**Flood Vulnerability Analysis for Illinois Using a**

**Decision-Tree Based Model for Social Vulnerability**

BY

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THESIS

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**LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| ACS | American Community Survey |
| CDC | Center for Disease Control |
| CF | Classification Failure |
| DEM | Digital Elevation Model |
| FC | False Classification |
| FEMA | Federal Emergency Management Agency |
| FVI | Flood Vulnerability Index |
| HEAVY\_DEV\_PROP | Proportion of Heavily Developed Land Cover |
| HMP | Hazard Mitigation Plan |
| IDOT | Illinois Department of Transportation |
| ILHMP | Illinois Height Modernization Program |
| IRB | Illinois River Basin |
| ISGS | Illinois State Geological Survey |
| LiDAR | Light Detection and Ranging |
| Mean\_El | Mean Elevation |
| N | Total Number of Areas |
| NFIP | National Flood Insurance Program |
| NLCD | National Land Cover Database |
| NRI | National Risk Index |
| OOR | Overall Overestimation Rate |
| OPR | Overall Performance Rate |
| OUR | Overall Underestimation Rate |
| PPM | Predictive Performance Matrix |
| SAD | Sum of Absolute Differences |
| SoVI® | Social Vulnerability Index - Hazard and Vulnerability Research Institute University of South Carolina |
| SVI | Social Vulnerability Index |
| UIC-SPH | University of Illinois at Chicago School of Public Health |
| USGS | U.S. Geological Survey |

**SUMMARY**

With the rise of urbanization and global climate change, there has been an increase in the occurrence of natural disasters over the past 50 years. While part of this rise is due to natural events, the resulting disasters are not the outcome of geophysical occurrences by themselves. Social vulnerability describes the human aspect of vulnerability and works to identify the social conditions that leave societies susceptible to disasters.

Social vulnerability is multifactorial, and these factors vary between county, state, and local regions. Socioeconomic status is recognized to be one of the largest contributing factors to social vulnerability. Well recognized variables that impact the socioeconomic status are income and poverty level. In addition to socioeconomic status, race, gender, education, employment, age, and social dependence contribute to the vulnerability of a community.

Existing social vulnerability models commonly use percentile rank or Principal Component Analysis (PCA) methodologies to derive vulnerability indices. While multiple indices exist, there have been little to no efforts to validate them using realized losses.

In this study, the decision tree (DT) methodology is proposed as an alternative to assess flood vulnerability in Illinois, specifically in the Illinois River Basin, which is heterogenous in demographics and land use. We also derive a PCA index using the performance optimization methodology developed by the University of Illinois at Chicago - School of Public Health’s (UIC-SPH) team. The predictive performance of the two derived indices and existing flood vulnerability indices for Illinois is evaluated using National Flood Insurance Program claim loss data as realized loss. The Flood Vulnerability Index derived using DT methodology (FVI.DT) has the highest overall predictive performance (87.2%). Existing FVIs for Illinois significantly under- and overestimate county level vulnerability, which implies gaps in mitigation planning and resource allocation throughout the state.

# **INTRODUCTION**

With the rise of urbanization and global climate change, there has been an increase in the occurrence of natural disasters over the past 50 years (1). While part of this rise is due to natural events, the resulting disasters are not the outcome of geophysical occurrences by themselves. The impacts from these events on individuals, communities, and society are what creates these disasters (1, 2). The concept of social vulnerability has emerged in the past fifty years and has become a major framework for assessing this human component of natural disasters (3). Social vulnerability describes the human aspect of vulnerability and works to identify the social conditions that leave societies susceptible to disasters (4). The social vulnerability framework is a systemic and holistic approach that embraces the complexity of human systems (4).

Social vulnerability is multifactorial, and these factors vary between county, state, and local regions. Socioeconomic status is recognized to be one of the largest contributing factors to social vulnerability (5). Well recognized variables that impact the socioeconomic status are income and poverty level (6, 7). This is true on both micro and macro levels, and much research has been conducted on the impact of wealth and socioeconomic status on the vulnerability of individuals and communities (8,9). Along with socioeconomic status, employment and development are key factors in social vulnerability. High-density areas present complications with evacuation and communication prior to disasters, and the loss of commercial and industrial buildings may result in losses in the business community and critical infrastructure, and can prolong recovery (10, 11).

Employment and education also contribute to socioeconomic status, which in turn impacts social vulnerability. Many times, individuals or families move to hazard-prone areas to access education and employment opportunities. Often these homes are unstable and access to transportation is limited. Individuals with low-paying or unstable jobs are often unable to afford housing in low-risk areas and are less likely to be able to afford to move after a disaster (12).

Race and ethnicity are crucial components of vulnerability and are closely related to socioeconomic status in the United States (8, 9). Although legislation prohibiting discrimination based on race and ethnicity exists, institutional racism and cultural undercurrents have resulted in the stratification of social capital along race and ethnic gradients (13,14). Additionally, language and cultural barriers often impede access to information and funding after disasters. The impacts of race and socioeconomic status on social vulnerability were particularly evident in the response to Hurricane Katrina, which saw a disproportionate number of impoverished and displaced minority residents displaced (15).

Gender has a significant impact on the ability to maintain socioeconomic status. Women have fewer resources such as land and access to labor, especially after a disaster. Additionally, gendered household roles such as caregiving place unique stress on women after disasters (16). Populations with a high proportion of elderly or young individuals are more vulnerable. The number of elderly individuals has increased threefold in the United States in the past 100 years, and they generally require more assistance and may be more reluctant to leave their homes in the event of a disaster. Children also require more assistance and resources, and children’s families may be placed under additional stress if school or daycare facilities become inaccessible after a disaster (7, 12).

Along with the elderly and children, those dependent on social services or individuals with special needs add to the vulnerability of a community. These individuals are likely to need more assistance during both pre- and post-disaster stages. These populations are already marginalized from society and if not identified beforehand, they may be overlooked in the post-disaster response (7, 12).

The factors discussed above are not comprehensive. Social vulnerability by nature is defined by the unique characteristics of a society which vary with geographic area and scale. Multiple frameworks exist to evaluate social vulnerability. The Hazards of Place framework was popularized by Susan Cutter and a team at the University of South Carolina. The social vulnerability index, or SoVI®, was created in 2003 by the University of South Carolina team. Forty-two socioeconomic and demographic variables were reduced into 11 factors that accounted for 76% of the variance using principal components analysis (PCA). The 11 components were 1) personal wealth, 2) age, 3) density of the built environment, 4) single-sector economic dependence, 5) housing stock and tenancy, 6) race – African American, 7) ethnicity – Hispanic, 8) ethnicity – Native American, 9) race – Asian, 10) occupation, and 11) Infrastructure dependence (7). A positive or negative directionality was assigned to each of the components based on how they impact social vulnerability in a literature review. These 11 components allow for a robust model and a consistent set of variables to use in order to track vulnerability over time and across the United States. Cutter suggested using the SoVI® in conjunction with hazard event frequency and economic loss data to enhance mitigation planning (7). Several iterations of the SoVI® exist, including the original SoVI® 2000 with 42 variables, the SoVI® 2000 with 32 variables, the SoVI® 2006-2010, and the SoVI® 2010-2014 (18).

In addition to PCA analysis, weighted ranking and percentile ranking are commonly used in social vulnerability analysis. Ranking methodologies rely on selection of relevant variables based on literature or professional opinion (19, 20). In a 2000 study of vulnerability of populations living in hazardous zones of Georgetown County, South Carolina, Cutter et al. selected nine variables based on the existing literature. These variables were standardized by calculating a ratio of the variable inside a census block compared to the total value of that variable within Georgetown County. The standardized values for all nine variables was summed for each census block to create an aggregate value for social vulnerability (19). The U.S. Center for Disease Control (CDC) utilizes a ranked social vulnerability index. A total of 15 social variables assigned to four themes (socioeconomic status, household composition & disability, minority and language status, and housing type & transportation) are used to calculate overall vulnerability. Information obtained from the American Community Survey (ACS) is used to calculate percentile rank scores for each variable. In order to obtain the percentile rank for each theme, the percentile rank of the corresponding variables are summed (20). The overall vulnerability is found by summing the four theme ranks. This analysis is completed at the census tract and county level for each state (20). While these methods are more accessible since no statistical software is necessary, it is possible that key indicator variables were omitted and they do not take into account the complexity of variable interaction (21). In some studies, weight is assigned to variables based on relevance and prior knowledge. While weighting may account for an increased influence of a particular variable within a study area, no reference data for weights exist (20, 22). Recent studies corroborate that percentile rank and weighted percentile rank methodologies have inferior performances compared to statistically derived models (22).

In 2020, the Federal Emergency Management Agency (FEMA) released the National Risk Index (NRI), an application developed to identify communities at risk of natural hazards. The NRI incorporates the University of South Carolina SoVI® with community resilience and expected annual losses and is publicly available for any jurisdiction. The NRI assessed 18 natural hazards that predict expected annual loss, including riverine flooding (23). In addition to the NRI, FEMA has developed the Resilience Analysis Planning Tool (RAPT) to assess socioeconomic and demographic data, physical attributes such as infrastructure, and hazard risks. RAPT utilizes historic hazard information and aims to provide insight into the interactions between infrastructure, community characteristics, and hazards (24).

Decision tree based modeling has been used to assess social vulnerability associated with natural disasters. In 2016, a team of researchers from the University of Illinois at Chicago School of Public Health (UIC-SPH) used a decision tree model to assess social vulnerability in the Houston Metropolitan Area in Texas. Decision tree models account for the heterogeneity and complexity of both the populations and hazards of the input socioeconomic variables as well as the losses due to a realization of hazards. The decision tree model proposed in the Houston study had a predictive performance rate greater than 77%, whereas the PCA based model for the same study area had a predictive performance rate of 35% (22). This study highlighted the need to validate the proposed indices since a predictive performance of 35% implies major underestimations of high-risk areas. The high-performance rate of the DT model provides confidence to legislature and public health officials when planning for disaster preparedness and mitigation.

Hazard Mitigation Plans (HMPs) are required for state, tribal, and local governments for receiving FEMA funds under the Disaster Mitigation Act of 2000. Mitigation planning is important to minimize the impact of natural hazards and disasters on people, the environment, and property (25). According to FEMA, as of December 31, 2020, 50 states have developed HMPs. 23,700 local governments and 222 tribal governments have also developed HMPs, and 85% of the population live in communities with current HMPs (26). Since the University of South Carolina’s development of a social vulnerability index, not many states have incorporated social vulnerability analyses into their HMPs. According to the University of South Carolina SoVI® website, only 17 states currently employ their social vulnerability index in their HMPs (17). These states are listed below in Table I.

One likely reason states do not include social vulnerability into mitigation planning is that there is a lack of validation of these quantitative indices (27). Social vulnerability models cost money to produce, and without validation of their predictive abilities they lack practical application (28). This deficiency has been identified by Cutter and other researchers in the vulnerability field (7, 22). Currently, common practices for validating vulnerability models, especially flood vulnerability, is by qualitative comparisons and case studies (29). While some studies that assess the validity of popular social vulnerability models such as the SoVI® exist, additional research is necessary before any existing social vulnerability model is empirically accepted (28, 30).

Illinois is one of the states that utilizes the University of South Carolina SoVI® methodology in its HMP. In the 2018 Illinois HMP, two flood vulnerability analyses are discussed (31). In the 2013 Illinois Statewide Floodhazard Assessment, Remo utilized the FEMA HAZUS® program to assess potential building-related economic losses and utilized the University of South Carolina SoVI® (32).

In 2015, Remo and his team conducted a second flood vulnerability assessment, this time incorporating a social vulnerability index that was created using the University of South Carolina’s methodology. The Social Vulnerability Index Remo created, called SVI, is comprised of eight components explaining 78.6% of the variability, identified using PCA. Remo utilized data from the 2000 census and used census tract-

#### **TABLE I**

STATES THAT EMPLOY SOCIAL VULNERABILITY INDICES® IN THEIR HAZARD MITIGATION PLANS

|  |  |
| --- | --- |
| Arkansas | New York |
| Colorado | North Carolina |
| Florida | North Dakota |
| Georgia | Oregon |
| Illinois | South Carolina |
| Kansas | South Dakota |
| Mississippi | Tennessee |
| Missouri | West Virginia |
| New Mexico |  |
| Source: SoVI® | Hazards & Vulnerability Research Institute | University of South Carolina | |

level outputs to create jurisdiction and county-level SVIs. Like Cutter’s 2003 SoVI®, Remo found that household income, age, and race were significant factors. To create a final Flood Vulnerability Index (FVI), this study utilized both the SVI and a flood loss index created using FEMA’s HAZUS® software package (33).

Remo found that the highest FVIs were in Southern Illinois, primarily along the Mississippi and Ohio Rivers. In urban jurisdictions, like Chicago in the Northeast and East St. Louis in the Midwest, the SVI contribute to high FVI scores. While Remo created a SVI specific to Illinois, he also compared it to the SoVI® and found that they were in 80% agreement (33).

Flood vulnerability has also been assessed at the regional and county levels. The 2019 Cook County Multi-Jurisdictional Hazard Mitigation Plan utilized HAZUS-MH software to assess flood susceptibility across Cook County. The HMP uses HAZUS default vulnerability variables to assess population-level susceptibility to flooding, which include economically disadvantaged populations, population over 65 years old, and population under 16 years old (34). While the Cook County HMP does utilize the FVI developed for the statewide HMP, it focuses on the impact of urban flooding and is an example of how counties and local jurisdictions can evaluate flood vulnerability in a smaller geographic area.

## **Setting**

In recent years, Illinois has experienced several record flooding events. While Illinois does experience flooding related to the Mississippi and Ohio Rivers that comprise the Western and Southern borders of the state, flooding in the Illinois River watershed has been particularly devastating to counties in northern and central Illinois (35). Sixteen federal disaster declarations have been declared due to flooding (36). Recent significant flood events are presented below:

* 1993: The Mississippi River flood of 1993 was devastating for Illinois. The flood has numerous causes, including weather, soil moisture, hydrologic conditions, flood stages, and levee failures. Record rainfall in Illinois combined with high soil moisture leading to increased runoff, and the River was at flood stage almost continuously from April through September. As a result, at least 16,000 people were displaced, 18 communities were severely flooded, and 17 public water supply centers were damaged or destroyed. Bridges were flooded along both the Mississippi and Illinois Rivers, and elevated water tables along the Mississippi and in the Illinois River Basin continuously discharged to the rivers and presented the opportunity for floodwater to contaminate ground water (37).
* 2002: Heavy rainstorms in Spring 2002 resulted in widespread flooding throughout Illinois. By the end of June, over $10.3 million in federal aid had been distributed to individuals and business in 68 counties and to local governments in 38 counties. Several levees, bridges, and highways were washed out, and agricultural and residential areas were flooded for long periods of time (38, 39)
* 2008: In June 2008, rainfall events in Wisconsin contributed to flooding in Northern Illinois, and as river levels rose further downstream (40). By June 24, 2008, the Governor of Illinois had declared a state disaster for 24 counties (41). Agricultural losses related to this flood were approximately $1.3 billion (40).
* 2013: Widespread rainfall in April 2013 resulted in record flooding on portions of the Des Plaines, Fox, Chicago, Vermillion, DuPage, and Illinois Rivers. This flooding resulted in approximately $375 million of damage due to flash flooding and riverine flooding. Evacuations were necessary in several counties, and major highways and waterways were closed due to flooding (35).

The U.S. Geological Survey (USGS) has delineated 33 major watershed basins in Illinois. These watersheds do not operate in isolation, and are all part of larger watersheds, such as the Illinois River Basin and Upper Mississippi River Watershed (31, 42). The Illinois River Basin covers much of northern and central Illinois and has a drainage area of approximately 28,906 square miles (42). A map of Illinois and the Illinois River basin is presented in Figure 13, Appendix A. The basin includes the area between Lake Michigan and the Mississippi River. Tributaries to the Illinois River include the Kankakee, Des Plaines, Fox, Sangamon, Vermillion, Mackinaw, and LaMoine Rivers, and the Chicago River is connected to the Illinois River via the Illinois and Michigan Canal, constructed in 1933 (43). In 2009, a trend analysis of the yearly flood peaks in 12 watersheds revealed that annual flood peaks have been increasing over the last decades. The 12 small watersheds analyzed in the study were all in Northeastern Illinois and were located in increasingly urbanizing areas (44).

The Chicago Metropolitan Agency for Planning (CMAP) developed Regional Flood Susceptibility Indexes (FSI) to assess riverine and urban flooding. Urban flooding describes flooding related to urban infrastructure and is more difficult to predict than it’s riverine counterpart. The CMAP riverine and urban FVIs identified different geographic areas susceptible to each type of flooding. The areas most vulnerable to urban flooding are in Chicago and the surrounding suburbs, and Elgin, Aurora, and Joliet. A smaller geographic area is susceptible to riverine flooding, and the susceptible areas are focused around major rivers as opposed to developed areas. These two FSIs help visualize the impact that urbanization has on flood vulnerability throughout the Chicago metropolitan area (45).

The Illinois River basin encompasses both rural and urban areas and includes several large cities such as Chicago as well as agricultural lands associated with cities such as Peoria (31, 42). Due to the diversity of land use, the demographics of the counties within the Illinois River basin vary greatly. According to data obtained by the US Census QuickFacts website, the least populated county in the Illinois River Basin has 4,739 residents, and the most populated county contains 5,150,233 residents. While on average, the 76.8% of the total population of Illinois is White alone, the Illinois River Basin counties ranged from 65.4% to 94.9%. Similarly, 14.6% of the total population of Illinois identify as Black or African American alone, and the Illinois River Basin ranged from 0.4% to 23.8%. The median household income in 2019 dollars for Illinois is $65,009, and the median household income in the Illinois River Basin ranged from $44,471 to $96,563 (46).

As discussed above, the areas with the highest FVI scores in the Illinois HMP were located along the Mississippi and Ohio Rivers (33), which are along the southern and western borders of Illinois. In order to account for the complexity of Illinois’ watersheds, the study area is defined as Illinois with the exception of the counties bordering the Ohio River in the Saline River/Bay Creek and Cache River watersheds. The Saline River/Bay Creek and Cache River watersheds border the Ohio River and do not contain any large urban centers (31). The study area is presented in Figure 13, Appendix A. The recent significant flood events and trends in annual flood peaks along with the demographically diverse counties highlight the need for a refined flood vulnerability analysis for Illinois, especially in the Illinois River Basin.

## **Objectives**

The purpose of this study is to assess flood vulnerability in Illinois, specifically the Illinois River Basin, using the social vulnerability framework, and to provide validation for the results. Two models, the UIC-SPH decision tree-based model and the commonly applied PCA based model, will be applied. The validity of these models in terms of their ability to predict high-risk areas will be assessed based on FEMA’s National Flood Insurance Program (NFIP) data.

The validation methodology proposed by the UIC-SPH team will be applied for a number of flood vulnerability indices for Illinois. The objective of this validation is to assess the PCA and DT derived indices in comparison to existing indices like the FEMA NRI. The target variable for comparison are the NFIP claim data recording actual flood losses within the study area. In addition, a threshold of performance is introduced for all these indices.

# **METHODS AND MATERIALS**

This section discusses variable selection, data sources, methods, and validation for this study.

## **Variable Selection**

Variables for inclusion in our models were selected based on the literature review. A total of 16 demographic indicator variables were selected for inclusion, covering four major themes commonly used in such studies (socioeconomic status, household composition & disability, minority and language status, and housing type & transportation) (6, 7, 20):

1. Percent of total population Black or African American alone;
2. Percent of total population: population in group quarters
3. Percent of civilian population 16 to 19 years: not high school graduate, not enrolled (dropped out)
4. Percent of civilian population in labor force 16 years and over: unemployed
5. Percent of households with social security income
6. Percent of households with supplemental security income (Ssi)
7. Percent married couple family with related child living below poverty level
8. Percent below poverty level: female householder with no husband present with related children under 18 years
9. Percent occupied housing units: no vehicle available
10. Percent of total population: Hispanic or Latino
11. Percent below poverty level: female householder with no husband present
12. Percent 1 year+ householder lived in renter-occupied housing units
13. Percent age 75+
14. Percent households with retirement income
15. Percent of total population over 75 years old
16. Per capita income in 2014.

In addition to the demographic variables, two geophysical variables were selected to include in the model. Elevation and land use were selected since they heavily impact the surface features of an area. Generally, floodwater flows from a higher elevation to a lower elevation. Land use impacts both the permeability and inundation of an area (47). Additionally, most flooding models take land use and elevation into account when estimated flood vulnerability (33, 44).

For the validation of the derived indices, data from FEMA’s NFIP will be used. The NFIP was created in 1968 with the passing of the National Flood Insurance Act (48). The redacted claims dataset provides information about the magnitude of flood loss for a given year in a given area. While the redacted dataset does provide county and census tract level information, it does not allow for finer resolution aggregation since detailed information has been redacted to exclude personal identifiable information (49).

## **Data Sources**

The NFIP claim data was accessed from openFEMA, which is FEMA’s data delivery platform. The current NFIP Redacted Claims data is Version1 and contains over 2,000,000 claims transactions from 1975 to 2020. Only data from the State of Illinois was utilized in this study (50). After a review of the Illinois NFIP data and major flooding events in Illinois, two time periods were selected. The first time period spans from 1985 to 1999, and the second spans from 2000 to 2014. These time periods were selected because they encompass both major and minor flooding events statewide, and each has a corresponding complete census data set available (35). We evaluated NFIP data on a county-level. Only claim entries with a FIPS County Code entered was included in the study. This new total amount was normalized to the value of the 2014 U.S. dollar to allow for direct comparisons between the two groups. Illinois has 102 counties. A total of 90 counties in Illinois had NFIP claims in the two time periods; 87 counties were used in the final dataset (Table VIII and Table IX, Appendix B). A table summarizing NFIP loss data utilized in this study is provided in Table X, Appendix B.

Land cover data from the National Land Cover Database (NLCD) is developed by USGS and several partner federal agencies. The 2001 NLCD data was evaluated for this study. While 1992 NLCD data does exist, it is not directly comparable to any later editions of NLCD, which would prejudice comparisons and inferences made between the two study groups. NLCD2001 uses a classification system that is modified from the Anderson Land Cover Classification System (51). Four classes, or values, exist to describe developed land. These classifications were further condensed into two orders; lightly developed areas and heavily developed areas. Using ArcMap10.6, these classifications were tabulated by county. The resulting counts were divided by total land-use counts, and multiplied by square mileage to calculate the approximate square mileage of lightly developed and heavily developed areas in each county. Table II below describes land use orders and classifications used in the study, and Tables XI and XII, Appendix B contain the tabulated ArcMap output and subsequent methodology used to find county-level area approximations.

#### **TABLE II**

CONSOLIDATED LAND USE VARIABLES

|  |  |  |
| --- | --- | --- |
| **Order** | **NLCD Class Value** | **NLCD Classification Description** |
| Lightly Developed | 21 | Developed, Open Space – areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes. |
| 22 | Developed, Low Intensity – areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% of total cover. These areas most commonly include single-family housing units. |
| Heavily Developed | 23 | Developed, Medium Intensity – areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units. |
| 24 | Developed, High Intensity – highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses, and commercial/industrial. Impervious surfaces account for 80 to 100% of the total land cover. |
| Source: NLCD 2001 Land Cover (CONUS) | | |

Elevation data was obtained using the Illinois Height Modernization Program’s (ILHMP) Digital Elevation Model (DEM) Light Detection and Ranging (LiDAR) collection, produced Illinois Department of Transportation (IDOT) and Illinois State Geological Survey (ISGS) (52). Using ArcMap 10.6, zonal descriptive statistics were calculated for each county. The output table from ArcMap is provided in Table XIII, Appendix B.

Socioeconomic data for each county are from the American Community Survey (ACS); 2018 release of 5-year estimates (53). The 16 variables included were selected based on literature review and the methodology used in the 2016 Sambanis study (21, 54). The variables selected are discussed above in section 2.1 and are presented below in Table 3.

#### **TABLE III**

SOCIOECONOMIC AND DEMOGRAPHIC VARIABLES SELECTED FOR INCLUSION

|  |  |
| --- | --- |
| **Category** | **ACS Variables Used** |
| Age | % Age 75+ |
| Poverty | % Married Couple Family: with Related Child Living Below Poverty Level |
| % Below Poverty Level Female Householder, No Husband Present |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years |
| Education | % Civilian Population 16 to 19 Years: Not High School Graduate, Not Enrolled (Dropped Out) |
| % Population 25 Years and Over: Less than High School Education |
| Housing | % Total Population: Population in Group Quarters |
| Income | Per Capita Income 2014 |
| Race - African American | % Total Population: Black or African American Alone |
| Race - Hispanic | % Total Population: Hispanic or Latino |
| Supplemental Income | % Households: with Social Security Income |
| % Households: with Retirement Income |
| Transportation | % Occupied Housing Units: No Vehicle Available |
| Unemployment | % Civilian Population in Labor Force 16 Years and Over: Unemployed |

The variable categories provide ample coverage of the four major themes commonly used in such studies (socioeconomic status, household composition & disability, minority and language status, and housing type & transportation) (6, 7, 20).

## **Methods**

To demonstrate the need for validation we will apply two methodologies for deriving a flood vulnerability index (FVI) for the selected study area.

### **Decision Tree Methodology**

Decision tree (DT) models have been used since the 1960s and are widely used across disciplines due to their ease of use and predictive capabilities (55, 56). Decision tree models use machine-learning algorithms that iteratively sort the input data based on their attributes and a target variable, in this case NFIP losses (23). The goal of DT analysis is to identify a best model for dividing all input data into homogenous classes (57). For this DT model, the methodology developed by the UIC team in 2016 outlined in the Decision Tree-Based Vulnerability Classification Model was applied (22). The IBM SPSS Modeler software was utilized, and the DT model was derived with the C5.0 algorithm (55, 58). As described in a 2016 study conducted by Sambanis, the resulting classification will be a vulnerability category, or severity class (21). The resulting index will be referred to as FVI.DT.

### **Principal Component Analysis Methodology**

The Principal Component Analysis (PCA) methodology is frequently used to derive social vulnerability; both the University of South Caroline SoVI® and the Illinois HMP utilize the PCA approach (7, 33). Principal component analysis is a form of inductive analysis, in which indicator input variables are aggregated into uncorrelated new variables, or Principal Components (PCs) (59). The number of PCs is less than, or equal to, the number of input variables. The first PC accounts for the largest proportion of variability in the data as possible, and each succeeding PC explains the next highest variance possible provided that they are uncorrelated to the first PC (21, 60). For this study, the PCA derivation was performed with the IBM SPSS Modeler software using the methodology outlined in the 2016 Sambanis and UIC-SPH study (21, 57). The resulting index will be referred to as FVI.PCA.

Other methods commonly applied for social vulnerability index derivation included deductive models that select variables for inclusion based on expert opinion or literature review (59). For this study, we will only be developing the DT and PCA models since it is likely that other models’ performances will be inferior to the PCA index derivation methodology (59).

## **Validation**

An approach developed by the UIC School of Public Health (UIC-SPH) team will be applied to validate the derived FVIs. Like the 2016 and 2019 Sambanis and UIC-SPH studies, an ordinal scale will be utilized to compare the FVI and actual losses from the FEMA NFIP database. In order to utilize an ordinal scale, the FVI, representing a predicted scale of vulnerability, as well as the target variables must be transformed into m classes that represent the severity of the event or incidence (e.g., low, medium, high, severe) (21, 22). According to Sambanis 2016, “this is accomplished using a binning methodology with equal counts per bin (if the total records are even) which creates m new nominal class fields based on the values of one or more existing continuous (numeric range) fields. The equal counts approach was selected due to the lack of reliable thresholds for both comparison components” (21). In this study, the scores of the derived FVI.DT and FVI.PCA will be classified into m classes representing levels of flood vulnerability. The NFIP claim losses will be classified into m’ classes representing the severity of actual losses. For practical reasons, m = m’.

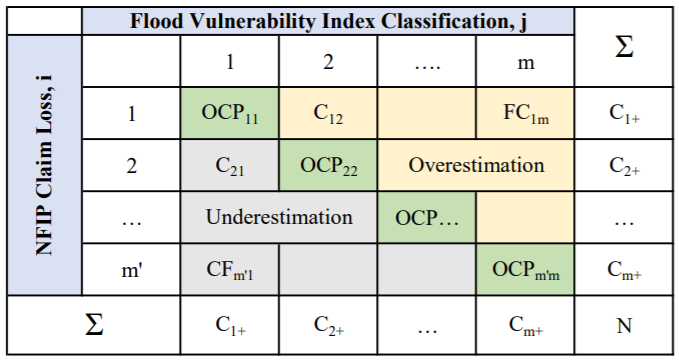
The model performance evaluation will utilize a predictive performance matrix (PPM), or a m x m’ confusion (or error) matrix (21, 62). We also evaluate the performance of the standard SoVI® model as utilized in the Illinois HMP and the FEMA NRI. This is accomplished by using the UIC-SPH validation methodology (21, 22, 62). We utilize the PPM, presented below in Figure 1, to assess the accuracy of our derived FVIs. In this figure, m represents the highest predicted FVI vulnerability class and m’ represents the highest realized NFIP claim loss class.

The PPM identifies correctly and incorrectly classified areas from the FVI and NFIP Claim Loss classes. Correctly classified areas, where the FVI class matches the NFIP claim loss class, are contained in the diagonal elements of the PPM and their sum provide a measure of overall classification performance (OCP). The OCP rate is calculated by taking the sum of the diagonal elements and dividing by the total number of areas, N (21, 22, 62).

With the metrics proposed by the UIC-SPH team (21, 22), we can evaluate the over- and underestimation of the proposed index by using the PPM. Cells below the diagonal elements of PPM represent areas with high NFIP claim losses that were classified into a non-vulnerable class by the FVI. The sum of all areas below the diagonal elements divided by the total number of areas, N, yields the Overall Underestimation Rate (OUR). In particular areas in the highest class of NFIP claim losses but the lowest vulnerability class are represented in cell Cm’1. Sambanis and the UIC-SPH team call this particular type of underestimation Classification Failure (CF), and it can have significant public health implications in using the FVI to allocate resources. By dividing CF by the total number of areas, N, CF can be expressed as a rate (21, 22).

On the other hand, cells above the diagonal elements represent areas with low NFIP claim losses but a high vulnerability classification predicted by the FVI. The sum of all areas above the diagonal elements divided by the total number of areas, N, yields the Overall Overestimation Rate (OOR). Areas in the lowest class of NFIP claim losses but the highest FVI rank are represented in cell C1m, called False Classification (FC) by the UIC-SPH team (21, 22, 62). Areas in this cell may be allocated resources that they do not need, which can lead to unnecessary waste of valuable resources. Similar to CF, FC can be divided by the total number of areas to yield an FC rate.

The OUR can identify high-risk counties that may be missed by a model, and the OOR can identify counties that are incorrectly classified as high-risk. An index that yields a high OUR or OOR has incorrectly classified areas, and if decisions are made for mitigation planning or public health protective measures based on this information, this can have devastating results. Counties that are low-risk but have been classified as high-risk may receive more assistance and resources which may go to waste. If a large proportion of high-risk counties are misclassified as low risk, they may not have the resources or plans in place to help them pre- and post-disaster. The most extreme example of underestimation is captured by the CF rate. If a CF rate is high, it implies that many high-risk counties have not been correctly identified by the model and are therefore unlikely to receive the assistance they need.



**Figure 1 Predictive Performance Matrix**

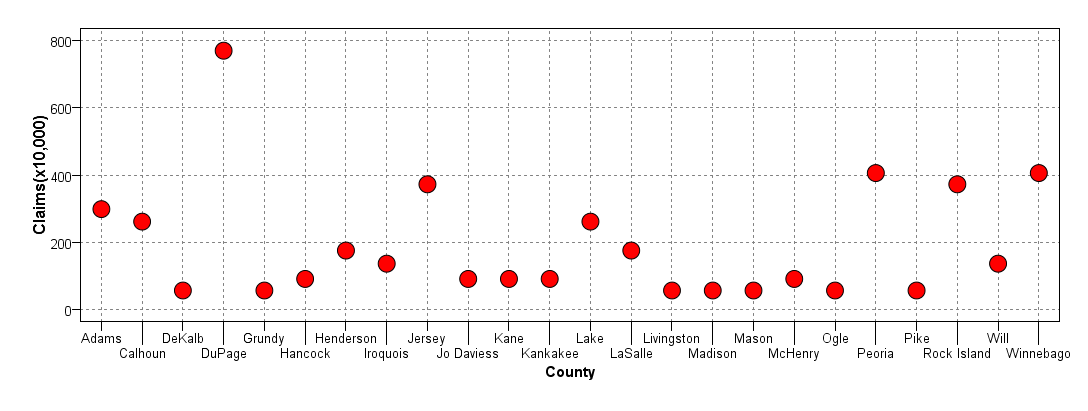
# **RESULTS AND DISCUSSION**

## **Data Characteristics**

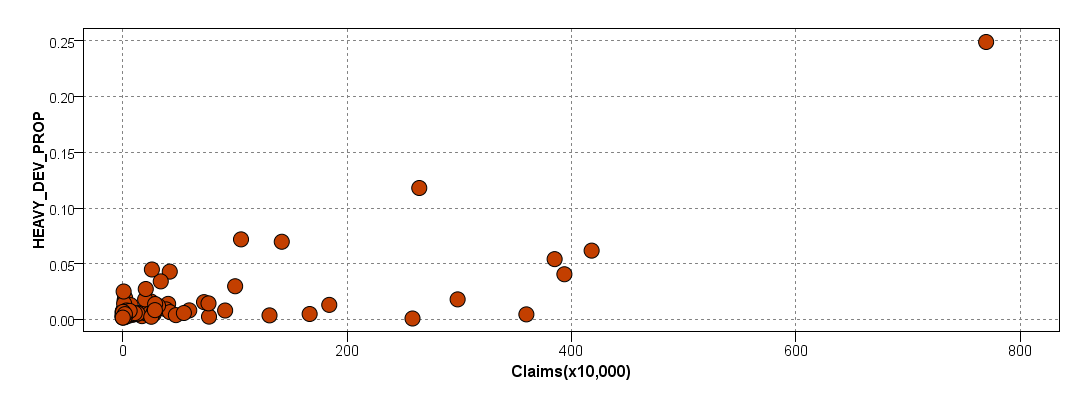
The target variable for validation and DT index derivation is FEMA’s NFIP claim data for the 2000-2014 period. Counties bordering the Ohio River and the ones lacking claim records (designated NA for Not Available) have been removed in order to have a meaningful zero claims threshold. In order to enroll in the NFIP program, communities must enroll and participate in the NFIP program, which requires Elevation Certificates or Floodplain Management Planning, depending on the community’s designation (63). The total number of counties in the study area complying with these rules is 87 (Figure 13 and Figure 14, Appendix A). In terms of claims, these counties account for 98.7% of the 2000-2014 claims and geographically cover the majority of Illinois’ surface.

Figure 14, Appendix A indicates that Cook county and its record level claims amount is likely to test the sensitivity of the two FVI derivation approaches. Cook county accounts for 33.7% of all NFIP claims in the 2000-2014 period. Validation results will be presented with and without Cook County. Figure 2 presents the counties with claims above $400,000, which represents the highest quartile of claims during the 2000-2014 period. Figure 2 and Figure 14, Appendix A corroborate that the study area contains counties with diverse socioeconomic characteristics. These characteristics will be used in the index development approach.

The UIC-SPH team introduced the inclusion of variables representing land cover characteristics while developing classification-based vulnerability indices (62). From the land cover variables, the area of highly developed areas in square miles is divided by each county’s area. This proportion of the heavily developed county surface area will be used (HEAVY\_DEV\_PROP). Figure 3 demonstrates the influence that this variable has on the claims. Once again, Cook county was not included in Figure 4 to better understand the distribution of claims among less developed counties. Another variable introduced specifically for this study is the mean elevation (Mean\_El). Conceptually, elevation has the potential to influence the severity of floods.



**Figure 2 Claims above $400,000 by County**



**Figure 3 Proportion of Heavily Developed Areas by County**

## **Validation of Decision Tree and PCA Models**

This study followed the methodology developed by the UIC-SPH team and used a target variable and the PPM to optimize the indices regardless of the derivation approach (21, 62). The target variable for validation is FEMA’s NFIP claim data for the 2000-2014 period. All economic variables have been adjusted to the 2014 U.S. dollar. The majority of input variables are in percent and include the socioeconomic and demographic variables presented in Table 3, land cover (HEAVY\_DEV\_PROP), and elevation (Mean\_El).

### **DT Index Derivation and Validation without Cook County**

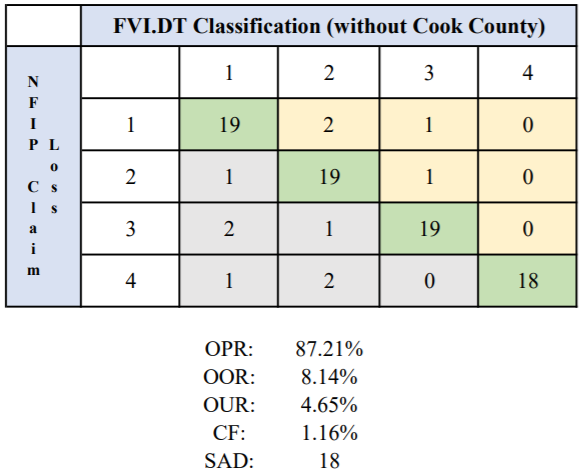
The UIC-SPH validation approach, based on a target variable and the PPM, can be used to optimize the indices regardless of the derivation approach (21, 62). In order to develop the FVI.DT, the C5.0 algorithm was used with four output classes. However, as discussed in the 2016 Sambanis study, the C5.0 algorithm tends to overfit the model. In order to mitigate overfitting, the C5.0 algorithm was used with the significant only variables, identified using the importance metric for decision tree algorithms in the SPSS-Modeler (21, 64). For our FVI.DT, the sixteen input variables presented in Table III were included in the initial model. Of those sixteen variables, eight variables were significant in the DT model. These variables and their relative importance in the DT model are presented in Table IV and in Figures 19 and 20, Appendix C. The target variable for validation of the FVI.DT is FEMA’s NFIP claim data for the 2000-2014 period. All economic variables have been adjusted to the 2014 U.S. dollar. The DT model takes the form of a decision tree structure (available upon request). The relative importance of each input, or predictor, variable in establishing the model structure is summarized by the importance metric (see Table IV). Figure 15, Appendix A shows the mapped FVI.DT for counties in Illinois. As evidenced in Figure 15, the majority of high-vulnerability counties identified by FVI.DT are in the Illinois River Basin and along the Mississippi River.

Figure 4 below presents the PPM for FVI.DT. The FVI.DT yields an overall classification performance rate of 87.2%. The overall overestimation rate (OOR) is 4.7% and the overall underestimation rate is

#### **TABLE IV**

INPUT VARIABLES AND THEIR RELATIVE IMPORTANCE IN THE DECISION TREE MODEL

|  |  |
| --- | --- |
| **Input Variable** | **Importance in DT model** |
| % Occupied Housing Units: No Vehicle Available | 0.37 |
| % Population 25 Years and Over: Less than High School | 0.20 |
| HEAVY\_DEV\_PROP | 0.13 |
| % Households: with Public Assistance Income | 0.12 |
| % Total Population: Hispanic or Latino | 0.09 |
| % Civilian Population 16 to 19 Years: Not High School Graduate, Not Enrolled (Dropped Out) | 0.06 |
| % Total Population: Population in Group Quarters | 0.02 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | 0.01 |



**Figure 4 Predictive Performance Matrix for FVI.DT**

8.1%; the classification failure rate (CF) is 1.1%. These summary performance metrics indicate an range of performance for FVI.DT that will be judged in comparison to other FVI. The sum of absolute differences (SAD) provides another useful metric for assessing the performance of FVI.DT. In this case, the SAD is 18 and the spatial distribution of underestimated and overestimated counties is presented in Figure 16, Appendix A. The county with the highest level of underestimation is Jersey County, which is located at the confluence of the Illinois and Mississippi Rivers. The most overestimated county is Pulaski County, located on the southern tip of Illinois.

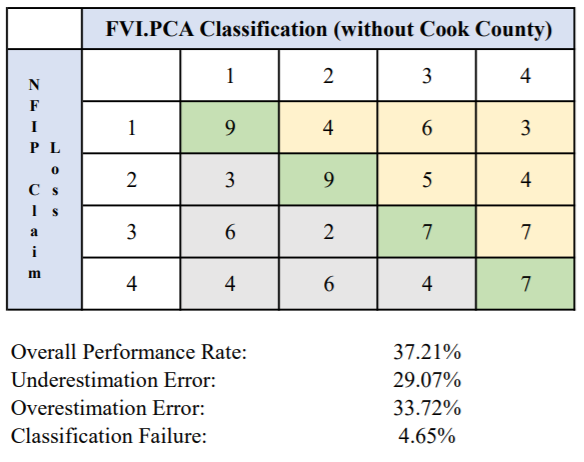
### **PCA Index Derivation and Validation without Cook County**

Following the UIC-SPH methodology, “Principal Component Analysis results yield Principal Components (PCs) that can be interpreted by review of the Communalities and Components. Communalities is the proportion of each variable’s variance that can be explained by the principal components” (21, 65). The primary stopping mechanism in this study for PC selection was based on eigenvalues; only components with eigenvalues greater than one were selected for inclusion. For this FVI.PCA, we used the same 16 input variables listed in Table III. The communalities matrix for the 16 components is provided in Table XIV, Appendix C. The initial FVI.PCA 16 variable data structure can be represented by five uncorrelated PCs explaining 77.4% of the variability.

The FVI.PCA was derived by adding each of the five PCs scores. The typical social vulnerability index derivation methodology changes the directionality of each component subjectively based on literature review or professional judgement. For example, a purely economic PC is expected to be negative since a high economic status implies low vulnerability. The UIC-SPH validation approach provides a better way to assign directionality for each PC with the use of the PPM.

In this case, all positive PCs yield an overall performance of 29.1%. A change of directionality for the first PC yields an OPR of 27.9%. By trial and error, we identified that a -PC1, +PC2, +PC3, -PC4, and +PC5 will yield an OPR of 37.2%. Thus, by using the SPH-UIC methodology, arbitrary interpretations of directionality are avoided and the overall predictive performance of FVI.PCA.1 is improved.

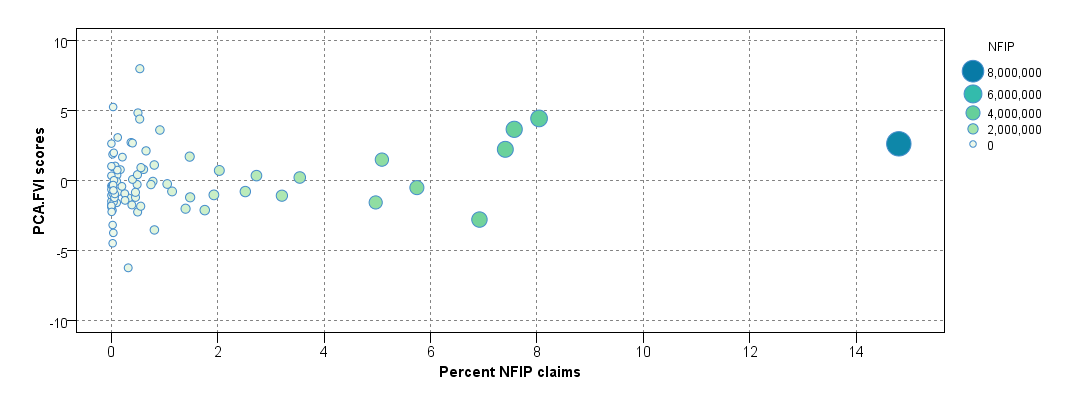
Each of the 16 components are presented in Table XV, Appendix C, with each row representing an individual component and their relative eigenvalues (66). Table XVI, Appendix C also presents the component matrix for the PCA model. The PPM for FVI.PCA is presented Figure 5. As discussed above, the OPR is 37.2%. The OUR is 29.0% and the OOR is 33.7%; the CF is 3.7%.

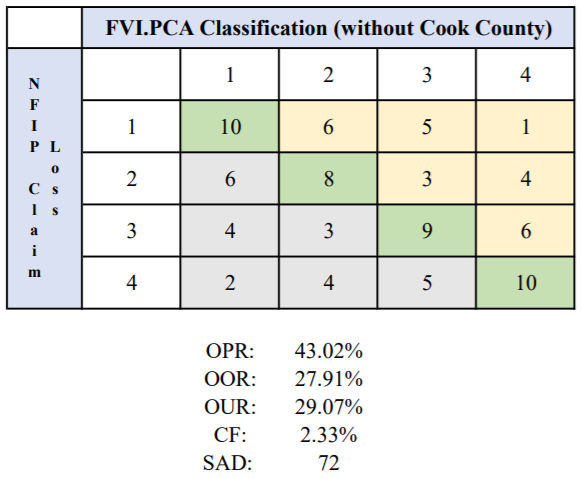


**Figure 5 Predictive Performance Matrix for FVI.PCA**

Figure 6 further clarifies the issues encountered with the PCA approach. The scores for each PC are normalized; subsequently the additive model used to derive the FVI.PCA will have a distribution resembling the normal distribution. FVI.PCA should approximate the distribution of all the claims at least in terms on location on Figure 6 (i.e., high percent claims should correspond to high FVI.PCA scores). As visible in Figure 6 below, this is not the case. The majority of high claims are located close to the horizontal line representing the average FVI.PCA scores. Underestimating the high-risk areas by 29% is a major concern. Therefore, this FVI.PCA cannot be considered as a reliable index.

One of the objectives of this study is to demonstrate the ability off the UIC-SPH validation approach to optimize and explore indices, which was first introduced in 2015 by Bakhsh and the UIC-SPH team (66). With the UIC-SPH approach, the PCA.FVI improved from a 37.2% to 43.02% OPR, with four PCs explaining 73.6% of the variability. Matrices presenting the communalities, total variance explained, and components are provided in Tables XVII, XVIII, and XIV of Appendix C. and Worth noting is the number of input variables was reduced to 14, and the directionality for each of the four PCs is -PC1, +PC2, +PC3, and -PC4. The PPM for FVI.PCA.2 is presented in Figure 7. While this FVI.PCA is an improvement, with an OPR of 43.02% and CF of 3.6%, the OOR is 29% and the OUR is 2.9%. Thus, the improved FVI.PCA

**Figure 6 PCA.FVI.1 score by NFIP Claim Percentile**

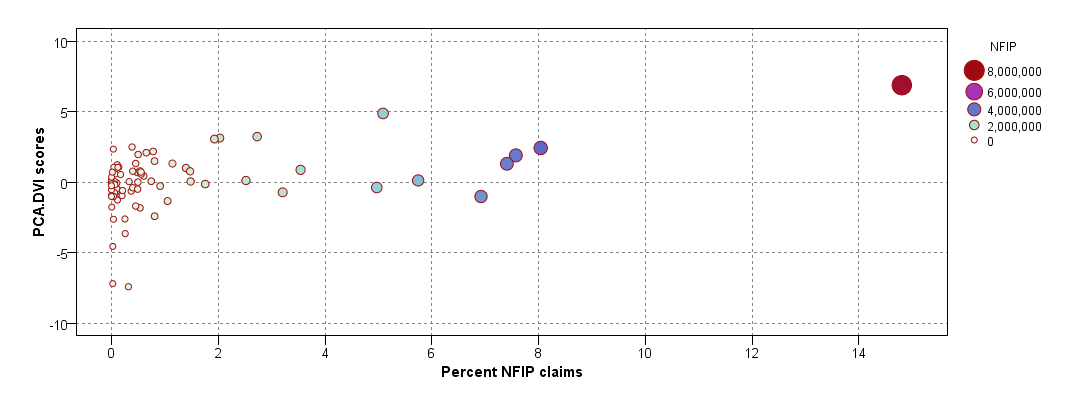


**Figure 7 Predictive Performance Matrix for FVI.PCA after UIC-SPH methodology applied**

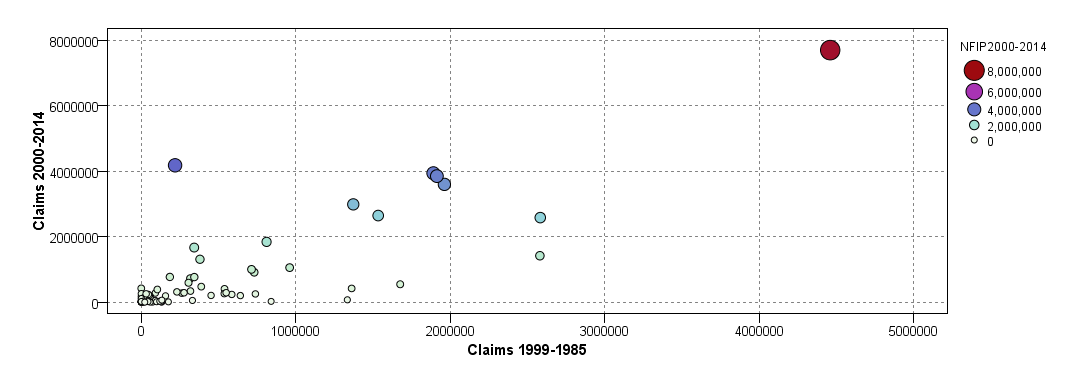
remains problematic in correctly identifying at-risk counties. This is further reflected in the SAD, which is 72. Figure 17, Appendix A shows the mapped FVI.PCA for counties in Illinois. Similar to FVI.DT, most of the high-vulnerability counties identified by FVI.PCA are in the Illinois River Basin and along the Mississippi River. Figure 18, Appendix A shows the spatial difference of the loss differences between NFIP claims classes and FVI.PCA vulnerability classes. As visible in Figure 18, both the incidence and magnitude of under- and overestimation is much greater than FVI.DT. The improvement in FVI.PCA is visualized further in Figure 8 since the distribution of high claim counties has moved away from the horizontal line.

### **Validation of the FVI for the Study Area**

The PPM comparison of the FVI.DT and FVI.PCA substantiates that the DT approach is far superior to deriving a FVI for a region having the characteristics of the selected study area. This simple comparison does not have the characteristics of a performance threshold and it will not suffice. To establish this

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**Figure 8 FVI.PCA by NFIP Claim Percentile**



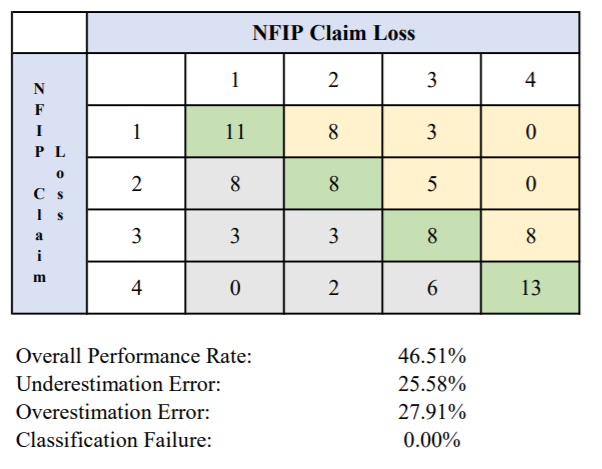
**Figure 9 NFIP Claim Distribution Across the Two Time Periods**

threshold the comparison between two time periods with recorded claims will be used. Figure 9 delineates the relationship of these two periods. With only one exemption, a trend seems to be established that indicates that both the previous claims from 1985-1999 can be used as a reference point for the 2000-2014 claims. Claims for both periods have been adjusted to the 2014 U.S. Dollar.

Conceptually, the flood mitigation measures implemented between the two time periods are expected to lessen the intensity of the losses and establish a relationship with a lower slope. However, better reporting, increased NFIP participation, and the likelihood of climate change-related weather events seem to be reflected in these results.

The existence of a previous loss realization will assist us in establishing the minimum performance threshold metric introduced by the UIC-SPH team (62). This performance threshold is established by comparing the two loss realizations in a PPM context. At a practical level, this performance threshold is a reasonable expectation for any FVI, especially those aspiring to contribute to HMPs or public health planning. “A vulnerability indicator based on numerous input variables and in some cases, a relatively sophisticated derivation approach is expected to perform as well as a naïve index based on a previous realization event” (62). The PPM results for these two realizations are presented in Figure 10, which establishes the performance threshold for four classes as 46.5%.

Based on this performance threshold, only the FVI.DT exceeds the minimum requirements. Table V presents a comprehensive assessment for several flood vulnerability indices. In order to accurately evaluate these indices, they are divided into two different groups based on the number of output categories. Our derived FVI.DT, FVI.PCA, and the 2013 Remo Flood Vulnerability Rating have four output categories (31, 32) In order to compare our derived FVIs to the FEMA NRI and the Illinois HMP Flood Hazard Rating, we modified the models to have three output categories (23, 31). The PPMs for each of these indices are provided in Figures 21 through 32, Appendix C.



**Figure 10 Minimum Performance Threshold Matrix**

#### **TABLE V**

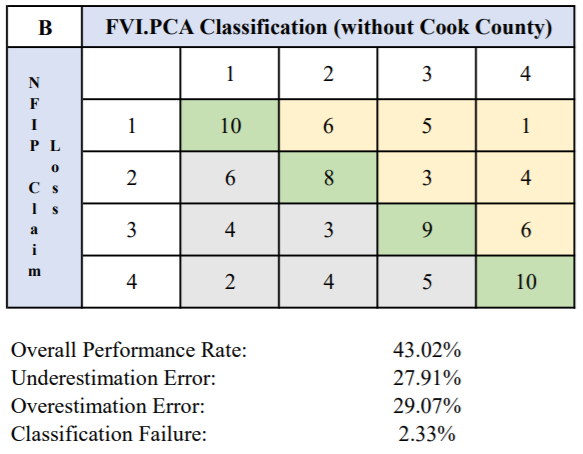
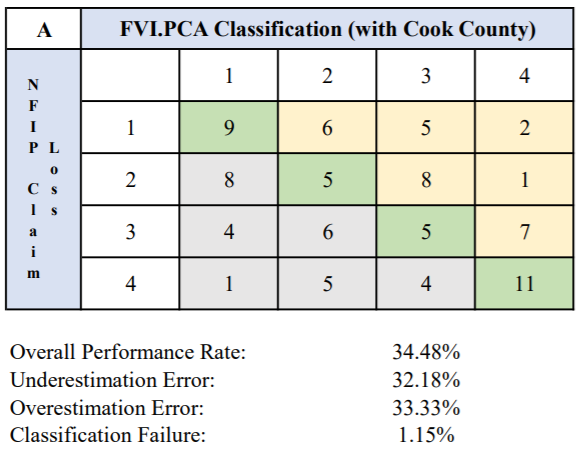
COMPREHENSIVE INDEX PERFORMANCE ASSESSMENT

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Index** | **OPR** | **OUR** | **OOR** | **CF** | **SAD** |
| 4 Class | | | | | |
| Threshold | 46.5% | 25.5% | 27.9% | 0.0% | 54 |
| FVI.DT | 87.2% | 8.1% | 4.7% | 1.1% | 18 |
| FVI.PCA | 43.0% | 27.9% | 29.0% | 2.3% | 72 |
| IL FVA 2013 | 22.1% | 51.2% | 33.7% | 5.8% | 105 |
| 3 Class | | | | | |
| Threshold | 60.5% | 20.9% | 19.8% | 1.2% | 36 |
| FVI.DT | 86.0% | 11.6% | 2.3% | 9.3% | 20 |
| FVI.PCA | 43.0% | 31.4% | 29.1% | 4.7% | 56 |
| FEMA NRI | 41.9% | 34.9% | 25.6% | 8.1% | 59 |
| IL HMP FVI | 30.2% | 26.7% | 43.0% | 2.3% | 66 |

As evidenced in Table V, both the Illinois HMP and 2013 Flood Vulnerability Assessment have the poorest predictive performance when using NFIP claim data as the target variable. The OUR for the 2013 flood assessment is 51.2%, this implies that about half of the counties experiencing flood losses are underestimated. The OUR and OOR for the Illinois HMP FVI are 26.7% and 43.0%, respectively. This level of under- and overestimation for a mitigation plan implies that planning and resources are not targeting the right counties in Illinois.

## **DT and PCA Index Derivation with Cook County**

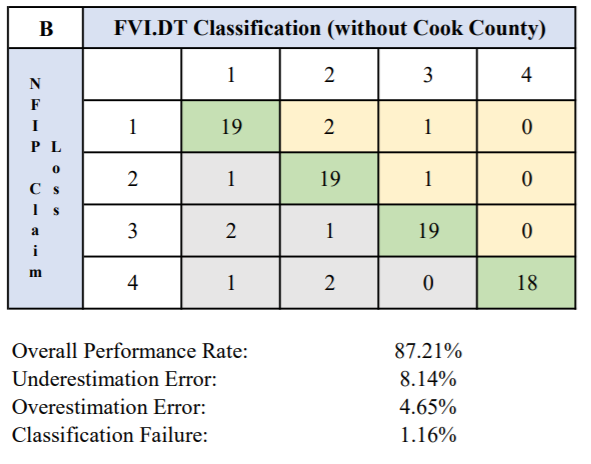
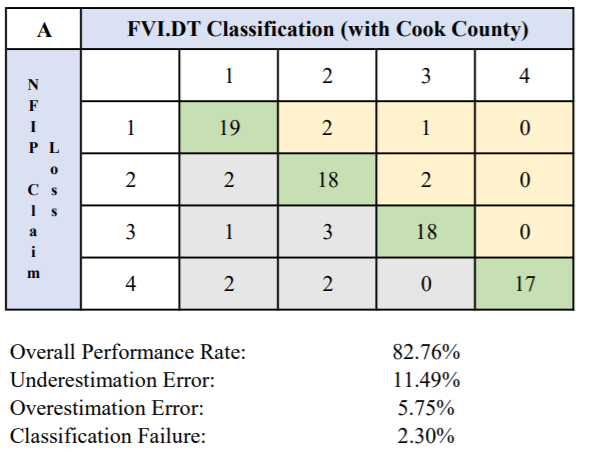
The inclusion of Cook County in the data structure creates a challenge since records for Cook County account for 33.7% of total claims for the 2000-2014 period (Table X, Appendix B). From a prediction perspective, the outcome is known since Cook County leads the state with claims. The challenge lies in assessing the sensitivity of the derivation approach. The optimized PCA.FVI index identified in Section 3.2.2 with 14 variables and -PC1, +PC2, +PC3, and -PC4 components will be used. The results for this validation are presented in Figure 11A and 11B below.



**Figure 11 PPM for FVI.PCA with Cook County (A) and PPM for FVI.PCA without Cook County (B)**

The inclusion of Cook County, a high-claim outlier, has a significant impact on the diagonal elements, reducing performance to 34.48%. The OOR and OUR increase to 33.3% and 32.1%, respectively, meaning more counties are likely to be either over- or underestimated if Cook County is included.

The performance of FVI.DT with Cook County was also assessed. The results for this validation are presented below in Figures 12A and 12B. The DT approach seems to be less sensitive than the FVI.PCA, since the diagonal elements are less impacted and overall performance is only reduced to 82.76%. The OOR is increased to 5.7%, and the OUR is increased to 11.5%. The FVI.DT with Cook County still exceeds the performance threshold criteria established in Section 3.2.3.



**Figure 12 PPM for FVI.DT with Cook County (A) and PPM for FVI.DT without Cook County (B)**

## **Comparison of Vulnerability Classification in Terms of Input Variables**

The elements of the PPM reveal real dimensions of performance in comparison to an actual event. Therefore, it is expected that beyond the derivation methodology, a high-vulnerability class will correspond to a class containing counties with high losses. Within this context, Table VI below shows the distribution of each of the input variables and loss information throughout the four FVI.PCA output classes.

A meaningful directionality is an implicit premise of the PCA derivation approach (66). Another equally important premise is that the derived FVI will classify regions with socioeconomic characteristics that make regions vulnerable to disasters. The PCA derived FVI implies vulnerability to flood (losses) and, implicitly, the assumption is made that low socioeconomic status (SES) communities are the most vulnerable. The current study and its findings underline a different reality and confirm the findings of other studies that the PCA derived index does not identify vulnerable to a disaster (i.e., loss) areas (22, 62). A significant finding as well is that the PCA derived index identifies communities with the typical SES profiles.

From Table VI, we can see that the profile of a high-vulnerability class (Class 4) contains counties that do not exhibit typical characteristics of SES vulnerability. For example,

* Per capita income is highest for the most vulnerable class.
* Educational attainment also increases in the more vulnerable classes.
* Vehicle availability increases with vulnerability.
* Proportion of heavily developed land use increases with vulnerability.
* Percent of total population identifying as Hispanic or Latino is highest in the most vulnerable class.
* Proportion of total population in group quarters decreases in more vulnerable classes.
* Additionally, the percentage of households with public assistance income decreased in the more vulnerable classes.

This is antithetical to much of the existing social vulnerability research and the proposed conceptual frameworks (7, 11). An argument could be made that the selected directionality of the PCs are responsible for this antithetical finding, however, the original unaltered PC model yields an index with a predictive performance less than 30% (see section 3.2.2).

#### **TABLE VI**

DISTRIBUTION AND DIRECTIONALITY OF INDICATOR VARIABLES ACROSS FVI.PCA VULNERABILITY CLASSES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FVI.PCA Class** | **1** | **2** | **3** | **4** | **Directional Difference (4th - 1st)** |
| Number of Counties | 22 | 21 | 22 | 21 |
| Mean NFIP (x10000) | $ 267.11 | $316.94 | $467.30 | $1,389.59 | $1,122.49 |
| Total Population | 516,162 | 453,050 | 1,315,945 | 5,114,497 | 4,598,335 |
| Per Capita Income 2014 | $ 22,485.69 | $ 24,938.64 | $ 26,296.91 | $ 30,071.93 | $ 7,586.25 |
| % Occupied Housing Units: No Vehicle Available | 6.724 | 6.277 | 5.977 | 5.504 | -1.22 |
| % Population 25 Years and Over: Less than High School Education | 15.961 | 12.719 | 11.351 | 10.834 | -5.13 |
| HEAVY\_DEV\_PROP mean | 0.006 | 0.005 | 0.01 | 0.045 | 0.04 |
| % Households: with Public Assistance Income | 1.893 | 1.633 | 1.63 | 1.581 | -0.31 |
| % Total Population: Hispanic or Latino | 3.175 | 1.82 | 3.41 | 9.45 | 6.28 |
| % Total Population: Population in Group Quarters | 8.81 | 3.103 | 2.403 | 2.09 | -6.72 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | 4.747 | 4.235 | 4.632 | 4.138 | -0.61 |

Table VII shows the same distribution of input variables and loss information throughout the four FVI.DT output classes. For this case, no assumption is made about the directionality of the input variables and the objective is to derive a decision tree structure that can predict the classification based on actual losses. The SES characteristics of the counties vulnerable to flooding are similar to the ones identified by the PCA methodology; however, for this index there is no conceptual antithesis. The DT based index does not assume any *a priori* SES profile characteristics associated with vulnerability. For this study area and the flood losses realization, a relatively rich (per capita income) county is more likely to report higher losses since the underlying assets are likely to be higher. Sparsely populated counties, regardless of other SES variables, are likely to be less impacted by disasters measured in terms of losses. Percent of the total population in group quarters includes those who are incarcerated, living in nursing homes, or in university housing. For this study, areas with higher proportions of individuals living in group quarters were less vulnerable.

#### **TABLE VII**

DISTRIBUTION AND DIRECTIONALITY OF INDICATOR VARIABLES ACROSS FVI.DT VULNERABILITY CLASSES

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **FVI.DT Class** | **1** | **2** | **3** | **4** | **Directional Difference (4th - 1st)** |
| Number of Counties | 23 | 24 | 21 | 18 |
| Mean NFIP | $ 180.69 | $ 153.98 | $ 250.84 | $ 2,159.73 | $ 1,979.04 |
| Total Population | 662,761 | 761,055 | 1,816,604 | 4,159,234 | 3,496,473 |
| Per Capita Income 2014 | $ 24,505.31 | $ 25,282.40 | $ 25,656.22 | $ 28,847.72 | $ 4,342.41 |
| % Occupied Housing Units: No Vehicle Available | 5.408 | 6.247 | 7.267 | 5.55 | 0.14 |
| % Population 25 Years and Over: Less than High School Education | 13.036 | 13.18 | 12.635 | 11.888 | -1.15 |
| HEAVY\_DEV\_PROP mean | 0.006 | 0.007 | 0.015 | 0.043 | 0.04 |
| % Households: with Public Assistance Income | 1.783 | 1.573 | 1.786 | 1.597 | -0.19 |
| % Total Population: Hispanic or Latino | 2.727 | 3.345 | 4.268 | 8.272 | 5.55 |
| % Total Population: Population in Group Quarters | 4.427 | 4.631 | 4.898 | 2.218 | -2.21 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | 4.074 | 4.544 | 5.101 | 4.018 | -0.06 |

At a practical level these findings raise the issue of appropriateness for HMP of indices based on the PCA derivation approach. These findings, in no way underestimate the importance of vulnerability as a concept, but they do imply that current methodologies are not applicable for mitigation planning or resource allocation. In order to correctly identify vulnerable areas and populations, a vulnerability index must be empirically validated. The DT derivation approach utilizes a target variable, which allows for greater predictive performance opposed to it’s PCA derived counterpart.

## **3.5** **Summary Discussion of Results and Findings**

Our derived FVI.DT for the study area outperformed the optimized FVI.PCA. The UIC-SPH performance optimization methodology for PCA models is not the standard approach for deriving indices, but the optimized FVI.PCA outperformed the initial derived PCA model. The \ FVIs with the highest overall performance rates for both approaches were derived with fewer than 16 variables. This practice is in accordance with the principle of parsimony which promotes the notion of establishing models that use the smallest number of possible parameters to explain a phenomenon (67). The only way to accomplish this in the context of vulnerability studies is to use the UIC-SPH validation approach as demonstrated in this and other studies (22, 23, 55, 61).

While all of the DT socioeconomic input variables (e.g. education, housing, race, social dependence, etc.) have demonstrated impact on vulnerability, they are different from the sociodemographic variables selected by Remo’s SoVI® in the 2015 Illinois Flood Vulnerability Assessment (6, 33). In the Remo model, age, white and nonwhite race, household income bracket, employment in commercial or industrial industry, and renter-occupied, owner-occupied, and vacant homes were used. Our FVI.DT model includes education, unemployment, supplemental income, and access to transportation. These significant indicator variables, along with their unique impact on vulnerability classification highlight the need for area-specific modelling to account for the nuanced interactions of socioeconomic, demographic, and geophysical condition. Applying a model that was developed for a different region or on a larger scale may miss locally significant input variables and their unique impact on vulnerability.

While many flood vulnerability indices do account for land use and geophysical conditions that contribute to hazard vulnerability, they are frequently assessed separately from social vulnerability and added in when creating a final aggregate index (6, 33). The incorporation of physical variables, such as land cover, into the vulnerability model has been utilized by the UIC-SPH team in prior studies (62). In our FVI.DT, the proportion of heavily developed land use was the third most important variable in the model (see Table 4). This is in line with much literature citing the impact of permeable surfaces and the overwhelming of drainage systems in developed areas (31, 44). Land cover was more significant than elevation in predicting flood losses in the FVI.DT. Figure 15, Appendix A, which shows the spatial distribution of the FVI.DT results, corroborates this point. Counties in the highest vulnerability class are also counties with urban or suburban centers, and are primarily located in the Illinois River Basin.

The UIC-SPH performance optimization methodology applied to FVI.PCA resulted in improved predictive performance. While many PCA models for vulnerability examine derived PCs and classify them based on type (e.g. education, socioeconomic status, race), this is not necessary when applying the UIC-SPH methodology. When optimizing models using a target variable for validation, the predictive performance is more significant than grouping the PCs by characteristics of the indicator variables and assigning directionality based on professional opinion. For example, the first two PCs in our optimized 14-variable FVI.PCA may be classified as socioeconomic status and race, but there are other variables that contribute to these components, such as access to transportation and the proportion of heavily developed land use. Instead of focusing on classifying these PCs and assigning directionality based on literature review or professional judgement, we utilize the impact on the predictive performance to determine directionality. These results are similar to other studies conducted by the UIC-SPH team (21, 22, 62, 68).

Many prior flood vulnerability studies have utilized FEMA HAZUS as a tool to estimate and delineate flood losses. HAZUS projects losses using a simulated event, and is not generally used for research purposes (31).While HAZUS does allow for user-defined inputs in the modelled events, the resulting losses are only projections. By using actualized losses as our target variable in the FVI.DT and to validate the results, we are able to assess how the model performs to predict real flood losses.

# **LIMITATIONS**

This analysis was conducted on a county level and across two time periods. NFIP claim data is only available for communities that participate in NFIP. While Illinois leads the nation in enrollment for non-coastal states, not all counties participate. NFIP enrollment is mandated for those living within FEMA designated flood areas, but recent research has pointed out that FEMA DFIRM maps are woefully out of date (69). Additionally, agricultural losses are not captured in this model. This study did not focus on the interpretation of the Decision Tree structure.

# **FURTHER RESEARCH**

Based on the results of this study, recommendations for further research are presented below.

1. The applicability of DT analysis on different scales, both on a state-level and tract level.
2. The applicability of DT vulnerability models for other disasters other than flooding.
3. The applicability of DT vulnerability models for emergency and public health planning.
4. Use HAZUS loss estimations to determine the applicability of DT vulnerability models for capturing agricultural losses.
5. Use of other machine learning algorithms (e.g. Random Trees) to compare and optimize performance.

# **CONCLUSIONS**

This study demonstrates the need for validation for social vulnerability indices, especially for flood vulnerability. Existing social vulnerability indices for Illinois use percentile rank or principal component analysis (PCA) methodologies and create vulnerability indices from these models. In this study, we created two new flood vulnerability indices for Illinois; one using Decision Tree methodology (FVI.DT) and one using PCA (FVI.PCA). National Flood Insurance Program (NFIP) claim data for two time periods as a metric of realized loss and was used to validate the indices and to derive minimum performance thresholds.

Our FVI.DT yielded the highest overall performance rate (87.2%), and fifteen of the nineteen counties in the highest vulnerability class were located in the Illinois River Basin. The Illinois River Basin contains both urban and rural communities and land use is diverse. The relative importance of highly developed land use in the FVI.DT model highlights the impact of urbanization on flood vulnerability. By applying the UIC-SPH performance optimization methodology to the FVI.PCA models, the overall performance rate increased from 37.21% to 43.02%. However, the overall performance rate is still below the minimum performance threshold of 46.5%.

The predictive performance of FVI.DT and FVI.PCA was compared to the performance of existing flood vulnerability indices. FVI.DT is the only index that exceeds the minimum performance threshold criteria. The current FVIs in the Illinois HMP and the 2015 Flood Vulnerability Assessment drastically under- and overestimate flood vulnerability on a county level when using NFIP claim data as an outcome. This has significant planning and public health implications for counties in Illinois. This finding highlights the need for validation of existing social vulnerability indices in order to provide confidence in practical applications.

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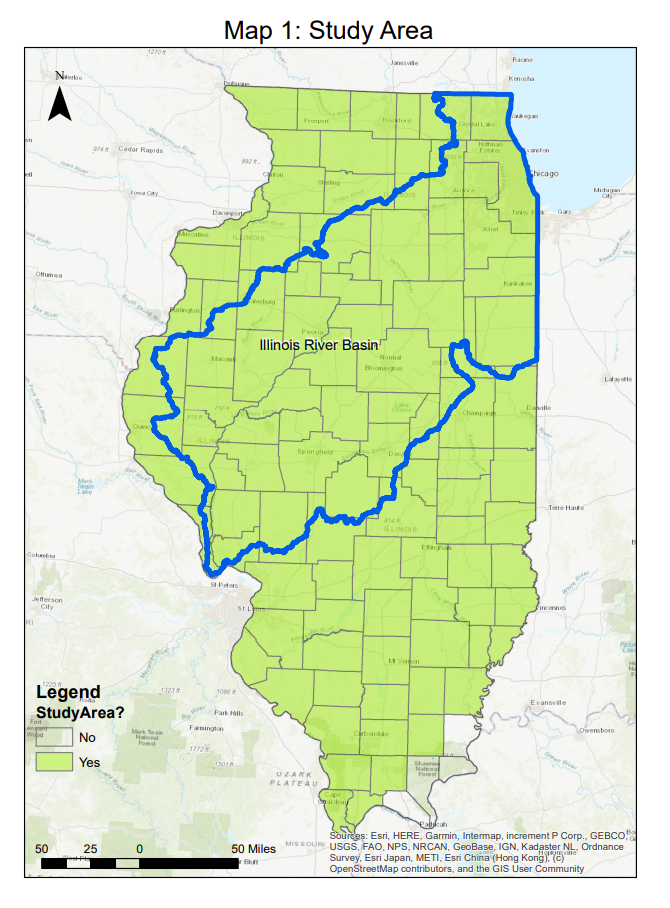
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# **APPENDICES**



## **Appendix A**

## **Maps**

****

**Figure 13 Study Area**

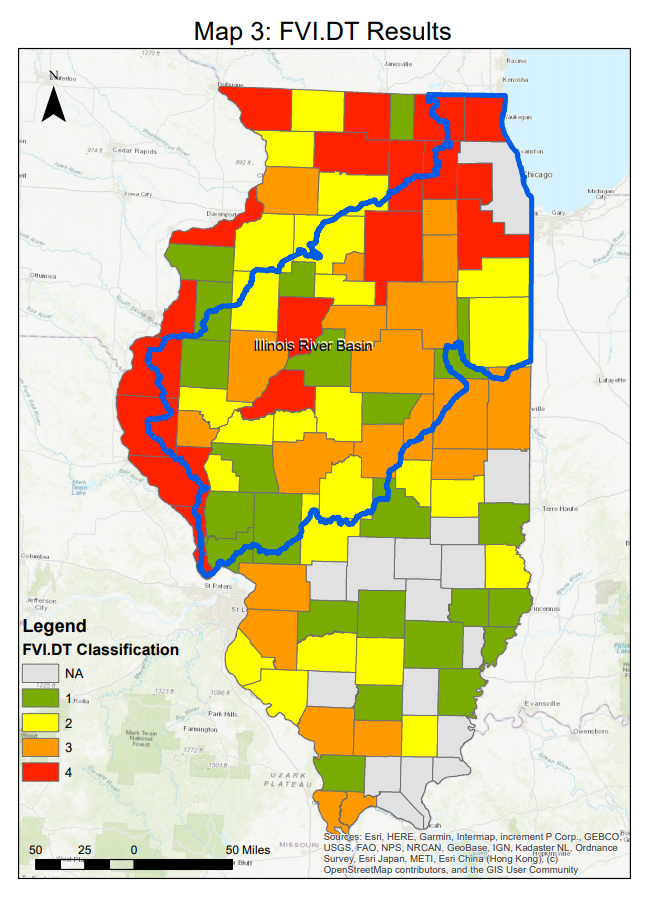
**Appendix A (continued)**

**Map

Description automatically generated**

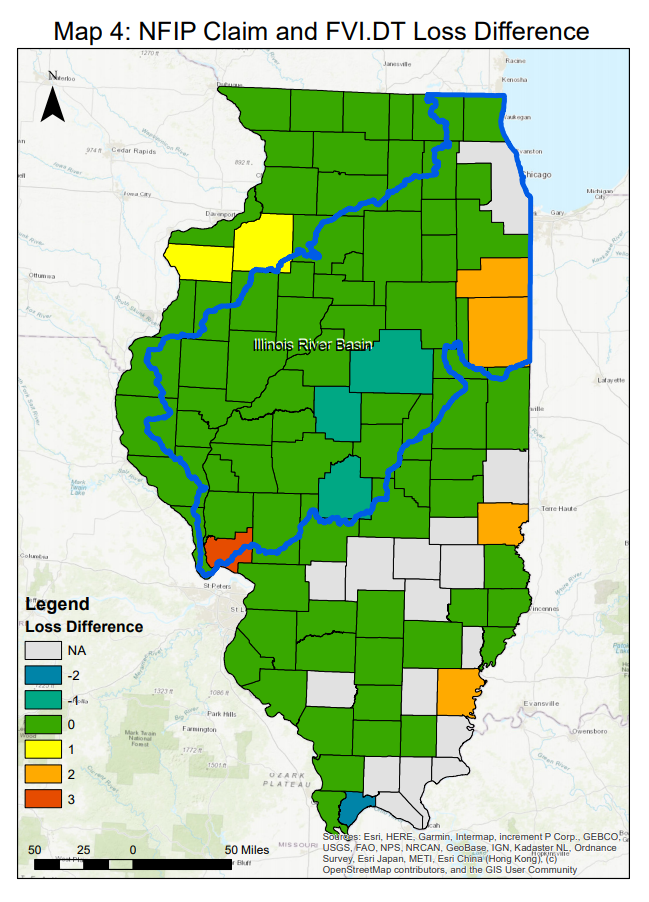
**Figure 14 NFIP Claim Class and Top 5 Claims**

**Appendix A (continued)**

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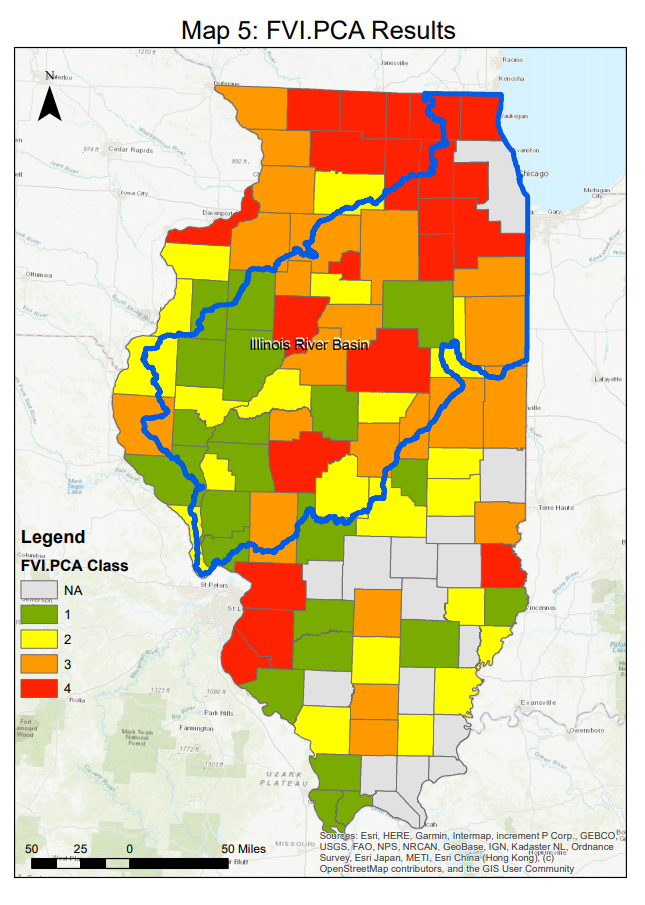
**Figure 15 FVI.DT Results**

**Appendix A (continued)**

****

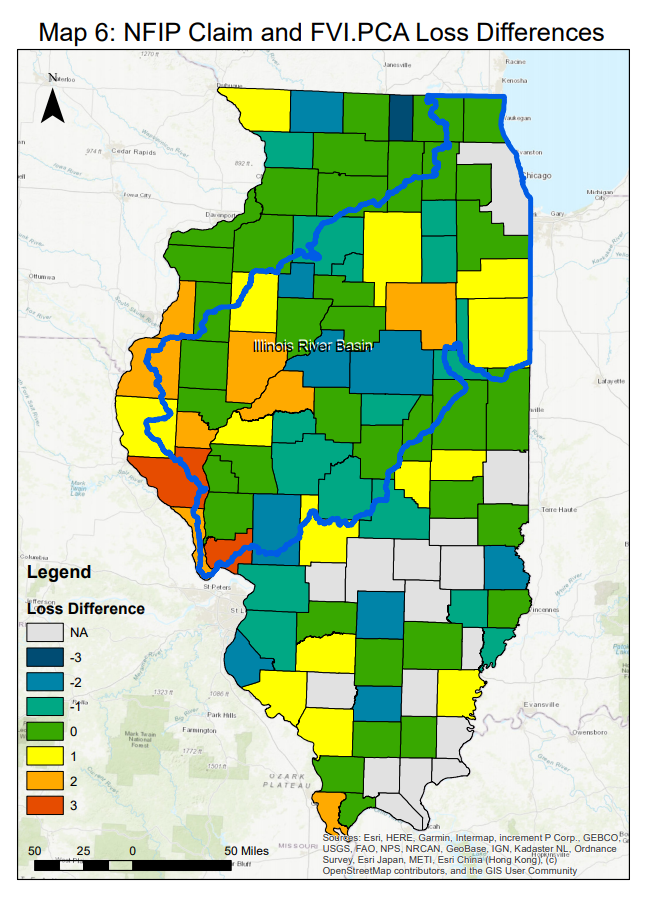
**Figure 16 NFIP and FVI.DT Loss Difference**

**Appendix A (continued)**

****

**Figure 17 FVI.PCA Results**

**Appendix A (continued)**



**Figure 18 NFIP and FVI.PCA Loss Difference**

## **Appendix B**

## **Input Data**

#### TABLE VIII: NFIP CLAIM INFORMATION (1985 – 1999)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| County Name | FIPS  County Code | 1985  $2.20 | | | 1986  $2.16 | | | 1987  $2.08 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 | 2 | $ - | $ - | 3 | $ 10,349.25 | $ 22,354.38 |  |  | $ - |
| Alexander | 17003 | 3 | $ 17,450.06 | $ 38,390.13 | 6 | $ 22,502.13 | $ 48,604.60 | 1 | $ - | $ - |
| Boone | 17007 |  |  | $ - |  |  | $ - |  |  | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - |  |  | $ - |
| Bureau | 17011 | 1 | $ 1,125.28 | $ 2,475.62 |  |  | $ - |  |  | $ - |
| Calhoun | 17013 | 19 | $ 79,777.33 | $ 175,510.13 | 39 | $ 198,483.79 | $ 428,724.99 |  |  | $ - |
| Carroll | 17015 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cass | 17017 | 5 | $ 21,469.39 | $ 47,232.66 |  |  | $ - |  |  | $ - |
| Champaign | 17019 | 1 | $ 353.40 | $ 777.48 |  |  | $ - | 2 | $ 12,930.09 | $ 26,894.59 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cook | 17031 | 25 | $ 8,225.00 | $ 18,095.00 | 68 | $1,039,941.78 | $ 2,246,274.24 | 343 | $2,782,841.80 | $5,788,310.94 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 | 1 | $ 9,127.82 | $ 20,081.20 |  |  | $ - | 1 | $ 1,261.80 | $ 2,624.54 |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 | 6 | $ 23,385.85 | $ 51,448.87 |  |  | $ - |  |  | $ - |
| Dupage | 17043 | 23 | $ 3,764.47 | $ 8,281.83 | 6 | $ 16,346.43 | $ 35,308.29 | 200 | $1,850,850.22 | $3,849,768.46 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - |  |  | $ - |
| Fulton | 17057 | 27 | $ 94,403.72 | $ 207,688.18 |  |  | $ - |  |  | $ - |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 | 3 | $ 5,078.90 | $ 11,173.58 | 2 | $ 12,000.36 | $ 25,920.78 |  |  | $ - |
| Grundy | 17063 | 13 | $ 239,916.84 | $ 527,817.05 |  |  | $ - |  |  | $ - |
| Hancock | 17067 |  |  | $ - | 1 | $ 2,987.26 | $ 6,452.48 |  |  | $ - |
| Hardin | 17069 |  |  | $ - |  |  | $ - |  |  | $ - |
| Henderson | 17071 | 1 | $ 1,107.00 | $ 2,435.40 |  |  | $ - |  |  | $ - |
| Henry | 17073 | 3 | $ 2,203.88 | $ 4,848.54 |  |  | $ - | 2 | $ 144.60 | $ 300.77 |
| Iriquois | 17075 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Jackson | 17077 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
|  | | | | | | | | | | |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VII: NFIP CLAIM INFORMATION (1985 – 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1985  $2.20 | | | 1986  $2.16 | | | 1987  $2.08 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Jersey | 17083 | 6 | $ 26,258.05 | $ 57,767.71 | 27 | $ 165,367.71 | $ 357,194.25 |  |  | $ - |
| Jo Daviess | 17085 |  |  | $ - | 7 | $ 28,833.71 | $ 62,280.81 |  |  | $ - |
| Kane | 17089 | 3 | $ 4,395.90 | $ 9,670.98 | 2 | $ 13,153.24 | $ 28,411.00 | 1 | $ 3,053.18 | $ 6,350.61 |
| Kankakee | 17091 | 19 | $ 84,978.79 | $ 186,953.34 | 1 | $ 9,393.20 | $ 20,289.31 | 1 | $ - | $ - |
| Kendall | 17093 | 2 | $ 15,998.00 | $ 35,195.60 |  |  | $ - |  |  | $ - |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 | 4 | $ - | $ - | 78 | $ 539,230.47 | $ 1,164,737.82 | 13 | $ 13,274.39 | $ 27,610.73 |
| LaSalle | 17099 | 9 | $ 35,090.44 | $ 77,198.97 |  |  | $ - | 1 | $ - | $ - |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 | 8 | $ 55,696.27 | $ 122,531.79 |  |  | $ - |  |  | $ - |
| Livingston | 17105 |  |  | $ - |  |  | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 |  |  | $ - | 24 | $ 98,662.72 | $ 213,111.48 |  |  | $ - |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - | 1 | $ 6,960.79 | $ 15,035.31 |  |  | $ - |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 | 5 | $ 3,278.10 | $ 7,211.82 | 11 | $ 56,011.42 | $ 120,984.67 |  |  | $ - |
| Marion | 17121 |  |  | $ - | 1 | $ 450.00 | $ 972.00 |  |  | $ - |
| Marshall | 17123 | 3 | $ 17,907.30 | $ 39,396.06 | 1 | $ 385.10 | $ 831.82 |  |  | $ - |
| Mason | 17125 | 12 | $ 37,652.39 | $ 82,835.26 |  |  | $ - |  |  | $ - |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - |  |  | $ - |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 | 8 | $ 19,125.24 | $ 42,075.53 | 1 | $ - | $ - |  |  | $ - |
| Moultrie | 17139 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 | 1 | $ 2,649.10 | $ 5,828.02 |  |  | $ - | 1 | $ - | $ - |
| Peoria | 17143 | 92 | $ 388,357.69 | $ 854,386.92 | 8 | $ 42,233.10 | $ 91,223.50 |  |  | $ - |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1985  $2.20 | | | 1986  $2.16 | | | 1987  $2.08 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Pike | 17149 | 2 | $ 2,589.44 | $ 5,696.77 | 2 | $ 10,428.93 | $ 22,526.49 |  |  | $ - |
| Pulaski | 17153 |  |  | $ - |  |  | $ - |  |  | $ - |
| Putnam | 17155 | 1 | $ 13,769.00 | $ 30,291.80 |  |  | $ - |  |  | $ - |
| Randolph | 17157 |  |  | $ - |  |  | $ - |  |  | $ - |
| Richland | 17159 | 1 | $ 765.18 | $ 1,683.40 | 2 | $ 3,742.45 | $ 8,083.69 |  |  | $ - |
| Rock Island | 17161 | 18 | $ 33,858.99 | $ 74,489.78 | 10 | $ 17,829.96 | $ 38,512.71 | 4 | $ - | $ - |
| St. Clair | 17163 |  |  | $ - |  |  | $ - | 5 | $ - | $ - |
| Saline | 17165 |  |  |  |  |  |  |  |  |  |
| Sangamon | 17167 | 1 | $ 5,290.87 | $ 11,639.91 | 6 | $ 25,682.93 | $ 55,475.13 |  |  | $ - |
| Schuyler | 17169 | 2 | $ 1,622.11 | $ 3,568.64 |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - |  |  | $ - |
| Tazewell | 17179 | 9 | $ 14,069.10 | $ 30,952.02 | 1 | $ - | $ - |  |  | $ - |
| Union | 17181 |  |  | $ - | 1 | $ 3,416.12 | $ 7,378.82 |  |  | $ - |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  |  |  |  |  |  |  |  |
| Wayne | 17191 | 1 | $ 2,954.83 | $ 6,500.63 |  |  | $ - |  |  | $ - |
| White | 17193 | 2 | $ - | $ - |  |  | $ - |  |  | $ - |
| Whiteside | 17195 |  |  | $ - | 4 | $ 1,541.70 | $ 3,330.07 |  |  | $ - |
| Will | 17197 | 36 | $ 465,744.70 | $ 1,024,638.34 | 2 | $ 9,188.67 | $ 19,847.53 | 1 | $ - | $ - |
| Williamson | 17199 | 1 | $ 259.33 | $ 570.53 |  |  | $ - |  |  | $ - |
| Winnebago | 17201 | 4 | $ 627.39 | $ 1,380.26 | 2 | $ - | $ - | 1 | $ - | $ - |
| Woodford | 17203 | 27 | $ 100,519.84 | $ 221,143.65 |  |  | $ - |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1988  $2.00 | | | 1989  $1.91 | | | 1990  $1.81 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - |  |  | $ - |  |  | $ - |
| Alexander | 17003 |  |  | $ - |  |  | $ - |  |  | $ - |
| Boone | 17007 |  |  | $ - |  |  | $ - |  |  | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - |  |  | $ - |
| Bureau | 17011 | 1 | $ 1,923.30 | $ 3,846.60 |  |  | $ - |  |  | $ - |
| Calhoun | 17013 |  |  | $ - |  |  | $ - | 8 | $ 20,926.40 | $ 37,876.78 |
| Carroll | 17015 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cass | 17017 |  |  | $ - |  |  | $ - | 2 | $ - | $ - |
| Champaign | 17019 |  |  | $ - |  |  | $ - | 7 | $ 98,401.99 | $ 178,107.60 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Cook | 17031 | 11 | $ - | $ - | 50 | $ 38,116.12 | $ 72,801.79 | 85 | $ 173,726.00 | $ 314,444.06 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 |  |  | $ - | 1 | $ - | $ - | 3 | $ 7,681.17 | $ 13,902.92 |
| Dupage | 17043 | 1 | $ - | $ - | 10 | $ 97,926.07 | $ 187,038.79 | 14 | $ 25,523.71 | $ 46,197.92 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - |  |  | $ - |
| Fulton | 17057 |  |  | $ - |  |  | $ - |  |  | $ - |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 |  |  | $ - |  |  | $ - | 4 | $ 6,132.34 | $ 11,099.54 |
| Hancock | 17067 |  |  | $ - |  |  | $ - | 1 | $ 16,445.10 | $ 29,765.63 |
| Hardin | 17069 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Henderson | 17071 |  |  | $ - |  |  | $ - | 2 | $ 3,297.51 | $ 5,968.49 |
| Henry | 17073 |  |  | $ - |  |  | $ - |  |  | $ - |
| Iriquois | 17075 |  |  | $ - |  |  | $ - | 1 | $ 955.07 | $ 1,728.68 |
| Jackson | 17077 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jersey | 17083 |  |  | $ - | 1 | $ - | $ - | 3 | $ 2,127.19 | $ 3,850.21 |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1988  $2.00 | | | 1989  $1.91 | | | 1990  $1.81 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Jo Daviess | 17085 |  |  | $ - |  |  | $ - |  |  | $ - |
| Kane | 17089 | 8 | $ 40,829.14 | $ 81,658.28 | 1 | $ 20,981.03 | $ 40,073.77 | 2 | $ 21,591.15 | $ 39,079.98 |
| Kankakee | 17091 |  |  | $ - |  |  | $ - | 19 | $ 38,416.08 | $ 69,533.10 |
| Kendall | 17093 |  |  | $ - |  |  | $ - |  |  | $ - |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 |  |  | $ - | 1 | $ 1,725.22 | $ 3,295.17 | 3 | $ - | $ - |
| LaSalle | 17099 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 | 2 | $ 4,630.20 | $ 9,260.40 |  |  | $ - | 1 | $ 1,370.00 | $ 2,479.70 |
| Livingston | 17105 |  |  | $ - |  |  | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 |  |  | $ - |  |  | $ - | 4 | $ 7,264.00 | $ 13,147.84 |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - |  |  | $ - | 13 | $ 204,169.74 | $ 369,547.23 |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 |  |  | $ - | 1 | $ - | $ - | 2 | $ 4,458.23 | $ 8,069.40 |
| Marion | 17121 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Marshall | 17123 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mason | 17125 |  |  | $ - |  |  | $ - |  |  | $ - |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - |  |  | $ - |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 |  |  | $ - |  |  | $ - |  |  | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 | 3 | $ 6,068.46 | $ 12,136.92 |  |  | $ - | 1 | $ - | $ - |
| Peoria | 17143 | 1 | $ - | $ - | 1 | $ - | $ - | 5 | $ 25,097.35 | $ 45,426.20 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1988  $2.00 | | | 1989  $1.91 | | | 1990  $1.81 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Pulaski | 17153 |  |  | $ - |  |  |  |  |  | $ - |
| Putnam | 17155 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Randolph | 17157 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 |  |  | $ - |  |  | $ - | 14 | $ 22,882.56 | $ 41,417.43 |
| St. Clair | 17163 | 1 | $ - | $ - | 1 | $ - | $ - | 3 | $ 19,507.80 | $ 35,309.12 |
| Saline | 17165 |  |  |  |  |  |  |  |  |  |
| Sangamon | 17167 |  |  | $ - |  |  | $ - | 2 | $ 1,485.38 | $ 2,688.54 |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - | 2 | $ 603.40 | $ 1,092.15 |
| Tazewell | 17179 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Union | 17181 |  |  | $ - |  |  | $ - |  |  | $ - |
| Vermillion | 17183 |  |  | $ - | 1 | $ - | $ - | 2 | $ 43,785.26 | $ 79,251.32 |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  |  |  |  |  |  |  |  |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - |  |  | $ - | 2 | $ 1,570.00 | $ 2,841.70 |
| Whiteside | 17195 | 2 | $ 20,648.18 | $ 41,296.36 |  |  | $ - |  |  | $ - |
| Will | 17197 |  |  | $ - | 4 | $ 4,748.03 | $ 9,068.74 | 22 | $ 83,037.54 | $ 150,297.95 |
| Williamson | 17199 |  |  | $ - | 3 | $ 131.98 | $ 252.08 | 5 | $ 72,637.78 | $ 131,474.38 |
| Winnebago | 17201 | 12 | $ 13,509.34 | $ 27,018.68 | 1 | $ 12,397.42 | $ 23,679.07 |  |  | $ - |
| Woodford | 17203 |  |  | $ - |  |  | $ - |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1991  $1.74 | | | 1992  $1.69 | | | 1993  $1.64 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - |  |  | $ - | 31 | $ 809,043.35 | $ 1,326,831.09 |
| Alexander | 17003 |  |  | $ - |  |  | $ - | 7 | $ 2,299.72 | $ 3,771.54 |
| Boone | 17007 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - | 2 | $ 28,665.00 | $ 47,010.60 |
| Bureau | 17011 |  |  | $ - |  |  | $ - |  |  | $ - |
| Calhoun | 17013 |  |  | $ - |  |  | $ - | 55 | $ 1,077,435.83 | $ 1,766,994.76 |
| Carroll | 17015 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cass | 17017 |  |  | $ - |  |  | $ - | 2 | $ 3,918.25 | $ 6,425.93 |
| Champaign | 17019 | 7 | $ 85,721.34 | $ 149,155.13 |  |  | $ - | 3 | $ 49,257.70 | $ 80,782.63 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cook | 17031 | 16 | $ 2,032.55 | $ 3,536.64 | 2 | $ 3,550.78 | $ 6,000.82 | 17 | $ 8,547.26 | $ 14,017.51 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 | 1 | $ - | $ - |  |  | $ - | 1 | $ - | $ - |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 | 1 | $ 532.12 | $ 925.89 |  |  | $ - | 1 | $ - | $ - |
| Dupage | 17043 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - |  |  | $ - |
| Fulton | 17057 |  |  | $ - |  |  | $ - | 10 | $ 66,263.18 | $ 108,671.62 |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - | 2 | $ 21,670.58 | $ 35,539.75 |
| Grundy | 17063 |  |  | $ - |  |  | $ - |  |  | $ - |
| Hancock | 17067 |  |  | $ - |  |  | $ - | 19 | $ 423,666.66 | $ 694,813.32 |
| Hardin | 17069 | 2 | $ 41,117.45 | $ 71,544.36 |  |  | $ - |  |  | $ - |
| Henderson | 17071 |  |  | $ - |  |  | $ - | 17 | $ 199,132.56 | $ 326,577.40 |
| Henry | 17073 |  |  | $ - | 1 | $ - | $ - | 2 | $ 6,957.64 | $ 11,410.53 |
| Iriquois | 17075 | 2 | $ 1,627.50 | $ 2,831.85 |  |  | $ - | 2 | $ 191,930.23 | $ 314,765.58 |
| Jackson | 17077 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jersey | 17083 | 1 | $ 1,040.80 | $ 1,810.99 |  |  | $ - | 34 | $ 696,459.86 | $ 1,142,194.17 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| Table 1: NFIP Claim Information (1985 – 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1991  $1.74 | | | 1992  $1.69 | | | 1993  $1.64 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Jo Daviess | 17085 |  |  | $ - |  |  | $ - | 6 | $ 52,469.41 | $ 86,049.83 |
| Kane | 17089 |  |  | $ - |  |  | $ - | 1 | $ 3,822.48 | $ 6,268.87 |
| Kankakee | 17091 | 5 | $ - | $ - |  |  | $ - | 1 | $ - | $ - |
| Kendall | 17093 |  |  | $ - |  |  | $ - |  |  | $ - |
| Knox | 17095 |  |  | $ - |  |  | $ - | 2 | $ 24,200.00 | $ 39,688.00 |
| Lake | 17097 | 3 | $ 13,939.74 | $ 24,255.15 | 1 | $ - | $ - | 35 | $ 161,813.98 | $ 265,374.93 |
| LaSalle | 17099 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 |  |  | $ - | 1 | $ - | $ - | 7 | $ 15,533.67 | $ 25,475.22 |
| Livingston | 17105 |  |  | $ - |  |  | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 | 1 | $ 777.00 | $ 1,351.98 |  |  | $ - | 22 | $ 247,295.04 | $ 405,563.87 |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - | 1 | $ 10,252.43 | $ 17,326.61 |  |  | $ - |
| Macoupin | 17117 |  |  | $ - |  |  | $ - | 1 | $ 9,823.58 | $ 16,110.67 |
| Madison | 17119 | 1 | $ 795.00 | $ 1,383.30 |  |  | $ - | 17 | $ 704,446.80 | $ 1,155,292.75 |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mason | 17125 |  |  | $ - |  |  | $ - | 13 | $ 54,816.25 | $ 89,898.65 |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - | 22 | $ 508,789.31 | $ 834,414.47 |
| Monroe | 17133 |  |  | $ - |  |  | $ - | 26 | $ 813,402.92 | $ 1,333,980.79 |
| Montgomery | 17135 |  |  | $ - |  |  | $ - | 2 | $ 16,501.24 | $ 27,062.03 |
| Morgan | 17137 |  |  | $ - |  |  | $ - | 6 | $ 27,626.65 | $ 45,307.71 |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 |  |  | $ - |  |  | $ - | 1 | $ 6,362.58 | $ 10,434.63 |
| Peoria | 17143 |  |  | $ - | 1 | $ - | $ - | 12 | $ 159,075.20 | $ 260,883.33 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 |  |  | $ - |  |  | $ - | 32 | $ 944,121.65 | $ 1,548,359.51 |
| Pulaski | 17153 |  |  |  |  |  |  |  |  |  |
| Putnam | 17155 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1991  $1.74 | | | 1992  $1.69 | | | 1993  $1.64 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Randolph | 17157 |  |  | $ - |  |  | $ - | 3 | $ 9,300.00 | $ 15,252.00 |
| Richland | 17159 |  |  | $ - |  |  | $ - | 1 | $ 28,789.33 | $ 47,214.50 |
| Rock Island | 17161 |  |  | $ - | 1 | $ - | $ - | 64 | $ 908,442.90 | $ 1,489,846.36 |
| St. Clair | 17163 |  |  | $ - |  |  | $ - | 10 | $ 17,366.97 | $ 28,481.83 |
| Saline | 17165 |  |  |  |  |  |  |  |  |  |
| Sangamon | 17167 | 1 | $ 1,196.71 | $ 2,082.28 |  |  | $ - | 3 | $ 52,366.69 | $ 85,881.37 |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - | 3 | $ 7,908.35 | $ 12,969.69 |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - | 10 | $ 79,630.24 | $ 130,593.59 |
| Tazewell | 17179 |  |  | $ - | 1 | $ 3,508.80 | $ 5,929.87 | 5 | $ 64,484.40 | $ 105,754.42 |
| Union | 17181 |  |  | $ - |  |  | $ - | 18 | $ 4,725.39 | $ 7,749.64 |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  |  |  |  |  |  |  |  |
| Wayne | 17191 |  |  | $ - | 1 | $ 990.12 | $ 1,673.30 | 1 | $ 8,870.17 | $ 14,547.08 |
| White | 17193 |  |  | $ - |  |  | $ - | 3 | $ 6,360.19 | $ 10,430.71 |
| Whiteside | 17195 |  |  | $ - |  |  | $ - | 3 | $ 60,553.55 | $ 99,307.82 |
| Will | 17197 | 3 | $ 1,224.28 | $ 2,130.25 | 1 | $ - | $ - | 3 | $ 552.11 | $ 905.46 |
| Williamson | 17199 | 3 | $ 42,914.08 | $ 74,670.50 |  |  | $ - | 5 | $ 50,262.08 | $ 82,429.81 |
| Winnebago | 17201 |  |  | $ - | 1 | $ 2,155.02 | $ 3,641.98 | 23 | $ 68,773.82 | $ 112,789.06 |
| Woodford | 17203 |  |  | $ - |  |  | $ - |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1994  $1.60 | | | 1995  $1.55 | | | 1996  $1.51 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - | 1 | $ - | $ - | 2 | $ 15,357.12 | $ 23,189.25 |
| Alexander | 17003 |  |  | $ - |  |  | $ - |  |  | $ - |
| Boone | 17007 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Brown | 17009 |  |  | $ - | 3 | $ 8,397.90 | $ 13,016.75 |  |  | $ - |
| Bureau | 17011 |  |  | $ - |  |  | $ - |  |  | $ - |
| Calhoun | 17013 |  |  | $ - | 9 | $ 112,270.12 | $ 174,018.69 |  |  | $ - |
| Carroll | 17015 |  |  | $ - |  |  | $ - | 1 | $ 6,920.24 | $ 10,449.56 |
| Cass | 17017 | 1 | $ 1,703.90 | $ 2,726.24 |  |  | $ - | 1 | $ 4,160.60 | $ 6,282.51 |
| Champaign | 17019 | 6 | $ 122,557.17 | $ 196,091.47 | 3 | $ 46,930.34 | $ 72,742.03 | 2 | $ 13,150.99 | $ 19,857.99 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Cook | 17031 | 5 | $ 4,156.00 | $ 6,649.60 | 5 | $ - | $ - | 110 | $2,202,815.32 | $ 3,326,251.13 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 | 3 | $ - | $ - |  |  | $ - | 9 | $ 182,306.74 | $ 275,283.18 |
| DeWitt | 17039 | 2 | $ 58,610.14 | $ 93,776.22 | 2 | $ 24,686.70 | $ 38,264.39 | 1 | $ 14.50 | $ 21.90 |
| Douglas | 17041 | 4 | $ 18,765.69 | $ 30,025.10 |  |  | $ - | 9 | $ 25,396.71 | $ 38,349.03 |
| Dupage | 17043 |  |  | $ - | 1 | $ 966.74 | $ 1,498.45 | 24 | $ 176,834.75 | $ 267,020.47 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 | 1 | $ - | $ - |  |  | $ - | 3 | $ 84,378.99 | $ 127,412.27 |
| Fulton | 17057 |  |  | $ - | 7 | $ 157,563.80 | $ 244,223.89 | 3 | $ 16,524.37 | $ 24,951.80 |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Hancock | 17067 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Hardin | 17069 | 1 | $ - | $ - | 1 | $ - | $ - |  |  | $ - |
| Henderson | 17071 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Henry | 17073 |  |  | $ - |  |  | $ - | 2 | $ 13,745.40 | $ 20,755.55 |
| Iriquois | 17075 | 9 | $ 37,654.24 | $ 60,246.78 |  |  | $ - |  |  | $ - |
| Jackson | 17077 | 1 | $ - | $ - |  |  | $ - | 3 | $ 28,873.64 | $ 43,599.20 |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jersey | 17083 |  |  | $ - | 14 | $ 202,391.22 | $ 313,706.39 | 12 | $ 37,071.97 | $ 55,978.67 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1994  $1.60 | | | 1995  $1.55 | | | 1996  $1.51 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Jo Daviess | 17085 |  |  | $ - |  |  | $ - |  |  | $ - |
| Kane | 17089 | 4 | $ 12,431.87 | $ 19,890.99 |  |  | $ - | 23 | $ 407,556.06 | $ 615,409.65 |
| Kankakee | 17091 | 1 | $ - | $ - |  |  | $ - | 3 | $ 43,928.09 | $ 66,331.42 |
| Kendall | 17093 | 1 | $ - | $ - |  |  | $ - | 13 | $ 377,956.45 | $ 570,714.24 |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 | 2 | $ 5,329.83 | $ 8,527.73 | 3 | $ - | $ - | 5 | $ 12,775.84 | $ 19,291.52 |
| LaSalle | 17099 | 1 | $ 3,343.74 | $ 5,349.98 |  |  | $ - | 11 | $ 298,961.97 | $ 451,432.57 |
| Lawrence | 17101 |  |  | $ - | 1 | $ 3,067.37 | $ 4,754.42 |  |  | $ - |
| Lee | 17103 | 9 | $ 48,680.60 | $ 77,888.96 |  |  | $ - | 6 | $ 55,926.99 | $ 84,449.75 |
| Livingston | 17105 |  |  | $ - |  |  | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 | 2 | $ 18,425.15 | $ 29,480.24 |  |  | $ - |  |  | $ - |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - |  |  | $ - | 2 | $ 32,745.27 | $ 49,445.36 |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 | 1 | $ 4,765.57 | $ 7,624.91 | 9 | $ 35,982.28 | $ 55,772.53 | 3 | $ 2,632.98 | $ 3,975.80 |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - | 1 | $ 15,709.29 | $ 24,349.40 |  |  | $ - |
| Mason | 17125 | 1 | $ - | $ - | 12 | $ 138,968.33 | $ 215,400.91 |  |  | $ - |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 | 5 | $ 23,950.98 | $ 38,321.57 |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - | 1 | $ 3,975.07 | $ 6,002.36 |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 |  |  | $ - | 2 | $ 6,477.84 | $ 10,040.65 |  |  | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 | 4 | $ 43,875.79 | $ 70,201.26 |  |  | $ - | 12 | $ 133,086.31 | $ 200,960.33 |
| Peoria | 17143 |  |  | $ - | 19 | $ 130,502.21 | $ 202,278.43 | 3 | $ 14,100.00 | $ 21,291.00 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 |  |  | $ - | 3 | $ 64,188.97 | $ 99,492.90 |  |  | $ - |
| Pulaski | 17153 |  |  |  |  |  |  |  |  |  |
| Putnam | 17155 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1994  $1.60 | | | 1995  $1.55 | | | 1996  $1.51 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Randolph | 17157 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 | 7 | $ 18,295.77 | $ 29,273.23 |  |  | $ - | 14 | $ 68,517.29 | $ 103,461.11 |
| St. Clair | 17163 | 4 | $ 13,243.89 | $ 21,190.22 | 18 | $ 106,443.21 | $ 164,986.98 | 29 | $ 173,766.24 | $ 262,387.02 |
| Saline | 17165 |  |  |  |  |  |  |  |  |  |
| Sangamon | 17167 | 5 | $ 75,001.55 | $ 120,002.48 |  |  | $ - | 3 | $ 26,772.52 | $ 40,426.51 |
| Schuyler | 17169 | 1 | $ - | $ - | 1 | $ 74,847.29 | $ 116,013.30 |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - | 1 | $ 770.75 | $ 1,163.83 |
| Tazewell | 17179 |  |  | $ - | 1 | $ 10,525.44 | $ 16,314.43 |  |  | $ - |
| Union | 17181 | 3 | $ - | $ - |  |  | $ - |  |  | $ - |
| Vermillion | 17183 | 5 | $ 113,800.00 | $ 182,080.00 |  |  | $ - | 2 | $ 152.00 | $ 229.52 |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  |  |  |  |  |  |  |  |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - |  |  | $ - | 2 | $ - | $ - |
| Whiteside | 17195 | 6 | $ 22,618.57 | $ 36,189.71 |  |  | $ - | 1 | $ - | $ - |
| Will | 17197 | 2 | $ 964.63 | $ 1,543.41 |  |  | $ - | 92 | $ 872,104.95 | $ 1,316,878.47 |
| Williamson | 17199 |  |  | $ - |  |  | $ - | 6 | $ 146,992.83 | $ 221,959.17 |
| Winnebago | 17201 | 2 | $ 1,819.51 | $ 2,911.22 |  |  | $ - | 10 | $ 24,539.54 | $ 37,054.71 |
| Woodford | 17203 |  |  | $ - | 3 | $ 9,922.30 | $ 15,379.57 |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1997  $1.47 | | | 1998  $1.45 | | | 1999  $1.42 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - |  |  | $ - |  |  | $ - |
| Alexander | 17003 |  |  | $ - |  |  | $ - |  |  | $ - |
| Boone | 17007 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - |  |  | $ - |
| Bureau | 17011 |  |  | $ - |  |  | $ - |  |  | $ - |
| Calhoun | 17013 |  |  | $ - |  |  | $ - |  |  | $ - |
| Carroll | 17015 | 1 | $ 2,504.35 | $ 3,681.39 | 1 | $ 2,727.22 | $ 3,954.47 |  |  | $ - |
| Cass | 17017 |  |  | $ - |  |  | $ - |  |  | $ - |
| Champaign | 17019 |  |  | $ - | 2 | $ - | $ - | 2 | $ 10,000.00 | $ 14,200.00 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - | 2 | $ - | $ - |
| Cook | 17031 | 124 | $ 402,679.75 | $ 591,939.23 | 14 | $ 40,268.32 | $ 58,389.06 | 29 | $ 14,203.89 | $ 20,169.52 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 | 2 | $ 6,298.48 | $ 9,258.77 |  |  | $ - | 1 | $ 6,576.89 | $ 9,339.18 |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 | 2 | $ 14,931.76 | $ 21,949.69 | 1 | $ - | $ - |  |  | $ - |
| Dupage | 17043 | 8 | $ 34,638.41 | $ 50,918.46 | 3 | $ 5,038.13 | $ 7,305.29 | 3 | $ 4,571.16 | $ 6,491.05 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Fulton | 17057 |  |  | $ - |  |  | $ - |  |  | $ - |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 |  |  | $ - |  |  | $ - |  |  | $ - |
| Hancock | 17067 |  |  | $ - |  |  | $ - |  |  | $ - |
| Hardin | 17069 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Henderson | 17071 | 2 | $ 4,923.02 | $ 7,236.84 |  |  | $ - |  |  | $ - |
| Henry | 17073 | 4 | $ 45,232.92 | $ 66,492.39 |  |  | $ - | 1 | $ - | $ - |
| Iriquois | 17075 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jackson | 17077 |  |  | $ - | 2 | $ 6,025.33 | $ 8,736.73 | 1 | $ - | $ - |
| Jefferson | 17081 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Jersey | 17083 | 6 | $ 6,553.75 | $ 9,634.01 | 5 | $ 3,393.89 | $ 4,921.14 | 2 | $ 10,761.58 | $ 15,281.44 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1997  $1.47 | | | 1998  $1.45 | | | 1999  $1.42 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Jo Daviess | 17085 | 3 | $ 24,876.88 | $ 36,569.01 |  |  | $ - |  |  | $ - |
| Kane | 17089 | 6 | $ 76,523.89 | $ 112,490.12 | 1 | $ 693.98 | $ 1,006.27 | 2 | $ - | $ - |
| Kankakee | 17091 |  |  | $ - |  |  | $ - |  |  | $ - |
| Kendall | 17093 | 2 | $ 23,986.74 | $ 35,260.51 |  |  | $ - |  |  | $ - |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 |  |  | $ - | 1 | $ - | $ - | 5 | $ 14,305.64 | $ 20,314.01 |
| LaSalle | 17099 | 11 | $ 188,446.30 | $ 277,016.06 |  |  | $ - |  |  | $ - |
| Lawrence | 17101 |  |  | $ - |  |  | $ - | 1 | $ 1,729.19 | $ 2,455.45 |
| Lee | 17103 | 1 | $ 5,960.62 | $ 8,762.11 |  |  | $ - |  |  | $ - |
| Livingston | 17105 |  |  | $ - |  |  | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - | 1 | $ 6,301.57 | $ 9,137.28 |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 |  |  | $ - |  |  | $ - | 9 | $ 35,571.32 | $ 50,511.27 |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 |  |  | $ - | 2 | $ 758.74 | $ 1,100.17 |  |  | $ - |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 | 4 | $ 17,620.66 | $ 25,902.37 |  |  | $ - |  |  | $ - |
| Mason | 17125 |  |  | $ - |  |  | $ - |  |  | $ - |
| Massac | 17127 | 5 | $ 18,838.82 | $ 27,693.07 |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - |  |  | $ - |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 | 1 | $ 919.74 | $ 1,352.02 |  |  | $ - |  |  | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 | 1 | $ 4,019.08 | $ 5,908.05 |  |  | $ - | 1 | $ - | $ - |
| Peoria | 17143 | 28 | $ 220,915.65 | $ 324,746.01 | 4 | $ 2,452.66 | $ 3,556.36 | 4 | $ 61,081.02 | $ 86,735.05 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pulaski | 17153 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE VIII: NFIP CLAIM INFORMATION (1985 - 1999) (continued) | | | | | | | | | | |
| County Name | FIPS  County Code | 1997  $1.47 | | | 1998  $1.45 | | | 1999  $1.42 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Putnam | 17155 | 1 | $ 10,551.59 | $ 15,510.84 |  |  | $ - |  |  | $ - |
| Randolph | 17157 |  |  | $ - |  |  | $ - |  |  | $ - |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 | 27 | $ 91,917.19 | $ 135,118.27 | 1 | $ - | $ - | 1 | $ 894.84 | $ 1,270.67 |
| St. Clair | 17163 | 1 | $ - | $ - | 10 | $ 15,372.88 | $ 22,290.68 | 3 | $ 1,648.54 | $ 2,340.93 |
| Saline | 17165 |  |  |  |  |  |  |  |  |  |
| Sangamon | 17167 |  |  | $ - |  |  | $ - |  |  | $ - |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - |  |  | $ - |
| Tazewell | 17179 | 2 | $ 11,287.15 | $ 16,592.11 |  |  | $ - |  |  | $ - |
| Union | 17181 | 4 | $ 19,270.91 | $ 28,328.24 |  |  | $ - | 1 | $ - | $ - |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - | 1 | $ 4,910.00 | $ 7,119.50 |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  |  |  |  |  |  |  |  |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 | 1 | $ 12,155.94 | $ 17,869.23 |  |  | $ - |  |  | $ - |
| Whiteside | 17195 | 6 | $ 34,306.62 | $ 50,430.73 |  |  | $ - |  |  | $ - |
| Will | 17197 | 9 | $ 31,788.66 | $ 46,729.33 | 2 | $ 5,852.96 | $ 8,486.79 | 1 | $ - | $ - |
| Williamson | 17199 | 1 | $ 17,199.00 | $ 25,282.53 | 2 | $ 445.34 | $ 645.74 | 2 | $ 8,642.40 | $ 12,272.21 |
| Winnebago | 17201 | 3 | $ 1,840.87 | $ 2,706.08 |  |  | $ - | 4 | $ 5,200.21 | $ 7,384.30 |
| Woodford | 17203 | 5 | $ 27,184.54 | $ 39,961.27 |  |  | $ - |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2000 $1.37 | | | 2001  $1.34 | | | 2002 $1.32 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - | 6 | $ 74,555.63 | $ 99,904.54 |  |  | $ - |
| Alexander | 17003 |  |  | $ - | 1 | $ - | $ - | 1 | $ 947.72 | $ 1,250.99 |
| Boone | 17007 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - | 4 | $ 69,086.02 | $ 91,193.55 |
| Bureau | 17011 |  |  | $ - |  |  | $ - |  |  | $ - |
| Calhoun | 17013 |  |  | $ - | 3 | $ 10,411.72 | $ 13,951.70 | 11 | $ 136,825.89 | $ 180,610.17 |
| Carroll | 17015 |  |  | $ - | 1 | $ 62,000.00 | $ 83,080.00 | 1 | $ 2,856.23 | $ 3,770.22 |
| Cass | 17017 |  |  | $ - |  |  | $ - | 2 | $ 2,274.97 | $ 3,002.96 |
| Champaign | 17019 |  |  | $ - | 1 | $ - | $ - | 3 | $ 73,928.83 | $ 97,586.06 |
| Christian | 17021 | 1 | $ 3,176.97 | $ 4,352.45 |  |  | $ - | 3 | $ 6,223.40 | $ 8,214.89 |
| Clark | 17023 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - | 1 | $ 949.60 | $ 1,253.47 |
| Cook | 17031 | 16 | $ 4,759.86 | $ 6,521.01 | 68 | $ 155,563.91 | $ 208,455.64 | 38 | $ 89,182.27 | $ 117,720.60 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 |  |  | $ - |  |  | $ - | 9 | $ 9,385.42 | $ 12,388.75 |
| Dupage | 17043 |  |  | $ - | 26 | $ 131,337.45 | $ 175,992.18 |  |  | $ - |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - |  |  | $ - |
| Fulton | 17057 |  |  | $ - |  |  | $ - | 3 | $ 5,883.01 | $ 7,765.57 |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Hancock | 17067 |  |  | $ - | 9 | $ 64,630.71 | $ 86,605.15 |  |  | $ - |
| Hardin | 17069 |  |  | $ - |  |  | $ - |  |  | $ - |
| Henderson | 17071 |  |  | $ - | 10 | $ 186,135.81 | $ 249,421.99 | 1 | $ 51,342.91 | $ 67,772.64 |
| Henry | 17073 | 2 | $ 1,831.52 | $ 2,509.18 | 4 | $ 35,992.95 | $ 48,230.55 |  |  | $ - |
| Iriquois | 17075 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jackson | 17077 | 1 | $ 21,471.99 | $ 29,416.63 |  |  | $ - |  |  | $ - |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jersey | 17083 | 1 | $ 3,506.97 | $ 4,804.55 | 5 | $ 10,269.03 | $ 13,760.50 | 21 | $ 199,784.36 | $ 263,715.36 |
| Jo Daviess | 17085 |  |  | $ - | 9 | $ 76,204.14 | $ 102,113.55 | 3 | $ 19,242.73 | $ 25,400.40 |
| Kane | 17089 |  |  | $ - | 2 | $ 10,783.98 | $ 14,450.53 |  |  | $ - |
| Kankakee | 17091 |  |  | $ - |  |  | $ - | 1 | $ 15,699.33 | $ 20,723.12 |
| Kendall | 17093 | 1 | $ 6,826.94 | $ 9,352.91 |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2000  $1.37 | | | 2001  $1.34 | | | 2002  $1.32 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 | 7 | $ 51,613.05 | $ 70,709.88 | 8 | $ 34,669.33 | $ 46,456.90 | 4 | $ 2,871.25 | $ 3,790.05 |
| LaSalle | 17099 |  |  | $ - |  |  | $ - | 4 | $ 28,534.25 | $ 37,665.21 |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 | 1 | $ 7,904.60 | $ 10,829.30 | 1 | $ - | $ - |  |  | $ - |
| Livingston | 17105 |  |  | $ - |  |  | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 | 7 | $ 52,415.35 | $ 71,809.03 | 1 | $ 5,655.33 | $ 7,578.14 | 2 | $ - | $ - |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - | 1 | $ - | $ - | 1 | $ 18,239.63 | $ 24,076.31 |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 | 3 | $ 20,174.04 | $ 27,638.43 | 1 | $ - | $ - | 11 | $ 96,592.25 | $ 127,501.77 |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mason | 17125 |  |  | $ - | 1 | $ - | $ - | 8 | $ 62,555.23 | $ 82,572.90 |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - | 2 | $ 23,547.84 | $ 31,083.15 |
| Mercer | 17131 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - | 1 | $ 20,000.00 | $ 26,400.00 |
| Morgan | 17137 |  |  | $ - |  |  | $ - | 2 | $ 2,508.49 | $ 3,311.21 |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 | 2 | $ 27,827.06 | $ 38,123.07 |  |  | $ - | 1 | $ 9,168.27 | $ 12,102.12 |
| Peoria | 17143 |  |  | $ - | 1 | $ 702.64 | $ 941.54 | 20 | $ 94,944.69 | $ 125,326.99 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 |  |  | $ - | 1 | $ - | $ - | 8 | $ 131,262.51 | $ 173,266.51 |
| Pulaski | 17153 |  |  | $ - | 1 | $ - | $ - | 3 | $ 1,921.93 | $ 2,536.95 |
| Putnam | 17155 |  |  | $ - |  |  | $ - |  |  | $ - |
| Randolph | 17157 |  |  | $ - |  |  | $ - | 3 | $ 2,722.91 | $ 3,594.24 |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 | 7 | $ 64,746.13 | $ 88,702.20 | 30 | $ 549,358.39 | $ 736,140.24 | 26 | $ 340,287.38 | $ 449,179.34 |
| St. Clair | 17163 |  |  | $ - |  |  | $ - | 3 | $ 3,080.48 | $ 4,066.23 |
| Saline | 17165 |  |  | $ - |  |  | $ - |  |  | $ - |
| Sangamon | 17167 |  |  | $ - | 1 | $ 22,509.75 | $ 30,163.07 | 5 | $ 129,799.65 | $ 171,335.54 |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - | 3 | $ 5,681.83 | $ 7,613.65 | 1 | $ 3,301.32 | $ 4,357.74 |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2000  $1.37 | | | 2001  $1.34 | | | 2002  $1.32 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - |  |  | $ - |
| Tazewell | 17179 |  |  | $ - |  |  | $ - |  |  | $ - |
| Union | 17181 |  |  | $ - | 1 | $ - | $ - | 2 | $ 3,517.02 | $ 4,642.47 |
| Vermillion | 17183 |  |  | $ - |  |  | $ - | 1 | $ 20,313.87 | $ 26,814.31 |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - | 1 | $ 2,668.77 | $ 3,576.15 |  |  | $ - |
| Whiteside | 17195 | 2 | $ 1,523.70 | $ 2,087.47 | 7 | $ 93,487.05 | $ 125,272.65 | 2 | $ 42,657.46 | $ 56,307.85 |
| Will | 17197 | 1 | $ - | $ - |  |  | $ - | 5 | $ 8,309.48 | $ 10,968.51 |
| Williamson | 17199 | 1 | $ - | $ - |  |  | $ - | 1 | $ 147.18 | $ 194.28 |
| Winnebago | 17201 | 17 | $ 158,292.30 | $ 216,860.45 | 1 | $ - | $ - | 2 | $ 115,814.84 | $ 152,875.59 |
| Woodford | 17203 |  |  | $ - |  |  | $ - |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2003  $1.29 | | | 2004 $1.25 | | | 2005 $1.21 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - |  |  | $ - |  |  | $ - |
| Alexander | 17003 |  |  | $ - |  |  | $ - |  |  | $ - |
| Boone | 17007 |  |  | $ - |  |  | $ - |  |  | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - |  |  | $ - |
| Bureau | 17011 |  |  | $ - |  |  | $ - |  |  | $ - |
| Calhoun | 17013 |  |  | $ - |  |  | $ - |  |  | $ - |
| Carroll | 17015 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cass | 17017 |  |  | $ - |  |  | $ - |  |  | $ - |
| Champaign | 17019 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - | 3 | $ 98,734.54 | $ 119,468.79 |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cook | 17031 | 60 | $ 206,103.29 | $ 265,873.24 | 15 | $ 63,548.83 | $ 79,436.04 | 13 | $ 46,571.21 | $ 56,351.16 |
| Crawford | 17033 |  |  | $ - |  |  | $ - | 1 | $ 17,631.87 | $ 21,334.56 |
| DeKalb | 17037 |  |  | $ - | 2 | $ 14,249.71 | $ 17,812.14 |  |  | $ - |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 | 1 | $ - | $ - |  |  | $ - | 1 | $ - | $ - |
| Dupage | 17043 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - |  |  | $ - |
| Fulton | 17057 |  |  | $ - |  |  | $ - |  |  | $ - |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 |  |  | $ - |  |  | $ - |  |  | $ - |
| Hancock | 17067 |  |  | $ - |  |  | $ - |  |  | $ - |
| Hardin | 17069 |  |  | $ - |  |  | $ - |  |  | $ - |
| Henderson | 17071 |  |  | $ - | 1 | $ 3,456.66 | $ 4,320.83 |  |  | $ - |
| Henry | 17073 |  |  | $ - |  |  | $ - |  |  | $ - |
| Iriquois | 17075 | 1 | $ 626.29 | $ 807.91 | 1 | $ - | $ - | 5 | $ 32,294.97 | $ 39,076.91 |
| Jackson | 17077 |  |  | $ - |  |  | $ - | 1 | $ 11,304.70 | $ 13,678.69 |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jersey | 17083 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jo Daviess | 17085 | 3 | $ 1,663.30 | $ 2,145.66 | 2 | $ 298.12 | $ 372.65 |  |  | $ - |
| Kane | 17089 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Kankakee | 17091 |  |  | $ - | 1 | $ - | $ - | 4 | $ 15,362.01 | $ 18,588.03 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2003  $1.29 | | | 2004  $1.25 | | | 2005  $1.21 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Kendall | 17093 |  |  | $ - |  |  | $ - |  |  | $ - |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 | 1 | $ 1,729.12 | $ 2,230.56 | 15 | $ 172,991.31 | $ 216,239.14 | 1 | $ 11,641.89 | $ 14,086.69 |
| LaSalle | 17099 |  |  | $ - |  |  | $ - | 3 | $ 19,214.90 | $ 23,250.03 |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 |  |  | $ - |  |  | $ - |  |  | $ - |
| Livingston | 17105 |  |  | $ - |  |  | $ - | 4 | $ - | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 |  |  | $ - | 7 | $ 7,821.43 | $ 9,776.79 |  |  | $ - |
| McLean | 17113 | 2 | $ 6,794.63 | $ 8,765.07 |  |  | $ - | 1 | $ 1,045.78 | $ 1,265.39 |
| Macon | 17115 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 | 1 | $ 1,566.96 | $ 2,021.38 |  |  | $ - | 5 | $ 8,030.35 | $ 9,716.72 |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mason | 17125 |  |  | $ - |  |  | $ - | 4 | $ 12,145.82 | $ 14,696.44 |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - |  |  | $ - |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 |  |  | $ - |  |  | $ - |  |  | $ - |
| Peoria | 17143 |  |  | $ - | 3 | $ 1,118.90 | $ 1,398.63 | 11 | $ 38,509.69 | $ 46,596.72 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 | 1 | $ 1,851.45 | $ 2,388.37 |  |  | $ - |  |  | $ - |
| Pulaski | 17153 |  |  | $ - |  |  | $ - |  |  | $ - |
| Putnam | 17155 |  |  | $ - |  |  | $ - | 1 | $ 5,626.40 | $ 6,807.94 |
| Randolph | 17157 |  |  | $ - | 1 | $ 2,330.94 | $ 2,913.68 |  |  | $ - |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 |  |  | $ - | 5 | $ 31,223.40 | $ 39,029.25 | 1 | $ 45,500.00 | $ 55,055.00 |
| St. Clair | 17163 | 3 | $ 16,658.17 | $ 21,489.04 | 2 | $ - | $ - | 5 | $ 4,495.77 | $ 5,439.88 |
| Saline | 17165 |  |  | $ - |  |  | $ - |  |  | $ - |
| Sangamon | 17167 |  |  | $ - |  |  | $ - | 1 | $ 16,457.28 | $ 19,913.31 |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2003  $1.29 | | | 2004  $1.25 | | | 2005  $1.21 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - | 1 | $ 1,040.36 | $ 1,300.45 |  |  | $ - |
| Tazewell | 17179 |  |  | $ - |  |  | $ - |  |  | $ - |
| Union | 17181 |  |  | $ - |  |  | $ - |  |  | $ - |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - |  |  | $ - |  |  | $ - |
| Whiteside | 17195 |  |  | $ - |  |  | $ - |  |  | $ - |
| Will | 17197 | 2 | $ 20,031.03 | $ 25,840.03 | 2 | $ 8,770.11 | $ 10,962.64 | 3 | $ 8,470.08 | $ 10,248.80 |
| Williamson | 17199 |  |  | $ - |  |  | $ - | 3 | $ 7,299.28 | $ 8,832.13 |
| Winnebago | 17201 | 1 | $ - | $ - | 1 | $ 2,241.07 | $ 2,801.34 |  |  | $ - |
| Woodford | 17203 |  |  | $ - |  |  | $ - |  |  | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2006 $1.17 | | | 2007 $1.14 | | | 2008 $1.10 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - |  |  | $ - | 14 | $2,544,683.24 | $2,799,151.56 |
| Alexander | 17003 |  |  | $ - |  |  | $ - | 6 | $ 109,840.14 | $ 120,824.15 |
| Boone | 17007 |  |  | $ - | 1 | $ 11,357.37 | $ 12,947.40 |  |  | $ - |
| Brown | 17009 |  |  | $ - |  |  | $ - |  |  | $ - |
| Bureau | 17011 |  |  | $ - |  |  | $ - | 1 | $ 3,315.77 | $ 3,647.35 |
| Calhoun | 17013 |  |  | $ - |  |  | $ - | 41 | $ 884,633.38 | $ 973,096.72 |
| Carroll | 17015 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cass | 17017 |  |  | $ - |  |  | $ - |  |  | $ - |
| Champaign | 17019 | 1 | $ - | $ - |  |  | $ - | 8 | $ 110,653.92 | $ 121,719.31 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - | 2 | $ 11,958.59 | $ 13,154.45 |
| Clinton | 17027 |  |  | $ - |  |  | $ - |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - | 1 | $ 30,899.34 | $ 33,989.27 |
| Cook | 17031 | 146 | $ 1,537,494.00 | $ 1,798,867.98 | 92 | $ 824,317.54 | $939,722.00 | 501 | $7,692,124.92 | $8,461,337.41 |
| Crawford | 17033 | 1 | $ 27,284.52 | $ 31,922.89 |  |  | $ - | 1 | $ 1,458.54 | $ 1,604.39 |
| DeKalb | 17037 |  |  | $ - | 24 | $ 443,418.27 | $505,496.83 | 3 | $ 110,287.34 | $ 121,316.07 |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 |  |  | $ - |  |  | $ - | 2 | $ 46,694.08 | $ 51,363.49 |
| Dupage | 17043 | 11 | $ 68,648.64 | $ 80,318.91 | 9 | $ 61,344.96 | $ 69,933.25 | 81 | $2,310,543.35 | $2,541,597.69 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - | 1 | $ 6,503.12 | $ 7,153.43 |
| Fulton | 17057 |  |  | $ - |  |  | $ - | 1 | $ 14,427.79 | $ 15,870.57 |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 |  |  | $ - |  |  | $ - | 8 | $ 120,453.00 | $ 132,498.30 |
| Hancock | 17067 |  |  | $ - |  |  | $ - | 29 | $ 688,884.41 | $ 757,772.85 |
| Hardin | 17069 |  |  | $ - |  |  | $ - |  |  | $ - |
| Henderson | 17071 |  |  | $ - |  |  | $ - | 27 | $1,115,750.64 | $1,227,325.70 |
| Henry | 17073 |  |  | $ - | 1 | $ 1,075.93 | $ 1,226.56 | 2 | $ 2,925.75 | $ 3,218.33 |
| Iriquois | 17075 |  |  | $ - | 1 | $ - | $ - | 97 | $1,153,561.11 | $1,268,917.22 |
| Jackson | 17077 | 1 | $ 151.14 | $ 176.83 |  |  | $ - | 29 | $ 120,591.35 | $ 132,650.49 |
| Jefferson | 17081 | 1 | $ 17,081.00 | $ 19,984.77 |  |  | $ - |  |  | $ - |
| Jersey | 17083 |  |  | $ - |  |  | $ - | 58 | $2,553,736.42 | $2,809,110.06 |
| Jo Daviess | 17085 |  |  | $ - |  |  | $ - | 7 | $ 55,119.17 | $ 60,631.09 |
| Kane | 17089 |  |  | $ - | 23 | $435,743.01 | $496,747.03 | 20 | $ 216,515.52 | $ 238,167.07 |
| Kankakee | 17091 | 1 | $ - | $ - | 2 | $ 39,350.24 | $ 44,859.27 | 30 | $ 521,093.92 | $ 573,203.31 |
| Kendall | 17093 |  |  | $ - | 2 | $ 29,127.44 | $ 33,205.28 | 3 | $ 1,094.54 | $ 1,203.99 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2006  $1.17 | | | 2007  $1.14 | | | 2008  $1.10 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 | 6 | $ 30,369.68 | $ 35,532.53 | 34 | $ 319,176.02 | $363,860.66 | 32 | $ 146,420.11 | $ 161,062.12 |
| LaSalle | 17099 |  |  | $ - | 10 | $ 131,906.79 | $150,373.74 | 34 | $ 887,120.18 | $ 975,832.20 |
| Lawrence | 17101 | 1 | $ 10,276.84 | $ 12,023.90 |  |  | $ - |  |  | $ - |
| Lee | 17103 |  |  | $ - | 1 | $ 8,286.96 | $ 9,447.13 | 2 | $ 10,898.63 | $ 11,988.49 |
| Livingston | 17105 |  |  | $ - |  |  | $ - | 39 | $ 338,642.22 | $ 372,506.44 |
| Logan | 17107 |  |  | $ - |  |  | $ - | 1 | $ 10,847.41 | $ 11,932.15 |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 |  |  | $ - | 28 | $ 271,916.23 | $309,984.50 | 10 | $ 38,793.44 | $ 42,672.78 |
| McLean | 17113 |  |  | $ - |  |  | $ - | 2 | $ 10,619.83 | $ 11,681.81 |
| Macon | 17115 |  |  | $ - |  |  | $ - | 8 | $ 157,600.98 | $ 173,361.08 |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 | 1 | $ 3,471.81 | $ 4,062.02 |  |  | $ - | 12 | $ 208,482.48 | $ 229,330.73 |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mason | 17125 |  |  | $ - |  |  | $ - | 1 | $ 1,892.86 | $ 2,082.15 |
| Massac | 17127 |  |  | $ - |  |  | $ - | 1 | $ 2,467.00 | $ 2,713.70 |
| Menard | 17129 |  |  | $ - |  |  | $ - | 1 | $ 1,149.78 | $ 1,264.76 |
| Mercer | 17131 |  |  | $ - |  |  | $ - | 3 | $ 22,285.23 | $ 24,513.75 |
| Monroe | 17133 |  |  | $ - |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - | 1 | $ 94,600.00 | $ 104,060.00 |
| Morgan | 17137 |  |  | $ - |  |  | $ - |  |  | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - | 2 | $ 93,447.30 | $ 102,792.03 |
| Ogle | 17141 |  |  | $ - | 2 | $ 6,690.25 | $ 7,626.89 |  |  | $ - |
| Peoria | 17143 |  |  | $ - | 9 | $ 30,837.79 | $ 35,155.08 | 41 | $ 593,802.03 | $ 653,182.23 |
| Piatt | 17147 | 1 | $ 907.56 | $ 1,061.85 |  |  | $ - | 2 | $ 46,029.68 | $ 50,632.65 |
| Pike | 17149 |  |  | $ - |  |  | $ - | 2 | $ 104,500.00 | $ 114,950.00 |
| Pulaski | 17153 |  |  | $ - |  |  | $ - | 1 | $ 6,257.10 | $ 6,882.81 |
| Putnam | 17155 |  |  | $ - |  |  | $ - | 2 | $ 34,367.82 | $ 37,804.60 |
| Randolph | 17157 |  |  | $ - | 1 | $109,514.68 | $124,846.74 | 2 | $ - | $ - |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 |  |  | $ - | 8 | $148,904.79 | $169,751.46 | 57 | $ 985,565.55 | $1,084,122.11 |
| St. Clair | 17163 | 2 | $ 4,362.78 | $ 5,104.45 |  |  | $ - | 11 | $ 64,796.91 | $ 71,276.60 |
| Saline | 17165 |  |  | $ - |  |  | $ - |  |  | $ - |
| Sangamon | 17167 |  |  | $ - |  |  | $ - | 3 | $ 57,090.67 | $ 62,799.74 |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2006  $1.17 | | | 2007  $1.14 | | | 2008  $1.10 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - | 3 | $ 7,179.30 | $ 8,184.40 | 3 | $ 8,465.01 | $ 9,311.51 |
| Tazewell | 17179 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Union | 17181 |  |  | $ - |  |  | $ - | 3 | $ 9,827.00 | $ 10,809.70 |
| Vermillion | 17183 |  |  | $ - |  |  | $ - | 3 | $ 226,663.28 | $ 249,329.61 |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - |  |  | $ - | 2 | $ 36,079.90 | $ 39,687.89 |
| Whiteside | 17195 |  |  | $ - |  |  | $ - | 4 | $ 6,828.62 | $ 7,511.48 |
| Will | 17197 | 6 | $ 3,958.82 | $ 4,631.82 | 13 | $272,280.55 | $310,399.83 | 26 | $ 383,843.41 | $ 422,227.75 |
| Williamson | 17199 |  |  | $ - |  |  | $ - | 11 | $ 213,912.89 | $ 235,304.18 |
| Winnebago | 17201 | 36 | $ 907,609.67 | $ 1,061,903.31 | 46 | $ 791,246.00 | $902,020.44 | 57 | $1,533,439.11 | $1,686,783.02 |
| Woodford | 17203 |  |  | $ - |  |  | $ - | 3 | $ 24,882.99 | $ 27,371.29 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2009 $1.10 | | | 2010  $1.09 | | | 2011  $1.05 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - |  |  | $ - |  |  | $ - |
| Alexander | 17003 |  |  | $ - |  |  | $ - | 15 | $ 146,005.16 | $ 153,305.42 |
| Boone | 17007 | 1 | $ 4,020.63 | $ 4,422.69 |  |  | $ - |  |  | $ - |
| Brown | 17009 | 1 | $ 12,668.41 | $ 13,935.25 |  |  | $ - |  |  | $ - |
| Bureau | 17011 |  |  | $ - | 1 | $ 3,304.84 | $ 3,602.28 | 2 | $ 3,566.20 | $ 3,744.51 |
| Calhoun | 17013 | 4 | $ 13,548.17 | $ 14,902.99 | 7 | $ 71,965.33 | $ 78,442.21 | 7 | $ 24,646.95 | $ 25,879.30 |
| Carroll | 17015 |  |  | $ - |  |  | $ - | 1 | $ 1,075.03 | $ 1,128.78 |
| Cass | 17017 |  |  | $ - | 3 | $ 6,312.18 | $ 6,880.28 |  |  | $ - |
| Champaign | 17019 | 1 | $ 6,132.21 | $ 6,745.43 |  |  | $ - | 1 | $ 995.84 | $ 1,045.63 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - |  |  | $ - | 1 | $ 3,721.86 | $ 3,907.95 |
| Clinton | 17027 |  |  | $ - |  |  | $ - | 1 | $ 5,485.69 | $ 5,759.97 |
| Coles | 17029 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cook | 17031 | 30 | $ 80,760.17 | $ 88,836.19 | 291 | $4,208,083.28 | $4,586,810.78 | 127 | $1,603,831.03 | $1,684,022.58 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 |  |  | $ - | 4 | $ 69,369.26 | $ 75,612.49 |  |  | $ - |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 |  |  | $ - |  |  | $ - |  |  | $ - |
| Dupage | 17043 | 2 | $ - | $ - | 42 | $ 715,806.00 | $ 780,228.54 | 1 | $ 54,064.26 | $ 56,767.47 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - | 1 | $ 2,934.54 | $ 3,081.27 |
| Fulton | 17057 | 4 | $ 110,504.48 | $ 121,554.93 |  |  | $ - |  |  | $ - |
| Gallatin | 17059 |  |  | $ - |  |  | $ - | 3 | $ 37,510.48 | $ 39,386.00 |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 |  |  | $ - |  |  | $ - |  |  | $ - |
| Hancock | 17067 | 2 | $ 39,797.06 | $ 43,776.77 |  |  | $ - | 1 | $ - | $ - |
| Hardin | 17069 |  |  | $ - |  |  | $ - | 1 | $ 7,492.69 | $ 7,867.32 |
| Henderson | 17071 |  |  | $ - |  |  | $ - |  |  | $ - |
| Henry | 17073 | 1 | $ - | $ - | 2 | $ 303,547.01 | $ 330,866.24 |  |  | $ - |
| Iriquois | 17075 | 2 | $ - | $ - |  |  | $ - |  |  | $ - |
| Jackson | 17077 | 1 | $ 2,903.25 | $ 3,193.58 |  |  | $ - | 3 | $ 21,117.08 | $ 22,172.93 |
| Jefferson | 17081 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jersey | 17083 | 3 | $ 1,848.74 | $ 2,033.61 | 2 | $ 5,398.00 | $ 5,883.82 | 7 | $ 5,615.57 | $ 5,896.35 |
| Jo Daviess | 17085 |  |  | $ - | 3 | $ 36,119.55 | $ 39,370.31 | 18 | $ 478,350.59 | $ 502,268.12 |
| Kane | 17089 | 4 | $ 20,803.67 | $ 22,884.04 | 1 | $ 2,481.42 | $ 2,704.75 |  |  | $ - |
| Kankakee | 17091 | 7 | $ 15,955.44 | $ 17,550.98 | 1 | $ 5,898.47 | $ 6,429.33 |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2009  $1.10 | | | 2010  $1.09 | | | 2011  $1.05 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Kendall | 17093 | 1 | $ 3,196.62 | $ 3,516.28 |  |  | $ - |  |  | $ - |
| Knox | 17095 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lake | 17097 | 8 | $ 84,773.61 | $ 93,250.97 | 4 | $ 742.97 | $ 809.84 | 2 | $ 35,682.08 | $ 37,466.18 |
| LaSalle | 17099 | 5 | $ 21,943.71 | $ 24,138.08 | 1 | $ 3,296.29 | $ 3,592.96 |  |  | $ - |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 |  |  | $ - | 1 | $ - | $ - | 1 | $ 10,164.76 | $ 10,673.00 |
| Livingston | 17105 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - |  |  | $ - |  |  | $ - |
| McHenry | 17111 | 1 | $ 3,935.28 | $ 4,328.81 | 1 | $ 10,996.95 | $ 11,986.68 |  |  | $ - |
| McLean | 17113 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 | 1 | $ 5,774.59 | $ 6,352.05 |  |  | $ - |  |  | $ - |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Mason | 17125 | 6 | $ 114,774.18 | $ 126,251.60 | 4 | $ 7,011.09 | $ 7,642.09 | 3 | $ 11,279.03 | $ 11,842.98 |
| Massac | 17127 |  |  | $ - |  |  | $ - | 15 | $ 178,612.38 | $ 187,543.00 |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - |  |  | $ - |
| Monroe | 17133 | 1 | $ 13,738.04 | $ 15,111.84 |  |  | $ - |  |  | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 | 3 | $ 6,291.12 | $ 6,920.23 | 1 | $ 1,977.61 | $ 2,155.59 |  |  | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 | 1 | $ 498.93 | $ 548.82 | 16 | $ 343,730.69 | $ 374,666.45 |  |  | $ - |
| Peoria | 17143 | 48 | $ 951,491.93 | $1,046,641.12 | 1 | $ 10,043.18 | $ 10,947.07 | 2 | $ 17,805.40 | $ 18,695.67 |
| Piatt | 17147 |  |  | $ - |  |  | $ - |  |  | $ - |
| Pike | 17149 |  |  | $ - | 1 | $ 1,413.83 | $ 1,541.07 |  |  | $ - |
| Pulaski | 17153 |  |  | $ - |  |  | $ - | 1 | $ 6,755.34 | $ 7,093.11 |
| Putnam | 17155 | 1 | $ - | $ - |  |  | $ - |  |  | $ - |
| Randolph | 17157 | 1 | $ 1,226.29 | $ 1,348.92 |  |  | $ - | 3 | $ 278.89 | $ 292.83 |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 | 9 | $ 14,639.81 | $ 16,103.79 | 6 | $ 21,306.95 | $ 23,224.58 | 7 | $ 25,415.82 | $ 26,686.61 |
| St. Clair | 17163 | 1 | $ 17,163.00 | $ 18,879.30 | 6 | $ 26,759.10 | $ 29,167.42 | 8 | $ 77,100.16 | $ 80,955.17 |
| Saline | 17165 |  |  | $ - |  |  | $ - | 1 | $ 70,856.71 | $ 74,399.55 |
| Sangamon | 17167 |  |  | $ - |  |  | $ - |  |  | $ - |
| Schuyler | 17169 |  |  | $ - |  |  | $ - |  |  | $ - |
| Scott | 17171 |  |  | $ - |  |  | $ - | 3 | $ 19,829.25 | $ 20,820.71 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2009  $1.10 | | | 2010  $1.09 | | | 2011  $1.05 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 | 1 | $ 3,116.98 | $ 3,428.68 | 5 | $ 36,293.47 | $ 39,559.88 |  |  | $ - |
| Tazewell | 17179 | 1 | $ 1,522.71 | $ 1,674.98 |  |  | $ - |  |  | $ - |
| Union | 17181 |  |  | $ - |  |  | $ - | 1 | $ 1,083.20 | $ 1,137.36 |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - |  |  | $ - |  |  | $ - |
| Washington | 17189 |  |  | $ - |  |  | $ - | 2 | $ 18,269.61 | $ 19,183.09 |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - |  |  | $ - | 6 | $ 171,892.45 | $ 180,487.07 |
| Whiteside | 17195 | 1 | $ 62,211.01 | $ 68,432.11 |  |  | $ - | 1 | $ 306.63 | $ 321.96 |
| Will | 17197 |  |  | $ - | 6 | $ 14,017.91 | $ 15,279.52 | 3 | $ 3,617.97 | $ 3,798.87 |
| Williamson | 17199 | 3 | $ 40,102.24 | $ 44,112.46 |  |  | $ - | 1 | $ - | $ - |
| Winnebago | 17201 | 1 | $ - | $ - | 6 | $ 101,151.64 | $ 110,255.29 |  |  | $ - |
| Woodford | 17203 | 5 | $ 48,084.61 | $ 52,893.07 |  |  | $ - | 1 | $ - | $ - |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2012  $1.03 | | | 2013 $1.02 | | | 2014 $1.00 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 |  |  | $ - | 4 | $ 84,870.40 | $ 86,567.81 |  |  | $ - |
| Alexander | 17003 |  |  | $ - | 1 | $ 2,435.32 | $ 2,484.03 | 1 | $ - | $ - |
| Boone | 17007 |  |  | $ - |  |  | $ - |  |  | $ - |
| Brown | 17009 |  |  | $ - | 2 | $ 57,738.90 | $ 58,893.68 |  |  | $ - |
| Bureau | 17011 |  |  | $ - | 3 | $ 25,125.54 | $ 25,628.05 |  |  | $ - |
| Calhoun | 17013 |  |  | $ - | 57 | $1,254,708.80 | $ 1,279,802.98 | 4 | $ 16,093.77 | $ 16,093.77 |
| Carroll | 17015 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cass | 17017 |  |  | $ - | 2 | $ 71,668.76 | $ 73,102.14 | 2 | $ 8,465.74 | $ 8,465.74 |
| Champaign | 17019 |  |  | $ - | 2 | $ 16,480.67 | $ 16,810.28 | 1 | $ 7,331.09 | $ 7,331.09 |
| Christian | 17021 |  |  | $ - |  |  | $ - |  |  | $ - |
| Clark | 17023 |  |  | $ - | 2 | $ 33,780.89 | $ 34,456.51 |  |  | $ - |
| Clinton | 17027 |  |  | $ - | 1 | $ 4,171.67 | $ 4,255.10 |  |  | $ - |
| Coles | 17029 |  |  | $ - |  |  | $ - |  |  | $ - |
| Cook | 17031 | 4 | $ 43,732.87 | $ 45,044.86 | 385 | $7,401,573.18 | $ 7,549,604.64 | 89 | $ 631,079.76 | $ 631,079.76 |
| Crawford | 17033 |  |  | $ - |  |  | $ - |  |  | $ - |
| DeKalb | 17037 |  |  | $ - | 1 | $ 4,269.83 | $ 4,355.23 |  |  | $ - |
| DeWitt | 17039 |  |  | $ - |  |  | $ - |  |  | $ - |
| Douglas | 17041 |  |  | $ - | 17 | $ 125,230.90 | $ 127,735.52 |  |  | $ - |
| Dupage | 17043 |  |  | $ - | 104 | $3,812,840.95 | $ 3,889,097.77 | 9 | $ 102,292.00 | $ 102,292.00 |
| Ford | 17053 |  |  | $ - |  |  | $ - |  |  | $ - |
| Franklin | 17055 |  |  | $ - |  |  | $ - |  |  | $ - |
| Fulton | 17057 |  |  | $ - | 5 | $ 88,530.62 | $ 90,301.23 |  |  | $ - |
| Gallatin | 17059 |  |  | $ - |  |  | $ - |  |  | $ - |
| Greene | 17061 |  |  | $ - |  |  | $ - |  |  | $ - |
| Grundy | 17063 | 1 | $ 1,125.87 | $ 1,159.65 | 10 | $ 266,019.92 | $ 271,340.32 |  |  | $ - |
| Hancock | 17067 |  |  | $ - | 1 | $ 13,300.00 | $ 13,566.00 | 2 | $ 10,449.30 | $ 10,449.30 |
| Hardin | 17069 |  |  | $ - |  |  | $ - |  |  | $ - |
| Henderson | 17071 |  |  | $ - | 2 | $ 28,999.16 | $ 29,579.14 | 6 | $ 87,830.49 | $ 87,830.49 |
| Henry | 17073 |  |  | $ - | 1 | $ - | $ - |  |  | $ - |
| Iriquois | 17075 |  |  | $ - |  |  | $ - |  |  | $ - |
| Jackson | 17077 |  |  | $ - |  |  | $ - | 1 | $ 4,451.10 | $ 4,451.10 |
| Jefferson | 17081 | 1 | $ 3,031.68 | $ 3,122.63 |  |  | $ - |  |  | $ - |
| Jersey | 17083 |  |  | $ - | 22 | $ 482,108.18 | $ 491,750.34 | 1 | $ 846.47 | $ 846.47 |
| Jo Daviess | 17085 |  |  | $ - | 3 | $ 17,280.25 | $ 17,625.86 | 3 | $ 19,384.09 | $ 19,384.09 |
| Kane | 17089 |  |  | $ - | 21 | $ 270,374.57 | $ 275,782.06 | 3 | $ 3,813.17 | $ 3,813.17 |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2012  $1.03 | | | 2013 $1.02 | | | 2014 $1.00 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Kankakee | 17091 |  |  | $ - |  |  | $ - | 4 | $ 83,449.27 | $ 83,449.27 |
| Kendall | 17093 |  |  | $ - | 6 | $ 149,362.87 | $ 152,350.13 |  |  | $ - |
| Knox | 17095 |  |  | $ - | 1 | $ 57,044.60 | $ 58,185.49 |  |  | $ - |
| Lake | 17097 |  |  | $ - | 68 | $1,566,483.62 | $ 1,597,813.29 | 2 | $ 376.61 | $ 376.61 |
| LaSalle | 17099 | 1 | $ - | $ - | 18 | $ 613,627.19 | $ 625,899.73 |  |  | $ - |
| Lawrence | 17101 |  |  | $ - |  |  | $ - |  |  | $ - |
| Lee | 17103 |  |  | $ - | 1 | $ 9,238.92 | $ 9,423.70 |  |  | $ - |
| Livingston | 17105 |  |  | $ - | 2 | $ 46,600.00 | $ 47,532.00 |  |  | $ - |
| Logan | 17107 |  |  | $ - |  |  | $ - |  |  | $ - |
| McDonough | 17109 |  |  | $ - | 1 | $ 18,145.16 | $ 18,508.06 |  |  | $ - |
| McHenry | 17111 |  |  | $ - | 30 | $ 532,959.63 | $ 543,618.82 |  |  | $ - |
| McLean | 17113 |  |  | $ - |  |  | $ - |  |  | $ - |
| Macon | 17115 |  |  | $ - | 1 | $ 8,072.51 | $ 8,233.96 |  |  | $ - |
| Macoupin | 17117 |  |  | $ - |  |  | $ - |  |  | $ - |
| Madison | 17119 |  |  | $ - | 3 | $ 11,860.57 | $ 12,097.78 |  |  | $ - |
| Marion | 17121 |  |  | $ - |  |  | $ - |  |  | $ - |
| Marshall | 17123 |  |  | $ - | 2 | $ 50,729.86 | $ 51,744.46 |  |  | $ - |
| Mason | 17125 |  |  | $ - | 8 | $ 224,231.84 | $ 228,716.48 |  |  | $ - |
| Massac | 17127 |  |  | $ - |  |  | $ - |  |  | $ - |
| Menard | 17129 |  |  | $ - |  |  | $ - |  |  | $ - |
| Mercer | 17131 |  |  | $ - |  |  | $ - |  |  | $ - |
| Monroe | 17133 |  |  | $ - | 2 | $ 54,618.88 | $ 55,711.26 | 2 | $ - | $ - |
| Montgomery | 17135 |  |  | $ - |  |  | $ - |  |  | $ - |
| Morgan | 17137 |  |  | $ - |  |  | $ - | 1 | $ - | $ - |
| Moultrie | 17139 |  |  | $ - |  |  | $ - |  |  | $ - |
| Ogle | 17141 |  |  | $ - | 10 | $ 156,861.17 | $ 159,998.39 |  |  | $ - |
| Peoria | 17143 |  |  | $ - | 57 | $1,959,186.15 | $ 1,998,369.87 | 1 | $ - | $ - |
| Piatt | 17147 |  |  | $ - |  |  | $ - | 6 | $ 204,791.16 | $ 204,791.16 |
| Pike | 17149 |  |  | $ - | 5 | $ 248,346.27 | $ 253,313.20 |  |  | $ - |
| Pulaski | 17153 |  |  | $ - |  |  | $ - |  |  | $ - |
| Putnam | 17155 |  |  | $ - | 5 | $ 186,517.12 | $ 190,247.46 |  |  | $ - |
| Randolph | 17157 |  |  | $ - |  |  | $ - |  |  | $ - |
| Richland | 17159 |  |  | $ - |  |  | $ - |  |  | $ - |
| Rock Island | 17161 |  |  | $ - | 30 | $ 540,516.51 | $ 551,326.84 | 11 | $ 610,859.14 | $ 610,859.14 |
| St. Clair | 17163 | 1 | $ 2,516.52 | $ 2,592.02 | 8 | $ 19,914.90 | $ 20,313.20 |  |  | $ - |
| Saline | 17165 |  |  | $ - |  |  | $ - | 2 | $ 32,446.38 | $ 32,446.38 |
| Sangamon | 17167 |  |  | $ - | 1 | $ 3,774.88 | $ 3,850.38 | 1 | $ 50,382.83 | $ 50,382.83 |
| Schuyler | 17169 |  |  | $ - | 1 | $ 29,283.02 | $ 29,868.68 |  |  | $ - |
|  |  |  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | | | |
| TABLE IX: NFIP CLAIM INFORMATION (2000 - 2014) (continued) | | | | | | | | | | |
| County Name | FIPS  County  Code | 2012  $1.03 | | | 2013 $1.02 | | | 2014 $1.00 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Scott | 17171 |  |  | $ - |  |  | $ - |  |  | $ - |
| Shelby | 17173 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stark | 17175 |  |  | $ - |  |  | $ - |  |  | $ - |
| Stephenson | 17177 |  |  | $ - |  |  | $ - |  |  | $ - |
| Tazewell | 17179 |  |  | $ - | 2 | $ 6,440.59 | $ 6,569.40 |  |  | $ - |
| Union | 17181 |  |  | $ - |  |  | $ - |  |  | $ - |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Tazewell | 17179 |  |  | $ - | 2 | $ 6,440.59 | $ 6,569.40 |  |  | $ - |
| Union | 17181 |  |  | $ - |  |  | $ - |  |  | $ - |
| Vermillion | 17183 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wabash | 17185 |  |  | $ - |  |  | $ - |  |  | $ - |
| Warren | 17187 |  |  | $ - | 1 | $ 2,554.03 | $ 2,605.11 |  |  | $ - |
| Washington | 17189 |  |  | $ - |  |  | $ - |  |  | $ - |
| Wayne | 17191 |  |  | $ - |  |  | $ - |  |  | $ - |
| White | 17193 |  |  | $ - | 1 | $ 30,128.72 | $ 30,731.29 |  |  | $ - |
| Whiteside | 17195 |  |  | $ - | 2 | $ 53,005.13 | $ 54,065.23 |  |  | $ - |
| Will | 17197 |  |  | $ - | 30 | $ 591,828.64 | $ 603,665.21 | 2 | $ - | $ - |
| Williamson | 17199 |  |  | $ - |  |  | $ - |  |  | $ - |
| Winnebago | 17201 |  |  | $ - | 8 | $ 43,410.70 | $ 44,278.91 | 1 | $ 1,830.69 | $ 1,830.69 |
| Woodford | 17203 |  |  | $ - | 17 | $ 202,457.88 | $ 206,507.04 |  |  | $ - |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | |
| TABLE X: NFIP CLAIM SUMMARY | | | | | | | |
| County Name | FIPS County | 1985-1999 | | | 2000-2014 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Adams | 17001 | 39 | $ 834,749.72 | $ 1,372,374.73 | 24 | $ 2,704,109.27 | $ 2,985,623.92 |
| Alexander | 17003 | 17 | $ 42,251.91 | $ 90,766.27 | 25 | $ 259,228.34 | $ 277,864.59 |
| Boone | 17007 | 3 | $ - | $ - | 3 | $ 15,378.00 | $ 17,370.09 |
| Brown | 17009 | 5 | $ 37,062.90 | $ 60,027.35 | 7 | $ 139,493.33 | $ 164,022.48 |
| Bureau | 17011 | 2 | $ 3,048.58 | $ 6,322.22 | 7 | $ 35,312.35 | $ 36,622.18 |
| Calhoun | 17013 | 130 | $ 1,488,893.47 | $ 2,583,125.34 | 134 | $ 2,412,834.01 | $ 2,582,779.84 |
| Carroll | 17015 | 3 | $ 12,151.81 | $ 18,085.43 | 3 | $ 65,931.26 | $ 87,979.01 |
| Cass | 17017 | 11 | $ 31,252.14 | $ 62,667.33 | 9 | $ 88,721.65 | $ 91,451.11 |
| Champaign | 17019 | 35 | $ 439,303.02 | $ 738,608.92 | 19 | $ 215,522.56 | $ 251,237.80 |
| Christian | 17021 | 0 | $ - | $ - | 4 | $ 9,400.37 | $ 12,567.34 |
| Clark | 17023 | 0 | $ - | $ - | 8 | $ 148,195.88 | $ 170,987.70 |
| Clinton | 17027 | 0 | $ - | $ - | 2 | $ 9,657.36 | $ 10,015.08 |
| Coles | 17029 | 4 | $ - | $ - | 2 | $ 31,848.94 | $ 35,242.75 |
| Cook | 17031 | 904 | $ 6,721,104.57 | $ 12,466,879.55 | 1875 | $ 24,588,726.12 | $ 26,519,683.88 |
| Crawford | 17033 | 0 | $ - | $ - | 3 | $ 46,374.93 | $ 54,861.85 |
| DeKalb | 17037 | 19 | $ 205,571.73 | $ 316,586.87 | 35 | $ 641,594.41 | $ 724,592.76 |
| DeWitt | 17039 | 5 | $ 83,311.34 | $ 132,062.50 | 0 | $ - | $ - |
| Douglas | 17041 | 28 | $ 90,693.30 | $ 156,601.50 | 30 | $ 181,310.40 | $ 191,487.76 |
| Dupage | 17043 | 294 | $ 2,216,460.09 | $ 4,459,829.01 | 286 | $ 7,256,877.61 | $ 7,696,227.81 |
| Ford | 17053 | 0 | $ - | $ - | 0 | $ - | $ - |
| Franklin | 17055 | 5 | $ 84,378.99 | $ 127,412.27 | 2 | $ 9,437.66 | $ 10,234.70 |
| Fulton | 17057 | 47 | $ 334,755.07 | $ 585,535.49 | 13 | $ 219,345.90 | $ 235,492.30 |
| Gallatin | 17059 | 0 | $ - | $ - | 3 | $ 37,510.48 | $ 39,386.00 |
| Greene | 17061 | 7 | $ 38,749.84 | $ 72,634.11 | 0 | $ - | $ - |
| Grundy | 17063 | 18 | $ 246,049.18 | $ 538,916.58 | 20 | $ 387,598.79 | $ 404,998.26 |
| Hancock | 17067 | 22 | $ 443,099.02 | $ 731,031.44 | 44 | $ 817,061.48 | $ 912,170.07 |
| Hardin | 17069 | 6 | $ 41,117.45 | $ 71,544.36 | 1 | $ 7,492.69 | $ 7,867.32 |
| Henderson | 17071 | 23 | $ 208,460.09 | $ 342,218.13 | 47 | $ 1,473,515.67 | $ 1,666,250.79 |
| Henry | 17073 | 15 | $ 68,284.44 | $ 103,807.78 | 13 | $ 345,373.16 | $ 386,050.86 |
| Iriquois | 17075 | 15 | $ 232,167.04 | $ 379,572.89 | 107 | $ 1,186,482.37 | $ 1,308,802.05 |
| Jackson | 17077 | 8 | $ 34,898.97 | $ 52,335.92 | 37 | $ 181,990.61 | $ 205,740.24 |
| Jefferson | 17081 | 1 | $ - | $ - | 2 | $ 20,112.68 | $ 23,107.40 |
| Jersey | 17083 | 111 | $ 1,151,426.02 | $ 1,962,339.00 | 120 | $ 3,263,113.74 | $ 3,597,801.06 |
| Jo Daviess | 17085 | 16 | $ 106,180.00 | $ 184,899.66 | 51 | $ 703,661.94 | $ 769,311.72 |
| Kane | 17089 | 54 | $ 605,031.92 | $ 960,310.52 | 75 | $ 960,515.34 | $ 1,054,548.65 |
| Kankakee | 17091 | 50 | $ 176,716.16 | $ 343,107.17 | 51 | $ 696,808.68 | $ 764,803.32 |
|  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | |
| TABLE X: NFIP CLAIM SUMMARY (continued) | | | | | | | |
| County Name | FIPS County | 1985-1999 | | | 2000-2014 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Kendall | 17093 | 18 | $ 417,941.19 | $ 641,170.35 | 13 | $ 189,608.41 | $ 199,628.59 |
| Knox | 17095 | 2 | $ 24,200.00 | $ 39,688.00 | 1 | $ 57,044.60 | $ 58,185.49 |
| Lake | 17097 | 154 | $ 762,395.11 | $ 1,533,407.05 | 192 | $ 2,459,540.65 | $ 2,643,685.42 |
| LaSalle | 17099 | 35 | $ 525,842.45 | $ 810,997.59 | 76 | $ 1,705,643.31 | $ 1,840,751.95 |
| Lawrence | 17101 | 2 | $ 4,796.56 | $ 7,209.87 | 1 | $ 10,276.84 | $ 12,023.90 |
| Lee | 17103 | 35 | $ 187,798.35 | $ 330,847.94 | 8 | $ 46,493.87 | $ 52,361.63 |
| Livingston | 17105 | 0 | $ - | $ - | 46 | $ 385,242.22 | $ 420,038.44 |
| Logan | 17107 | 1 | $ 6,301.57 | $ 9,137.28 | 1 | $ 10,847.41 | $ 11,932.15 |
| McDonough | 17109 | 0 | $ - | $ - | 1 | $ 18,145.16 | $ 18,508.06 |
| McHenry | 17111 | 62 | $ 407,995.23 | $ 713,166.68 | 87 | $ 924,493.64 | $ 1,001,755.55 |
| McLean | 17113 | 0 | $ - | $ - | 6 | $ 18,460.24 | $ 21,712.28 |
| Macon | 17115 | 18 | $ 254,128.23 | $ 451,354.50 | 12 | $ 183,913.12 | $ 205,671.35 |
| Macoupin | 17117 | 1 | $ 9,823.58 | $ 16,110.67 | 0 | $ - | $ - |
| Madison | 17119 | 52 | $ 813,129.12 | $ 1,361,415.35 | 38 | $ 355,953.05 | $ 418,720.88 |
| Marion | 17121 | 2 | $ 450.00 | $ 972.00 | 0 | $ - | $ - |
| Marshall | 17123 | 9 | $ 51,622.35 | $ 90,479.65 | 3 | $ 50,729.86 | $ 51,744.46 |
| Mason | 17125 | 38 | $ 231,436.97 | $ 388,134.82 | 35 | $ 433,890.05 | $ 473,804.64 |
| Massac | 17127 | 5 | $ 18,838.82 | $ 27,693.07 | 16 | $ 181,079.38 | $ 190,256.70 |
| Menard | 17129 | 5 | $ 23,950.98 | $ 38,321.57 | 3 | $ 24,697.62 | $ 32,347.91 |
| Mercer | 17131 | 23 | $ 512,764.38 | $ 840,416.82 | 4 | $ 22,285.23 | $ 24,513.75 |
| Monroe | 17133 | 26 | $ 813,402.92 | $ 1,333,980.79 | 5 | $ 68,356.92 | $ 70,823.10 |
| Montgomery | 17135 | 2 | $ 16,501.24 | $ 27,062.03 | 2 | $ 114,600.00 | $ 130,460.00 |
| Morgan | 17137 | 18 | $ 54,149.47 | $ 98,775.90 | 8 | $ 10,777.22 | $ 12,387.03 |
| Moultrie | 17139 | 1 | $ - | $ - | 2 | $ 93,447.30 | $ 102,792.03 |
| Ogle | 17141 | 25 | $ 196,061.32 | $ 305,469.21 | 32 | $ 544,776.37 | $ 593,065.74 |
| Peoria | 17143 | 178 | $ 1,043,814.88 | $ 1,890,526.78 | 194 | $ 3,698,442.40 | $ 3,937,254.92 |
| Piatt | 17147 | 0 | $ - | $ - | 9 | $ 251,728.40 | $ 256,485.65 |
| Pike | 17149 | 39 | $ 1,021,328.99 | $ 1,676,075.67 | 18 | $ 487,374.06 | $ 545,459.15 |
| Pulaski | 17153 | 0 | $ - | $ - | 6 | $ 14,934.37 | $ 16,512.86 |
| Putnam | 17155 | 3 | $ 24,320.59 | $ 45,802.64 | 9 | $ 226,511.34 | $ 234,860.01 |
| Randolph | 17157 | 5 | $ 9,300.00 | $ 15,252.00 | 11 | $ 116,073.71 | $ 132,996.40 |
| Richland | 17159 | 4 | $ 33,296.96 | $ 56,981.59 | 0 | $ - | $ - |
| Rock Island | 17161 | 161 | $ 1,162,639.50 | $ 1,913,389.56 | 197 | $ 3,378,323.87 | $ 3,850,180.56 |
| St. Clair | 17163 | 85 | $ 347,349.53 | $ 536,986.77 | 50 | $ 236,847.79 | $ 259,283.31 |
| Saline | 17165 | 0 | $ - | $ - | 3 | $ 103,303.09 | $ 106,845.93 |
| Sangamon | 17167 | 21 | $ 187,796.65 | $ 318,196.21 | 12 | $ 280,015.06 | $ 338,444.86 |
|  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | |
| TABLE X: NFIP CLAIM SUMMARY (continued) | | | | | | | |
| County Name | FIPS County | 1985-1999 | | | 2000-2014 | | |
| Count | Amount | Amount in 2014 Dollars | Count | Amount | Amount in 2014 Dollars |
| Schuyler | 17169 | 4 | $ 76,469.40 | $ 119,581.94 | 1 | $ 29,283.02 | $ 29,868.68 |
| Scott | 17171 | 3 | $ 7,908.35 | $ 12,969.69 | 7 | $ 28,812.40 | $ 32,792.11 |
| Shelby | 17173 | 0 | $ - | $ - | 0 | $ - | $ - |
| Stark | 17175 | 0 | $ - | $ - | 0 | $ - | $ - |
| Stephenson | 17177 | 13 | $ 81,004.39 | $ 132,849.58 | 13 | $ 56,095.12 | $ 61,784.92 |
| Tazewell | 17179 | 20 | $ 103,874.89 | $ 175,542.85 | 4 | $ 7,963.30 | $ 8,244.38 |
| Union | 17181 | 27 | $ 27,412.42 | $ 43,456.70 | 7 | $ 14,427.22 | $ 16,589.53 |
| Vermillion | 17183 | 10 | $ 157,737.26 | $ 261,560.84 | 4 | $ 246,977.15 | $ 276,143.92 |
| Wabash | 17185 | 1 | $ 4,910.00 | $ 7,119.50 | 0 | $ - | $ - |
| Warren | 17187 | 0 | $ - | $ - | 1 | $ 2,554.03 | $ 2,605.11 |
| Washington | 17189 | 0 | $ - | $ - | 2 | $ 18,269.61 | $ 19,183.09 |
| Wayne | 17191 | 3 | $ 12,815.12 | $ 22,721.01 | 0 | $ - | $ - |
| White | 17193 | 10 | $ 20,086.13 | $ 31,141.64 | 10 | $ 240,769.84 | $ 254,482.41 |
| Whiteside | 17195 | 22 | $ 139,668.62 | $ 230,554.70 | 19 | $ 260,019.60 | $ 313,998.75 |
| Will | 17197 | 178 | $ 1,475,206.53 | $ 2,580,526.26 | 99 | $ 1,315,128.00 | $ 1,418,022.98 |
| Williamson | 17199 | 28 | $ 339,484.82 | $ 549,556.95 | 20 | $ 261,461.59 | $ 288,443.05 |
| Winnebago | 17201 | 63 | $ 130,863.12 | $ 218,565.36 | 177 | $ 3,655,036.02 | $ 4,179,609.04 |
| Woodford | 17203 | 35 | $ 137,626.68 | $ 276,484.49 | 26 | $ 275,425.48 | $ 286,771.40 |
| Total | -- | 3344 | $ 27,855,613.44 | $ 49,101,256.22 | 4553 | $ 72,276,616.92 | $ 78,751,216.78 |

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| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS | | | |
| COUNTY\_NAM | OBJECTID | COUNTY\_SQMI | TOTAL\_COUNT |
| ADAMS | 14 | 855.2 | 2256267600 |
| ALEXANDER | 62 | 235.51 | 655892100 |
| BOND | 92 | 380.28 | 991532700 |
| BOONE | 2 | 280.72 | 730480500 |
| BROWN | 40 | 305.61 | 795716100 |
| BUREAU | 6 | 869.03 | 2263814100 |
| CALHOUN | 45 | 253.83 | 734938200 |
| CARROLL | 27 | 444.81 | 1208259000 |
| CASS | 43 | 375.82 | 993624300 |
| CHAMPAIGN | 15 | 996.27 | 2585616300 |
| CHRISTIAN | 82 | 709.38 | 1852641000 |
| CLARK | 89 | 501.42 | 1307560500 |
| CLAY | 46 | 468.32 | 1215509400 |
| CLINTON | 50 | 474.09 | 1303382700 |
| COLES | 85 | 508.29 | 1321947000 |
| COOK | 30 | 945.33 | 2479723200 |
| CRAWFORD | 90 | 443.63 | 1154688300 |
| CUMBERLAND | 44 | 346.02 | 897985800 |
| DEKALB | 29 | 631.31 | 1643625900 |
| DEWITT | 37 | 397.51 | 1048911300 |
| DOUGLAS | 41 | 416.67 | 1080875700 |
| DUPAGE | 63 | 327.5 | 871248600 |
| EDGAR | 80 | 623.37 | 1615452300 |
| EDWARDS | 52 | 222.42 | 576743400 |
| EFFINGHAM | 48 | 478.78 | 1243578600 |
| FAYETTE | 94 | 716.48 | 1879163100 |
| FORD | 34 | 485.62 | 1259688600 |
| FRANKLIN | 57 | 408.89 | 1117971900 |
| FULTON | 13 | 865.6 | 2286394200 |
| GALLATIN | 70 | 323.07 | 849783600 |
| GREENE | 49 | 543.02 | 1416716100 |
| GRUNDY | 8 | 418.04 | 1115113500 |
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| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | OBJECTID | COUNTY\_SQMI | TOTAL\_COUNT |
| HAMILTON | 73 | 434.67 | 1128901500 |
| HANCOCK | 39 | 793.73 | 2108605500 |
| HARDIN | 74 | 177.53 | 469637100 |
| HENDERSON | 22 | 378.87 | 1025435700 |
| HENRY | 7 | 822.99 | 2136538800 |
| IROQUOIS | 24 | 1117.32 | 2899134900 |
| JACKSON | 58 | 584.08 | 1567748700 |
| JASPER | 91 | 494.51 | 1290660300 |
| JEFFERSON | 98 | 571.17 | 1512084600 |
| JERSEY | 47 | 369.27 | 977818500 |
| JO DAVIESS | 66 | 601.09 | 1601366400 |
| JOHNSON | 72 | 343092 | 902768400 |
| KANE | 28 | 520.06 | 1357353900 |
| KANKAKEE | 33 | 676.56 | 1764252900 |
| KENDALL | 32 | 320.34 | 834815700 |
| KNOX | 19 | 716.4 | 1863458100 |
| LAKE | 69 | 443.67 | 1219389300 |
| LASALLE | 5 | 1135.12 | 2973677400 |
| LAWRENCE | 99 | 372.18 | 968668200 |
| LEE | 65 | 724.9 | 1887008400 |
| LIVINGSTON | 21 | 1044.29 | 2709133200 |
| LOGAN | 16 | 618.06 | 1602852300 |
| MACON | 78 | 580.69 | 1517494500 |
| MACOUPIN | 88 | 862.91 | 2246540400 |
| MADISON | 93 | 715.58 | 1916992800 |

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| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | LIGHT\_DEV\_  COUNT | LIGHT\_DEV\_  PROP | LIGHT\_DEV\_  AREA |
| ADAMS | 122499900 | 0.054293161 | 46.43151126 |
| ALEXANDER | 33947100 | 0.051757141 | 12.18932431 |
| BOND | 61063200 | 0.061584656 | 23.41941289 |
| BOONE | 67957200 | 0.09303082 | 26.11561183 |
| BROWN | 29123100 | 0.036599863 | 11.18528404 |
| BUREAU | 122677200 | 0.054190492 | 47.09316331 |
| CALHOUN | 26910900 | 0.036616548 | 9.294378421 |
| CARROLL | 60383700 | 0.049975792 | 22.22973187 |
| CASS | 36970200 | 0.037207423 | 13.98329385 |
| CHAMPAIGN | 226770300 | 0.087704545 | 87.37740661 |
| CHRISTIAN | 106869600 | 0.057685002 | 40.9205868 |
| CLARK | 76818600 | 0.058749557 | 29.45820282 |
| CLAY | 64703700 | 0.053231756 | 24.92949605 |
| CLINTON | 79744500 | 0.061182721 | 29.00611617 |
| COLES | 95791500 | 0.072462436 | 36.83193164 |
| COOK | 1042128900 | 0.420260173 | 397.284549 |
| CRAWFORD | 68769900 | 0.059557112 | 26.42132144 |
| CUMBERLAND | 52548300 | 0.058517963 | 20.24838563 |
| DEKALB | 110180700 | 0.067035145 | 42.31995719 |
| DEWITT | 55783800 | 0.053182571 | 21.14060392 |
| DOUGLAS | 65653200 | 0.060740749 | 25.30884804 |
| DUPAGE | 487594800 | 0.559650598 | 183.2855708 |
| EDGAR | 82198800 | 0.050882839 | 31.71883562 |
| EDWARDS | 31576500 | 0.054749651 | 12.17741743 |
| EFFINGHAM | 95805900 | 0.077040486 | 36.88544399 |
| FAYETTE | 106548300 | 0.056699868 | 40.62432153 |
| FORD | 68189400 | 0.05413195 | 26.28755744 |
| FRANKLIN | 97104600 | 0.086857818 | 35.51529327 |
| FULTON | 107636400 | 0.047076921 | 40.74978315 |
| GALLATIN | 37257300 | 0.04384328 | 14.16444835 |
| GREENE | 59905800 | 0.042284972 | 22.96158526 |
| GRUNDY | 75003300 | 0.067260687 | 28.11765756 |
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| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | LIGHT\_DEV\_  COUNT | LIGHT\_DEV\_  PROP | LIGHT\_DEV\_  AREA |
| HAMILTON | 54386100 | 0.048176125 | 20.94071634 |
| HANCOCK | 102823200 | 0.048763602 | 38.70513405 |
| HARDIN | 21097800 | 0.044923623 | 7.975290781 |
| HENDERSON | 41060700 | 0.040042199 | 15.1707878 |
| HENRY | 123163200 | 0.057646133 | 47.44219107 |
| IROQUOIS | 156033000 | 0.053820538 | 60.1347635 |
| JACKSON | 112512600 | 0.071766987 | 41.91766155 |
| JASPER | 64436400 | 0.049925143 | 24.68848245 |
| JEFFERSON | 108433800 | 0.071711464 | 40.95943676 |
| JERSEY | 53742600 | 0.054961734 | 20.2957194 |
| JO DAVIESS | 80208900 | 0.050087788 | 30.10726821 |
| JOHNSON | 49735800 | 0.055092535 | 18901.80814 |
| KANE | 314523900 | 0.231718419 | 120.5074811 |
| KANKAKEE | 139642200 | 0.079150897 | 53.55033104 |
| KENDALL | 77521500 | 0.092860616 | 29.74696967 |
| KNOX | 115425900 | 0.061941774 | 44.37508671 |
| LAKE | 479648700 | 0.393351574 | 174.5182927 |
| LASALLE | 208466100 | 0.070103805 | 79.57623091 |
| LAWRENCE | 69894000 | 0.072154738 | 26.85455032 |
| LEE | 103583700 | 0.054893078 | 39.79199252 |
| LIVINGSTON | 143514000 | 0.052974139 | 55.32036411 |
| LOGAN | 88303500 | 0.055091477 | 34.04983804 |
| MACON | 164884500 | 0.108655748 | 63.09530631 |
| MACOUPIN | 133660800 | 0.059496281 | 51.33993625 |
| MADISON | 301366800 | 0.157208102 | 112.4949738 |

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| **Appendix B (continued)** | | | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | | | |
| COUNTY\_NAM | HEAVY\_DEV\_  COUNT | HEAVY\_DEV  \_PROP | HEAVY\_DEV\_  TOTAL | TOTAL\_DEV  \_COUNT | TOTAL\_PROP\_  DEV | DEV\_AREA |
| ADAMS | 40943700 | 0.018146651 | 15.51901567 | 163443600 | 0.072439812 | 61.95052693 |
| ALEXANDER | 3345300 | 0.005100382 | 1.201190871 | 37292400 | 0.056857523 | 13.39051518 |
| BOND | 3125700 | 0.003152392 | 1.198791725 | 64188900 | 0.064737048 | 24.61820462 |
| BOONE | 12708000 | 0.017396768 | 4.883620795 | 80665200 | 0.110427588 | 30.99923262 |
| BROWN | 3965400 | 0.004983436 | 1.522987777 | 33088500 | 0.041583298 | 12.70827181 |
| BUREAU | 13930200 | 0.00615342 | 5.347506982 | 136607400 | 0.060343913 | 52.44067029 |
| CALHOUN | 714600 | 0.000972327 | 0.246805674 | 27625500 | 0.037588875 | 9.541184095 |
| CARROLL | 5290200 | 0.004378366 | 1.947540935 | 65673900 | 0.054354158 | 24.1772728 |
| CASS | 7979400 | 0.008030601 | 3.018060355 | 44949600 | 0.045238024 | 17.00135421 |
| CHAMPAIGN | 41963400 | 0.016229554 | 16.16901801 | 268733700 | 0.103934099 | 103.5464246 |
| CHRISTIAN | 8456400 | 0.004564511 | 3.237972728 | 115326000 | 0.062249513 | 44.15855953 |
| CLARK | 4040100 | 0.0030898 | 1.54928735 | 80858700 | 0.061839357 | 31.00749017 |
| CLAY | 2769300 | 0.002278304 | 1.066975357 | 67473000 | 0.05551006 | 25.99647141 |
| CLINTON | 12146400 | 0.009319136 | 4.418108953 | 91890900 | 0.070501856 | 33.42422512 |
| COLES | 13451400 | 0.010175446 | 5.172077327 | 109242900 | 0.082637882 | 42.00400897 |
| COOK | 980362800 | 0.395351707 | 373.7378292 | 2022491700 | 0.81561188 | 771.0223781 |
| CRAWFORD | 4157100 | 0.003600192 | 1.597153338 | 72927000 | 0.063157304 | 28.01847478 |
| CUMBERLAND | 1611000 | 0.001794015 | 0.620765072 | 54159300 | 0.060311978 | 20.8691507 |
| DEKALB | 25693200 | 0.015632024 | 9.868653257 | 135873900 | 0.082667169 | 52.18861044 |
| DEWITT | 7227000 | 0.006890001 | 2.738844333 | 63010800 | 0.060072572 | 23.87944825 |
| DOUGLAS | 7800300 | 0.007216649 | 3.006960931 | 73453500 | 0.067957398 | 28.31580897 |
| DUPAGE | 217007100 | 0.249075981 | 81.57238388 | 704601900 | 0.808726579 | 264.8579547 |
| EDGAR | 3855600 | 0.0023867 | 1.487797177 | 86054400 | 0.053269539 | 33.2066328 |
| EDWARDS | 1278900 | 0.002217451 | 0.493205363 | 32855400 | 0.056967102 | 12.67062279 |
| EFFINGHAM | 10402200 | 0.008364731 | 4.004865729 | 106208100 | 0.085405217 | 40.89030972 |
| FAYETTE | 5238900 | 0.00278789 | 1.997467422 | 111787200 | 0.059487758 | 42.62178895 |
| FORD | 5607000 | 0.0044511 | 2.16154321 | 73796400 | 0.05858305 | 28.44910065 |
| FRANKLIN | 8222400 | 0.007354747 | 3.007282326 | 105327000 | 0.094212565 | 38.52257559 |
| FULTON | 12940200 | 0.005659654 | 4.898996472 | 120576600 | 0.052736575 | 45.64877962 |
| GALLATIN | 1473300 | 0.001733736 | 0.56011793 | 38730600 | 0.045577015 | 14.72456628 |
| GREENE | 3571200 | 0.002520759 | 1.368822606 | 63477000 | 0.044805731 | 24.33040786 |
| GRUNDY | 15721200 | 0.014098296 | 5.893651586 | 90724500 | 0.081358983 | 34.01130914 |
| HAMILTON | 1366200 | 0.001210203 | 0.526038945 | 55752300 | 0.049386328 | 21.46675528 |
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| **Appendix B (continued)** | | | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | | | |
| COUNTY\_NAM | HEAVY\_DEV\_  COUNT | HEAVY\_DEV  \_PROP | HEAVY\_DEV\_  TOTAL | TOTAL\_DEV  \_COUNT | TOTAL\_PROP\_  DEV | DEV\_AREA |
| HANCOCK | 17206200 | 0.00815999 | 6.47682894 | 120029400 | 0.056923592 | 45.18196299 |
| HARDIN | 1015200 | 0.002161669 | 0.383761113 | 22113000 | 0.047085292 | 8.359051893 |
| HENDERSON | 5166900 | 0.005038736 | 1.909025991 | 46227600 | 0.045080935 | 17.07981379 |
| HENRY | 19556100 | 0.009153169 | 7.532966281 | 142719300 | 0.066799302 | 54.97515735 |
| IROQUOIS | 10865700 | 0.003747911 | 4.18761608 | 166898700 | 0.057568449 | 64.32237958 |
| JACKSON | 8781300 | 0.005601217 | 3.271558576 | 121293900 | 0.077368203 | 45.18922013 |
| JASPER | 2594700 | 0.002010366 | 0.99414625 | 67031100 | 0.051935509 | 25.6826287 |
| JEFFERSON | 11603700 | 0.007673975 | 4.38314452 | 120037500 | 0.079385439 | 45.34258128 |
| JERSEY | 4559400 | 0.004662829 | 1.721842692 | 58302000 | 0.059624562 | 22.01756209 |
| JO DAVIESS | 4194900 | 0.002619575 | 1.574600567 | 84403800 | 0.052707363 | 31.68186877 |
| JOHNSON | 1663200 | 0.001842333 | 632.0897081 | 51399000 | 0.056934868 | 19533.89785 |
| KANE | 97683300 | 0.071965977 | 37.42662617 | 412207200 | 0.303684397 | 157.9341073 |
| KANKAKEE | 25584300 | 0.014501492 | 9.81112969 | 165226500 | 0.09365239 | 63.36146073 |
| KENDALL | 15116400 | 0.01810747 | 5.800546846 | 92637900 | 0.110968086 | 35.54751652 |
| KNOX | 22920300 | 0.012299874 | 8.811629797 | 138346200 | 0.074241648 | 53.1867165 |
| LAKE | 143942400 | 0.118044664 | 52.372876 | 623591100 | 0.511396237 | 226.8911687 |
| LASALLE | 39172500 | 0.013173083 | 14.95303028 | 247638600 | 0.083276888 | 94.52926119 |
| LAWRENCE | 3060900 | 0.003159906 | 1.176053639 | 72954900 | 0.075314643 | 28.03060396 |
| LEE | 15314400 | 0.008115703 | 5.883073207 | 118898100 | 0.063008782 | 45.67506572 |
| LIVINGSTON | 18000000 | 0.006644192 | 6.938462826 | 161514000 | 0.059618331 | 62.25882694 |
| LOGAN | 10528200 | 0.006568416 | 4.059674926 | 98831700 | 0.061659892 | 38.10951296 |
| MACON | 41603400 | 0.027415849 | 15.92010933 | 206487900 | 0.136071597 | 79.01541564 |
| MACOUPIN | 13459500 | 0.005991212 | 5.169876823 | 147120300 | 0.065487494 | 56.50981308 |
| MADISON | 82420200 | 0.042994528 | 30.76602412 | 383787000 | 0.20020263 | 143.2609979 |

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| **Appendix B (continued)** | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | |
| COUNTY\_NAM | VALUE\_21 | VALUE\_22 | VALUE\_23 | VALUE\_24 |
| ADAMS | 46222200 | 76277700 | 34441200 | 6502500 |
| ALEXANDER | 24219900 | 9727200 | 2689200 | 656100 |
| BOND | 40518900 | 20544300 | 2594700 | 531000 |
| BOONE | 31462200 | 36495000 | 9501300 | 3206700 |
| BROWN | 12255300 | 16867800 | 3546000 | 419400 |
| BUREAU | 76134600 | 46542600 | 11110500 | 2819700 |
| CALHOUN | 20782800 | 6128100 | 590400 | 124200 |
| CARROLL | 36942300 | 23441400 | 4085100 | 1205100 |
| CASS | 15474600 | 21495600 | 6681600 | 1297800 |
| CHAMPAIGN | 100359900 | 126410400 | 31703400 | 10260000 |
| CHRISTIAN | 63127800 | 43741800 | 6337800 | 2118600 |
| CLARK | 52383600 | 24435000 | 3309300 | 730800 |
| CLAY | 50374800 | 14328900 | 2103300 | 666000 |
| CLINTON | 41196600 | 38547900 | 10147500 | 1998900 |
| COLES | 49187700 | 46603800 | 10430100 | 3021300 |
| COOK | 209503800 | 832625100 | 639520200 | 340842600 |
| CRAWFORD | 50885100 | 17884800 | 3041100 | 1116000 |
| CUMBERLAND | 39038400 | 13509900 | 1349100 | 261900 |
| DEKALB | 45877500 | 64303200 | 19584900 | 6108300 |
| DEWITT | 29697300 | 26086500 | 5797800 | 1429200 |
| DOUGLAS | 32348700 | 33304500 | 5793300 | 2007000 |
| DUPAGE | 129438900 | 358155900 | 151731900 | 65275200 |
| EDGAR | 54698400 | 27500400 | 2921400 | 934200 |
| EDWARDS | 23050800 | 8525700 | 961200 | 317700 |
| EFFINGHAM | 68018400 | 27787500 | 7169400 | 3232800 |
| FAYETTE | 82628100 | 23920200 | 4188600 | 1050300 |
| FORD | 33876900 | 34312500 | 4243500 | 1363500 |
| FRANKLIN | 56172600 | 40932000 | 7021800 | 1200600 |
| FULTON | 47515500 | 60120900 | 11189700 | 1750500 |
| GALLATIN | 25484400 | 11772900 | 1178100 | 295200 |
| GREENE | 37221300 | 22684500 | 2971800 | 599400 |
| GRUNDY | 35740800 | 39262500 | 10742400 | 4978800 |
| HAMILTON | 37418400 | 16967700 | 1143900 | 222300 |
|  |  |  |  |  |
| **Appendix B (continued)** | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | |
| COUNTY\_NAM | VALUE\_21 | VALUE\_22 | VALUE\_23 | VALUE\_24 |
| HANCOCK | 44915400 | 57907800 | 15661800 | 1544400 |
| HARDIN | 17502300 | 3595500 | 688500 | 326700 |
| HENDERSON | 18126900 | 22933800 | 4683600 | 483300 |
| HENRY | 64218600 | 58944600 | 15325200 | 4230900 |
| IROQUOIS | 91549800 | 64483200 | 8973000 | 1892700 |
| JACKSON | 63267300 | 49245300 | 7578900 | 1202400 |
| JASPER | 51351300 | 13085100 | 2013300 | 581400 |
| JEFFERSON | 68522400 | 39911400 | 8783100 | 2820600 |
| JERSEY | 35208000 | 18534600 | 3420000 | 1139400 |
| JO DAVIESS | 57240000 | 22968900 | 3439800 | 755100 |
| JOHNSON | 29278800 | 20457000 | 1485000 | 178200 |
| KANE | 100278900 | 214245000 | 74070000 | 23613300 |
| KANKAKEE | 51582600 | 88059600 | 18959400 | 6624900 |
| KENDALL | 32550300 | 44971200 | 11252700 | 3863700 |
| KNOX | 55377900 | 60048000 | 17320500 | 5599800 |
| LAKE | 195180300 | 284468400 | 104913000 | 39029400 |
| LASALLE | 92442600 | 116023500 | 29141100 | 10031400 |
| LAWRENCE | 52470900 | 17423100 | 2621700 | 439200 |
| LEE | 58275000 | 45308700 | 11994300 | 3320100 |
| LIVINGSTON | 68211900 | 75302100 | 14659200 | 3340800 |
| LOGAN | 44647200 | 43656300 | 8481600 | 2046600 |
| MACON | 72892800 | 91991700 | 27864000 | 13739400 |
| MACOUPIN | 79425000 | 54235800 | 10836900 | 2622600 |
| MADISON | 144942300 | 156424500 | 56482200 | 25938000 |

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| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | OBJECTID | COUNTY\_SQMI | TOTAL\_COUNT |
| MARION | 100 | 572.36 | 1491682500 |
| MARSHALL | 20 | 386.79 | 1033157700 |
| MASON | 36 | 539.24 | 1459076400 |
| MASSAC | 75 | 237.22 | 625962600 |
| MCDONOUGH | 76 | 589.41 | 1528088400 |
| MCHENRY | 1 | 603.17 | 1581994800 |
| MCLEAN | 11 | 1183.38 | 3072485700 |
| MENARD | 35 | 314.44 | 816608700 |
| MERCER | 9 | 561.2 | 1469909700 |
| MONROE | 97 | 385.01 | 1030193100 |
| MONTGOMERY | 87 | 703.69 | 1838026800 |
| MORGAN | 81 | 568.79 | 1483821900 |
| MOULTRIE | 83 | 335.94 | 891152100 |
| OGLE | 3 | 758.57 | 1977178500 |
| PEORIA | 25 | 619.21 | 1631750400 |
| PERRY | 56 | 441.76 | 1157852700 |
| PIATT | 17 | 439.2 | 1137796200 |
| PIKE | 42 | 831.38 | 2192574600 |
| POPE | 102 | 368.77 | 969269400 |
| PULASKI | 61 | 199.19 | 526304700 |
| PUTNAM | 10 | 160.16 | 445882500 |
| RANDOLPH | 55 | 575.5 | 1541014200 |
| RICHLAND | 54 | 359.99 | 937457100 |
| ROCK ISLAND | 31 | 427.64 | 1169292600 |
| SALINE | 59 | 379.82 | 1002240900 |
| SANGAMON | 79 | 868.3 | 2270951100 |
| SCHUYLER | 38 | 437.27 | 1142905500 |
| SCOTT | 84 | 250.91 | 654718500 |
| SHELBY | 86 | 758.52 | 1989931500 |
| ST. CLAIR | 95 | 657.76 | 1745477100 |
| STARK | 18 | 288.08 | 747117000 |
| STEPHENSON | 67 | 564.52 | 1461653100 |
| TAZEWELL | 12 | 648.97 | 1704348000 |
|  |  |  |  |
| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | OBJECTID | COUNTY\_SQMI | TOTAL\_COUNT |
| UNION | 101 | 413.46 | 1093309200 |
| VERMILION | 77 | 898.37 | 2334028500 |
| WABASH | 51 | 223.25 | 589215600 |
| WARREN | 23 | 542.41 | 1408287600 |
| WASHINGTON | 53 | 562.57 | 1460427300 |
| WAYNE | 96 | 713.81 | 1853073900 |
| WHITE | 60 | 494.77 | 1299716100 |
| WHITESIDE | 64 | 684.25 | 1806750900 |
| WILL | 4 | 836.91 | 2198998800 |
| WILLIAMSON | 71 | 420.15 | 1150257600 |
| WINNEBAGO | 68 | 513.36 | 1344637800 |
| WOODFORD | 26 | 527.8 | 1405771200 |

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| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | LIGHT\_DEV\_  COUNT | LIGHT\_DEV\_  PROP | LIGHT\_DEV\_  AREA |
| MARION | 110962800 | 0.07438768 | 42.57653234 |
| MARSHALL | 53968500 | 0.052236459 | 20.20454004 |
| MASON | 63377100 | 0.043436451 | 23.42267163 |
| MASSAC | 39566700 | 0.063209367 | 14.99452615 |
| MCDONOUGH | 77091300 | 0.050449503 | 29.73544144 |
| MCHENRY | 250061400 | 0.158067144 | 95.3413593 |
| MCLEAN | 218665800 | 0.071169021 | 84.21999634 |
| MENARD | 42832800 | 0.05245205 | 16.49302246 |
| MERCER | 63761400 | 0.043377767 | 24.34360266 |
| MONROE | 62767800 | 0.060928189 | 23.45796208 |
| MONTGOMERY | 114738300 | 0.062424715 | 43.92764802 |
| MORGAN | 78066900 | 0.052612042 | 29.92520332 |
| MOULTRIE | 48103200 | 0.053978664 | 18.13359247 |
| OGLE | 114937200 | 0.058131929 | 44.09713731 |
| PEORIA | 155498400 | 0.095295457 | 59.0078999 |
| PERRY | 67767300 | 0.058528429 | 25.85551897 |
| PIATT | 63363600 | 0.055689762 | 24.45894363 |
| PIKE | 94905900 | 0.043285141 | 35.98640025 |
| POPE | 28220400 | 0.029115125 | 10.73678475 |
| PULASKI | 31094100 | 0.059080035 | 11.76815214 |
| PUTNAM | 24178500 | 0.054226169 | 8.684863299 |
| RANDOLPH | 90459900 | 0.058701536 | 33.78273377 |
| RICHLAND | 62464500 | 0.066631849 | 23.98679935 |
| ROCK ISLAND | 125877600 | 0.107652781 | 46.0366352 |
| SALINE | 73710900 | 0.073546091 | 27.93427612 |
| SANGAMON | 210002400 | 0.092473325 | 80.29458843 |
| SCHUYLER | 44749800 | 0.039154418 | 17.12105248 |
| SCOTT | 27479700 | 0.041971779 | 10.531139 |
| SHELBY | 101898900 | 0.05120724 | 38.84171572 |
| ST. CLAIR | 271196100 | 0.155370758 | 102.1966697 |
| STARK | 32497200 | 0.043496802 | 12.53055864 |
| STEPHENSON | 90173700 | 0.061692956 | 34.82690737 |
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|  |  |  |  |
| **Appendix B (continued)** | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | |
| COUNTY\_NAM | LIGHT\_DEV\_  COUNT | LIGHT\_DEV\_  PROP | LIGHT\_DEV\_  AREA |
| TAZEWELL | 158436900 | 0.092960417 | 60.32852152 |
| UNION | 59759100 | 0.05465892 | 22.59927703 |
| VERMILION | 168221700 | 0.072073542 | 64.74870749 |
| WABASH | 35371800 | 0.060032015 | 13.40214745 |
| WARREN | 66268800 | 0.047056297 | 25.52380622 |
| WASHINGTON | 73453500 | 0.050295896 | 28.29496237 |
| WAYNE | 95144400 | 0.051344094 | 36.64992754 |
| WHITE | 77750100 | 0.059820833 | 29.59755363 |
| WHITESIDE | 105281100 | 0.058270955 | 39.87190081 |
| WILL | 414353700 | 0.188428343 | 157.6975645 |
| WILLIAMSON | 119638800 | 0.104010441 | 43.6999867 |
| WINNEBAGO | 239351400 | 0.178004367 | 91.38032168 |
| WOODFORD | 90090000 | 0.06408582 | 33.82449576 |

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| **Appendix B (continued)** | | | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | | | |
| COUNTY\_NAM | HEAVY\_DEV\_  COUNT | HEAVY\_DEV  \_PROP | HEAVY\_DEV\_  TOTAL | TOTAL\_DEV  \_COUNT | TOTAL\_PROP\_  DEV | DEV\_AREA |
| MARION | 11056500 | 0.0074121 | 4.24238961 | 122019300 | 0.08179978 | 46.81892195 |
| MARSHALL | 5102100 | 0.004938355 | 1.91010652 | 59070600 | 0.057174815 | 22.11464656 |
| MASON | 5796000 | 0.003972376 | 2.142064007 | 69173100 | 0.047408827 | 25.56473564 |
| MASSAC | 3775500 | 0.006031511 | 1.430794923 | 43342200 | 0.069240878 | 16.42532107 |
| MCDONOUGH | 13227300 | 0.008656109 | 5.101997301 | 90318600 | 0.059105612 | 34.83743874 |
| MCHENRY | 47407500 | 0.029966913 | 18.07514271 | 297468900 | 0.188034057 | 113.416502 |
| MCLEAN | 59699700 | 0.019430424 | 22.9935752 | 278365500 | 0.090599445 | 107.2135715 |
| MENARD | 3734100 | 0.004572692 | 1.437837246 | 46566900 | 0.057024741 | 17.93085971 |
| MERCER | 3978900 | 0.002706901 | 1.519112827 | 67740300 | 0.046084668 | 25.86271549 |
| MONROE | 13383900 | 0.012991642 | 5.001912107 | 76151700 | 0.073919831 | 28.45987419 |
| MONTGOMERY | 9708300 | 0.005281914 | 3.716830259 | 124446600 | 0.06770663 | 47.64447828 |
| MORGAN | 21229200 | 0.014307108 | 8.137739892 | 99296100 | 0.06691915 | 38.06294321 |
| MOULTRIE | 4393800 | 0.004930471 | 1.656342584 | 52497000 | 0.058909136 | 19.78993505 |
| OGLE | 16333200 | 0.008260863 | 6.266442572 | 131270400 | 0.066392792 | 50.36357988 |
| PEORIA | 66446100 | 0.04072075 | 25.21469557 | 221944500 | 0.136016207 | 84.22259547 |
| PERRY | 5111100 | 0.004414292 | 1.950057668 | 72878400 | 0.062942721 | 27.80557664 |
| PIATT | 5753700 | 0.005056881 | 2.220982141 | 69117300 | 0.060746643 | 26.67992577 |
| PIKE | 12995100 | 0.005926868 | 4.927479429 | 107901000 | 0.049212009 | 40.91387968 |
| POPE | 466200 | 0.000480981 | 0.1773713 | 28686600 | 0.029596106 | 10.91415605 |
| PULASKI | 1799100 | 0.003418362 | 0.680903532 | 32893200 | 0.062498397 | 12.44905567 |
| PUTNAM | 2275200 | 0.00510269 | 0.817246768 | 26453700 | 0.059328859 | 9.502110067 |
| RANDOLPH | 8344800 | 0.005415135 | 3.116410219 | 98804700 | 0.064116671 | 36.89914399 |
| RICHLAND | 3060900 | 0.003265109 | 1.175406737 | 65525400 | 0.069896958 | 25.16220608 |
| ROCK ISLAND | 63404100 | 0.054224323 | 23.18848963 | 189281700 | 0.161877104 | 69.22512482 |
| SALINE | 5830200 | 0.005817164 | 2.209475351 | 79541100 | 0.079363255 | 30.14375147 |
| SANGAMON | 77859000 | 0.034284754 | 29.76945197 | 287861400 | 0.126758079 | 110.0640404 |
| SCHUYLER | 5948100 | 0.005204367 | 2.275713685 | 50697900 | 0.044358786 | 19.39676617 |
| SCOTT | 5328900 | 0.008139223 | 2.042212491 | 32808600 | 0.050111002 | 12.57335149 |
| SHELBY | 5013000 | 0.002519182 | 1.910850077 | 106911900 | 0.053726422 | 40.7525658 |
| ST. CLAIR | 78436800 | 0.044937169 | 29.5578725 | 349632900 | 0.200307927 | 131.7545422 |
| STARK | 1392300 | 0.001863564 | 0.536855384 | 33889500 | 0.045360365 | 13.06741402 |
| STEPHENSON | 11428200 | 0.007818681 | 4.41380206 | 101601900 | 0.069511637 | 39.24070943 |
| TAZEWELL | 42880500 | 0.025159474 | 16.32774415 | 201317400 | 0.118119891 | 76.65626567 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | | | |
| COUNTY\_NAM | HEAVY\_DEV\_  COUNT | HEAVY\_DEV  \_PROP | HEAVY\_DEV\_  TOTAL | TOTAL\_DEV  \_COUNT | TOTAL\_PROP\_  DEV | DEV\_AREA |
| UNION | 2331000 | 0.002132059 | 0.88152122 | 62090100 | 0.056790979 | 23.48079825 |
| VERMILION | 15831900 | 0.006783079 | 6.093714795 | 184053600 | 0.078856621 | 70.84242229 |
| WABASH | 2364300 | 0.004012623 | 0.895818059 | 37736100 | 0.064044638 | 14.29796551 |
| WARREN | 9689400 | 0.006880271 | 3.731927664 | 75958200 | 0.053936568 | 29.25573389 |
| WASHINGTON | 7198200 | 0.004928831 | 2.772812706 | 80651700 | 0.055224728 | 31.06777507 |
| WAYNE | 3208500 | 0.001731447 | 1.235924474 | 98352900 | 0.053075541 | 37.88585202 |
| WHITE | 3320100 | 0.002554481 | 1.263880533 | 81070200 | 0.062375314 | 30.86143417 |
| WHITESIDE | 22459500 | 0.012430878 | 8.505828266 | 127740600 | 0.070701833 | 48.37772908 |
| WILL | 153528300 | 0.069817364 | 58.43085024 | 567882000 | 0.258245707 | 216.1284147 |
| WILLIAMSON | 16110900 | 0.014006341 | 5.884764104 | 135749700 | 0.118016782 | 49.5847508 |
| WINNEBAGO | 83246400 | 0.061909906 | 31.78206942 | 322597800 | 0.239914273 | 123.1623911 |
| WOODFORD | 12007800 | 0.008541788 | 4.508355869 | 102097800 | 0.072627608 | 38.33285163 |

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| **Appendix B (continued)** | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | |
| COUNTY\_NAM | VALUE\_21 | VALUE\_22 | VALUE\_23 | VALUE\_24 |
| MARION | 73023300 | 37939500 | 8071200 | 2985300 |
| MARSHALL | 28343700 | 25624800 | 4072500 | 1029600 |
| MASON | 32637600 | 30739500 | 4774500 | 1021500 |
| MASSAC | 27607500 | 11959200 | 2649600 | 1125900 |
| MCDONOUGH | 37639800 | 39451500 | 10827000 | 2400300 |
| MCHENRY | 90062100 | 159999300 | 35665200 | 11742300 |
| MCLEAN | 101269800 | 117396000 | 46165500 | 13534200 |
| MENARD | 23443200 | 19389600 | 3154500 | 579600 |
| MERCER | 33868800 | 29892600 | 3181500 | 797400 |
| MONROE | 24904800 | 37863000 | 11838600 | 1545300 |
| MONTGOMERY | 66957300 | 47781000 | 7959600 | 1748700 |
| MORGAN | 31730400 | 46336500 | 18114300 | 3114900 |
| MOULTRIE | 24372000 | 23731200 | 3420900 | 972900 |
| OGLE | 62218800 | 52718400 | 12107700 | 4225500 |
| PEORIA | 62551800 | 92946600 | 51097500 | 15348600 |
| PERRY | 39025800 | 28741500 | 4461300 | 649800 |
| PIATT | 35969400 | 27394200 | 4820400 | 933300 |
| PIKE | 47682900 | 47223000 | 11985300 | 1009800 |
| POPE | 23879700 | 4340700 | 369000 | 97200 |
| PULASKI | 18774900 | 12319200 | 1668600 | 130500 |
| PUTNAM | 11031300 | 13147200 | 1493100 | 782100 |
| RANDOLPH | 45990000 | 44469900 | 7157700 | 1187100 |
| RICHLAND | 47999700 | 14464800 | 2214900 | 846000 |
| ROCK ISLAND | 50391000 | 75486600 | 42896700 | 20507400 |
| SALINE | 49109400 | 24601500 | 4642200 | 1188000 |
| SANGAMON | 84581100 | 125421300 | 62496000 | 15363000 |
| SCHUYLER | 19527300 | 25222500 | 5499000 | 449100 |
| SCOTT | 10576800 | 16902900 | 4969800 | 359100 |
| SHELBY | 74842200 | 27056700 | 3882600 | 1130400 |
| ST. CLAIR | 114256800 | 156939300 | 57801600 | 20635200 |
| STARK | 23465700 | 9031500 | 1010700 | 381600 |
| STEPHENSON | 53505000 | 36668700 | 8565300 | 2862900 |
| TAZEWELL | 64741500 | 93695400 | 30972600 | 11907900 |
|  |  |  |  |  |
| **Appendix B (continued)** | | | | |
| TABLE XI: NATIONAL LAND COVER DATABASE DEVELOPMENT CALCULATIONS (continued) | | | | |
| COUNTY\_NAM | VALUE\_21 | VALUE\_22 | VALUE\_23 | VALUE\_24 |
| UNION | 41530500 | 18228600 | 2035800 | 295200 |
| VERMILION | 91612800 | 76608900 | 10382400 | 5449500 |
| WABASH | 24693300 | 10678500 | 1934100 | 430200 |
| WARREN | 31780800 | 34488000 | 8270100 | 1419300 |
| WASHINGTON | 48249000 | 25204500 | 5779800 | 1418400 |
| WAYNE | 68387400 | 26757000 | 2542500 | 666000 |
| WHITE | 56905200 | 20844900 | 2593800 | 726300 |
| WHITESIDE | 56186100 | 49095000 | 16443900 | 6015600 |
| WILL | 120649500 | 293704200 | 115831800 | 37696500 |
| WILLIAMSON | 66384900 | 53253900 | 13494600 | 2616300 |
| WINNEBAGO | 96219000 | 143132400 | 59845500 | 23400900 |
| WOODFORD | 37508400 | 52581600 | 9867600 | 2140200 |

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| **Appendix B (continued)** | |
| TABLE XII: NATIONAL LAND COVER DATABASE VARIABLE DESCRIPTIONS | |
| TOTAL\_COUNT | Sum of the counts in the county area |
| LIGHT\_DEV\_COUNT | Count of "lightly developed" areas, found by adding value 21 and value 22 |
| LIGHT\_DEV\_PROP | Proportion of "lightly developed" areas, calculated by dividing Light\_Dev\_Count by  Total\_Count |
| LIGHT\_DEV\_AREA | Area of lightly developed areas in square miles, found by multiplying  Light\_Dev\_Prop by County\_SqMi |
| HEAVY\_DEV\_COUNT | Count of "highly developed" areas, found by adding value 23 and value 24 |
| HEAVY\_DEV\_PROP | Proportion of "highly developed" areas, calculated by dividing high\_Dev\_Count by  Total\_Count |
| HEAVY\_DEV\_TOTAL | Area of highly developed areas in square miles, found by multiplying high\_Dev\_Prop by County\_SqMi |
| TOTAL\_DEV\_COUNT | Count of all developed areas, found by adding values 21, 22, 23, and 24 |
| TOTAL\_PROP\_DEV | Proportion of all developed areas, calculated by dividing Light\_Dev\_Count by  Total\_Count |
| DEV\_AREA | Area of lightly developed areas in square miles, found by multiplying  Total\_Dev\_Prop by County\_SqMi |
| VALUE\_21 | Developed, Open Space- areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes. |
| VALUE\_22 | Developed, Low Intensity- areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units. |
| VALUE\_23 | Developed, Medium Intensity -areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units. |
| VALUE\_24 | Developed High Intensity-highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover. |

Source: https://www.mrlc.gov/data/legends/national-land-cover-database-2016-nlcd2016-legend

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| **Appendix B (continued)** | | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS | | | | | | | | |
| CO\_FIPS | OBJECTID | County\_FIPS | County\_Name | COUNT | AREA | MIN | MAX | RANGE |
| 1 | 1 | 17001 | Adams | 2512802 | 2261521800 | 446 | 861 | 415 |
| 3 | 2 | 17003 | Alexander | 728941 | 656046900 | 282 | 843 | 561 |
| 5 | 3 | 17005 | Bond | 1101977 | 991779300 | 439 | 674 | 235 |
| 7 | 4 | 17007 | Boone | 811445 | 730300500 | 723 | 1052 | 329 |
| 9 | 5 | 17009 | Brown | 885681 | 797112900 | 423 | 810 | 387 |
| 11 | 6 | 17011 | Bureau | 2516046 | 2264441400 | 439 | 958 | 519 |
| 13 | 7 | 17013 | Calhoun | 817921 | 736128900 | 394 | 821 | 427 |
| 15 | 8 | 17015 | Carroll | 1343440 | 1209096000 | 560 | 1067 | 507 |
| 17 | 9 | 17017 | Cass | 1105244 | 994719600 | 417 | 680 | 263 |
| 19 | 10 | 17019 | Champaign | 2871271 | 2584143900 | 620 | 857 | 237 |
| 21 | 11 | 17021 | Christian | 2058803 | 1852922700 | 531 | 802 | 271 |
| 23 | 12 | 17023 | Clark | 1451835 | 1306651500 | 407 | 778 | 371 |
| 25 | 13 | 17025 | Clay | 1350071 | 1215063900 | 400 | 646 | 246 |
| 27 | 14 | 17027 | Clinton | 1448516 | 1303664400 | 382 | 595 | 213 |
| 29 | 15 | 17029 | Coles | 1468003 | 1321202700 | 546 | 794 | 248 |
| 31 | 16 | 17031 | Cook | 2753266 | 2477939400 | 421 | 951 | 530 |
| 33 | 17 | 17033 | Crawford | 1282028 | 1153825200 | 400 | 646 | 246 |
| 35 | 18 | 17035 | Cumberland | 997252 | 897526800 | 494 | 709 | 215 |
| 37 | 19 | 17037 | DeKalb | 1825787 | 1643208300 | 634 | 991 | 357 |
| 39 | 20 | 17039 | DeWitt | 1165316 | 1048784400 | 603 | 811 | 208 |
| 41 | 21 | 17041 | Douglas | 1200375 | 1080337500 | 578 | 745 | 167 |
| 43 | 22 | 17043 | DuPage | 967418 | 870676200 | 475 | 974 | 499 |
| 45 | 23 | 17045 | Edgar | 1793413 | 1614071700 | 502 | 838 | 336 |
| 47 | 24 | 17047 | Edwards | 640453 | 576407700 | 351 | 591 | 240 |
| 49 | 25 | 17049 | Effingham | 1381248 | 1243123200 | 454 | 680 | 226 |
| 51 | 26 | 17051 | Fayette | 2087935 | 1879141500 | 445 | 714 | 269 |
| 53 | 27 | 17053 | Ford | 1398914 | 1259022600 | 639 | 870 | 231 |
| 55 | 28 | 17055 | Franklin | 1242085 | 1117876500 | 348 | 605 | 257 |
| 57 | 29 | 17057 | Fulton | 2543032 | 2288728800 | 411 | 783 | 372 |
| 59 | 30 | 17059 | Gallatin | 943747 | 849372300 | 318 | 925 | 607 |
| 61 | 31 | 17061 | Greene | 1576150 | 1418535000 | 393 | 708 | 315 |
| 63 | 32 | 17063 | Grundy | 1238389 | 1114550100 | 484 | 704 | 220 |
| 65 | 33 | 17065 | Hamilton | 1253849 | 1128464100 | 348 | 631 | 283 |
| 67 | 34 | 17067 | Hancock | 2348186 | 2113367400 | 438 | 763 | 325 |
| 69 | 35 | 17069 | Hardin | 521579 | 469421100 | 308 | 879 | 571 |
|  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued) | | | | | | | | |
| CO\_FIPS | OBJECTID | County\_FIPS | County\_Name | COUNT | AREA | MIN | MAX | RANGE |
| 71 | 36 | 17071 | Henderson | 1141526 | 1027373400 | 486 | 801 | 315 |
| 73 | 37 | 17073 | Henry | 2376058 | 2138452200 | 546 | 880 | 334 |
| 75 | 38 | 17075 | Iroquois | 3219052 | 2897146800 | 602 | 817 | 215 |
| 77 | 39 | 17077 | Jackson | 1742371 | 1568133900 | 320 | 858 | 538 |
| 79 | 40 | 17079 | Jasper | 1433288 | 1289959200 | 436 | 626 | 190 |
| 81 | 41 | 17081 | Jefferson | 1679840 | 1511856000 | 396 | 642 | 246 |
| 83 | 42 | 17083 | Jersey | 1087854 | 979068600 | 392 | 904 | 512 |
| 85 | 43 | 17085 | Jo Daviess | 1781072 | 1602964800 | 571 | 1235 | 664 |
| 87 | 44 | 17087 | Johnson | 1002928 | 902635200 | 288 | 860 | 572 |
| 89 | 45 | 17089 | Kane | 1507450 | 1356705000 | 593 | 1064 | 471 |
| 91 | 46 | 17091 | Kankakee | 1958854 | 1762968600 | 543 | 752 | 209 |
| 93 | 47 | 17093 | Kendall | 927102 | 834391800 | 539 | 813 | 274 |
| 95 | 48 | 17095 | Lmpx | 2072545 | 1865290500 | 508 | 877 | 369 |
| 97 | 49 | 17097 | Lake | 1353978 | 1218580200 | 584 | 957 | 373 |
| 99 | 50 | 17099 | LaSalle | 3303471 | 2973123900 | 356 | 920 | 564 |
| 101 | 51 | 17101 | Lawrence | 1075540 | 967986000 | 387 | 640 | 253 |
| 103 | 52 | 17103 | Lee | 2096875 | 1887187500 | 635 | 1000 | 365 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued) | | | | | | | | |
| CO\_FIPS | OBJECTID | County\_FIPS | County\_Name | COUNT | AREA | MIN | MAX | RANGE |
| 105 | 53 | 17105 | Livingston | 3009057 | 2708151300 | 561 | 837 | 276 |
| 107 | 54 | 17107 | Logan | 1781247 | 1603122300 | 505 | 771 | 266 |
| 109 | 55 | 17109 | McDonough | 1700629 | 1530566100 | 477 | 800 | 323 |
| 111 | 56 | 17111 | McHenry | 1757017 | 1581315300 | 720 | 1183 | 463 |
| 113 | 57 | 17113 | McLean | 3413077 | 3071769300 | 600 | 957 | 357 |
| 115 | 58 | 17115 | Macon | 1685838 | 1517254200 | 560 | 755 | 195 |
| 117 | 59 | 17117 | Macoupin | 2498034 | 2248230600 | 468 | 766 | 298 |
| 119 | 60 | 17119 | Madison | 2131596 | 1918436400 | 205 | 679 | 474 |
| 121 | 61 | 17121 | Marion | 1657113 | 1491401700 | 422 | 656 | 234 |
| 123 | 62 | 17123 | Marshall | 1148218 | 1033396200 | 440 | 906 | 466 |
| 125 | 63 | 17125 | Mason | 1622311 | 1460079900 | 413 | 733 | 320 |
| 127 | 64 | 17127 | Massac | 695354 | 625818600 | 274 | 593 | 319 |
| 129 | 65 | 17129 | Menard | 907901 | 817110900 | 460 | 661 | 201 |
| 131 | 66 | 17131 | Mercer | 1635856 | 1472270400 | 513 | 825 | 312 |
| 133 | 67 | 17133 | Monroe | 1145890 | 1031301000 | 347 | 833 | 486 |
| 135 | 68 | 17135 | Montgomery | 2042840 | 1838556000 | 510 | 781 | 271 |
| 137 | 69 | 17137 | Morgan | 1650382 | 1485343800 | 420 | 727 | 307 |
| 139 | 70 | 17139 | Moultrie | 989827 | 890844300 | 596 | 773 | 177 |
| 141 | 71 | 17141 | Ogle | 2197163 | 1977446700 | 648 | 1024 | 376 |
| 143 | 72 | 17143 | Peoria | 1813951 | 1632555900 | 402 | 833 | 431 |
| 145 | 73 | 17145 | Perry | 1286820 | 1158138000 | 352 | 601 | 249 |
| 147 | 74 | 17147 | Piatt | 1263706 | 1137335400 | 616 | 810 | 194 |
| 149 | 75 | 17149 | Pike | 2440894 | 2196804600 | 414 | 884 | 470 |
| 151 | 76 | 17151 | Pope | 1076528 | 968875200 | 302 | 1070 | 768 |
| 153 | 77 | 17153 | Pulaski | 584799 | 526319100 | 285 | 522 | 237 |
| 155 | 78 | 17155 | Putnam | 495486 | 445937400 | 430 | 863 | 433 |
| 157 | 79 | 17157 | Randolph | 1713413 | 1542071700 | 324 | 745 | 421 |
| 159 | 80 | 17159 | Richland | 1041095 | 936985500 | 394 | 604 | 210 |
| 161 | 81 | 17161 | Rock Island | 1301017 | 1170915300 | 427 | 829 | 402 |
| 163 | 82 | 17163 | St Clair | 1940946 | 1746851400 | 352 | 703 | 351 |
| 165 | 83 | 17165 | Saline | 1113145 | 1001830500 | 318 | 1001 | 683 |
| 167 | 84 | 17167 | Sangamon | 2524467 | 2272020300 | 491 | 716 | 225 |
| 169 | 85 | 17169 | Schuyler | 1271815 | 1144633500 | 423 | 750 | 327 |
| 171 | 86 | 17171 | Scott | 728493 | 655643700 | 416 | 712 | 296 |
|  |  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued) | | | | | | | | |
| CO\_FIPS | OBJECTID | County\_FIPS | County\_Name | COUNT | AREA | MIN | MAX | RANGE |
| 173 | 87 | 17173 | Shelby | 2210545 | 1989490500 | 499 | 819 | 320 |
| 175 | 88 | 17175 | Stark | 830591 | 747531900 | 579 | 876 | 297 |
| 177 | 89 | 17177 | Stephenson | 1624712 | 1462240800 | 688 | 1162 | 474 |
| 179 | 90 | 17179 | Tazewell | 1894299 | 1704869100 | 420 | 851 | 431 |
| 181 | 91 | 17181 | Union | 1214996 | 1093496400 | 308 | 1030 | 722 |
| 183 | 92 | 17183 | Vermillion | 2591485 | 2332336500 | 481 | 863 | 382 |
| 185 | 93 | 17185 | Wabash | 654239 | 588815100 | 338 | 594 | 256 |
| 187 | 94 | 17187 | Warren | 1567065 | 1410358500 | 559 | 810 | 251 |
| 189 | 95 | 17189 | Washington | 1623149 | 1460834100 | 379 | 601 | 222 |
| 191 | 96 | 17191 | Wayne | 2057976 | 1852178400 | 365 | 601 | 236 |
| 193 | 97 | 17193 | White | 1443334 | 1299000600 | 292 | 584 | 292 |
| 195 | 98 | 17195 | Whiteside | 2008801 | 1807920900 | 537 | 880 | 343 |
| 197 | 99 | 17197 | Will | 2441930 | 2197737000 | 403 | 836 | 433 |
| 199 | 100 | 17199 | Williamson | 1277892 | 1150102800 | 348 | 725 | 377 |
| 201 | 101 | 17201 | Winnebago | 1494043 | 1344638700 | 668 | 996 | 328 |
| 203 | 102 | 17203 | Woodford | 1561989 | 1405790100 | 401 | 858 | 457 |

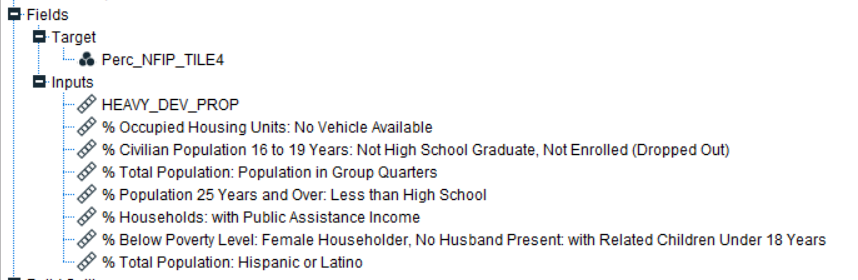
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued) | | | | | | | |
| CO\_FIPS | MEAN | STD | SUM | VARIETY | MAJORITY | MINORITY | MEDIAN |
| 1 | 653.43 | 87.53003 | 1641940336 | 416 | 475 | 446 | 679 |
| 3 | 386.2695 | 97.98274 | 281567670 | 492 | 320 | 733 | 338 |
| 5 | 537.4996 | 40.70804 | 592312181 | 230 | 550 | 674 | 541 |
| 7 | 862.8684 | 68.76083 | 700170258 | 330 | 840 | 723 | 851 |
| 9 | 624.6338 | 85.29046 | 553226295 | 385 | 430 | 804 | 636 |
| 11 | 702.4754 | 87.40653 | 1767460394 | 518 | 630 | 954 | 696 |
| 13 | 552.1328 | 111.4531 | 451600980 | 428 | 420 | 820 | 534 |
| 15 | 768.2129 | 101.5097 | 1032047922 | 498 | 583 | 560 | 779 |
| 17 | 536.9953 | 78.92806 | 593510785 | 264 | 440 | 680 | 567 |
| 19 | 710.6556 | 32.50188 | 2040484828 | 237 | 725 | 853 | 707 |
| 21 | 619.6375 | 27.9304 | 1275711444 | 266 | 610 | 791 | 616 |
| 23 | 587.9262 | 59.80344 | 853571791 | 302 | 591 | 777 | 594 |
| 25 | 487.1456 | 38.11005 | 657681151 | 246 | 522 | 643 | 488 |
| 27 | 454.482 | 27.1029 | 658324434 | 214 | 445 | 592 | 455 |
| 29 | 680.1973 | 33.84946 | 998531723 | 245 | 669 | 787 | 678 |
| 31 | 660.403 | 71.35211 | 1818265117 | 531 | 600 | 447 | 637 |
| 33 | 505.2018 | 42.04424 | 647682833 | 216 | 531 | 405 | 505 |
| 35 | 605.419 | 35.20118 | 603755295 | 215 | 591 | 496 | 605 |
| 37 | 830.1946 | 66.76131 | 1515758417 | 358 | 880 | 634 | 850 |
| 39 | 722.9319 | 37.08338 | 842444154 | 209 | 740 | 603 | 727 |
| 41 | 661.9283 | 19.08503 | 794562165 | 157 | 640 | 578 | 659 |
| 43 | 728.5208 | 38.41813 | 704784098 | 434 | 750 | 475 | 730 |
| 45 | 669.8715 | 37.99784 | 1201356290 | 286 | 659 | 572 | 669 |
| 47 | 441.4296 | 37.27546 | 282714920 | 240 | 410 | 585 | 439 |
| 49 | 578.6607 | 36.12001 | 799273961 | 227 | 591 | 678 | 582 |
| 51 | 553.9339 | 50.02216 | 1156578033 | 270 | 581 | 714 | 562 |
| 53 | 747.9096 | 48.09679 | 1046261178 | 229 | 655 | 867 | 758 |
| 55 | 434.0977 | 37.00209 | 539186181 | 257 | 405 | 605 | 431 |
| 57 | 600.5735 | 78.09922 | 1527277676 | 372 | 430 | 411 | 615 |
| 59 | 386.9526 | 62.21188 | 365185341 | 374 | 350 | 586 | 372 |
| 61 | 543.1979 | 70.23742 | 856161431 | 302 | 420 | 393 | 554 |
| 63 | 583.3716 | 44.2313 | 722440992 | 221 | 610 | 704 | 586 |
| 65 | 437.7352 | 51.36064 | 548853894 | 283 | 375 | 629 | 430 |
| 67 | 638.5077 | 55.97327 | 1499334741 | 301 | 670 | 438 | 653 |
|  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued) | | | | | | | |
| CO\_FIPS | MEAN | STD | SUM | VARIETY | MAJORITY | MINORITY | MEDIAN |
| 69 | 477.6791 | 88.93361 | 249147408 | 174 | 459 | 866 | 472 |
| 71 | 640.1868 | 82.02228 | 730789829 | 310 | 520 | 486 | 654 |
| 73 | 709.8445 | 76.1989 | 1686631604 | 335 | 610 | 880 | 719 |
| 75 | 666.8563 | 31.47781 | 2146645172 | 204 | 659 | 817 | 661 |
| 77 | 453.1117 | 95.00381 | 789488658 | 523 | 360 | 809 | 419 |
| 79 | 528.7565 | 38.62707 | 757860321 | 191 | 552 | 626 | 531 |
| 81 | 490.7443 | 45.61993 | 824371902 | 247 | 490 | 642 | 490 |
| 83 | 578.5839 | 80.82876 | 629414817 | 509 | 420 | 392 | 588 |
| 85 | 835.8365 | 125.7503 | 1488685051 | 658 | 591 | 572 | 850 |
| 87 | 500.3229 | 116.2716 | 501787891 | 459 | 351 | 288 | 488 |
| 89 | 812.5992 | 89.14108 | 1224952606 | 472 | 910 | 601 | 810 |
| 91 | 647.5655 | 30.98752 | 1268486214 | 208 | 625 | 549 | 644 |
| 93 | 654.1112 | 47.61208 | 606427819 | 275 | 650 | 812 | 652 |
| 95 | 717.1761 | 71.03631 | 1486379836 | 370 | 780 | 876 | 727 |
| 97 | 738.5178 | 61.62211 | 999936819 | 369 | 732 | 932 | 740 |
| 99 | 654.7386 | 61.29528 | 2162909851 | 550 | 630 | 356 | 660 |
| 101 | 454.7465 | 37.57703 | 489098069 | 206 | 430 | 640 | 443 |
| 103 | 790.5571 | 83.20535 | 1657699399 | 366 | 770 | 999 | 787 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix B (continued)** | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued) | | | | | | | |
| CO\_FIPS | MEAN | STD | SUM | VARIETY | MAJORITY | MINORITY | MEDIAN |
| 105 | 683.0391 | 44.083 | 2055303480 | 260 | 650 | 834 | 679 |
| 107 | 599.3074 | 36.59553 | 1067514458 | 253 | 600 | 743 | 596 |
| 109 | 666.0061 | 55.03435 | 1132629334 | 324 | 660 | 477 | 662 |
| 111 | 872.4442 | 67.21937 | 1532899317 | 457 | 890 | 728 | 873 |
| 113 | 767.7745 | 54.02852 | 2620473615 | 358 | 790 | 957 | 765 |
| 115 | 668.3173 | 38.39978 | 1126674763 | 196 | 685 | 755 | 679 |
| 117 | 626.6615 | 39.67034 | 1565421673 | 246 | 660 | 468 | 634 |
| 119 | 515.3627 | 56.78103 | 1098545130 | 341 | 540 | 205 | 525 |
| 121 | 535 | 36.47027 | 886555435 | 235 | 510 | 424 | 533 |
| 123 | 660.5657 | 90.84023 | 758473392 | 423 | 440 | 842 | 679 |
| 125 | 503.7389 | 45.89285 | 817221167 | 317 | 495 | 715 | 497 |
| 127 | 387.372 | 58.91663 | 269360664 | 309 | 340 | 274 | 370 |
| 129 | 574.8607 | 44.8695 | 521916590 | 202 | 600 | 659 | 592 |
| 131 | 680.7288 | 80.21563 | 1113574373 | 313 | 530 | 513 | 689 |
| 133 | 514.5086 | 114.0668 | 589570245 | 474 | 400 | 806 | 500 |
| 135 | 638.8041 | 31.96215 | 1304974521 | 272 | 640 | 781 | 640 |
| 137 | 616.2705 | 57.78993 | 1017081804 | 307 | 610 | 420 | 623 |
| 139 | 666.8166 | 24.36834 | 660033026 | 175 | 674 | 596 | 669 |
| 141 | 813.725 | 64.1663 | 1787886443 | 377 | 790 | 1019 | 811 |
| 143 | 650.1061 | 87.8211 | 1179260673 | 432 | 620 | 833 | 664 |
| 145 | 462.4969 | 42.17158 | 595150309 | 250 | 450 | 601 | 460 |
| 147 | 696.0733 | 25.67238 | 879632065 | 195 | 674 | 809 | 693 |
| 149 | 600.5758 | 112.3061 | 1465941747 | 467 | 446 | 414 | 619 |
| 151 | 505.8178 | 124.6487 | 544527017 | 442 | 341 | 602 | 495 |
| 153 | 362.6192 | 38.745 | 212059370 | 214 | 340 | 487 | 348 |
| 155 | 601.5347 | 93.68871 | 298052044 | 356 | 440 | 749 | 640 |
| 157 | 466.8151 | 67.48393 | 799846979 | 416 | 380 | 731 | 468 |
| 159 | 476.5747 | 35.68483 | 496159508 | 211 | 490 | 394 | 476 |
| 161 | 662.4117 | 78.04171 | 861808818 | 348 | 570 | 430 | 673 |
| 163 | 470.7113 | 64.19671 | 913625302 | 347 | 420 | 358 | 453 |
| 165 | 416.5233 | 67.25576 | 463650832 | 358 | 367 | 557 | 400 |
| 167 | 600.091 | 31.58874 | 1514909951 | 226 | 600 | 716 | 600 |
| 169 | 582.4787 | 74.10698 | 740805205 | 328 | 430 | 746 | 595 |
| 171 | 536.5738 | 77.64573 | 390890228 | 293 | 430 | 416 | 551 |
| 173 | 639.3659 | 41.97826 | 1413347136 | 321 | 600 | 796 | 639 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **Appendix B (continued)** | | | | | | | |
| TABLE XIII: ILLINOIS DIGITAL ELEVATION MODEL TABULATED ZONAL STATISTICS (continued)**)** | | | | | | | |
| CO\_FIPS | MEAN | STD | SUM | VARIETY | MAJORITY | MINORITY | MEDIAN |
| 175 | 721.482 | 47.24912 | 599256456 | 267 | 748 | 580 | 722 |
| 177 | 870.638 | 68.11124 | 1414536064 | 470 | 760 | 1132 | 868 |
| 179 | 617.4081 | 97.64652 | 1169555480 | 430 | 440 | 851 | 633 |
| 181 | 498.625 | 119.1742 | 605827339 | 614 | 340 | 313 | 497 |
| 183 | 681.245 | 39.37003 | 1765436195 | 325 | 670 | 802 | 679 |
| 185 | 434.5663 | 36.01213 | 284310197 | 153 | 413 | 338 | 430 |
| 187 | 716.9121 | 48.68552 | 1123447927 | 252 | 770 | 559 | 723 |
| 189 | 484.5796 | 40.61849 | 786544860 | 223 | 510 | 598 | 483 |
| 191 | 435.5599 | 39.09401 | 896371859 | 236 | 380 | 598 | 434 |
| 193 | 405.5417 | 35.87647 | 585332117 | 256 | 380 | 299 | 397 |
| 195 | 656.2429 | 57.43639 | 1318261491 | 324 | 580 | 537 | 643 |
| 197 | 662.0791 | 68.5369 | 1616750842 | 414 | 710 | 408 | 667 |
| 199 | 465.0587 | 56.04566 | 594294764 | 320 | 404 | 615 | 456 |
| 201 | 801.2731 | 57.41733 | 1197136404 | 323 | 730 | 668 | 799 |
| 203 | 709.9016 | 77.70721 | 1108858436 | 457 | 719 | 858 | 731 |

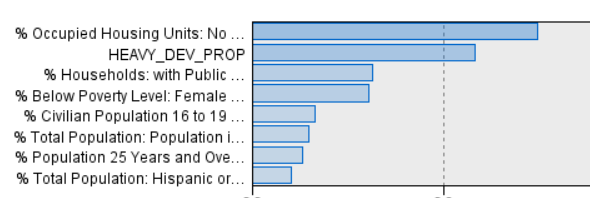
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## **Appendix C**

## **Model Outputs**



**Figure 19 FVI.DT Variables**



**Figure 20 FVI.DT Relative Significance**

**Appendix C (continued)**

|  |  |  |
| --- | --- | --- |
| TABLE XIV: FVI.PCA: 16 VARIABLES, 5 PRINCIPAL COMPONENTS WITHOUT COOK COUNTY, COMMUNALITIES | | |
|  | Initial | Extraction |
| HEAVY\_DEV\_PROP | 1.000 | .576 |
| % Total Population: Black or African American Alone | 1.000 | .838 |
| % Total Population: Population in Group Quarters | 1.000 | .879 |
| % Population 25 Years and Over: Less than High School | 1.000 | .865 |
| % Civilian Population 16 to 19 Years: Not High School Graduate, Not Enrolled (Dropped Out) | 1.000 | .807 |
| % Civilian Population in Labor Force 16 Years and Over: Unemployed | 1.000 | .769 |
| % Households: with Social Security Income | 1.000 | .848 |
| % Households: with Public Assistance Income | 1.000 | .471 |
| Per Capita Income 2014 | 1.000 | .892 |
| % Married Couple Family: with Related Child Living Bellow Poverty Level | 1.000 | .802 |
| % Below Poverty Level Female Householder, No Husband Present | 1.000 | .918 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | 1.000 | .892 |
| % Occupied Housing Units: No Vehicle Available | 1.000 | .757 |
| % Total Population: Hispanic or Latino | 1.000 | .828 |
| %Age.75+ | 1.000 | .835 |
| MEAN\_El | 1.000 | .410 |
| Extraction Method: Principal Component Analysis. | | |

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| --- | --- | --- | --- | --- | --- | --- |
| **Appendix C (continued)** TABLE XV: FVI.PCA: 16 VARIABLES, 5 PRINCIPAL COMPONENTS WITHOUT COOK COUNTY, TOTAL VARIANCE EXPLAINED | | | | | | |
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
| Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.533 | 34.579 | 34.579 | 5.533 | 34.579 | 34.579 |
| 2 | 3.220 | 20.125 | 54.704 | 3.220 | 20.125 | 54.704 |
| 3 | 1.360 | 8.500 | 63.204 | 1.360 | 8.500 | 63.204 |
| 4 | 1.194 | 7.466 | 70.669 | 1.194 | 7.466 | 70.669 |
| 5 | 1.081 | 6.758 | 77.427 | 1.081 | 6.758 | 77.427 |
| 6 | .842 | 5.260 | 82.687 |  |  |  |
| 7 | .690 | 4.313 | 87.000 |  |  |  |
| 8 | .529 | 3.304 | 90.304 |  |  |  |
| 9 | .483 | 3.019 | 93.324 |  |  |  |
| 10 | .326 | 2.036 | 95.359 |  |  |  |
| 11 | .311 | 1.945 | 97.304 |  |  |  |
| 12 | .189 | 1.180 | 98.485 |  |  |  |
| 13 | .090 | .564 | 99.048 |  |  |  |
| 14 | .086 | .540 | 99.589 |  |  |  |
| 15 | .055 | .343 | 99.932 |  |  |  |
| 16 | .011 | .068 | 100.000 |  |  |  |
| Extraction Method: Principal Component Analysis. | | | | | | |

|  |  |  |  |  |  |
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| **Appendix C (continued)** TABLE XVI: FVI.PCA: 16 VARIABLE, 5 PRINCIPAL COMPONENTS WITHOUT COOK COUNTY, COMPONENT MATRIX | | | | | |
|  | Component | | | | |
| 1 | 2 | 3 | 4 | 5 |
| HEAVY\_DEV\_PROP | -.389 | .590 | .157 | .227 | -.038 |
| % Total Population: Black or African American Alone | .564 | .643 | -.287 | .123 | -.097 |
| % Total Population: Population in Group Quarters | .333 | .109 | -.623 | -.295 | .531 |
| % Population 25 Years and Over: Less than High School | .728 | -.004 | .104 | .248 | .513 |
| % Civilian Population 16 to 19 Years: Not High School Graduate, Not Enrolled (Dropped Out) | .392 | -.080 | .396 | .643 | .277 |
| % Civilian Population in Labor Force 16 Years and Over: Unemployed | .422 | .544 | .428 | -.324 | -.081 |
| % Households: with Social Security Income | .573 | -.703 | .140 | .060 | -.054 |
| % Households: with Public Assistance Income | .627 | .229 | .078 | -.139 | -.002 |
| Per Capita Income 2014 | -.843 | .272 | .099 | .230 | -.210 |
| % Married Couple Family: with Related Child Living Bellow Poverty Level | .281 | -.050 | .606 | -.572 | .164 |
| % Below Poverty Level Female Householder, No Husband Present | .858 | .351 | -.105 | .029 | -.219 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | .824 | .346 | -.021 | .012 | -.306 |
| % Occupied Housing Units: No Vehicle Available | .752 | .360 | -.008 | .138 | -.206 |
| % Total Population: Hispanic or Latino | -.388 | .671 | .279 | .047 | .384 |
| %Age.75+ | .395 | -.792 | .140 | .016 | -.178 |
| MEAN\_El | -.541 | .271 | .054 | -.190 | -.072 |
| Extraction Method: Principal Component Analysis. | | | | | |

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| **Appendix C (continued)** TABLE XVII: FVI.PCA: 14 VARIABLES, 4 PRINCIPAL COMPONENTS WITHOUT COOK COUNTIES, COMMUNALITIES | | |
|  | Initial | Extraction |
| HEAVY\_DEV\_PROP | 1.000 | .565 |
| % Total Population: Black or African American Alone | 1.000 | .832 |
| % Total Population: Population in Group Quarters | 1.000 | .849 |
| % Population 25 Years and Over: Less than High School | 1.000 | .592 |
| % Civilian Population in Labor Force 16 Years and Over: Unemployed | 1.000 | .735 |
| % Households: with Social Security Income | 1.000 | .854 |
| % Households: with Public Assistance Income | 1.000 | .472 |
| Per Capita Income 2014 | 1.000 | .896 |
| % Married Couple Family: with Related Child Living Bellow Poverty Level | 1.000 | .795 |
| % Below Poverty Level Female Householder, No Husband Present | 1.000 | .916 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | 1.000 | .888 |
| % Occupied Housing Units: No Vehicle Available | 1.000 | .755 |
| % Total Population: Hispanic or Latino | 1.000 | .720 |
| %Age.75+ | 1.000 | .867 |
| Extraction Method: Principal Component Analysis. | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Appendix C (continued)** TABLE XVIII: FVI.PCA: 14 VARIABLES, 4 PRINCIPAL COMPONENTS WITHOUT COOK COUNTY, TOTAL VARIANCE EXPLAINED | | | | | | |
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
| Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.164 | 36.889 | 36.889 | 5.164 | 36.889 | 36.889 |
| 2 | 3.149 | 22.496 | 59.385 | 3.149 | 22.496 | 59.385 |
| 3 | 1.320 | 9.429 | 68.815 | 1.320 | 9.429 | 68.815 |
| 4 | 1.101 | 7.867 | 76.681 | 1.101 | 7.867 | 76.681 |
| 5 | .814 | 5.816 | 82.498 |  |  |  |
| 6 | .678 | 4.846 | 87.344 |  |  |  |
| 7 | .523 | 3.739 | 91.083 |  |  |  |
| 8 | .396 | 2.826 | 93.908 |  |  |  |
| 9 | .313 | 2.237 | 96.145 |  |  |  |
| 10 | .232 | 1.661 | 97.806 |  |  |  |
| 11 | .141 | 1.009 | 98.815 |  |  |  |
| 12 | .100 | .713 | 99.528 |  |  |  |
| 13 | .055 | .393 | 99.921 |  |  |  |
| 14 | .011 | .079 | 100.000 |  |  |  |
| Extraction Method: Principal Component Analysis. | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Appendix C (continued)** TABLE XIX: FVI.PCA: 14 VARIABLES, 4 PRINCIPAL COMPONENTS WITHOUT COOK COUNTY, COMPONENT MATRIX | | | | |
|  | Component | | | |
| 1 | 2 | 3 | 4 |
| HEAVY\_DEV\_PROP | -.364 | .631 | .099 | -.156 |
| % Total Population: Black or African American Alone | .604 | .609 | -.288 | -.115 |
| % Total Population: Population in Group Quarters | .362 | .073 | -.524 | .662 |
| % Population 25 Years and Over: Less than High School | .700 | -.041 | -.031 | .315 |
| % Civilian Population in Labor Force 16 Years and Over: Unemployed | .478 | .495 | .511 | .032 |
| % Households: with Social Security Income | .524 | -.745 | .111 | -.109 |
| % Households: with Public Assistance Income | .646 | .183 | .136 | .044 |
| Per Capita Income 2014 | -.833 | .339 | .036 | -.292 |
| % Married Couple Family: with Related Child Living Bellow Poverty Level | .276 | -.068 | .767 | .355 |
| % Below Poverty Level Female Householder, No Husband Present | .886 | .286 | -.092 | -.203 |
| % Below Poverty Level: Female Householder, No Husband Present: with Related Children Under 18 Years | .856 | .279 | -.005 | -.280 |
| % Occupied Housing Units: No Vehicle Available | .774 | .305 | -.049 | -.245 |
| % Total Population: Hispanic or Latino | -.340 | .692 | .208 | .288 |
| %Age.75+ | .351 | -.830 | .128 | -.196 |
| Extraction Method: Principal Component Analysis. | | | | |

**Appendix C (continued)**

**Table

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**Figure 21 Performance Threshold Matrix**

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**Figure 22 Predictive Performance Matrix for FVI.DT without Cook County**

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**Figure 23 Predictive Performance Matrix for 16 Variable FVI.PCA without Cook County**

**Appendix C (continued)**

**Table

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**Figure 24 Predictive Performance Matrix for 14 Variable FVI.PCA without Cook County**

**FVI**

**Table

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**Figure 25 Predictive Performance Matrix for 2013 Illinois Flood Vulnerability Assessment Flood Vulnerability Index**

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**Figure 26 Performance Threshold Matrix for 3 Output Classes**

**Appendix C (continued)**

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**Figure 27 Predictive Performance Matrix for the Federal Emergency Management Agency National Risk Index**

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**Figure 28 Predictive Performance Matrix for the 20108 Illinois Hazard Mitigation Plan Flood Vulnerability Index**

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**Figure 29 Predictive Performance Matrix for FVI.DT with 3 Output Classes**

**Appendix C (continued)**

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**Figure 30 Predictive Performance Matrix for FVI.PCA with 3 Output Classes**

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**Figure 31 Predictive Performance Matrix for FVI.DT with Cook County**

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**Figure 32 Predictive Performance Matrix for FVI.PCA with Cook County**

# **VITA**

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