 2008 – September 2008
   Data source: RealtyTrac

3. **Foreclosure Rate**. The foreclosure rate was calculated by dividing the total number of foreclosure starts by the total number of housing units obtained from the 2007 U.S. Census estimates.

   Time period: January 2008 – September 2008
   Data source: RealtyTrac

[2] Ibid., p. 2.

[3] Ibid., Appendix I.

4. **Subprime Loans**. The number (percent) of conventional mortgage loans (loans not insured by a government program such as FHA or VA) made by subprime lenders.

   Time Period: 2004
   Data source: Home Mortgage Disclosure Act data

5. **Housing Cost Burden**. The number of households with less than 50 percent of the HUD area median income with housing cost burdens.

   Time Period: 2000
   Data source: U.S. Census Bureau, special tabulation for HUD's Comprehensive Housing Affordability Strategy

6. **Vacancy Rate**. The percentage of residential addresses that were vacant for 90 days or longer.

   Time Period: June 2008
   Data source: U.S. Postal Service Residential Vacancy Survey

The DCA used the following formula for calculating NSP allocations to Georgia counties:

Jursidiction Allocation = Appropriation *

{ .05 * Jurisdiction Notices of Trustees' Sale / Georgia total number of Trustees' Sale +

.65 * Jurisdiction Real Estate Owned Properties / Georgia total number of REOs +

.05 * Jurisdiction Foreclosure Rate / Georgia sum of Jurisdiction Foreclosure Rates +

.10 * Jurisdiction Number of Subprime Loans / Georgia total number of Subprime Loans +

.05 * Jurisdiction Percentage of Subprime Loans / Georgia sum of Jurisdiction Subprime Loan Percentages +

.05 * Jurisdiction Vacancy Rate / Georgia sum of Jurisdiction Vacancy Rates +

.05 * Jurisdiction Households <50% HUD AMI and Housing Cost Burden / Georgia total number of Households <50% HUD AMI and Housing Cost Burden }

There are several concerns with the proposed DCA allocation formula that include:

1. **The formula is heavily skewed to a single indicator**, REO properties, which is weighted .65. Though other indicators are included in the formula, their relative weight in influencing a jurisdiction's NSP allocation is overshadowed by the impact of the REO indicator. This may be especially problematic if the indicator

is not a reliable measure of the underlying phenomenon (e.g., may be over- or under-counting REO activity).

2. **Several of the data sources are stale**. The data on subprime loans is for 2004; the data on low-income households with housing cost burdens is from 2000. Conditions have likely changed dramatically in many communities and these indicators may reflect current (or future) conditions.

3. **The incorporation of rate indicators (foreclosures, subprime loans, vacancies) into the formula is suspect.** It is unclear that the rate indicators as incorporated into the DCA formula are accurately capturing the relative concentration of the indicator in a particular jurisdiction. The conventional practice (e.g., used by HUD in its NSP state allocations and in many other federal formula grant programs) is to divide a jurisdiction's rate by the statewide rate (see Appendix 2). Jurisdictions with a rate greater than the statewide rate receive a relatively larger allocation and vice versa for those with rates below the statewide rate. The denominators for the rate indicators in the DCA formula, however, are the sum of percentages across all jurisdictions. As constructed DCA's rate indicators make no adjustment for population size; hence communities with identical rates but different population sizes are treated the same.

Six Alternative Formulas

In an effort to improve the targeting of Georgia's NSP assistance to needy communities, six alternatives to the proposed DCA formula are offered. Each of the six alternative formulas incorporates a broader range of indicators of the mortgage foreclosure crisis, provide indicators that are conceptually a better fit with the roots of the current mortgage foreclosure crisis as well as predictors of future foreclosure problems, and all are available for a more current time period. In addition, two alternative approaches are taken in the formula options presented to address the problem of capturing both the incidence (count) as well as the concentration (rate or percentage) of community need.

Each of the six formula alternatives includes seven indicators and for each indicator we incorporate both a measure of incidence as well as a measure of concentration. The formula indicators, their definitions, time periods, and data sources are as follows (see Table 1 for a summary):

1. **Notices of Trustees' Sale (NTS).** The Notices of Trustees' Sale is defined as assignment of a property for disposal through sale or auction to a trustee. The NTS rate is calculated by dividing the number of Trustees' sales by the number of housing units based on 2007 Census estimates.

   Time period: January 2008 – September 2008
   Data source: RealtyTrac

2. **Subprime Loans.** The number of first-lien mortgage loans issued by subprime lenders. The percentage of subprime loans is calculated based on the total number of first-lien mortgage loans.

   Time period: All outstanding loans as of June 30, 2008
   Data source: McDash Analytics

Table 1. Formula Elements, Weights, and Construction.

Indicator	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
Notice of Trustees' Sale	$\frac{NTS_i}{NTS_{GA}}$	$\frac{NTS_i}{NTS_{GA}} \times \frac{\%\ NTS_i}{\%\ NTS_{GA}}$	$\frac{NTS_i}{NTS_{GA}} \times \frac{\%\ NTS_i}{\%\ NTS_{GA}}$	$\frac{NTS_i}{NTS_{GA}} \times \frac{\%\ NTS_i}{\%\ NTS_{GA}}$	$\frac{NTS \times \%\ NTS_i}{\Sigma\ NTS \times \%\ NTS_{GA}}$	$\frac{NTS \times \%\ NTS_i}{\Sigma\ NTS \times \%\ NTS_{GA}}$	$\frac{NTS \times \%\ NTS_i}{\Sigma\ NTS \times \%\ NTS_{GA}}$
Weight	.05	.10	.10	.10	.10	.10	.10
Time period	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008
Real Estate Owned Properties—RealtyTrac	$\frac{REO_i}{REO_{GA}}$	$\frac{REO_i}{REO_{GA}} \times \frac{\%\ REO_i}{\%\ REO_{GA}}$	$\frac{REO_i}{REO_{GA}} \times \frac{\%\ REO_i}{\%\ REO_{GA}}$	$\frac{REO_i}{REO_{GA}} \times \frac{\%\ REO_i}{\%\ REO_{GA}}$	$\frac{REO \times \%\ REO_i}{\Sigma\ REO \times \%\ REO_{GA}}$	$\frac{REO \times \%\ REO_i}{\Sigma\ REO \times \%\ REO_{GA}}$	$\frac{REO \times \%\ REO_i}{\Sigma\ REO \times \%\ REO_{GA}}$
Weight	.65	.25	.25	.20	.25	.25	.20
Time period	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008	Jan – Sep 2008
Real Estate Owned Properties—McDash		$\frac{REO_i}{REO_{GA}} \times \frac{\%\ REO_i}{\%\ REO_{GA}}$	$\frac{REO_i}{REO_{GA}} \times \frac{\%\ REO_i}{\%\ REO_{GA}}$	$\frac{REO_i}{REO_{GA}} \times \frac{\%\ REO_i}{\%\ REO_{GA}}$	$\frac{REO \times \%\ REO_i}{\Sigma\ REO \times \%\ REO_{GA}}$	$\frac{REO \times \%\ REO_i}{\Sigma\ REO \times \%\ REO_{GA}}$	$\frac{REO \times \%\ REO_i}{\Sigma\ REO \times \%\ REO_{GA}}$
Weight		.25	.25	.20	.25	.25	.20
Time period		As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008
Foreclosures	$\frac{\%Foreclosures_i}{\Sigma\%Foreclosures_{GA}}$	$\frac{Forecl_i}{Forecl_{GA}} \times \frac{\%\ Forecl_i}{\%\ Forecl_{GA}}$	$\frac{Forecl_i}{Forecl_{GA}} \times \frac{\%\ Forecl_i}{\%\ Forecl_{GA}}$	$\frac{Forecl_i}{Forecl_{GA}} \times \frac{\%\ Forecl_i}{\%\ Forecl_{GA}}$	$\frac{Forecl \times \%\ Forecl_i}{\Sigma\ Forecl \times \%\ Forecl_{GA}}$	$\frac{Forecl \times \%\ Forecl_i}{\Sigma\ Forecl \times \%\ Forecl_{GA}}$	$\frac{Forecl \times \%\ Forecl_i}{\Sigma\ Forecl \times \%\ Forecl_{GA}}$
Weight	.05	.10	.10	.15	.10	.10	.15
Time period	Jan – Sep 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008
Subprime loans	$\frac{Subprime_i}{Subprime_{GA}}$ $\frac{\%\ Subprime_i}{\Sigma\ \%\ Subprime_{GA}}$	$\frac{Subp_i}{Subp_{GA}} \times \frac{\%\ Subp_i}{\%Subp_{GA}}$	$\frac{Subp_i}{Subp_{GA}} \times \frac{\%\ Subp_i}{\%Subp_{GA}}$	$\frac{Subp_i}{Subp_{GA}} \times \frac{\%\ Subp_i}{\%Subp_{GA}}$	$\frac{Subp \times \%\ Subp_i}{\Sigma\ Subp \times \%\ Subp_{GA}}$	$\frac{Subp \times \%\ Subp_i}{\Sigma\ Subp \times \%\ Subp_{GA}}$	$\frac{Subp \times \%\ Subp_i}{\Sigma\ Subp \times \%\ Subp_{GA}}$
Weight	.10/.05	.15	.15	.15	.15	.15	.15
Time period	2004	As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008
Delinquent loans		$\frac{Delnq_i}{Delnq_{GA}} \times \frac{\%\ Delnq_i}{\%\ Delnq_{GA}}$	$\frac{Delnq_i}{Delnq_{GA}} \times \frac{\%\ Delnq_i}{\%\ Delnq_{GA}}$	$\frac{Delnq_i}{Delnq_{GA}} \times \frac{\%\ Delnq_i}{\%\ Delnq_{GA}}$	$\frac{Delnq \times \%\ Delnq_i}{\Sigma\ Delnq \times \%\ Delnq_{GA}}$	$\frac{Delnq \times \%\ Delnq_i}{\Sigma\ Delnq \times \%\ Delnq_{GA}}$	$\frac{Delnq \times \%\ Delnq_i}{\Sigma\ Delnq \times \%\ Delnq_{GA}}$
Weight		.15	.10	.15	.15	.10	.15
Time period		As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008	As of June 2008
Vacancies	$\frac{\%\ Vacant_i}{\Sigma\ \%\ Vacant_{GA}}$	$\frac{\%\ Vac\ Hi\ Subp_i}{\%\ Vac\ Hi\ Subp_{GA}}$	$\frac{VHSubp_i}{VHSubp_{GA}} \times \frac{\%\ VHSubp_i}{\%VHSubp_{GA}}$	$\frac{VHSubp_i}{VHSubp_{GA}} \times \frac{\%\ VHSubp_i}{\%VHSubp_{GA}}$	$\frac{\%\ Vac\ Hi\ Subp_i}{\%\ Vac\ Hi\ Subp_{GA}}$	$\frac{VHSubp \times \%\ VHSubp_i}{\Sigma\ VHSubp \times \%VHSubp_{GA}}$	$\frac{VHSubp \times \%\ VHSubp_i}{\Sigma\ VHSubp \times \%VHSubp_{GA}}$
Weight	.05	Adjustment to total	.05	.05	Adjustment to total	.05	.05
Time period	June 2008	June 2008	June 2008	June 2008	June 2008	June 2008	June 2008
Housing Cost Burden	$\frac{HHs\ Cost\ Burden_i}{HHs\ Cost\ Burden_{GA}}$						
Weight	.05						
Time period	2000						

3. **Foreclosed Loans.** The number of first-lien loans that have been foreclosed. The percentage of foreclosed loans is calculated based on the total number of first-lien mortgage loans.

   Time period: All outstanding loans as of June 30, 2008
   Data source: McDash Analytics

4. **Delinquent Loans.** The number of first-lien loans that are delinquent for 30 days or more. The percentage of delinquent loans is calculated based on the total number of first-lien mortgage loans.

   Time period: All outstanding loans as of June 30, 2008
   Data source: McDash Analytics

5. **Real Estate Owned (REO) Properties**. REO property is the consequence of attempts to dispose of properties in default that have failed in obtaining a sale, short sale, or auction sale and the property ownership goes to the investor or lender. The REO rate is determined by dividing the number of REOs by the number of housing units (Census 2007 estimate).

   Time period: January 2008 – September 2008
   Data source: RealtyTrac

6. **Real Estate Owned (REO) Properties**. We use a second measure of REO property derived from another data vendor. The REO rate for this indicator is expressed as the percentage of outstanding loans that are REO properties.

   Time period: REO properties as of June 30, 2008
   Data source: McDash Analytics

7. **Vacancy Rate in High Subprime Zip Codes**. Residential vacancy rate in zip codes with a high rate (> 17.2%) of subprime lending.

   Time period: As of June 30, 2008
   Data source: Calculated from HMDA and U.S. Postal Service Vacancy Survey data

Several aspects of the formula elements and formula construction of the proposed alternative formulas warrant emphasis.

1. **Data Sources**. Following the Foreclosure Response project, a collaborative project of the Center for Housing Policy, KnowledgePlex, LISC, and the Urban Institute, we use data from McDash Analytics (a private vendor of loan performance data obtained from the nation's largest loan servicers) on the performance of prime and subprime loans. Measures derived from the McDash data include the total number of loans, the number of subprime loans, the number of REO properties, the number of foreclosed loans (banks had begun the foreclosure process but not sold the property to another owner), and the number of delinquent loans (30 days or more). All loan and foreclosure counts were restricted to first-lien mortgages

only and the data represent all residential loan activity as of June 30, 2008.[4] In addition, the McDash data were adjusted to account for undercounting of outstanding mortgages by using data from the U.S. Census county-level 2007 estimates (total housing units), the 2006 American Community Survey (homes with outstanding owner-occupied mortgages), and the 2002 Residential Finance Survey (share of single-family rental homes with a mortgage). Also, data from the Mortgage Bankers Association's June 2008 National Delinquency Survey was used to adjust the number of subprime loans, foreclosures, and delinquencies.[5]

2. **Formula Elements.**

   a. **Notice of Trustees' Sale**. We retained the original data on Notice of Trustees' Sale and Real Estate Owned Properties utilized in DCA's proposed formula for the six alternative formulas.

   b. **REOs**. We added a second measure of REOs based on the McDash Analytics data (see above) on the grounds that while REO is an essential construct for understanding the incidence and concentration of the mortgage foreclosure crisis, it is a difficult phenomenon to capture well in existing data sources and we would prefer compatible indicators derived from different sources rather than a single indicator from a single source. Indeed, while the time periods for data collected differed (DCA used monthly RealtyTrac data for the period January-September 2008 and McDash Analytics data are cumulative through June 2008), the totals for the two measures of REOs were very close (27,221 for RealtyTrac v. 26,689 for McDash) and correlated very highly (r=.99). However, as discussed later in the report, for some counties the totals varied widely depending on the source.[6]

   c. **REO Rates.** Different denominators were used for calculating REO rates. For the DCA measure we used the total number of housing units (2007) whereas the six formula alternatives used the total number of first-lien loans.

   d. **Foreclosures**. Though both the DCA and formula alternative used an indicator for foreclosures, the data came from different sources, used slightly different time periods, and different denominators were utilized to calculate rates. DCA used the number of housing units (2007) and we used the number of first-lien loans for the formula alternatives. Also, DCA used the statewide *sum* of county foreclosure rates as its formula

[4] A first lien loan is the mortgage placed on the home before any other loans are taken out. It is usually the loan you use to buy the home and may be the largest loan on the home. The lender of a first lien loan has first claim on the home in the case of default. Smart Refinance Net, accessed at http://www.smartrefinance.net/loan_sources.html.

[5] See LISC, "Foreclosure Needs Score Methodology Appendix" for details on these adjustments. Accessed at http://www.housingpolicy.org/foreclosure-response.html and reproduced in Appendix 1.

[6] Nineteen counties had at least 20 percent more REO activity according to RealtyTrac than the adjusted McDash figures including several counties in the Atlanta metro area (Forsyth, Gwinnett, Clayton, Cobb, and Fulton); 2 counties showed REO activity under RealtyTrac and none under McDash; 41 counties showed no activity under RealtyTrac and REO activity under McDash; 11 counties showed no REO properties under either source.

denominator whereas the formula alternatives used the statewide rate. In addition, the formula alternatives incorporated a measure of the number of foreclosures whereas DCA only used the foreclosure rate.

e. **Subprime Loans**. The DCA formula and each of the six formula alternatives incorporated a measure of the number of subprime loans. DCA used Home Mortgage Disclosure Act data for 2004 as its source whereas we used June 2008 McDash data adjusted with additional data from the Mortgage Bankers Association. While DCA included a measure of the subprime lending rate in its formula, the denominator for that formula element was the *sum* of the subprime lending *rates* for all Georgia counties whereas the formula alternatives used the statewide subprime lending rate as its denominator. In addition, the formula alternatives only included first-lien mortgages made by subprime lenders.

f. **Delinquent Loans**. Each of the six formula alternatives included a measure of the number of delinquent loans (30 days or more) and the percentage of outstanding loans that were delinquent for more than 30 days. All measures were based on first-lien mortgage loans.

g. **Residential Vacancies**. DCA included an indicator for the residential vacancy rate (vacant 90 days or longer) and used the statewide *sum* of county residential vacancy rates as its denominator for that formula element. The six formula alternatives used a more targeted measure of residential vacancy based on the county vacancy rate (vacant 90 days or longer) for residential properties located in zip codes with a high concentration (greater than 17.2%) of subprime loans. All of the vacancy measures were derived from the same source, the U.S. Postal Service's June 2008 extract on vacant residential addresses, though the formula alternatives incorporated additional HMDA data to identify zip codes with high concentrations of subprime lending.

h. **Housing Cost Burden**. We chose to drop the housing cost burden measure from the six formula alternatives for two reasons. First, the data was very old (2000) and second, we believe there are other indicators included in the formula alternatives that do a better job of capturing current and future foreclosure and abandonment problems.

i. **Incidence and Concentration**. We used a different approach than DCA to capture the incidence and concentration of community need. DCA included three rate measures in its formula (foreclosures, subprime loans, and vacancies), though in each instance the formula element was derived by comparing the rate in each county to the sum of the rates for all counties in the state. This is an unconventional practice which we have not seen incorporated in other funding formulas and one that does not take into consideration the size of the jurisdiction.

   We chose two approaches to incorporate both incidence (count) and concentration (rate or percentages) in the six formula alternatives. In the first three formula alternatives we adjusted each county's share of the formula indicator (e.g., number in county x divided by total for the state)

by multiplying that share by the ratio of the county's rate for that indicator to the statewide rate. This has the effect of raising a county's share of the indicator (and increasing its grant) for counties that have a rate for that indicator above the statewide rate and reducing a county's share of the indicator for counties that have a rate for the indicator below the statewide rate. Following the practice used by HUD for the statewide allocations, these ratios were capped so that no county's share of an indicator could increase or reduce a county's share of the problem by more than 30 percent for the indicators of trustees' sale, REOs, foreclosures, subprime loans, and delinquent loans, and no more than 10 percent for vacancies.

Our second approach, incorporated in formula alternatives four through six, followed the practice used by LISC in calculating a foreclosure needs score for CDBG jurisdictions (see Appendix 1). For each formula element we created a product indicator that weighted the percentage indicator by the count indicator (e.g., percent of subprime loans multiplied by the number of subprime loans) and then calculated each county's share of the problem by dividing it by the total of all products for that indicator summed across all counties in the state. In Formula 4, the vacancy rate indicator was treated similar to Formula 1 (adjusting the entire formula allocation up or down based on the ratio of the county's vacancy rate to the statewide vacancy rate) whereas in formulas five and six it was incorporated directly into the formula and calculated similarly to the other formula elements.

3. **Dollar Amounts.** We calculated grant amounts to counties based on a total state appropriation of $149,954,046. This amount was derived as follows:

   $153,037,451 total NSP allocation to Georgia

   Less $75,952,326 in direct HUD allocations to 9 entitlement jurisdictions[7]

   Less $3,083,405 for state administration and grants management[8]

   Following DCA's methodology, we included both the direct and discretionary funding available to the state in calculating grant amounts under the formula alternatives for Georgia counties and we ensured that entitlement jurisdictions received a grant amount at least equal to the amount of funding they were awarded directly by HUD. As did DCA, we included city entitlement funding in the county allocation.[9] In addition, because we used an alternative formula

[7] HUD awarded direct allocations to Clayton County ($9.7 million), Cobb County ($6.9 million), DeKalb County ($18.5 million), Fulton County ($10.3 million), Atlanta ($12.3 million), Gwinnett County ($10.5 million), Columbus/Muscogee County ($3.1 million), Augusta ($2.5 million), and Savannah ($2.0 million).

[8] DCA, *Neighborhood Stabilization Program*, p. 5 and Appendix 2.

[9] We included the entitlement funding for Savannah ($2,038,631) in Chatham County although it was not explicitly identified in the listing of potential allocations reported in Appendix 2 of DCA's NSP proposed amendment.

construction (adjusting each county's count measure with its rate measure and in formulas 1 and 4 adjusted the county's entire allocation based on the ratio of its vacancy rate to the statewide vacancy rate), we followed HUD's practice used in the national formula distribution to states by making a pro rata reduction adjustment to ensure that the amount of funding proposed for distribution conforms to the state's total appropriation.[10]

Evaluation Criterion

We used several strategies for assessing the targeting performance of DCA's proposed formula and each of the six formula alternatives. These included an analysis of the funding distribution by community need quintiles, construction of an Index of Inequity, and regression analysis. Each of these methods provides a slightly different perspective on the fit between formula grant allocations and community need, and considered together they provide a more comprehensive analysis of targeting performance than would any single method. A brief description of each of these analysis strategies is provided below.

Quintile Analysis. We rank-ordered the 159 Georgia counties on each of the indicators of community need included in our formula analysis and then classified the counties into quintiles (5 equal groups) for each indicator. These indicators are the rate or percentage measure for notices of trustees' sale, subprime loans, foreclosures, delinquent loans, REOs (both sources), and vacancies. We also used factor analysis to construct a composite needs index based on both the count and rate measures for these seven indicators (see Appendix 3 for the results of this analysis).

Once the community need quintiles were constructed we then examined the distribution of proposed grant allocations under DCA's formula and each of the six formula alternatives. We used three strategies to examine the distribution of funds: the percentage of funds (or share of total funds) awarded to counties in the highest need quintiles, the median per capita grant (grant per housing unit) awarded to counties in the highest need quintiles, and the ratio of the median per capita grant in the highest need quintile to the median per capita grant in the lowest need quintile. For each of these methods, higher numbers indicate greater targeting performance. It is important to point out, however, that the largest counties did not consistently fall into the highest need quintile, so caution should be used in interpreting the results of the quintile analysis, especially the analysis based on the share of funds awarded to counties in the highest need quintiles.

Index of Inequity. A second method used to assess the targeting performance of the various funding formulas was the construction of an Index of Inequity for each funding distribution. Coulter and Pittman developed a bivariate index that can be used to compare the extent of maldistribution in DCA's proposed formula and the six formula alternatives.[11] The index captures the extent to which funding allocations deviate from an equity

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[10] Though we could not reconcile the estimated totals for the six formula alternatives with the amount of funding available for distribution, we were within four decimal places (1.0000) when the estimated and actual amounts were compared. The variances ranged from an under-estimation of $3,040 for formula 1 to an over-estimation of $2,778 for formula 3. The differences are likely due to rounding errors.

[11] Philip B. Coulter and Terry Pittman, "Measuring Who Gets What: A Mathematical Model of Maldistribution," *Political Methodology* (1983): 215-233.

standard. In short, the index is constructed by summing for each county the discrepancies between the share of funding awarded to a county by a particular formula and the share of need in a particular county and then dividing that value by the maximum discrepancy sum that could be obtained given the distribution of the equity standard chosen. The value of the index ranges from 0 (perfect equity) to 1 (perfect inequity). An index score was created for each of the following needs indicators: notice of trustees' sale, subprime loans, foreclosures, delinquent loans, REOs (both sources), and vacancies in high subprime zip codes. As noted above, lower index scores indicate a more equitable funding distribution (less deviation in funding awards from an equity or need standard).

Regression Analysis. The final method we used to assess the targeting performance of each of the formulas was to conduct a regression analysis between the various per capita funding distributions and our indicators of community need (both count and rate measures). This analysis strategy was used by HUD in its recent assessment of the targeting performance of the CDBG formula.[12] Regression analysis provides two pieces of information that are helpful in interpreting the targeting performance of each formula:

1. Do counties with similar needs scores receive similar per capita grants? The R-square reported by the regression analysis is a measure of the proportion of variance explained by the needs indicator. If the R-square (ranges from 0 to 1) is high, it indicates a strong relationship between the funding distribution and the community need indicator.
2. Do counties with very high need receive larger per capita grants than counties with lower needs? The regression slope of the community need indicator represents how much larger (or smaller) a per capita grant to a high need county is than to a per capita grant to a low need county.

Findings

This section presents the results of our analysis of the targeting performance of DCA's proposed formula and the six formula alternatives. While the DCA formula does a relatively good job of targeting assistance to counties with a high level of need as measured by the number and percent of REO properties (weighted .65 in the DCA formula), the analysis shows that the DCA formula is less responsive than the formula alternatives to other dimensions of community need related to the mortgage foreclosure crisis.

Table 2 presents summary statistics for the seven formula elements included in the six alternative formulas and summary statistics for the DCA formula distribution and the allocations under the six alternative formulas. Histograms for each variable are presented in Appendix 4.

Quintile Analysis. Table 3 summarizes the results of the quintile analysis of the formula allocation distributions. In terms of the percentage share of funds allocated to counties in the neediest quintile, the DCA formula performs best on two measures of need: notices of trustees' sale and the number of REO properties (RealtyTrac). For both quintiles, more than 80 percent of funding allocations were awarded to counties that ranked in the

[12] Todd Richardson, *CDBG Formula Targeting to Community Development Need*, Washington, D.C.: U.S. Department of Housing and Urban Development, Office of Policy Development and Research, 2005.

Table 2. Descriptive Statistics

Formula Factors	Notice of Trustees Sale	Subprime Loans	Foreclosed Loans	Delinquent Loans	REOs--RealtyTrac	REOs--McDash	Residential Vacancies in High Subprime Zipcodes
Standard deviation	1,269.2	3,298.4	808.8	2,363.2	691.8	563.4	1,472.2
Mean	368.8	1,393.9	367.4	1,061.8	171.2	167.9	646.7
Median	44	349	103	281	3	31	242
Coefficient of variation	344.2	236.6	220.2	222.6	404.1	335.7	227.7
n of counties	159	159	159	159	159	159	159

Grant Allocations	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
Mean	943,107	943,088	943,100	943,125	943,116	943,094	943,123
Median	102,429	133,583	153,756	170,513	121,910	135,266	156,610
Standard deviation	3,230,220	3,218,778	3,094,862	2,916,690	3,475,328	3,329,478	3,102,921
Coefficient of variation	342.5	341.3	328.2	309.3	368.5	353.0	329.0
n of counties	159	159	159	159	159	159	159

Table 3. Quintile Analysis

A. Percentage Share to Neediest Quintile Counties

Quintiles	Indicator	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
NTS	86.1%	83.0%	80.7%	79.9%	78.1%	82.4%	81.4%	79.4%
Subprime loans	12.6%	12.3%	13.5%	13.6%	13.8%	16.5%	16.9%	17.1%
Foreclosed loans	14.9%	11.5%	13.4%	13.4%	14.0%	16.7%	16.8%	17.4%
Delinquent loans	20.8%	20.0%	21.5%	21.8%	22.4%	24.9%	25.4%	25.9%
REO-RealtyTrac	94.9%	86.6%	82.5%	82.0%	80.0%	84.3%	83.5%	81.3%
REO-McDash	52.8%	51.0%	53.0%	52.2%	50.2%	57.8%	56.8%	54.1%
Subprime vacancy	15.5%	4.6%	5.2%	5.0%	5.3%	4.6%	5.0%	5.4%
Index	--	79.9%	80.1%	79.1%	77.4%	83.6%	82.4%	80.6%

B. Median Per Capita Grant, Neediest Quintile Counties

Quintiles	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
NTS	39.97	38.32	40.61	41.96	33.26	35.32	37.04
Subprime loans	16.74	11.75	14.03	16.13	15.02	19.34	21.33
Foreclosed loans	16.16	15.27	16.29	18.79	17.57	19.61	22.46
Delinquent loans	15.60	21.50	21.01	23.01	21.18	22.45	25.80
REO-RealtyTrac	43.75	38.23	39.70	41.21	37.04	37.04	37.04
REO-McDash	20.02	27.01	27.24	28.57	27.44	28.71	32.79
Subprime vacancy	10.97	8.17	11.07	12.54	7.39	13.11	14.83
Index	32.13	38.23	37.99	39.06	37.54	37.54	37.54

C. Ratio of Median Per Capita Grant: Highest to Lowest Quintile

Quintiles	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
NTS	3.33	6.14	4.04	3.94	5.22	2.98	3.09
Subprime loans	1.26	1.14	1.16	1.24	2.06	2.30	2.09
Foreclosed loans	1.11	1.94	1.51	1.69	2.76	2.10	2.15
Delinquent loans	1.42	2.08	1.71	1.77	2.70	2.20	2.29
REO-RealtyTrac	3.99	4.44	3.72	3.52	4.37	3.13	3.01
REO-McDash	1.49	3.91	2.67	2.47	4.77	3.07	2.98
Subprime vacancy	0.87	0.67	0.92	0.93	0.82	1.51	1.35
Index	3.22	4.61	3.72	3.27	5.99	4.76	4.23

neediest quintile, though in each case the share of funding awarded to the neediest quintile counties was less than their share of the need indicator. Formula 6 demonstrated the best targeting performance, achieving the highest share of funding allocated to counties in the neediest quintile for four of the eight need indicators examined (subprime loans, foreclosed loans, delinquent loans, and vacancies in high subprime zip codes). Formula 4 did best on the REO (McDash) and composite needs index quintile analyses.

It is important to note that the funding share analysis by quintile is influenced by where the largest counties rank on the need indicator. To control for the effects of population size, we examined the median per capita grant (actually dollars per housing unit) awarded to counties in the neediest quintile and also the ratio of the median per capita grant in the neediest quintile to that in the least needy quintile. Panel B of Table 3 shows that DCA's proposed formula achieved the greatest targeting under only one need indicator (REO properties—RealtyTrac). Formula 6 achieved the greatest targeting as measured by five need indicators (subprime loans, foreclosed loans, delinquent loans, REOs—McDash, and vacancies in high subprime zip codes). Formula 3 achieved the largest median grant in the neediest quintile for the notice of trustees' sale and composite need index quintiles.

It is also important to note that targeting is not just about awarding large grants to the neediest counties. The fundamental principle of targeting is that a jurisdiction with high need should receive a relatively larger grant than a jurisdiction with low need. One way to assess the extent of targeting is to compare the ratio of median per capita grants in the neediest and least neediest quintiles. The results of this analysis reported in Panel C of Table 3 shows that DCA's proposed formula does relatively poorly on this measure of targeting performance. The formula alternatives record the highest targeting ratios for each of the eight need indicators examined and on all but one of those indicators (REOs—RealtyTrac) the targeting ratio of the leading formula alternative is about twice the ratio recorded by the DCA formula. Formula 4 has the highest targeting ratio on four indicators (foreclosed loans, delinquent loans, REOs—McDash, and the composite needs index) and Formula 1 (notice of trustees' sale and REOs—RealtyTrac) and Formula 5 (subprime loans and vacancies in high subprime zip codes) record the highest ratios for the other four need indicators.

Index of Inequity. Results from the calculation of the Index of Inequity for the DCA formula and the six formula alternatives are presented in Table 4. Recall that this index is a measure of the extent of maldistribution, comparing the distribution of NSP grant funds to the distribution of some equity standard (i.e., community need indicator). The index ranges from 0 (perfect equity, each county's share of funds equals its share of the need indicator) to 1 (perfect inequity). Table 4 shows that DCA's proposed formula achieves the lowest Index of Inequity score for the notice of trustees' sale and REOs—RealtyTrac need indicators. The results suggest that Formula 3 is the most equitable formula, recording the lowest index score on four community need indicators (subprime loans, foreclosed loans, delinquent loans, vacancies in high subprime zip codes) and has the lowest index score when the scores are averaged across all seven need indicators. Formula 1 achieves the lowest index score on the REOs—McDash indicator.

It is important note, however, that while equity and targeting are related concepts, they have different implications regarding funding distributions. Many would agree that equity implies a "fair share" distribution in that grant funds should be allocated in

Table 4. Index of Inequity

Need Criterion	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
Notice of Trustees Sale	.034	.053	.050	.056	.071	.065	.062
Subprime Loans	.106	.110	.094	.077	.136	.120	.099
Foreclosed Loans	.119	.120	.105	.088	.146	.130	.109
Delinquent Loans	.121	.126	.110	.094	.152	.136	.115
REOs--RealtyTrac	.052	.059	.070	.086	.053	.061	.076
REOs--McDash	.039	.028	.036	.047	.047	.045	.048
High Subprime Vacancy	.152	.139	.136	.128	.154	.147	.135
Average	.089	.091	.086	.082	.108	.101	.092

proportion to a jurisdiction's need. Targeting, on the other hand, implies that a disproportionate share of funding should be directed to the neediest jurisdictions, though policy makers have widely varying perceptions of what disproportionate might mean. Policy makers have used a variety of mechanisms in federal and state grant programs to pursue their targeting objectives. These include, for example, limiting eligibility for program participation to communities that surpass a minimum threshold of need (e.g., Urban Development Action Grants, Empowerment Zones, state Enterprise Zones), or adding a supplemental funding allocation to jurisdictions that pass some need threshold (e.g., the Anti-Recession Fiscal Assistance and Local Public Works programs in the late 1970s are two examples). Programs, such as CDBG, that provide an entitlement to jurisdictions simply on the basis of population, find it very difficult to maintain a relatively high degree of targeting. As Richardson pointed out in his recent report, targeting under the CDBG program has declined substantially over the past 26 years, due in part to an increasing number of relatively well-off jurisdictions that have become new entitlement communities.[13] Any gains in targeting a greater share of CDBG funds to needy jurisdictions will only be possible by reducing the share of CDBG funds awarded to the least needy jurisdictions, a policy option that has been politically difficult to achieve.

Regression Analysis. As noted above regression analysis provides two helpful measures for assessing the targeting performance of a funding distribution. In this section we perform a series of bivariate regressions, regressing each of our community need indicators (both count and percentage/rate measures) on the proposed DCA formula and each of the six formula alternatives per capita grant allocations (grants per housing unit). The regression's R^2 statistic provides a measure of the fairness of the funding distribution and enables the analyst to determine whether jurisdictions with similar levels of need receive similar per capita grants. A high R^2 indicates that need and grant dollars are strongly related, meaning that most counties with a high needs score also receive a high per capita grant award, whereas a low R^2 means that there is a weak relationship between a county's need and its grant award, which implies that counties with similar need are receiving different levels of per capita funding. The regression slope is a second statistic that helps us assess the targeting performance of each of the funding formulas. The slope is similar to the ratio between the median per capita grants in the neediest and least neediest quintiles presented in the section on the quintile analysis: a large slope indicates a large difference in funding between the highest and lowest need counties.

Because we are interested in the relative targeting performance of the DCA formula and the six formula alternatives across a range of measures of community need related to the mortgage foreclosure crisis, indicators that are measured on a variety of different scales with varying degrees of dispersion, we report the slope as a standardized regression coefficient (or Beta) that allows us to determine across the funding formulas which one is most responsive to community need. Also, because we are reporting the standardized slope coefficient we can also compare the relative influence of each of the need indicators on the funding distributions. The regression Beta for the needs indicator is expressed in standard deviation units and is interpreted as follows: a one standard deviation change in the needs indicator is associated with a Beta standard deviation change in the per capita grant

[13] Richardson, *CDBG Formula Targeting to Community Development Need*.

allocation. Thus, a higher Beta indicates a stronger effect of the need indicator in determining a county's grant allocation.

Table 5 reports the results of our regression analyses of community need on per capita formula grant allocations. Overall, 15 regressions were run for each formula; one for the composite needs index and one for both the count and percentage/rate for each of the seven community need indicators. The analysis shows that while the proposed DCA formula is most effective at targeting assistance to those counties most affected by notices of trustees' sale and REOs (RealtyTrac measure), the formula alternatives do a much better job of targeting assistance to the other dimensions of the mortgage foreclosure crisis (subprime loans, foreclosures, delinquent loans, REOs—McDash, residential vacancies in high subprime zip codes) and to our overall composite measure of community need. Among the formula alternatives, Formula 4 has the best overall performance, recording the highest R^2 and the highest slope in nine of the fifteen regression analyses including all seven of the count indicators. Formula 3 recorded the best targeting performance on three indicators, all rates, (percent of loans by subprime lenders, percent of loans foreclosed, and percent of loans delinquent), and Formula 1 achieved the highest R^2 on three measures (subprime loans, delinquent loans, and vacancy rate) and the largest slope on two measures (foreclosures, delinquent loans).

Conclusion

The main conclusion of our analysis is that the Georgia Department of Community Affairs should give serious consideration to revising the formula for distributing the state's Neighborhood Stabilization Program funds to local jurisdictions to improve targeting to the communities most affected by the mortgage foreclosure crisis. While DCA's proposed formula does a reasonably good job of directing funds to counties impacted by trustees' sales and REOs (as measured by RealtyTrac), it is less effective at targeting funding to high need communities as measured by other indicators of the mortgage foreclosure crisis, many of them predictive of future foreclosures and residential abandonment (see Table 6).

While many of the formula alternatives do a better job of targeting funds to the counties most affected by the mortgage foreclosure crisis than does DCA's proposed formula, it is the author's judgment that Formula 4 provides the best overall targeting performance based on the analyses presented in this report. Formula 4 performed the best in the regression analyses for all seven community need indicators and also for the overall composite measure of community need. In addition, Formula 4 also directed the largest share of funding to counties that ranked in the neediest quintile based on the overall composite needs index.

Table 5. Regression Analysis

	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
Summary							
Total no. of indicators with best targeting							
R^2	2	3	2	1	9	1	3
Slope	2	2	1	0	9	2	3
Number of count indicators with best targeting							
R^2	1	2	0	0	7	1	0
Slope	1	2	0	0	7	1	0
Number of rate indicators with best targeting							
R^2	1	1	2	1	2	0	3
Slope	1	0	1	0	2	1	3
Indicators							
Composite Needs Index							
R^2	.37	.47	.46	.43	.55	.53	.49
Slope	.61	.67	.68	.66	.74	.73	.71
Constant	20.6	19.9	21.1	22.5	18.9	20.5	22.1
Notice of Trustees' Sale							
R^2	.27	.26	.25	.21	.28	.26	.21
Slope	.53	.51	.50	.46	.53	.51	.47
Constant	18.0	17.3	18.6	20.2	16.0	17.7	19.7
NTS as a percent of housing units							
R^2	.56	.65	.67	.64	.59	.56	.54
Slope	.75	.81	.82	.80	.77	.75	.74
Constant	8.6	6.7	8.2	9.9	5.6	7.8	9.9
Number of subprime loans							
R^2	.32	.36	.35	.31	.36	.34	.30
Slope	.57	.60	.59	.56	.61	.59	.55
Constant	16.5	15.4	16.8	18.5	14.0	15.9	17.9

Table 5, cont'd.

	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
Percent of loans by subprime lenders							
R^2	.01	.02	.03	.03	.08	.08	.10
Slope	.12	.17	.18	.19	.29	.30	.32
Constant	15.1	12.1	13.3	14.3	4.9	6.6	7.4
Number of foreclosures							
R^2	.33	.39	.38	.34	.40	.37	.33
Slope	.58	.63	.62	.59	.63	.61	.58
Constant	16.1	14.9	16.2	17.9	13.4	15.4	17.3
Percent of loans foreclosed							
R^2	.01	.03	.02	.04	.07	.06	.09
Slope	.01	.18	.17	.20	.27	.25	.30
Constant	20.8	13.6	15.5	15.7	8.8	11.6	11.4
Number of delinquent loans (30+ days)							
R^2	.34	.38	.37	.34	.38	.36	.32
Slope	.59	.62	.61	.58	.62	.60	.57
Constant	16.0	15.0	16.3	18.0	13.6	15.5	17.5
Percent of loans delinquent (30+ days)							
R^2	.03	.10	.10	.12	.18	.16	.20
Slope	.19	.33	.32	.35	.42	.41	.46
Constant	10.3	1.9	4.1	4.1	-5.5	-2.4	-3.0
Number of REOs (RealtyTrac)							
R^2	.29	.26	.25	.21	.29	.28	.23
Slope	.54	.52	.51	.46	.55	.53	.48
Constant	18.3	17.6	18.9	20.5	16.3	18.1	20.0
REOs as a percent of housing units							
R^2	.84	.72	.73	.68	.68	.67	.62
Slope	.91	.85	.86	.83	.83	.82	.79
Constant	11.5	11.2	12.6	14.4	9.9	11.8	13.9

Table 5, cont'd.

	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6
Number of REOs (McDash)							
R^2	.27	.29	.28	.24	.31	.29	.25
Slope	.52	.54	.53	.49	.56	.54	.50
Constant	17.9	17.0	18.3	20.0	15.7	17.5	19.4
REOs as a percent of loans							
R^2	.10	.27	.27	.26	.33	.30	.29
Slope	.32	.53	.52	.51	.57	.55	.54
Constant	12.7	6.7	8.3	10.2	3.5	6.1	8.2
Number of residential vacancies in high subprime zip codes							
R^2	.16	.22	.22	.19	.25	.25	.21
Slope	.41	.48	.47	.44	.50	.50	.46
Constant	17.5	16.2	17.5	19.2	14.7	16.4	18.4
Residential vacancy rate in high subprime zip codes							
R^2	.01	.02	.02	.02	.01	.00	.00
Slope	-.13	-.16	-.15	-.15	-.12	-.05	-.06
Constant	23.8	23.9	24.8	26.3	22.2	22.0	23.8

Table 6. Summary Results of Targeting Analysis: Best Performing Formula by Type of Analysis.

Indicator	Quintile Analysis			Index of Inequity	Regression Analysis	
	Share of Funds	Median per capita grant	Ratio: Highest Need to Lowest Need Quintile		R^2	Slope
Notices of trustees' sale	DCA	F3	F1	DCA	F4-count F2-rate	F4-count F2-rate
Subprime loans	F6	F6	F5	F3	F1/F4-count F6-rate	F4-count F6-rate
Foreclosed loans	F6	F6	F4	F3	F4-count F6-rate	F1/F4-count F6-rate
Delinquent loans (30 days or more)	F6	F6	F4	F3	F1/F4-count F6-rate	F1/F4-count F6-rate
REOs (RealtyTrac)	DCA	DCA	F1	DCA	DCA/F4-count DCA-rate	F4-count DCA-rate
REOs (McDash)	F4	F6	F4	F1	F4-count F4-rate	F4-count F4-rate
Residential vacancies in high subprime zip codes	F6	F6	F5	F3	F4/F5-count F4/F5-rate	F4/F5-count F4/F5-rate
Composite needs index	F4	F3	F4	--	F4	F4

Formula 4 was calculated as follows:

$$\text{Jursidiction Allocation} = \text{Appropriation} * \{[.10\{.15 * \frac{\text{Subprime loans x \%Subprime loans}_i}{\Sigma\ \text{Subprime loans x \%Subprime loans}_{\text{GA counties}}} + .25 * \frac{\text{REOs}_{\text{RealtyTrac}} \text{ x \%REOs}_i}{\Sigma\ \text{REO x \%REO}_{\text{GA counties}}} + .25 * \frac{\text{REOs}_{\text{McDash}} \text{ x \%REOs}_i}{\Sigma\ \text{REO x \%REO}_{\text{GA counties}}} + .10 * \frac{\text{Foreclosures x \%Foreclosures}_i}{\Sigma\ \text{Foreclosures x \%Foreclosures}_{\text{GA counties}}} + .15 * \frac{\text{Subprime loans x \%Subprime loans}_i}{\Sigma\ \text{Subprime loans x \%Subprime loans}_{\text{GA counties}}} + .15 * \frac{\text{Delinquent loans x \%Delinquent loans}_i}{\Sigma\ \text{Delinquent loans x \%Delinquent loans}_{\text{GA counties}}}] * \frac{\text{Vacancy rate in high subprime zip codes}_i}{\text{Vacancy rate in high subprime zip codes}_{\text{GA}}} + \}$$

Finally, it is important to emphasize that revising the state's proposed formula for distributing NSP funds will not only improve the overall targeting performance of the state's funding distribution, it will also have significant consequences for several counties. Appendix 5 reports the total grant funding for each county under the DCA formula and each of the six formula alternatives as well as the relative change in funding for each county under the six formula alternatives as compared to its proposed DCA grant award. Eighteen counties receive an increase in funding under all six formula alternatives of at least 100 percent or higher. For five of those counties (Walker, Whitfield, Butts, Floyd, and Troup), the increase is large enough to move those counties above the minimum threshold ($500,000) the state has established for state NSP Direct Allocation assistance.

There appear to be two primary factors that account for these large gains (Table 7). First, these are counties with relatively greater needs as compared to the statewide county medians on most of the needs indicators and many of these indicators were not included in DCA's proposed formula, or if they were, they were defined differently, used a different data source, or a different time period. Thus, the alternative formulas are tapping a broader dimension of mortgage foreclosure crisis need and the need in these counties was under represented in the DCA formula. A second factor that accounts for the large gains recorded by these counties is the discrepancy in the REO measures. The DCA formula derived their data on REOs (which were weighted .65) from RealtyTrac whereas the formula alternatives included two measures of REOs (weighted .40 to .50 depending on the alternative), each from a different source (RealtyTrac and McDash). In addition, the McDash Analytics data was further adjusted based on data from the U.S. Census Bureau, the Resident Finance Survey, and the Mortgage Bankers Association to account for under reporting of outstanding residential mortgages (see pages 5-6 and Appendix 1 for further discussion).

On the other hand, 15 counties receive a reduction of at least 50 percent in their proposed formula allocation under each of the six formula alternatives. Forsyth County, however, is the only county in that group with a proposed DCA allocation above the minimum threshold for direct assistance and it would maintain that status under each of the six formula alternatives, although at a lower level of funding.

Table 7. Needs Indicators and Funding Allocations for Selected Counties with Large Increases Under the Formula Alternatives.

	State Median	Butts	Floyd	Troup	Walker	Whitfield
Number of housing units	9855	9,245	39,903	26,955	28,456	35,167
Notice of Trustees' Sale	44	37	382	259	368	407
NTS as % of housing units	0.4%	0.4%	1.0%	1.0%	1.3%	1.2%
No. of subprime loans	349	1,134	1,919	1,823	3,076	2,044
Percent of loans subprime	12.8%	14.7%	11.5%	13.1%	20.7%	11.1%
No. of foreclosures	103	296	585	538	989	638
Percent of loans foreclosed	3.4%	3.8%	3.5%	3.9%	6.7%	3.5%
No. of delinquent loans	281	917	1,528	1,446	1,989	1,774
Percent of loans delinquent	9.7%	11.9%	9.1%	10.4%	13.4%	9.6%
No. of REOs--RealtyTrac	3	18	13	10	16	25
REOs as % of housing units	0.02%	0.19%	0.03%	0.04%	0.06%	0.07%
No. of REOs--McDash	31	147	259	190	199	249
REOs as % of loans	1.0%	1.9%	1.6%	1.4%	1.3%	1.4%
No. of vacancies in high subprime zip codes	242	43	0	1,495	1,803	343
Percent vacant in hi-subprime zip codes	6.2%	6.6%	0.0%	5.4%	6.6%	9.2%
Composite Needs Index	-0.13	0.03	-0.11	0.09	0.60	0.05
Grant Allocations						
DCA	102,429	185,071	266,567	263,109	311,733	303,947
Formula 1	133,583	625,051	848,596	741,864	1,291,569	1,062,883
Formula 2	153,756	557,584	858,279	822,865	1,261,998	891,147
Formula 3	170,513	601,527	931,720	926,959	1,468,276	994,063
Formula 4	121,910	556,529	732,572	653,572	1,525,215	921,732
Formula 5	135,266	495,336	740,861	718,767	1,472,152	778,086
Formula 6	156,610	539,954	812,918	816,267	1,770,276	877,798
Percent change, Form 1 v. DCA	-4%	238%	218%	182%	314%	250%
Percent change, Form 2 v. DCA	6%	201%	222%	213%	305%	193%
Percent change, Form 3 v. DCA	13%	225%	250%	252%	371%	227%
Percent change, Form 4 v. DCA	-8%	201%	175%	148%	389%	203%
Percent change, Form 5 v. DCA	4%	168%	178%	173%	372%	156%
Percent change, Form 6 v. DCA	11%	192%	205%	210%	468%	189%

Appendices

1. LISC Foreclosure Needs Score Methodology Appendix
2. U.S. Department of Housing and Urban Development Methodology for Allocation of $3.92 billion of Emergency Assistance for the Redevelopment of Abandoned and Foreclosed Homes
3. Factor Analysis Results Used to Create a Composite Index of Community Need
4. Histograms of Community Need Indicators
5. Listing of Georgia Counties and Proposed Grant Awards Under Various Formulas
6. Listing of Georgia Counties and Their Formula Data Elements

Appendix 1.

LISC *Research and Assessment*

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

- 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 CDBG 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 CDBG 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.

Appendix 2

Methodology for Allocation of $3.92 billion of Emergency Assistance for the Redevelopment of Abandoned and Foreclosed Homes

Section 2301 of the Housing and Economic Recovery Act of 2008 calls for allocating $3.92 billion for state and local governments (as such terms are defined in section 102 of the Housing and Community Development Act of 1974 (42 U.S.C. 5302)) for emergency assistance with redeveloping abandoned and foreclosed homes. The statute calls for the funds to be used to:

(A) "establish financing mechanisms for purchase and redevelopment of foreclosed upon homes and residential properties, including such mechanisms as soft-seconds, loan loss reserves, and shared-equity loans for low- and moderate-income homebuyers;
(B) purchase and rehabilitate homes and residential properties that have been abandoned or foreclosed upon, in order to sell, rent, or redevelop such homes and properties;
(C) establish land banks for homes that have been foreclosed upon; and
(D) demolish blighted structures." (2301(c)(3))

The statute directs that the funds be allocated to "States and units of general local government with the greatest need, as such need is determined in the discretion of the Secretary based on

(A) the number and percentage of home foreclosures in each State or unit of general local government;
(B) the number and percentage of homes financed by a subprime mortgage related loan in each State or unit of general local government; and
(C) the number and percentage of homes in default or delinquency in each State or unit of general local government." (2301(b)(3))

It further notes that the formula is to be developed within 60 days of enactment (2301(c)) and that no state shall receive less than 0.5 percent of the amount appropriated (2302).

The statute also provides direction to grantees that they should give priority emphasis in targeting the funds that they receive to "those metropolitan areas, metropolitan cities, urban areas, rural areas, low- and moderate-income areas, and other areas with the greatest need, including those--
(A) with the greatest percentage of home foreclosures;
(B) with the highest percentage of homes financed by a subprime mortgage related loan; and
(C) identified by the State or unit of general local government as likely to face a significant rise in the rate of home foreclosures." (2301(c)(2))

Allocation

- **Grantee Universe.** The statute calls for allocating the Neighborhood Stabilization Program (NSP) funds to state and local governments. The initial grantee universe is comprised of the 1,201 state and local governments funded in FY 2008 under the regular Community Development Block Grant formula. However, if a local government receives an allocation based on their relative need (as discussed below) of less than $2 million, its allocation amount is rolled up into the state government grant. Of the 1,201 eligible state and local governments, 308 grants are made to states and local governments (including Puerto Rico, the District of Columbia, and the four insular areas).

Because this funding is one-time funding and the eligible activities under the program are different enough from the regular program, HUD believes that a grantee must receive a minimum amount of $2 million to have adequate staffing to properly administer the program effectively. In addition, fewer grants will allow HUD staff to more effectively monitor grantees to ensure proper implementation of the program and reduce the risk for fraud, waste, and abuse.

- **Minimum Grant to States.** The statute calls for no state (including Puerto Rico) to receive less than 0.5 percent of the appropriation. This equates to $19.6 million as a minimum grant for each state government. To meet this requirement, HUD first allocates funds based on relative need (see below) to each state as a whole (both entitled and non-entitled areas). If the state as a whole would receive less than $19.6 million, the state total is increased to $19.6 million. Sub allocations to the state government and local governments are then made as follows:

    - Each state government is allocated $19.6 million.
    - If the statewide allocation is more than $19.6 million, the remaining funds are allocated to state and local governments proportional to their relative need.
    - If a local government receives less than $2 million under this sub-allocation, their grant is rolled up into the state government grant.

  Note, this approach provides state governments with proportionally more funding than their estimated need under the assumption that state governments will serve both those areas not receiving a direct grant and those areas that do receive a direct grant, making sure that the total of all funds in the state are going proportionally more to those places (as prescribed by the statute):

    - *"with the greatest percentage of home foreclosures;*
    - *with the highest percentage of homes financed by a subprime mortgage related loan; and*
    - *identified by the State or unit of general local government as likely to face a significant rise in the rate of home foreclosures." (2301(c)(2))*

- **Two step allocation - statewide allocation.** The statute calls for allocating funds based on the number and percent of foreclosures, subprime loans, and loans delinquent or default. HUD staff experience is that the best source of data on those factors comes from the Mortgage Bankers Association National Delinquency Survey (MBA-NDS). This survey has been conducted for over 30 years and provides information on more than 70 percent of all active mortgages every quarter. The data are available at the state level. For the subprime and delinquency variables, HUD uses data from the second quarter of 2008. For foreclosures, HUD uses the sum of all foreclosure starts for all of 2007 and the first half of 2008.[1]

  However, because the MBA-NDS only covers about 70 percent of all active mortgages, and the distribution in coverage could be different from state-to-state, HUD adjusts the MBA-NDS data using (a) statewide data from the 2006 American Community Survey on number of owner-occupied dwelling with a mortgage and (b) increases that number by the fraction of mortgages made between 2004 and 2006 that were investor-owned in the Home Mortgage Disclosure Act (HMDA) data[2]. Since approximately 44 percent of single-family rental units have a mortgage (2001 Residential Finance Survey) and the investor owned properties are a significant contributor

[1] HUD elected to use this measure of "foreclosure starts" over a period of time rather than "currently in foreclosure" because we wanted to capture the volume of foreclosures independent of state laws and other actions locally that may affect how long a property is in the foreclosure process.

to the inventory of foreclosed homes, HUD staff believe it is important that loans made to investors be included in estimating the statewide total of mortgages in place, particularly since homeownership rates vary from state to state.

The statewide allocation is calculated using the following formula:

$$\text{Statewide Allocation} = \text{Appropriation} * \left\{ \left[0.7 * \frac{\text{State's foreclosure starts in last 6 quarters}}{\text{National foreclosure starts in last 6 quarters}} * \frac{\text{State foreclosure rate}}{\text{National foreclosure rate}} + 0.15 * \frac{\text{State's Number of subprime loans}}{\text{National number of subprime loans}} * \frac{\text{State subprime rate}}{\text{National subprime rate}} + 0.10 * \frac{\text{State's number of loans in default}}{\text{National number of loans in default}} * \frac{\text{State default rate}}{\text{National default rate}} + 0.05 * \frac{\text{State's loans 60 to 89 days delinquent}}{\text{National loans 60 to 89 days delinquent}} * \frac{\text{State 60 to 89 day delinq rate}}{\text{National 60 to 89 day delinq rate}} \right] * \frac{\text{State vacancy rate in Census Tracts with more than 40\% of the loans High-cost}[3]}{\text{National vacancy rate in Census Tracts with more than 40\% of the loans High-cost}} \right\}$$

Where the rate of a foreclosures, subprime loans, defaults, or delinquencies in a state relative to the national rate of that problem cannot increase or reduce a state's share of the problem by more than 30 percent and a state's vacancy rate difference relative to the national average cannot increase or decrease a state's proportional share of the problems by more than 10 percent.[4] If a statewide allocation is less than $19.6 million, the statewide grant is increased to $19.6 million. Because this approach will result in a total allocation in excess of appropriation, all grants above $19.6 million are reduced pro-rata to make the total allocation equal to the total appropriation.

Note that 70 percent of the funds are allocated based on the number and percent of foreclosures, 15 percent for subprime loans, 10 percent for loans in default, and 5 percent for delinquent loans. The higher weight on foreclosures is based on the emphasis the statute places on targeting foreclosed homes.[5]

The statute specifies that funds be targeted toward the places most likely to need assistance with addressing the problems associated with abandoned homes due to foreclosure. To ensure that the funds not only target to foreclosure, but also to abandonment caused by foreclosure, HUD adjusts a

[2] This is calculated as total mortgages = ACS Owner Occupied with mortgage *[1+(HMDA investor mortgages/HMDA renter mortgages)].

[3] Vacancy data are from a June 2008 extract of USPS data on addresses vacant for 90 days or longer in urban areas. Data on high cost loans are based on the sum of HMDA data for 2004 to 2006 on loans being made at 3 basis points or more above prime. The vacancy rate is calculated as the sum of vacant addresses in areas with high cost loans divided by all addresses in the state. The national rate is 1.1 percent.

[4] HUD was unable to identify reliable data on foreclosures, subprime loans, or delinquencies for the Insular areas. As such, HUD estimated insular area rates using the same model as it uses for the substate allocations. Only unemployment rate is used because there are not OFHEO or HMDA data available for insular areas.

[5] Delinquency rates and subprime rates correlate very highly with the foreclosure rate. As such, changing the weights has only a small impact on actual allocations.

state's proportional share of need associated with foreclosures, subprime loans, and defaults and delinquencies upward for states with relatively higher rates of vacancies of 90 days or more when those vacancies are in neighborhoods with high concentrations of high-cost loans. States with lower rates of vacancies have their share of need adjusted downward. Because high rates of high cost loans are a good predictor of foreclosures, HUD uses the 90-day vacancy information from the United States Postal Service as of June 2008 in those neighborhoods with a high rate of high cost loans as a proxy to predict abandonment risk. As noted above, a state's share of overall need can only be adjusted up or down by 10 percent using this factor.

- **Two step allocation - sub-state allocation.** Substate allocations work like a mini-formula. The appropriation amount is the amount calculated for the statewide allocation. A new formula is then applied to divide that "pie" up among the CDBG eligible grantees within that state.

  Data on foreclosures, subprime loans, and delinquencies are available from various private sources at county, zip code, and metropolitan levels. Those sources, however, have varying levels of coverage and transparency as to how the data are collected and aggregated. In addition, the short time frames needed to make this allocation made it unlikely that access to these private data could be negotiated with the vendors in a timely manner to meet the deadlines for this allocation. There are no public data sources collected evenly across the United States on most foreclosures, delinquencies, and subprime loans. Nonetheless, there are data from public data sources that can reliably predict where the foreclosure crisis is occurring or may occur. HUD analysis shows that 75 percent of the variance between states on foreclosure rates can be explained by three variables available from public data:

  - Office of Federal Housing Enterprise Oversight (OFHEO) data on decline in home values as of June 2008 compared to peak home value since 2000.
  - Federal Reserve Home Mortgage Disclosure Act (HMDA) data on percent of all loans made between 2004 and 2006 that are high cost.
  - Labor Department data on unemployment rates in places and counties as of June 2008.

  Because these three variables are publicly available for all CDBG eligible communities and they are good predictors of foreclosure risk, HUD used them to estimate foreclosure rates in each jurisdiction within a state.

  Using a simple linear regression, we created a model to estimate the foreclosure rate for each entitlement community, using the following formula:[6]

  Model Foreclosure Rate=-2.211

  - (0.131*Percent change in MSA OFHEO current price (June 2008) relative to the maximum in past 8 years)

  + (0.152*Percent of total loans made between 2004 and 2006 that are high cost[7])

  + (0.392*Percent unemployed in the place our county in June 2008[8]).

[6] This regression has an R-square of 0.750 (correlation 0.866).
[7] A high cost loans is one with a rate spread is 3 percentage points above the Treasury security of comparable maturity.
[8] Unemployment rate is capped at 10 percent to correct for anomalies in the estimated foreclosure rate created by extremely high unemployment rates.

This model foreclosure rate can then be multiplied times the estimated number of mortgages within a jurisdiction (number of HMDA loans made between 2004 and 2006 times the ratio of ACS 2006 data on total mortgages in state / HMDA loans in state) to calculate the number of foreclosures in a jurisdiction. This estimated number of foreclosures in the jurisdiction is further adjusted such that when summed for all jurisdictions within the state it equals the total foreclosure starts in the state used for the statewide allocations.[9]

Each jurisdiction's allocation is thus calculated as follows:

Local Allocation = (Statewide allocation - $19,600,000) *

$$\left[\frac{\text{(Local estimated foreclosure starts in last 6 quarters)}}{\text{State total foreclosure starts in last 6 quarters}} *\right.$$

$$\left.\frac{\text{(Local vacancy rate in Census Tracts with more than 40\% of the loans High-cost)}}{\text{State vacancy rate in Census Tracts with more than 40\% of the loans High-cost}}\right]$$

Where the vacancy rate adjustment can't increase or reduced a local jurisdiction's allocation by more than 30 percent.

Local governments with an allocation of less than $2 million have their grants rolled into the state government grant allocation.

[9] This model also has high predictive value relative to other sources of data on foreclosures and subprime loans. Relative to the rate of statewide foreclosures from the private vendor RealtyTrac, this model has a correlation of 0.784. Relative to the rate of problems for subprime and Alt-A loans available from First American Core Logic, the correlation is 0.846. Relative to the 90 day delinquency rate from Equifax data, the correlation is 0.893. In general, all of these measures correlate well with each other, but the correlation of the model against each of these measures is often higher than they are with one another.

Apprendix 3. Factor Analysis Results.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.550	53.931	53.931	7.550	53.931	53.931
2	2.605	18.611	72.541	2.605	18.611	72.541
3	1.304	9.317	81.859	1.304	9.317	81.859
4	0.730	5.212	87.071			
5	0.650	4.642	91.713			
6	0.386	2.757	94.470			
7	0.306	2.184	96.654			
8	0.197	1.405	98.059			
9	0.137	0.975	99.034			
10	0.119	0.852	99.887			
11	0.010	0.069	99.955			
12	0.003	0.018	99.973			
13	0.002	0.015	99.988			
14	0.002	0.012	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix(a)

	Component		
	1	2	3
NTS	0.968	-0.067	0.137
NTS as pct of housing units	0.734	0.021	-0.452
No. of subprime loans	0.975	-0.038	0.075
Pct of loans subprime	-0.009	0.852	0.140
No. of foreclosures	0.974	-0.021	0.056
Pct of loans in foreclosure	-0.034	0.844	0.090
No. of delinquent loans	0.968	-0.044	0.015
Pct of loans delinquent 30+ days	0.019	0.921	-0.023
REOs	0.961	-0.036	0.161
REOs as pct of housing units	0.769	0.099	-0.411
No. of REOs	0.962	-0.028	0.157
REOs as pct of loans	0.314	0.539	-0.305
No. of vacant hi-subprime residential	0.828	-0.008	0.303
Vacancy rate in hi-subprime residential addresses	-0.103	0.084	0.800

Extraction Method: Principal Component Analysis.

a. 3 components extracted.

Composite index was constructed as follows:

Composite Index = .65 * Factor 1 + .25 * Factor 2 + .10 * Factor 3

Appendix 4. Histograms of Community Need Indicators.

Fig A1. Notice of Trustee Sales as a Percentage of Total Housing Units
January – September 2008

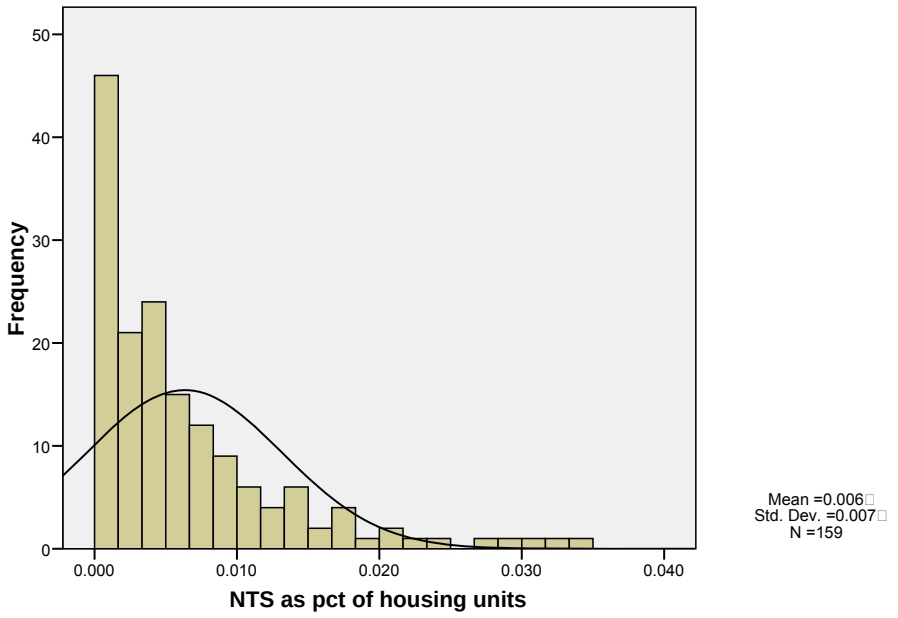
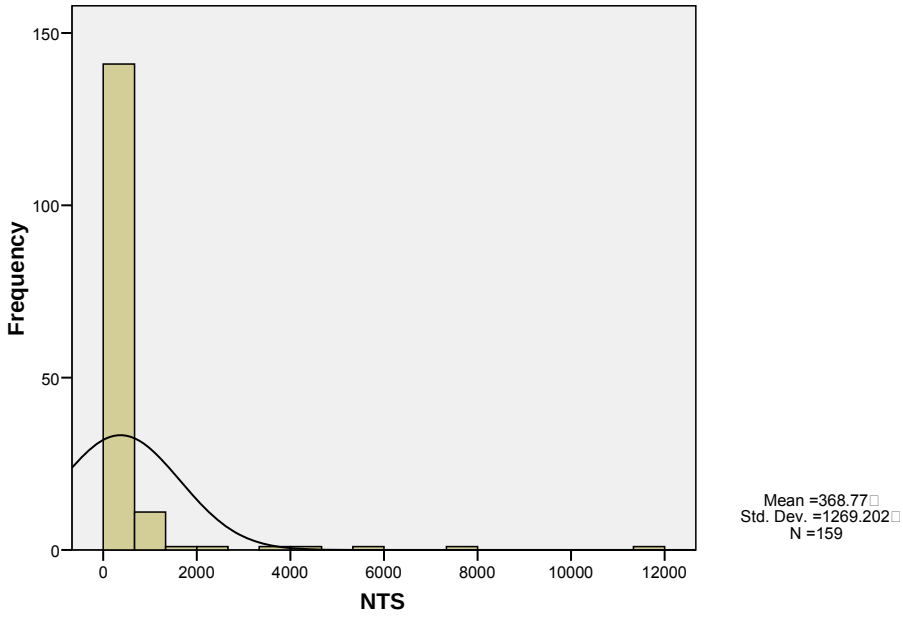


Fig A2. Number of Notices of Trustees' Sale



Appendix 4. Histograms of Community Need Indicators.

Fig. A3. Percent of First-Lien Loans Made by Subprime Lenders As of June 30, 2008

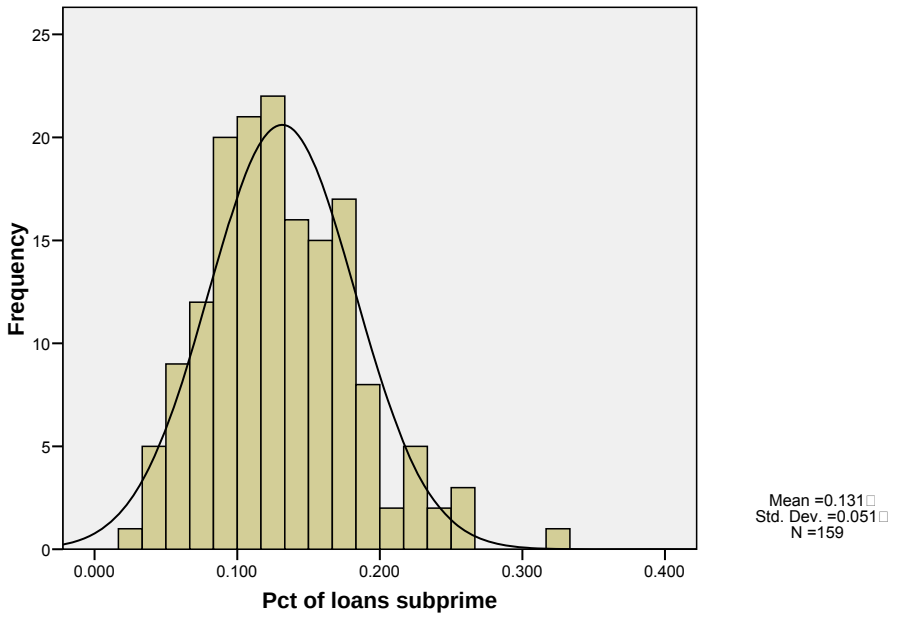
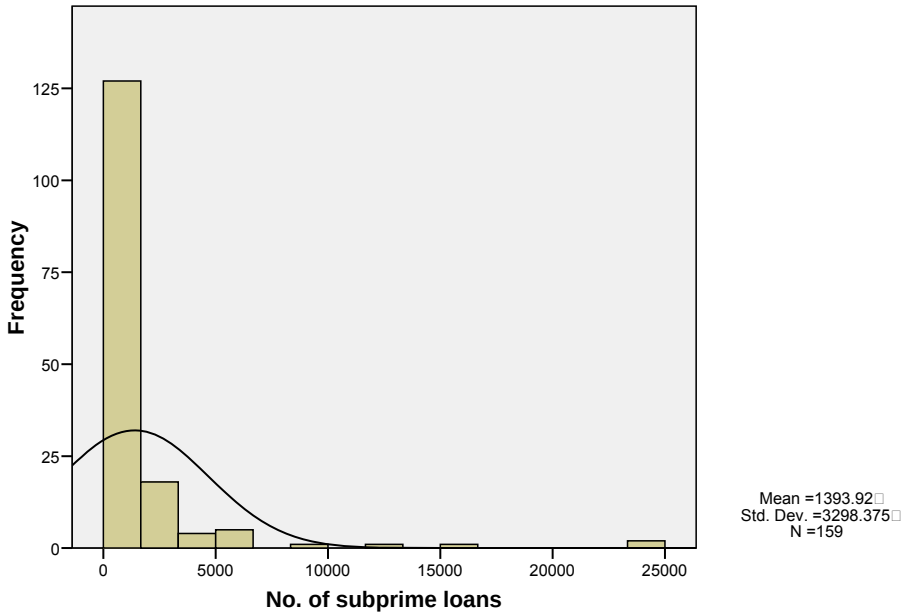


Fig. A4. Number of First-Lien Loans Made by Subprime Lenders As of June 30, 2008



Appendix 4. Histograms of Community Need Indicators.

Fig. A5. Percent of First-Lien Loans Foreclosed
As of June 30, 2008

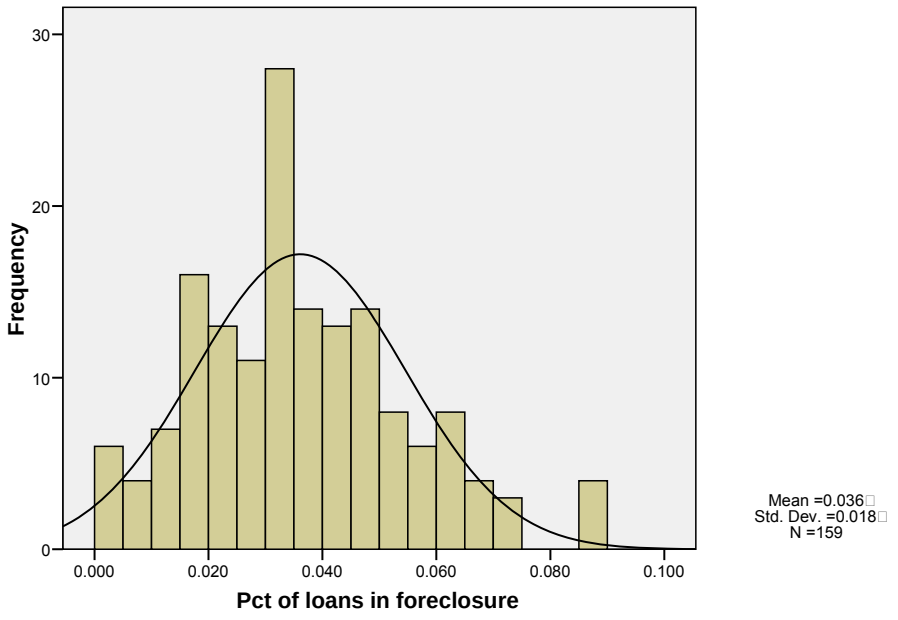
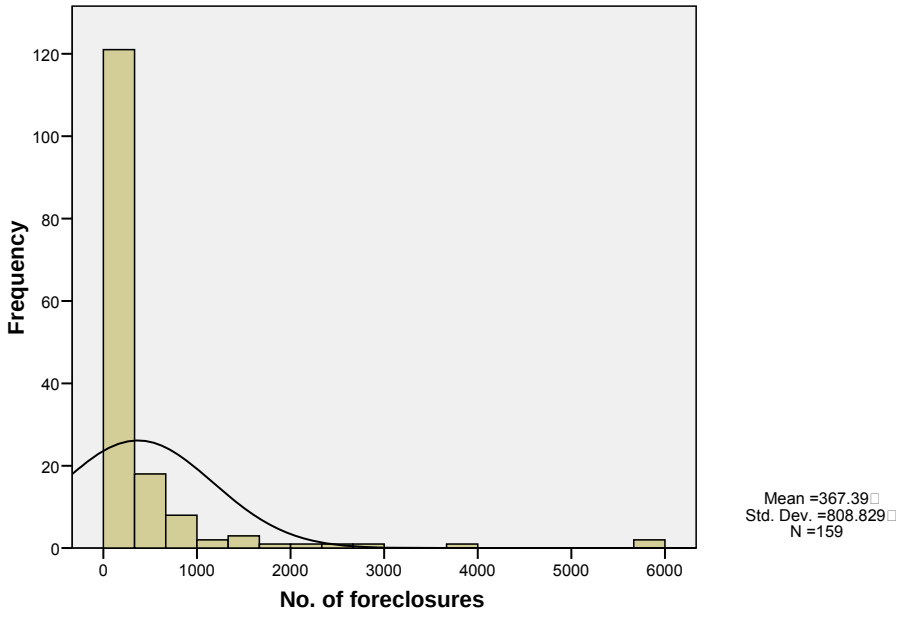


Fig. A6. Number of First-Lien Loans Foreclosed
As of June 30, 2008



Appendix 4. Histograms of Community Need Indicators.

Fig A7. Percent of First-Lien Loans Delinquent for 30+ days
As of June 30, 2008

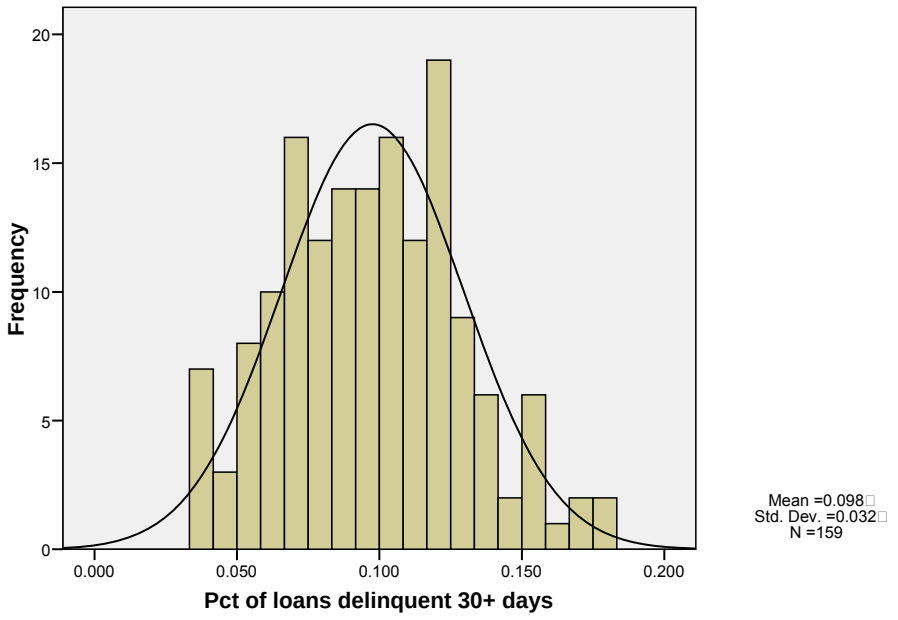
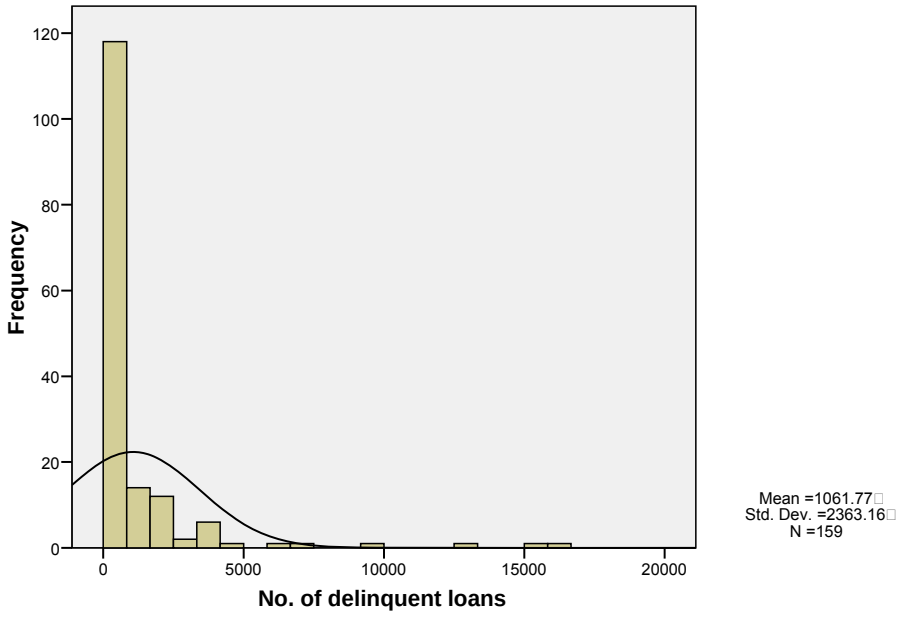


Fig A8. Number of First-Lien Loans Delinquent for 30+ days
As of June 30, 2008



Appendix 4. Histograms of Community Need Indicators.

Fig A9. REOs as a Percentage of Total Housing Units (RealtyTrac)
January 2008 – September 2008

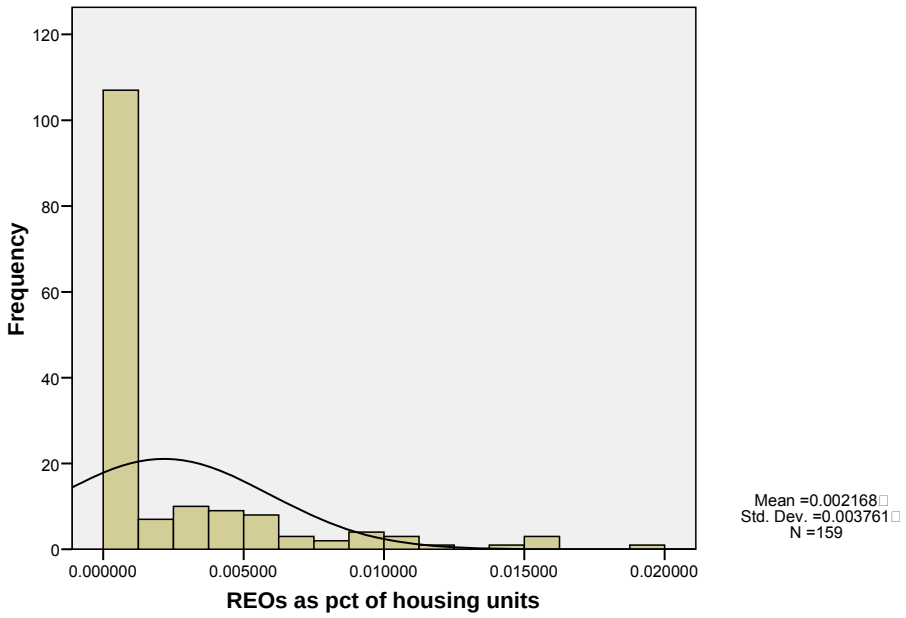
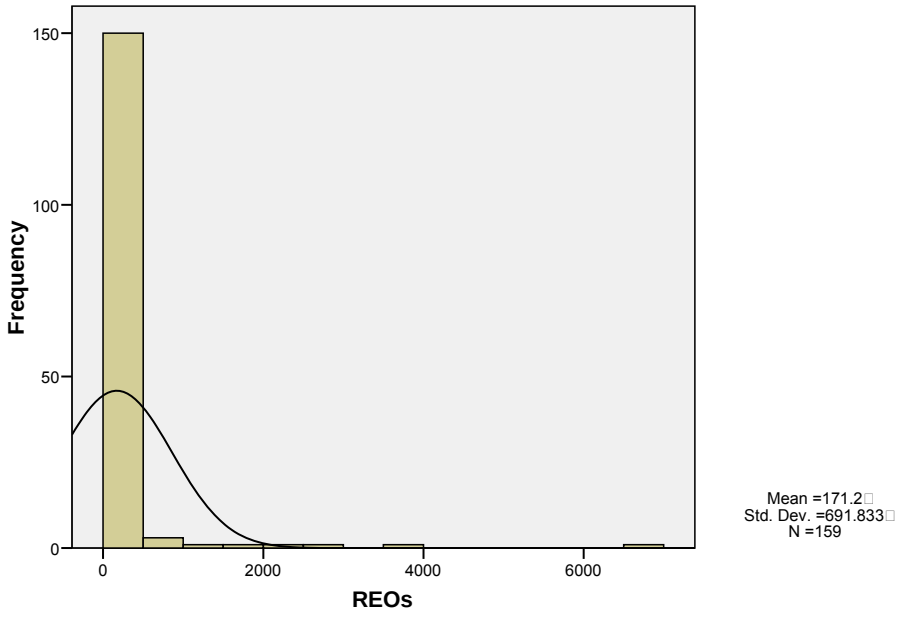


Fig A10. REOs as a Percentage of Total Housing Units (RealtyTrac)
January 2008 – September 2008



Appendix 4. Histograms of Community Need Indicators.

Fig A11. REOs as a Percentage of First-Lien Loans (McDash)
As of June 30, 2008

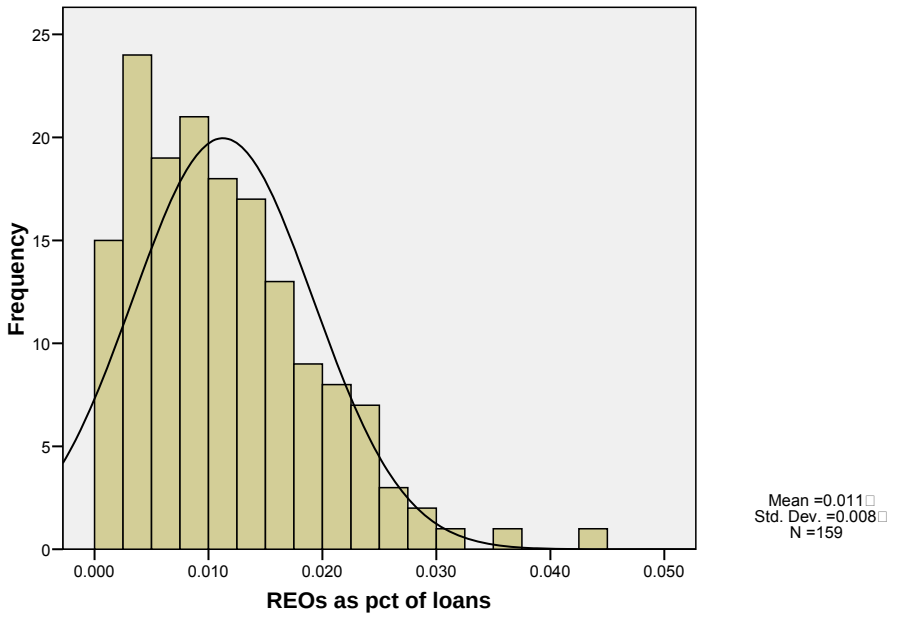
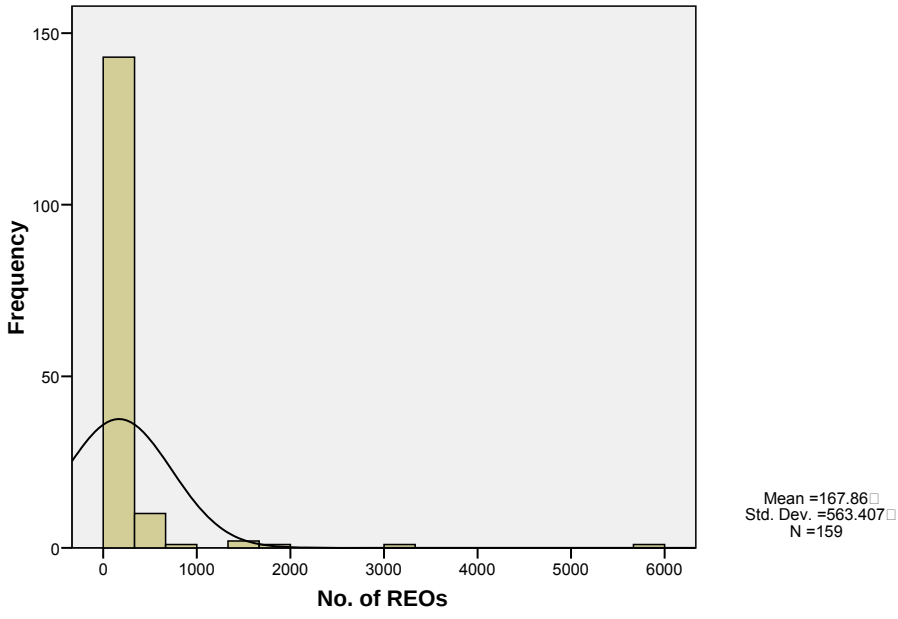


Fig A12. REOs as a Percentage of First-Lien Loans (McDash)
As of June 30, 2008



Appendix 4. Histograms of Community Need Indicators.

Fig A13. Residential Vacancy Rate in Zip Codes with High Levels of Subprime Lending (> 17.2%) As of June 30, 2008

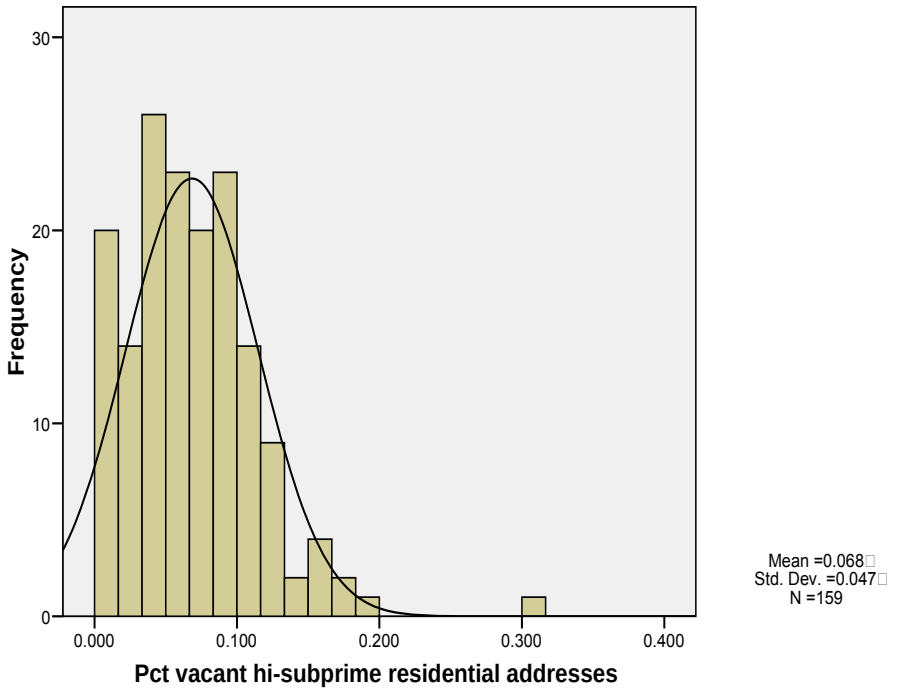
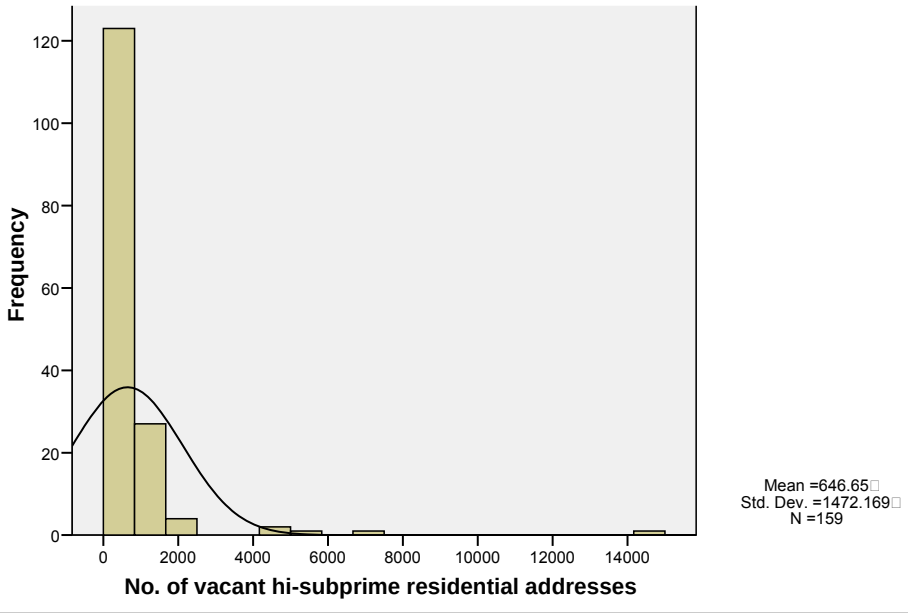


Fig A14. Number of Residential Vacancies in Zip Codes with High Levels of Subprime Lending (> 17.2%) As of June 30, 2008



Appendix 5. Listing of County Allocations Under Various Formula Alternatives.

County	No. of housing units	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6	Alternative Change in Funding Relative to DCA Proposed Grant					
									Form 1	Form 2	Form 3	Form 4	Form 5	Form 6
Appling	7,971	80,039	64,686	122,861	131,434	59,789	161,428	170,623	-19%	54%	64%	-25%	102%	113%
Atkinson	3,213	32,866	20,037	21,766	24,767	25,728	27,252	33,101	-39%	-34%	-25%	-22%	-17%	1%
Bacon	4,507	72,092	17,702	45,387	50,307	14,998	55,612	59,873	-75%	-37%	-30%	-79%	-23%	-17%
Baker	1,765	21,039	2,577	2,582	2,932	3,433	3,439	3,758	-88%	-88%	-86%	-84%	-84%	-82%
Baldwin	19,111	130,608	434,852	467,018	510,503	383,161	423,285	466,794	233%	258%	291%	193%	224%	257%
Banks	6,769	146,907	122,756	143,059	150,173	100,456	116,589	124,923	-16%	-3%	2%	-32%	-21%	-15%
Barrow	25,547	1,393,262	1,838,346	1,917,061	1,983,881	1,542,429	1,589,445	1,674,507	32%	38%	42%	11%	14%	20%
Bartow	36,998	1,146,907	965,881	965,300	1,053,678	813,414	809,763	901,149	-16%	-16%	-8%	-29%	-29%	-21%
BenHill	7,940	217,367	147,310	170,840	192,145	159,719	179,957	215,872	-32%	-21%	-12%	-27%	-17%	-1%
Berrien	7,527	49,676	87,461	115,015	124,442	74,245	103,774	112,453	76%	132%	151%	49%	109%	126%
Bibb	71,569	4,078,636	4,582,827	4,238,301	4,281,358	4,143,085	4,097,847	4,189,282	12%	4%	5%	2%	0%	3%
Bleckley	5,132	53,573	48,983	66,859	74,689	43,050	61,406	68,631	-9%	25%	39%	-20%	15%	28%
Brantley	6,608	46,848	67,162	100,346	113,571	66,691	123,129	137,497	43%	114%	142%	42%	163%	193%
Brooks	7,346	50,672	53,148	81,346	88,674	46,761	93,452	100,345	5%	61%	75%	-8%	84%	98%
Bryan	11,927	122,394	197,877	226,148	252,857	145,154	161,116	188,098	62%	85%	107%	19%	32%	54%
Bulloch	26,873	140,349	193,760	192,818	239,892	158,785	156,496	202,044	38%	37%	71%	13%	12%	44%
Burke	9,275	92,425	144,023	126,305	143,816	139,348	122,979	141,669	56%	37%	56%	51%	33%	53%
Butts	9,245	185,071	625,051	557,584	601,527	556,529	495,336	539,954	238%	201%	225%	201%	168%	192%
Calhoun	2,343	76,266	12,670	14,870	14,837	9,470	11,075	11,524	-83%	-81%	-81%	-88%	-85%	-85%
Camden	20,838	131,101	259,333	250,004	296,380	205,728	194,718	240,892	98%	91%	126%	57%	49%	84%
Candler	3,961	48,016	43,408	43,844	53,648	47,056	48,301	61,494	-10%	-9%	12%	-2%	1%	28%
Carroll	45,388	2,576,619	2,843,306	2,930,185	2,910,715	2,536,899	2,610,670	2,608,004	10%	14%	13%	-2%	1%	1%
Catoosa	26,037	530,845	575,955	586,488	675,483	479,941	485,120	574,437	8%	10%	27%	-10%	-9%	8%
Charlton	4,066	87,183	86,608	91,073	95,938	84,056	90,262	95,922	-1%	4%	10%	-4%	4%	10%
Chatham	113,250	3,982,557	3,893,175	3,663,155	3,853,647	3,436,993	3,262,557	3,478,528	-2%	-8%	-3%	-14%	-18%	-13%
Chattahoochee	3,355	79,438	28,989	27,428	32,156	35,531	32,492	41,747	-64%	-65%	-60%	-55%	-59%	-47%
Chattooga	10,894	107,321	303,218	333,608	368,422	288,782	312,774	357,185	183%	211%	243%	169%	191%	233%
Cherokee	78,925	3,154,823	1,965,430	2,034,860	1,999,902	1,423,111	1,462,682	1,474,288	-38%	-36%	-37%	-55%	-54%	-53%
Clarke	49,962	395,829	442,817	445,720	482,141	327,137	326,314	361,815	12%	13%	22%	-17%	-18%	-9%
Clay	1,961	26,064	640	5,028	5,184	419	6,286	6,376	-98%	-81%	-80%	-98%	-76%	-76%
Clayton	105,978	9,732,126	9,732,126	9,897,895	9,732,126	13,837,395	14,175,537	13,606,719	0%	2%	0%	42%	46%	40%
Clinch	2,908	45,372	33,074	43,520	49,980	53,033	64,362	72,389	-27%	-4%	10%	17%	42%	60%
Cobb	278,037	8,582,355	6,889,134	6,889,134	6,889,134	6,889,134	6,889,134	6,889,134	-20%	-20%	-20%	-20%	-20%	-20%
Coffee	16,693	177,221	360,980	401,000	443,104	491,656	532,276	616,578	104%	126%	150%	177%	200%	248%
Colquitt	18,361	112,561	156,840	160,079	187,718	133,401	134,838	161,050	39%	42%	67%	19%	20%	43%
Columbia	42,894	622,827	505,800	585,340	648,214	312,724	342,000	407,490	-19%	-6%	4%	-50%	-45%	-35%
Cook	6,856	48,293	192,949	195,381	203,706	236,219	241,195	245,136	300%	305%	322%	389%	399%	408%
Coweta	45,981	2,087,239	1,367,312	1,404,536	1,393,535	1,026,843	1,047,037	1,075,169	-34%	-33%	-33%	-51%	-50%	-48%
Crawford	5,746	127,742	57,908	62,422	63,263	42,442	54,947	57,286	-55%	-51%	-50%	-67%	-57%	-55%
Crisp	10,125	99,017	90,520	123,255	131,526	79,339	110,152	117,513	-9%	24%	33%	-20%	11%	19%
Dade	6,456	75,741	129,217	137,230	164,175	121,910	128,247	156,610	71%	81%	117%	61%	69%	107%
Dawson	9,855	314,634	257,479	258,453	277,906	198,073	201,617	223,642	-18%	-18%	-12%	-37%	-36%	-29%
Decatur	13,631	98,161	97,936	113,854	127,949	90,040	102,018	114,801	0%	16%	30%	-8%	4%	17%
DeKalb	306,106	18,545,013	18,924,466	20,038,183	19,622,851	18,545,013	19,276,252	18,818,411	2%	8%	6%	0%	4%	1%
Dodge	8,470	63,103	72,786	65,773	72,577	62,493	63,613	69,936	15%	4%	15%	-1%	1%	11%
Dooly	4,571	88,099	48,189	64,153	73,711	57,524	86,602	97,488	-45%	-27%	-16%	-35%	-2%	11%
Dougherty	41,607	785,595	1,108,976	1,021,956	1,178,383	945,970	875,192	1,038,387	41%	30%	50%	20%	11%	32%
Douglas	48,516	3,744,262	3,334,221	3,483,823	3,501,837	3,282,835	3,413,476	3,444,996	-11%	-7%	-6%	-12%	-9%	-8%
Early	5,487	51,451	25,891	53,342	55,675	23,946	64,254	66,212	-50%	4%	8%	-53%	25%	29%
Echols	1,521	43,189	6,380	6,750	5,853	9,692	10,426	8,710	-85%	-84%	-86%	-78%	-76%	-80%
Effingham	18,865	530,202	580,416	468,952	546,285	471,319	377,763	457,499	9%	-12%	3%	-11%	-29%	-14%

Appendix 5. Listing of County Allocations Under Various Formula Alternatives.

County	No. of housing units	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6	Alternative Change in Funding Relative to DCA Proposed Grant					
									Form 1	Form 2	Form 3	Form 4	Form 5	Form 6
Elbert	9,466	112,579	194,034	172,580	185,565	173,254	166,340	179,413	72%	53%	65%	54%	48%	59%
Emanuel	9,642	117,096	88,304	84,734	99,258	78,702	74,842	88,932	-25%	-28%	-15%	-33%	-36%	-24%
Evans	4,602	51,553	28,738	38,976	46,609	24,749	32,713	39,855	-44%	-24%	-10%	-52%	-37%	-23%
Fannin	17,104	91,066	113,376	163,085	175,538	51,117	135,266	143,228	24%	79%	93%	-44%	49%	57%
Fayette	38,946	1,158,086	658,735	722,649	737,737	465,185	492,428	511,827	-43%	-38%	-36%	-60%	-57%	-56%
Floyd	39,903	266,567	848,596	858,279	931,720	732,572	740,861	812,918	218%	222%	250%	175%	178%	205%
Forsyth	60,140	1,871,950	739,795	819,415	790,178	434,218	467,926	448,483	-60%	-56%	-58%	-77%	-75%	-76%
Franklin	9,549	230,072	177,867	208,175	211,134	139,843	173,436	178,559	-23%	-10%	-8%	-39%	-25%	-22%
Fulton	431,601	30,546,480	31,683,448	28,728,601	26,034,667	34,861,949	31,924,178	28,511,345	4%	-6%	-15%	14%	5%	-7%
Gilmer	16,354	401,717	251,042	279,396	277,596	156,661	200,541	197,887	-38%	-30%	-31%	-61%	-50%	-51%
Glascock	1,215	70,497	9,627	20,526	22,260	10,418	30,573	32,295	-86%	-71%	-68%	-85%	-57%	-54%
Glynn	38,169	232,439	239,815	240,865	267,856	160,733	159,999	185,975	3%	4%	15%	-31%	-31%	-20%
Gordon	20,919	496,263	658,523	649,145	749,944	610,569	599,744	720,441	33%	31%	51%	23%	21%	45%
Grady	10,530	74,410	67,384	84,930	89,625	61,703	74,582	78,380	-9%	14%	20%	-17%	0%	5%
Greene	8,112	51,013	100,459	91,181	101,361	70,961	67,954	77,809	97%	79%	99%	39%	33%	53%
Gwinnett	283,669	13,512,054	10,844,370	11,260,936	10,834,525	10,507,827	10,507,827	10,507,827	-20%	-17%	-20%	-22%	-22%	-22%
Habersham	17,598	407,469	233,332	289,112	293,439	171,925	218,167	224,747	-43%	-29%	-28%	-58%	-46%	-45%
Hall	62,798	2,223,422	1,395,448	1,566,250	1,550,656	1,102,362	1,198,631	1,210,091	-37%	-30%	-30%	-50%	-46%	-46%
Hancock	4,658	34,701	68,774	79,255	91,314	69,062	78,422	94,093	98%	128%	163%	99%	126%	171%
Haralson	12,037	426,449	372,424	376,458	394,730	311,186	312,141	335,438	-13%	-12%	-7%	-27%	-27%	-21%
Harris	12,952	75,770	133,583	147,801	170,513	103,609	108,861	131,960	76%	95%	125%	37%	44%	74%
Hart	12,021	108,252	91,821	112,567	123,507	74,014	87,842	98,874	-15%	4%	14%	-32%	-19%	-9%
Heard	4,864	158,624	144,787	153,756	157,129	156,685	165,713	167,426	-9%	-3%	-1%	-1%	4%	6%
Henry	71,280	6,143,996	5,684,702	5,894,538	5,877,242	5,939,323	6,194,981	6,126,752	-7%	-4%	-4%	-3%	1%	0%
Houston	56,581	610,040	967,855	822,133	910,197	773,006	741,888	838,878	59%	35%	49%	27%	22%	38%
Irwin	4,192	101,419	33,079	40,017	46,756	36,865	42,584	51,629	-67%	-61%	-54%	-64%	-58%	-49%
Jackson	23,572	708,290	884,365	957,329	994,650	745,519	792,900	836,069	25%	35%	40%	5%	12%	18%
Jasper	6,114	267,474	221,457	231,904	239,580	193,689	200,024	208,907	-17%	-13%	-10%	-28%	-25%	-22%
Jeff Davis	5,637	84,649	77,150	98,413	116,615	88,090	114,253	135,811	-9%	16%	38%	4%	35%	60%
Jefferson	7,394	69,963	66,934	54,203	70,473	70,975	59,728	80,075	-4%	-23%	1%	1%	-15%	14%
Jenkins	3,957	69,769	29,215	24,504	30,138	27,321	22,953	29,059	-58%	-65%	-57%	-61%	-67%	-58%
Johnson	3,654	45,740	18,829	28,562	32,877	17,432	25,781	30,368	-59%	-38%	-28%	-62%	-44%	-34%
Jones	11,070	130,299	110,263	111,506	136,255	90,563	87,227	111,191	-15%	-14%	5%	-30%	-33%	-15%
Lamar	7,248	98,176	255,547	267,220	283,093	292,346	302,502	317,161	160%	172%	188%	198%	208%	223%
Lanier	3,400	44,409	22,361	35,264	40,060	19,022	36,044	40,585	-50%	-21%	-10%	-57%	-19%	-9%
Laurens	20,154	133,299	390,340	313,546	381,905	377,364	307,056	381,877	193%	135%	187%	183%	130%	186%
Lee	11,700	71,442	159,513	129,241	156,752	133,500	109,473	136,172	123%	81%	119%	87%	53%	91%
Liberty	24,111	137,192	379,265	374,656	476,920	323,026	317,333	413,533	176%	173%	248%	135%	131%	201%
Lincoln	4,776	46,222	21,140	25,803	29,543	13,859	15,197	18,554	-54%	-44%	-36%	-70%	-67%	-60%
Long	4,320	54,762	71,168	71,617	78,204	61,735	61,793	68,225	30%	31%	43%	13%	13%	25%
Lowndes	43,135	181,670	445,778	559,998	663,543	362,318	439,522	539,138	145%	208%	265%	99%	142%	197%
Lumpkin	11,101	284,528	134,989	134,064	144,711	90,976	87,570	100,847	-53%	-53%	-49%	-68%	-69%	-65%
Macon	5,647	78,646	46,134	38,233	46,204	39,162	33,336	41,259	-41%	-51%	-41%	-50%	-58%	-48%
Madison	11,713	150,360	354,119	288,599	326,117	309,862	253,077	289,346	136%	92%	117%	106%	68%	92%
Marion	3,195	81,636	51,772	49,351	55,720	54,002	55,484	64,779	-37%	-40%	-32%	-34%	-32%	-21%
McDuffie	9,301	307,940	233,858	233,121	272,061	248,308	249,214	313,830	-24%	-24%	-12%	-19%	-19%	2%
McIntosh	6,711	42,612	76,034	85,219	95,040	66,829	73,591	82,723	78%	100%	123%	57%	73%	94%
Meriwether	10,370	134,010	280,091	282,485	296,255	280,972	281,765	294,376	109%	111%	121%	110%	110%	120%
Miller	2,804	59,500	22,127	32,645	31,260	24,694	34,029	32,259	-63%	-45%	-47%	-58%	-43%	-46%
Mitchell	9,334	251,882	222,793	228,409	242,800	256,123	251,073	280,979	-12%	-9%	-4%	2%	0%	12%
Monroe	10,062	108,833	189,758	193,996	224,659	167,358	170,878	198,848	74%	78%	106%	54%	57%	83%

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Montgomery	3,786	61,662	27,204	24,128	30,983	27,371	24,446	32,248	-56%	-61%	-50%	-56%	-60%	-48%
Morgan	7,550	77,626	120,367	127,900	157,490	99,750	100,616	129,074	55%	65%	103%	29%	30%	66%
Murray	16,032	101,745	346,830	339,142	394,454	328,708	319,183	381,894	241%	233%	288%	223%	214%	275%
Muscogee	83,031	3,117,039	3,117,039	3,117,039	3,117,039	3,117,039	3,117,039	3,117,039	0%	0%	0%	0%	0%	0%
Newton	36,964	2,133,534	2,462,521	2,542,718	2,583,155	2,678,218	2,732,114	2,825,965	15%	19%	21%	26%	28%	32%
Oconee	12,496	110,615	124,610	134,396	151,228	60,826	61,475	73,609	13%	21%	37%	-45%	-44%	-33%
Oglethorpe	6,213	88,617	22,337	21,101	25,616	17,092	15,440	19,353	-75%	-76%	-71%	-81%	-83%	-78%
Paulding	50,328	2,508,061	1,976,341	2,089,689	2,074,201	1,577,157	1,635,602	1,667,381	-21%	-17%	-17%	-37%	-35%	-34%
Peach	10,641	181,486	407,789	435,290	471,207	353,925	375,830	412,313	125%	140%	160%	95%	107%	127%
Pickens	13,796	317,059	232,735	260,831	267,847	178,476	191,049	198,743	-27%	-18%	-16%	-44%	-40%	-37%
Pierce	7,550	70,044	84,250	114,179	131,332	77,318	109,237	127,541	20%	63%	87%	10%	56%	82%
Pike	6,730	150,796	194,541	193,984	208,647	167,084	165,050	180,583	29%	29%	38%	11%	9%	20%
Polk	16,923	543,741	755,541	781,241	814,126	775,303	795,068	831,796	39%	44%	50%	43%	46%	53%
Pulaski	4,230	56,855	49,568	58,636	68,282	43,081	50,605	60,134	-13%	3%	20%	-24%	-11%	6%
Putnam	12,301	88,600	131,500	164,227	177,197	96,513	134,801	147,718	48%	85%	100%	9%	52%	67%
Quitman	1,816	44,905	6,930	14,317	15,447	7,222	18,019	18,962	-85%	-68%	-66%	-84%	-60%	-58%
Rabun	12,710	95,908	63,390	93,973	99,101	26,936	65,059	68,844	-34%	-2%	3%	-72%	-32%	-28%
Randloph	3,400	17,357	34,480	43,027	47,083	51,966	58,919	66,986	99%	148%	171%	199%	239%	286%
Richmond	86,890	2,496,103	3,613,671	3,301,334	3,645,733	3,542,262	3,291,570	3,727,489	45%	32%	46%	42%	32%	49%
Rockdale	31,166	2,654,539	2,178,966	2,306,612	2,280,003	2,253,672	2,378,240	2,342,125	-18%	-13%	-14%	-15%	-10%	-12%
Schley	1,645	18,046	17,090	20,863	20,029	16,220	19,675	18,520	-5%	16%	11%	-10%	9%	3%
Screven	7,117	62,061	73,221	63,227	80,647	89,159	77,681	101,629	18%	2%	30%	44%	25%	64%
Seminole	4,912	77,055	26,455	35,444	34,857	16,064	21,143	21,347	-66%	-54%	-55%	-79%	-73%	-72%
Spalding	26,284	1,450,408	1,801,428	1,588,895	1,611,110	1,540,452	1,362,843	1,407,824	24%	10%	11%	6%	-6%	-3%
Stephens	12,381	235,317	203,041	265,625	271,142	157,085	246,768	254,745	-14%	13%	15%	-33%	5%	8%
Stewart	2,352	34,012	9,187	16,064	18,911	8,602	18,806	21,344	-73%	-53%	-44%	-75%	-45%	-37%
Sumter	14,227	97,518	123,916	122,926	142,802	104,112	102,555	121,643	27%	26%	46%	7%	5%	25%
Talbot	3,078	100,135	48,004	42,548	45,172	38,724	35,079	38,245	-52%	-58%	-55%	-61%	-65%	-62%
Taliaferro	1,109	10,567	9,613	11,616	10,724	12,884	14,578	13,134	-9%	10%	1%	22%	38%	24%
Tattnall	8,839	85,681	68,705	114,372	128,213	57,650	133,570	146,269	-20%	33%	50%	-33%	56%	71%
Taylor	4,197	46,052	49,312	51,210	52,610	53,060	65,730	66,730	7%	11%	14%	15%	43%	45%
Telfair	5,131	90,427	80,974	88,547	95,587	105,327	115,170	126,422	-10%	-2%	6%	16%	27%	40%
Terrell	4,688	78,462	41,777	59,991	67,203	43,674	68,487	77,371	-47%	-24%	-14%	-44%	-13%	-1%
Thomas	20,042	141,193	176,697	190,822	213,283	139,742	151,909	173,747	25%	35%	51%	-1%	8%	23%
Tift	16,252	87,180	290,945	244,317	278,521	259,601	220,193	254,099	234%	180%	219%	198%	153%	191%
Toombs	11,838	91,741	108,428	161,681	176,990	93,872	156,042	169,840	18%	76%	93%	2%	70%	85%
Towns	8,303	73,435	45,232	102,076	106,831	16,722	140,156	142,690	-38%	39%	45%	-77%	91%	94%
Treutlen	2,878	24,098	11,840	21,621	23,798	10,432	19,760	21,744	-51%	-10%	-1%	-57%	-18%	-10%
Troup	26,955	263,109	741,864	822,865	926,959	653,572	718,767	816,267	182%	213%	252%	148%	173%	210%
Turner	3,971	55,757	36,909	35,906	46,297	39,833	37,213	50,003	-34%	-36%	-17%	-29%	-33%	-10%
Twiggs	4,434	71,130	95,318	82,352	93,716	110,314	93,843	114,382	34%	16%	32%	55%	32%	61%
Union	13,373	108,286	103,703	187,221	195,610	43,799	206,815	211,424	-4%	73%	81%	-60%	91%	95%
Upson	12,310	90,357	229,724	258,586	283,265	255,344	273,596	309,869	154%	186%	213%	183%	203%	243%
Walker	28,456	311,733	1,291,569	1,261,998	1,468,276	1,525,215	1,472,152	1,770,276	314%	305%	371%	389%	372%	468%
Walton	31,809	1,479,296	1,577,019	1,610,338	1,638,948	1,309,322	1,334,771	1,384,470	7%	9%	11%	-11%	-10%	-6%
Ware	16,439	133,674	251,157	316,294	353,521	232,974	318,924	358,507	88%	137%	164%	74%	139%	168%
Warren	2,792	64,455	16,215	15,395	21,048	16,876	16,326	22,997	-75%	-76%	-67%	-74%	-75%	-64%
Washington	8,537	72,860	116,382	114,256	131,973	124,028	124,752	147,514	60%	57%	81%	70%	71%	102%
Wayne	11,026	102,429	177,308	229,657	249,296	152,560	230,478	248,577	73%	124%	143%	49%	125%	143%
Webster	1,132	53,785	1,079	7,467	7,672	992	14,677	14,822	-98%	-86%	-86%	-98%	-73%	-72%
Wheeler	2,480	61,675	13,245	26,897	29,284	17,811	47,964	50,107	-79%	-56%	-53%	-71%	-22%	-19%

Appendix 5. Listing of County Allocations Under Various Formula Alternatives.

County	No. of housing units	DCA	Formula 1	Formula 2	Formula 3	Formula 4	Formula 5	Formula 6	Alternative Change in Funding Relative to DCA Proposed Grant					
									Form 1	Form 2	Form 3	Form 4	Form 5	Form 6
White	11,906	302,512	188,093	224,001	229,117	126,862	181,725	189,087	-38%	-26%	-24%	-58%	-40%	-37%
Whitfield	35,167	303,947	1,062,883	891,147	994,063	921,732	778,086	877,798	250%	193%	227%	203%	156%	189%
Wilcox	3,377	103,735	26,116	29,868	30,950	21,184	28,642	29,776	-75%	-71%	-70%	-80%	-72%	-71%
Wilkes	5,172	70,648	66,923	74,676	89,939	82,754	87,613	109,743	-5%	6%	27%	17%	24%	55%
Wilkinson	4,536	75,116	91,235	93,821	104,064	96,081	97,321	111,259	21%	25%	39%	28%	30%	48%
Worth	9,427	61,583	90,283	87,472	109,132	84,488	82,108	103,538	47%	42%	77%	37%	33%	68%

Appendix 6. Listing of Formula Elements by County.

County	Notice of Trustees' Sale	NTS as % of housing units	No. of subprime loans	Percent of loans subprime	No. of foreclosures	Percent of loans foreclosed	No. of delinquent loans	Percent of loans delinquent	No. of REOs--RealtyTrac	REOs as % of housing units	No. of REOs--McDash	REOs as % of loans	No. of vacancies in high subprime zip codes	Percent vacant in hi-subprime zip codes	Composite Needs Index
Appling	18	0.002	143	0.145	49	0.050	86	0.087	0	0.000000	13	0.013	994	0.131	-0.04
Atkinson	3	0.001	49	0.224	19	0.087	26	0.119	0	0.000000	4	0.018	24	0.023	0.18
Bacon	12	0.003	48	0.082	20	0.034	51	0.087	0	0.000000	0	0.000	457	0.113	-0.38
Baker	0	0.000	16	0.242	0	0.000	7	0.106	0	0.000000	0	0.000	2	0.003	-0.39
Baldwin	81	0.004	830	0.125	280	0.042	624	0.094	3	0.000157	101	0.015	1,550	0.080	-0.01
Banks	52	0.008	327	0.102	67	0.021	291	0.091	14	0.002068	40	0.012	381	0.056	-0.31
Barrow	544	0.021	3,264	0.130	826	0.033	2,746	0.110	228	0.008925	404	0.016	1,007	0.038	0.39
Bartow	547	0.015	2,075	0.111	600	0.032	1,863	0.100	192	0.005189	204	0.011	0	0.000	-0.02
BenHill	67	0.008	335	0.196	124	0.073	210	0.123	26	0.003275	21	0.012	384	0.050	0.20
Berrien	18	0.002	229	0.108	72	0.034	145	0.068	2	0.000266	24	0.011	604	0.081	-0.32
Bibb	1,029	0.014	6,615	0.185	1,548	0.043	3,987	0.111	797	0.011136	587	0.016	5,351	0.128	1.28
Bleckley	2	0.000	137	0.099	43	0.031	116	0.084	0	0.000000	12	0.009	400	0.079	-0.36
Brantley	1	0.000	121	0.108	56	0.050	135	0.121	0	0.000000	13	0.012	687	0.120	-0.06
Brooks	3	0.000	174	0.149	26	0.022	122	0.105	0	0.000000	7	0.006	575	0.117	-0.22
Bryan	91	0.008	774	0.066	232	0.020	693	0.059	1	0.000084	71	0.006	537	0.044	-0.49
Bulloch	56	0.002	769	0.096	256	0.032	602	0.075	3	0.000112	27	0.003	47	0.055	-0.41
Burke	41	0.004	308	0.175	80	0.045	217	0.123	0	0.000000	25	0.014	137	0.084	0.01
Butts	37	0.004	1,134	0.147	296	0.038	917	0.119	18	0.001947	147	0.019	43	0.066	0.03
Calhoun	1	0.000	38	0.187	7	0.034	10	0.049	8	0.003414	0	0.000	25	0.044	-0.39
Camden	123	0.006	1,235	0.087	278	0.020	1,002	0.071	3	0.000144	49	0.003	0	0.000	-0.51
Candler	1	0.000	137	0.164	52	0.062	78	0.093	1	0.000252	7	0.008	0	0.000	-0.21
Carroll	848	0.019	3,904	0.142	956	0.035	3,338	0.122	493	0.010862	582	0.021	297	0.049	0.61
Catoosa	231	0.009	1,609	0.130	487	0.039	1,116	0.090	77	0.002957	109	0.009	116	0.037	-0.09
Charlton	12	0.003	140	0.165	43	0.051	93	0.110	4	0.000984	19	0.022	271	0.084	0.03
Chatham	1,082	0.010	5,076	0.098	1,462	0.028	3,640	0.071	289	0.002552	253	0.005	1,341	0.073	0.23
Chattahoochee	4	0.001	53	0.188	24	0.085	44	0.156	4	0.001192	3	0.011	50	0.070	0.23
Chattooga	85	0.008	564	0.145	194	0.050	520	0.133	4	0.000367	70	0.018	663	0.060	0.09
Cherokee	1,323	0.017	4,058	0.072	985	0.018	3,481	0.062	583	0.007387	432	0.008	0	0.000	0.04
Clarke	339	0.007	1,680	0.077	392	0.018	1,264	0.058	18	0.000360	173	0.008	0	0.000	-0.47
Clay	0	0.000	4	0.047	0	0.000	4	0.047	0	0.000000	0	0.000	66	0.107	-0.76
Clayton	3,466	0.033	9,912	0.230	2,587	0.060	7,341	0.170	2,062	0.019457	1,521	0.035	4,666	0.061	2.58
Clinch	5	0.002	123	0.321	24	0.063	51	0.133	0	0.000000	0	0.000	242	0.096	0.27
Cobb	4,657	0.017	13,274	0.085	2,985	0.019	9,943	0.064	1,698	0.006107	1,337	0.009	1,137	0.062	1.42
Coffee	85	0.005	716	0.252	253	0.089	402	0.141	3	0.000180	57	0.020	1,461	0.094	0.59
Colquitt	91	0.005	606	0.153	128	0.032	352	0.089	0	0.000000	18	0.005	68	0.042	-0.29
Columbia	357	0.008	1,875	0.061	603	0.020	1,560	0.051	100	0.002331	89	0.003	1,401	0.029	-0.35
Cook	6	0.001	327	0.196	87	0.052	194	0.116	0	0.000000	50	0.030	492	0.095	0.19
Coweta	806	0.018	2,482	0.085	656	0.022	2,263	0.078	390	0.008482	231	0.008	0	0.000	-0.06
Crawford	33	0.006	70	0.106	16	0.024	80	0.121	12	0.002088	11	0.017	218	0.114	-0.15
Crisp	40	0.004	216	0.159	42	0.031	141	0.104	0	0.000000	18	0.013	714	0.075	-0.13
Dade	44	0.007	360	0.146	119	0.048	266	0.108	1	0.000155	24	0.010	173	0.049	-0.12
Dawson	85	0.009	646	0.075	170	0.020	643	0.075	41	0.004160	62	0.007	733	0.071	-0.33
Decatur	52	0.004	337	0.171	62	0.032	204	0.104	0	0.000000	20	0.010	300	0.049	-0.18
DeKalb	7,394	0.024	23,555	0.158	5,763	0.039	16,225	0.109	3,721	0.012156	3,206	0.022	7,194	0.055	3.88
Dodge	19	0.002	207	0.145	48	0.034	106	0.074	1	0.000118	16	0.011	68	0.192	-0.14
Dooly	9	0.002	152	0.230	37	0.056	78	0.118	0	0.000000	2	0.003	366	0.125	0.10
Dougherty	220	0.005	2,843	0.160	741	0.042	1,759	0.099	126	0.003028	94	0.005	1,660	0.073	0.19
Douglas	1,387	0.029	4,632	0.165	1,142	0.041	3,670	0.131	688	0.014181	492	0.018	976	0.038	0.88
Early	5	0.001	106	0.174	10	0.016	49	0.081	0	0.000000	4	0.007	464	0.113	-0.28

Appendix 6. Listing of Formula Elements by County.

County	Notice of Trustees' Sale	NTS as % of housing units	No. of subprime loans	Percent of loans subprime	No. of foreclosures	Percent of loans foreclosed	No. of delinquent loans	Percent of loans delinquent	No. of REOs--RealtyTrac	REOs as % of housing units	No. of REOs--McDash	REOs as % of loans	No. of vacancies in high subprime zip codes	Percent vacant in hi-subprime zip codes	Composite Needs Index
Echols	1	0.001	8	0.118	0	0.000	5	0.074	1	0.000657	3	0.044	0	0.000	-0.39
Effingham	133	0.007	1,365	0.100	425	0.031	1,263	0.093	83	0.004400	82	0.006	81	0.089	-0.14
Elbert	81	0.009	378	0.170	89	0.040	230	0.104	4	0.000423	38	0.017	159	0.160	0.07
Emanuel	31	0.003	222	0.122	60	0.033	219	0.120	0	0.000000	22	0.012	0	0.000	-0.30
Evans	5	0.001	103	0.112	32	0.035	87	0.095	0	0.000000	3	0.003	202	0.053	-0.38
Fannin	68	0.004	349	0.042	94	0.011	334	0.040	2	0.000117	30	0.004	1,034	0.108	-0.59
Fayette	594	0.015	1,586	0.064	453	0.018	1,297	0.052	183	0.004699	184	0.007	776	0.020	-0.30
Floyd	382	0.010	1,919	0.115	585	0.035	1,528	0.091	13	0.000326	259	0.016	0	0.000	-0.11
Forsyth	619	0.010	1,580	0.052	289	0.010	1,254	0.041	348	0.005786	131	0.004	914	0.020	-0.41
Franklin	61	0.006	389	0.112	84	0.024	259	0.075	29	0.003037	45	0.013	852	0.078	-0.25
Fulton	11,517	0.027	23,615	0.105	5,687	0.025	15,432	0.069	6,822	0.015806	5,674	0.025	14,800	0.093	5.29
Gilmer	145	0.009	441	0.048	133	0.014	368	0.040	65	0.003975	81	0.009	965	0.081	-0.47
Glascock	2	0.002	34	0.180	3	0.016	26	0.138	0	0.000000	0	0.000	192	0.139	-0.14
Glynn	198	0.005	1,006	0.075	256	0.019	704	0.052	8	0.000210	76	0.006	0	0.000	-0.59
Gordon	210	0.010	1,283	0.123	513	0.049	1,287	0.123	81	0.003872	136	0.013	0	0.000	0.03
Grady	42	0.004	300	0.172	30	0.017	133	0.076	0	0.000000	17	0.010	289	0.047	-0.34
Greene	11	0.001	328	0.064	103	0.020	268	0.053	1	0.000123	34	0.007	135	0.092	-0.55
Gwinnett	5,802	0.020	15,905	0.097	3,758	0.023	13,065	0.079	2,808	0.009899	1,976	0.012	384	0.026	2.08
Habersham	127	0.007	697	0.082	112	0.013	580	0.068	67	0.003807	77	0.009	945	0.058	-0.37
Hall	978	0.016	2,837	0.091	658	0.021	2,280	0.073	404	0.006433	337	0.011	2,251	0.034	0.15
Hancock	2	0.000	134	0.121	64	0.058	134	0.121	1	0.000215	17	0.015	202	0.057	-0.09
Haralson	23	0.002	683	0.135	180	0.036	595	0.118	76	0.006314	80	0.016	48	0.047	-0.05
Harris	64	0.005	527	0.077	175	0.026	426	0.062	1	0.000077	40	0.006	259	0.031	-0.51
Hart	60	0.005	325	0.095	75	0.022	268	0.078	3	0.000250	29	0.008	393	0.047	-0.43
Heard	4	0.001	251	0.180	68	0.049	154	0.110	18	0.003701	39	0.028	228	0.062	0.10
Henry	2,473	0.035	6,579	0.136	2,001	0.041	5,993	0.124	1,149	0.016120	963	0.020	633	0.046	1.31
Houston	602	0.011	2,875	0.098	696	0.024	2,102	0.071	65	0.001149	210	0.007	430	0.313	0.21
Irwin	17	0.004	88	0.190	31	0.067	50	0.108	0	0.000000	3	0.006	172	0.067	0.00
Jackson	328	0.014	1,892	0.090	587	0.028	1,704	0.081	104	0.004412	302	0.014	1,049	0.041	-0.02
Jasper	82	0.013	334	0.134	102	0.041	286	0.115	36	0.005888	51	0.021	111	0.026	-0.01
Jeff Davis	20	0.004	207	0.180	67	0.058	150	0.130	0	0.000000	0	0.000	542	0.095	0.02
Jefferson	19	0.003	114	0.102	61	0.054	161	0.143	0	0.000000	7	0.006	42	0.169	0.00
Jenkins	9	0.002	66	0.147	21	0.047	57	0.127	0	0.000000	3	0.007	21	0.089	-0.11
Johnson	3	0.001	63	0.124	24	0.047	38	0.075	0	0.000000	4	0.008	166	0.056	-0.33
Jones	79	0.007	292	0.080	116	0.032	340	0.094	1	0.000090	23	0.006	105	0.020	-0.42
Lamar	47	0.006	504	0.192	121	0.046	369	0.140	3	0.000414	70	0.027	310	0.061	0.19
Lanier	0	0.000	79	0.086	26	0.028	68	0.074	0	0.000000	3	0.003	255	0.098	-0.46
Laurens	25	0.001	794	0.131	307	0.050	697	0.115	1	0.000050	70	0.012	34	0.125	0.00
Lee	50	0.004	611	0.100	146	0.024	471	0.077	0	0.000000	16	0.003	54	0.121	-0.37
Liberty	142	0.006	1,568	0.094	540	0.032	1,222	0.073	0	0.000000	35	0.002	52	0.056	-0.33
Lincoln	22	0.005	89	0.062	23	0.016	88	0.061	0	0.000000	4	0.003	93	0.029	-0.67
Long	6	0.001	122	0.095	50	0.039	131	0.102	0	0.000000	23	0.018	6	0.003	-0.34
Lowndes	178	0.004	1,951	0.091	631	0.030	1,412	0.066	3	0.000070	68	0.003	2,080	0.047	-0.21
Lumpkin	70	0.006	444	0.072	106	0.017	415	0.067	42	0.003783	24	0.004	0	0.000	-0.58
Macon	11	0.002	98	0.123	33	0.041	89	0.111	2	0.000354	7	0.009	24	0.124	-0.16
Madison	119	0.010	649	0.106	199	0.032	662	0.108	6	0.000512	83	0.014	85	0.088	-0.13
Marion	22	0.007	95	0.166	38	0.066	61	0.106	0	0.000000	9	0.016	91	0.129	0.10
McDuffie	42	0.005	411	0.130	225	0.071	405	0.128	48	0.005161	37	0.012	0	0.000	0.02
McIntosh	9	0.001	222	0.106	69	0.033	172	0.082	0	0.000000	26	0.012	159	0.049	-0.36

Appendix 6. Listing of Formula Elements by County.

County	Notice of Trustees' Sale	NTS as % of housing units	No. of subprime loans	Percent of loans subprime	No. of foreclosures	Percent of loans foreclosed	No. of delinquent loans	Percent of loans delinquent	No. of REOs--RealtyTrac	REOs as % of housing units	No. of REOs--McDash	REOs as % of loans	No. of vacancies in high subprime zip codes	Percent vacant in hi-subprime zip codes	Composite Needs Index
Meriwether	131	0.013	527	0.159	107	0.032	439	0.133	0	0.000000	75	0.023	182	0.060	0.05
Miller	1	0.000	60	0.203	0	0.000	19	0.064	0	0.000000	7	0.024	196	0.075	-0.30
Mitchell	11	0.001	361	0.217	113	0.068	268	0.161	35	0.003750	37	0.022	578	0.070	0.40
Monroe	72	0.007	463	0.122	142	0.037	370	0.098	1	0.000099	38	0.010	530	0.069	-0.18
Montgomery	15	0.004	61	0.129	27	0.057	54	0.114	0	0.000000	0	0.000	39	0.078	-0.18
Morgan	48	0.006	341	0.087	143	0.036	346	0.088	2	0.000265	24	0.006	191	0.028	-0.39
Murray	35	0.002	736	0.129	262	0.046	733	0.128	4	0.000250	85	0.015	0	0.000	-0.12
Muscogee	682	0.008	5,388	0.137	1,491	0.038	3,654	0.093	432	0.005203	247	0.006	2,017	0.062	0.47
Newton	117	0.003	3,669	0.179	1,035	0.050	3,188	0.155	379	0.010253	553	0.027	606	0.032	0.73
Oconee	79	0.006	510	0.048	132	0.012	452	0.042	8	0.000640	33	0.003	204	0.018	-0.71
Oglethorpe	6	0.001	124	0.076	16	0.010	115	0.071	0	0.000000	3	0.002	8	0.031	-0.67
Paulding	888	0.018	2,654	0.132	631	0.031	2,398	0.120	443	0.008802	325	0.016	1,210	0.034	0.40
Peach	152	0.014	891	0.135	266	0.040	626	0.095	12	0.001128	108	0.016	345	0.050	-0.05
Pickens	127	0.009	710	0.075	139	0.015	608	0.064	46	0.003334	92	0.010	455	0.033	-0.44
Pierce	21	0.003	210	0.116	87	0.048	153	0.084	0	0.000000	13	0.007	652	0.082	-0.23
Pike	73	0.011	455	0.118	100	0.026	415	0.107	10	0.001486	57	0.015	47	0.035	-0.22
Polk	221	0.013	1,271	0.167	345	0.045	1,029	0.135	89	0.005259	188	0.025	250	0.034	0.28
Pulaski	6	0.001	170	0.133	31	0.024	149	0.116	1	0.000236	6	0.005	242	0.061	-0.30
Putnam	60	0.005	303	0.054	126	0.022	338	0.060	2	0.000163	46	0.008	820	0.082	-0.47
Quitman	0	0.000	30	0.180	3	0.018	17	0.102	0	0.000000	0	0.000	129	0.112	-0.28
Rabun	30	0.002	208	0.051	45	0.011	165	0.040	8	0.000629	14	0.003	610	0.084	-0.66
Randloph	0	0.000	68	0.265	22	0.086	47	0.183	0	0.000000	6	0.023	214	0.089	0.55
Richmond	1,059	0.012	6,265	0.168	1,916	0.051	4,612	0.124	489	0.005628	452	0.012	4,607	0.092	1.11
Rockdale	940	0.030	2,695	0.164	673	0.041	2,174	0.132	475	0.015241	337	0.020	968	0.047	0.70
Schley	2	0.001	33	0.106	8	0.026	16	0.051	0	0.000000	7	0.022	72	0.064	-0.42
Screven	3	0.000	173	0.168	65	0.063	157	0.153	0	0.000000	3	0.003	89	0.108	0.08
Seminole	0	0.000	109	0.131	11	0.013	34	0.041	12	0.002443	4	0.005	136	0.036	-0.59
Spalding	388	0.015	2,362	0.162	589	0.040	1,721	0.118	260	0.009892	264	0.018	1,130	0.076	0.45
Stephens	51	0.004	377	0.112	103	0.031	267	0.079	36	0.002908	48	0.014	1,371	0.099	-0.15
Stewart	0	0.000	23	0.086	10	0.038	28	0.105	0	0.000000	0	0.000	133	0.109	-0.35
Sumter	49	0.003	378	0.119	107	0.034	290	0.091	6	0.000422	31	0.010	4	0.011	-0.36
Talbot	4	0.001	93	0.119	23	0.029	78	0.100	6	0.001949	11	0.014	49	0.090	-0.24
Taliaferro	0	0.000	29	0.221	0	0.000	9	0.069	0	0.000000	4	0.031	26	0.035	-0.27
Tattnall	20	0.002	163	0.095	67	0.039	143	0.084	0	0.000000	13	0.008	848	0.121	-0.24
Taylor	4	0.001	101	0.196	14	0.027	66	0.128	0	0.000000	12	0.023	156	0.165	0.11
Telfair	13	0.003	156	0.249	39	0.062	109	0.174	1	0.000195	15	0.024	321	0.106	0.45
Terrell	31	0.007	88	0.176	31	0.062	60	0.120	0	0.000000	5	0.010	375	0.102	0.08
Thomas	124	0.006	820	0.128	170	0.027	363	0.057	3	0.000150	32	0.005	162	0.058	-0.40
Tift	79	0.005	620	0.140	190	0.043	432	0.097	0	0.000000	60	0.014	69	0.102	-0.09
Toombs	17	0.001	229	0.103	86	0.039	192	0.086	1	0.000084	27	0.012	1,052	0.088	-0.22
Towns	5	0.001	119	0.026	30	0.007	161	0.036	1	0.000120	16	0.004	958	0.157	-0.64
Treutlen	0	0.000	29	0.083	11	0.031	31	0.088	0	0.000000	3	0.009	178	0.077	-0.41
Troup	259	0.010	1,823	0.131	538	0.039	1,446	0.104	10	0.000371	190	0.014	1,495	0.054	0.09
Turner	6	0.002	97	0.137	35	0.050	109	0.154	0	0.000000	3	0.004	24	0.039	-0.12
Twiggs	5	0.001	141	0.160	65	0.074	137	0.155	2	0.000451	17	0.019	68	0.074	0.20
Union	50	0.004	359	0.046	64	0.008	281	0.036	4	0.000299	31	0.004	1,486	0.136	-0.55
Upson	44	0.004	415	0.164	150	0.059	386	0.152	3	0.000244	58	0.023	512	0.045	0.19
Walker	368	0.013	3,076	0.207	989	0.067	1,989	0.134	16	0.000562	199	0.013	1,803	0.066	0.60
Walton	717	0.023	2,503	0.114	694	0.032	2,216	0.101	254	0.007985	346	0.016	0	0.000	0.17

Appendix 6. Listing of Formula Elements by County.

County	Notice of Trustees' Sale	NTS as % of housing units	No. of subprime loans	Percent of loans subprime	No. of foreclosures	Percent of loans foreclosed	No. of delinquent loans	Percent of loans delinquent	No. of REOs--RealtyTrac	REOs as % of housing units	No. of REOs--McDash	REOs as % of loans	No. of vacancies in high subprime zip codes	Percent vacant in hi-subprime zip codes	Composite Needs Index
Ware	107	0.007	579	0.152	186	0.049	366	0.096	3	0.000182	41	0.011	1,575	0.094	0.03
Warren	1	0.000	42	0.099	24	0.056	46	0.108	1	0.000358	0	0.000	0	0.000	-0.37
Washington	8	0.001	254	0.176	87	0.060	170	0.118	1	0.000117	19	0.013	283	0.093	0.06
Wayne	38	0.003	379	0.109	121	0.035	312	0.090	2	0.000181	45	0.013	1,224	0.102	-0.16
Webster	0	0.000	8	0.091	0	0.000	5	0.057	0	0.000000	0	0.000	96	0.170	-0.57
Wheeler	0	0.000	55	0.264	7	0.034	25	0.120	0	0.000000	0	0.000	237	0.165	0.07
White	77	0.006	396	0.061	115	0.018	387	0.060	46	0.003864	51	0.008	978	0.094	-0.40
Whitfield	407	0.012	2,044	0.111	638	0.035	1,774	0.096	25	0.000711	249	0.014	343	0.092	0.05
Wilcox	9	0.003	52	0.146	13	0.037	28	0.079	1	0.000296	6	0.017	111	0.113	-0.18
Wilkes	12	0.002	144	0.168	53	0.062	150	0.175	1	0.000193	3	0.004	330	0.088	0.14
Wilkinson	2	0.000	194	0.174	57	0.051	164	0.147	1	0.000220	22	0.020	56	0.054	0.07
Worth	13	0.001	303	0.164	80	0.043	211	0.114	0	0.000000	8	0.004	3	0.006	-0.24