

**Comparing Foreclosure Rates to Latino Populations by Chicago Community Areas**  
**Sponsored by the Latino Policy Forum**  
**GEO 242**  
**March 20, 2013**

Erin McConnaughay  
Harini Balasubramanian  
David Semitekoll  
Sophie Marks

## Table of Contents

INTRODUCTION .....	4
NEEDS ASSESSMENT .....	4
SYSTEM REQUIREMENTS .....	7
DATA ACQUISITION .....	12
DATA ANALYSIS AND VISUALIZATION .....	15
RESULTS .....	16
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS .....	17
TECHNICAL APPENDICES .....	19

## PROJECT SUMMARY

Through the use of various forms of analysis the Latino Policy Forum aims to empower the Latino population in Chicago, Illinois by means of increased participation in decision-making processes. The organization seeks to improve the lives of Latinos by ensuring better educational attainment, access to affordable housing, and more just immigration policies. The forum has been in existence for over 20 years and has had made substantive positive impacts on the Latino population in Chicago as well as the state of Illinois. As housing is a basic necessity and guaranteeing access to affordable housing is a cornerstone of the Latino policy forum it is the purpose of this project to identify and compare Latino populations to auction rates in Chicago by community area. Understanding the relationship between these two variables is important in identifying areas containing high numbers of Latinos that are particular vulnerable to issues regarding housing. This project provides the forum with additional analysis which may be used to mitigate the impacts of unaffordable or unattainable housing on Latino populations in Chicago.

Auction data for the project was acquired from the Woodstock Institute, a nationally recognized non-profit organization centered on providing economic security and community building for lower-income individuals through reliable financial systems tailored to their specific needs. Data was organized into an excel files and contained information regarding foreclosure and auction rates from 2010 to 2012 by Chicago community area. The second set of data, Latino populations, was acquired from the American Community Survey. The data was downloaded as a .csv file and contained information regarding Latino populations by census tract. For the purpose of this project we were tasked with utilizing GIS (geographic information system) as a means to compare Latino populations to auction rates by community area. In doing so we are able to provide the forum with a visual analysis regarding the relationship between auction rates and Latino populations.

In order to accomplish this it was necessary to clean up and normalize the data for entry into ArcMap. The percentage of Latino's living in each community area was calculated by dividing the total population by the Latino population in a given community. Auction rates per community were calculated by dividing the total number of auctions by the number of auctions in a given community area for a given year. Through these calculations we were able to display the data in a more meaningful way. Latino population density is displayed for the year 2010 and auction rates are displayed for 2010, 2011, and 2012.

In comparing the 2010 Latino population map to the 2010 auctions map we see that West Englewood, which has a high Latino population, also has a high percentage of auctions. In general, Latino populations are largely concentrated on the southern portion of the city. In this area, constituting the south, southwest, far southwest, and far southeast sides of the city, there is also a particularly high number of auctions indicating a relationship between the two. In comparison the 2010 Latino population map to the 2011 auctions map we see that community areas containing a high number of Latinos also saw relatively high auction rates. Finally, we see that in 2012 auction rates remained relatively high in community areas with large Latino populations. Based on the results from the maps generated there appears to be a positive relationship between Latino populations and the amount of foreclosures. It is our hope that in completing this project the Latino policy forum will be able to utilize the information gathered

from these maps to further assess and respond to the housing needs of the Latino population in Chicago.

## **INTRODUCTION**

The Latino Policy Forum is dedicated to facilitating the involvement of Latinos in all levels of public decision-making. The organization focuses on improving education outcomes, advocating for affordable housing, promoting immigration policies and engaging diverse sectors of the community to further Latinos. The organization has asked us to further their research on affordable housing through spatial analysis.

The goal of this project is to provide a visual assessment of foreclosures and the Latino population by Chicago Community Areas. The outcomes will show the relationship between the amount of foreclosure auctions and the population density of the Latino population in each community area. A foreclosure auction is the end result of a foreclosure and represents the ownership of the house changing hands. Our research will provide insight on the impact of foreclosures affecting the Latino community and help determine if there is a correlation between foreclosures and Hispanic communities.

Our research will provide background information about the foreclosure crisis, focusing on discriminatory housing issues facing the Latino population. We will focus our research on the impact of foreclosures on the Latino population in Chicago through a series of spatial analysis procedures. Our analysis is conducted using data acquired through different secondary data sources; such as the Woodstock Institute, City of Chicago Data Portal, and the 2010 U.S. Census. This data was modified to conduct spatial analysis through ArcGIS software to create maps. The results of our analysis provide a visualization of the amount of foreclosure auctions and the population density of Latino's by Chicago Community Area. Our research concludes with a summary of our findings and suggestions to further research.

## **NEEDS ASSESSMENT**

### **BACKGROUND**

The Latino Policy Forum has advocated for the Latino community since 1988. The organization was formerly known as Latinos United until 2008, at which time the organization expanded their policy agenda. The organization has been dedicated to providing Latino's access to affordable housing. The Latino Policy Forum engages the community through "forums", giving Latino's a space to discuss issues, develops agendas and ultimately increases civic participation within the Latino community.

*“The mission of the Latino Policy Forum is to build the power, influence and leadership of the Latino community through collective action to transform public policies that ensure the wellbeing of our community and society as a whole.”*

The organization has asked us to further their research on affordable housing, specifically the foreclosure crisis. The Latino Policy Forum notes that the Latino community accounted for half of the overall homeowner increases in the last decade. The foreclosure crisis of 2010 greatly impacted people who recently acquired home ownership in the preceding decade. The Latino community was also greatly impacted by the crisis. The increase in foreclosures for Latino residents can have many severe consequences for the community.

The Latino Policy Forum is working with the Housing Acuerdo group, creating policy agenda to ensure Latino’s are equally represented in public affairs. The organization is also using research in order to educate the community about housing issues. The organization has asked us to further their research on the foreclosure crisis through creating maps and spatially analyzing the impacts of foreclosures on the Latino population. The organization and other authors have published research regarding the Latino population and fair housing, which will provide insight on the impact of foreclosures on the Latino population.

## **LITERATURE REVIEW**

Discriminatory housing practices aimed at Latino populations in the Chicago Metropolitan area are discussed and elaborated in Madeline Troche-Rodriguez’s article titled “Latinos and their Housing Experiences in Metropolitan Chicago: Challenges and Recommendations”. The author chooses to focus on unfair housing practices directed at Latinos in the Chicago suburbs. In doing so she examines a multitude of factors which contribute to frequent instances of foreclosures amongst Latino populations.

These include predatory lenders, exclusionary zoning practices, selectively enforced occupancy codes, and little oversight in the implementation of the Fair Housing Act. Oftentimes these factors are exacerbated by limited disciplinary action taken against such discriminatory efforts by the state and local governments. In conjunction, these agents of discrimination severely limit Latino family’s ability to secure affordable, reliable housing.

The author argues that Latino populations in the Chicago Metro area continue to fall victim to the very problems they sought to escape by moving to the suburbs. What this tells us is that housing issues faced by Latino families are not merely urban issues but rather larger national issues revolving around ethnicity, immigration, and lack of access to educational resources.

Ryan Allen explains the current economic situation nationwide in his article, The Relationship between Residential Foreclosures, Race, Ethnicity, and Nativity Status. The explanations give light to why the nation is experiencing a higher than normal foreclosure rate. The author details the difficulty in obtaining foreclosure rates and segregating said foreclosure rates through ethnic status. He explains his method in obtaining this information, which will give us insight into our own discoveries.

In 2008, the amount of foreclosures on home mortgages reached an all-time high. It is suspected that there are specific reasons besides the poor economy for the number of

foreclosures. One explanation is predatory loans that were given to high-risk borrowers despite their current credit rating or income. The reading also explains that rising interest rates on short and long term loans in 2005 helped to lead to the high foreclosures in subsequent years. Lastly, due to the housing market downturn, many homeowners lost equity on their houses, resulting in their inability to refinance their mortgages.

By utilizing statistical analysis, the author is able to determine patterns of foreclosures in neighborhoods. This data can then be matched to demographic data to determine a correlation between minority neighborhoods and foreclosure rates. Additionally, the author then matches this data with information from the Home Mortgage Disclosure Act which details information regarding the type of borrow and the loan details. With this information we can then begin to understand if minority groups were selectively targeted with bad loans.

The Woodstock Institute is a research and policy nonprofit agency that focuses on creating a financial system in which lower-wealth persons and communities of color can safely borrow, save, and build wealth so that they can achieve economic security and community prosperity. The Latino Policy Forum is providing data for this project from this agency. The Woodstock Institute produced a policy brief outlining the current analysis of the impact of the foreclosure crisis on people of color in Chicago communities.

This policy brief focuses specifically on negative equity, meaning homeowners owe more money on their mortgages than their homes are currently worth. The research concludes that negative equity is disproportionately affecting minority neighborhoods in Chicago.

In Chicago about one in four properties is “underwater” or in the process of being foreclosed. The average property has about 31.8% more outstanding mortgage debt than the current property value (Cowan, 2012). The following statistics outline the impact of foreclosures and negative equity to Latinos specifically in Chicago.

In predominantly Latino communities 40.3% of properties are undergoing foreclosure proceedings. In communities where people of color comprise between 50% and 79.9% of the total population, 38.1% are undergoing foreclosure proceedings on their properties. In comparison, only 16.7% of properties in predominantly white communities are undergoing foreclosure (Cowan, 2012).

The authors of these articles suggest a significant amount of discriminatory housing practices by banks and policy makers. The Latino Policy Forum has asked us to further this research and their policy agenda’s through creating a visual representation of the foreclosure crisis as it affects Latino populations in Chicago community Areas.

## **GOALS**

The goals of this assessment will examine the instances of foreclosure auctions by community area, comparing that amount to the population density of Latino’s living in those areas. The analysis contains maps showing the population density of Latino’s by Chicago community areas and the amount of foreclosure auctions in those areas. We also gathered foreclosure data for three years and created a visualization of foreclosure auctions from 2010 to 2012. Our analysis allows the Latino Policy Forum to assess the impact of foreclosures on Latino populations and to infer whether the Latino community has been disparately hard hit by the foreclosure crisis.

## **OBJECTIVES**

In order to conduct this analysis we modified several data sets from different sources in order to spatially represent our findings. Using, ArcGIS software we were able to conduct our spatial analysis to represent the goals of this project. The maps created show instances of foreclosure auctions and the population density by community area in Chicago. We were able to obtain data from the U.S. Census, the City of Chicago Data Portal, and the Woodstock Institute. The information products created through our analysis will represent the findings of our research agenda.

## **INFORMATION PRODUCTS**

The primary Information Product we will be producing is a map comparing the amount of foreclosure auctions to the population density of Latino's by community area in Chicago. We also produce a second map with the date of foreclosures over the course of the years specified to visually demonstrate the life of the economic downturn and if it is possibly improving. The maps provide information about the housing crisis as it relates to the Latino population in Chicago.

## **SYSTEM REQUIREMENTS**

### **INTRODUCTION**

The system requirement section of report helps to organize the data needed to fully support the Latino Policy Forum's needs. We do this by focusing on what the data requirements are, what the need-to-know questions are, and what are the processing requirements to make this project successful.

#### **Need-to-Know Question #1**

What is the Hispanic population density percentage for each community?

#### **Need-to-Know Question #2**

What are the foreclosure rates for each community?

#### **Hispanic Population Density:**

- Secondary Data Capture: Excel reports from Latino Policy Forum
- Data Transfer: Excel workbook data to DBF file format
- Table Join: Join Latino population data to community area layer
- Thematic Mapping: Graduated color and Prism mapping

#### **Foreclosure Rate:**

- Secondary Data Capture: Excel reports from Latino Policy Forum

- Normalize Data: Normalize foreclosure records in Excel
- Table Join: Join foreclosure records to community area layer
- Thematic Mapping: Graduated color and Prism mapping

### **Chen Model**

Census Tract

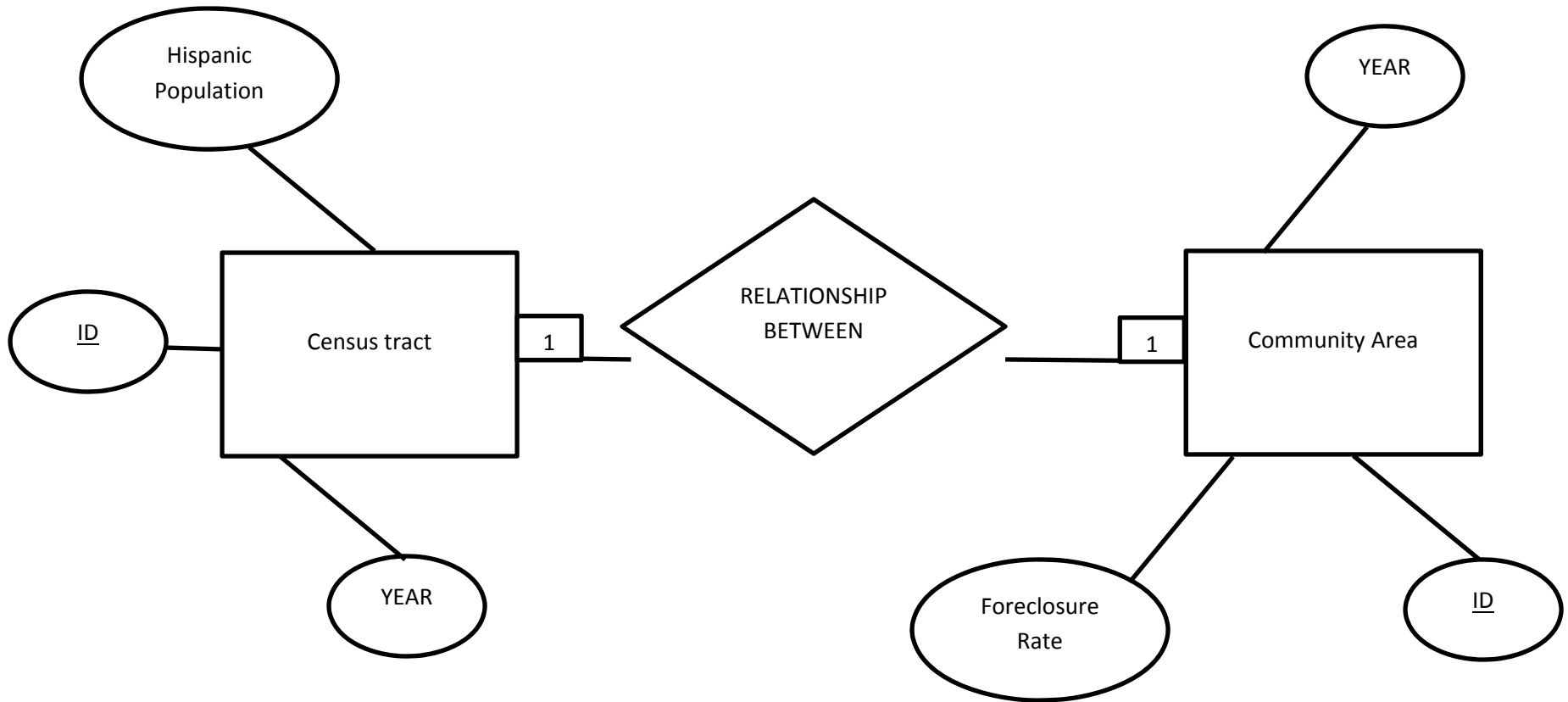
<u>CT ID</u>	YEAR	Hispanic Population
--------------	------	---------------------

Community Area

CA ID	YEAR	Auction rate
-------	------	--------------

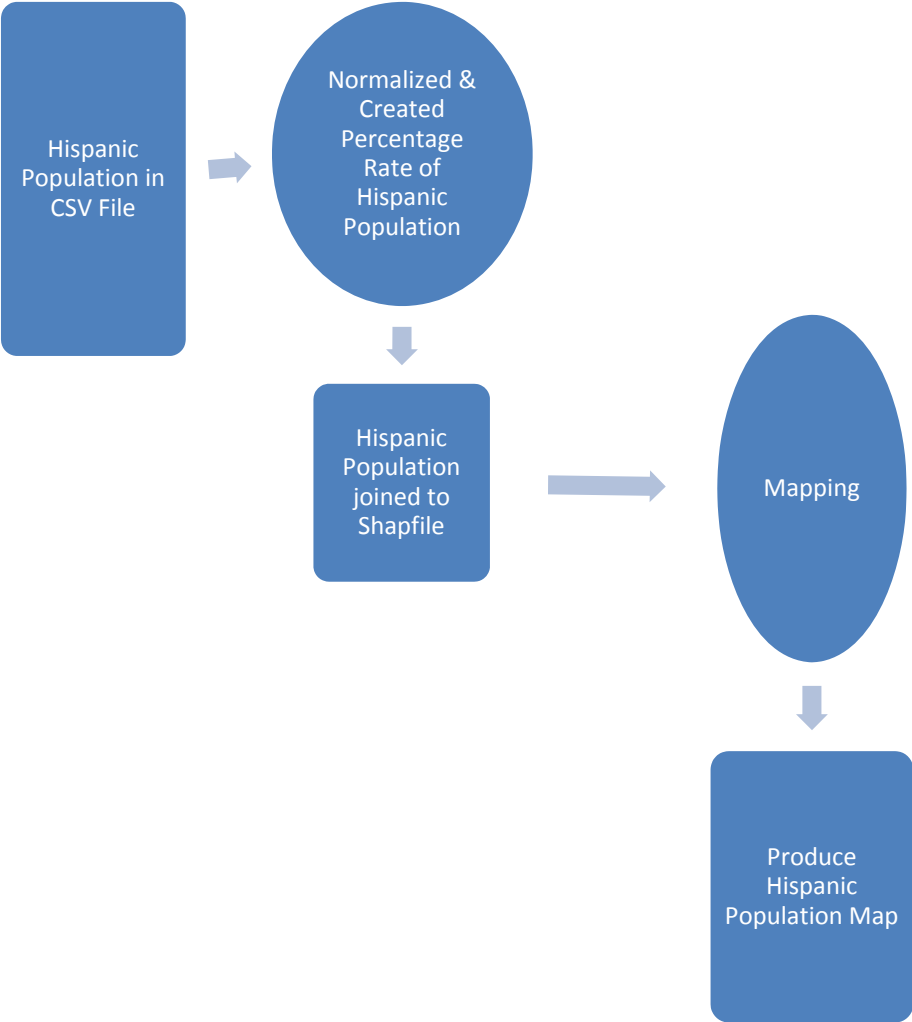


**ERD DIAGRAM**

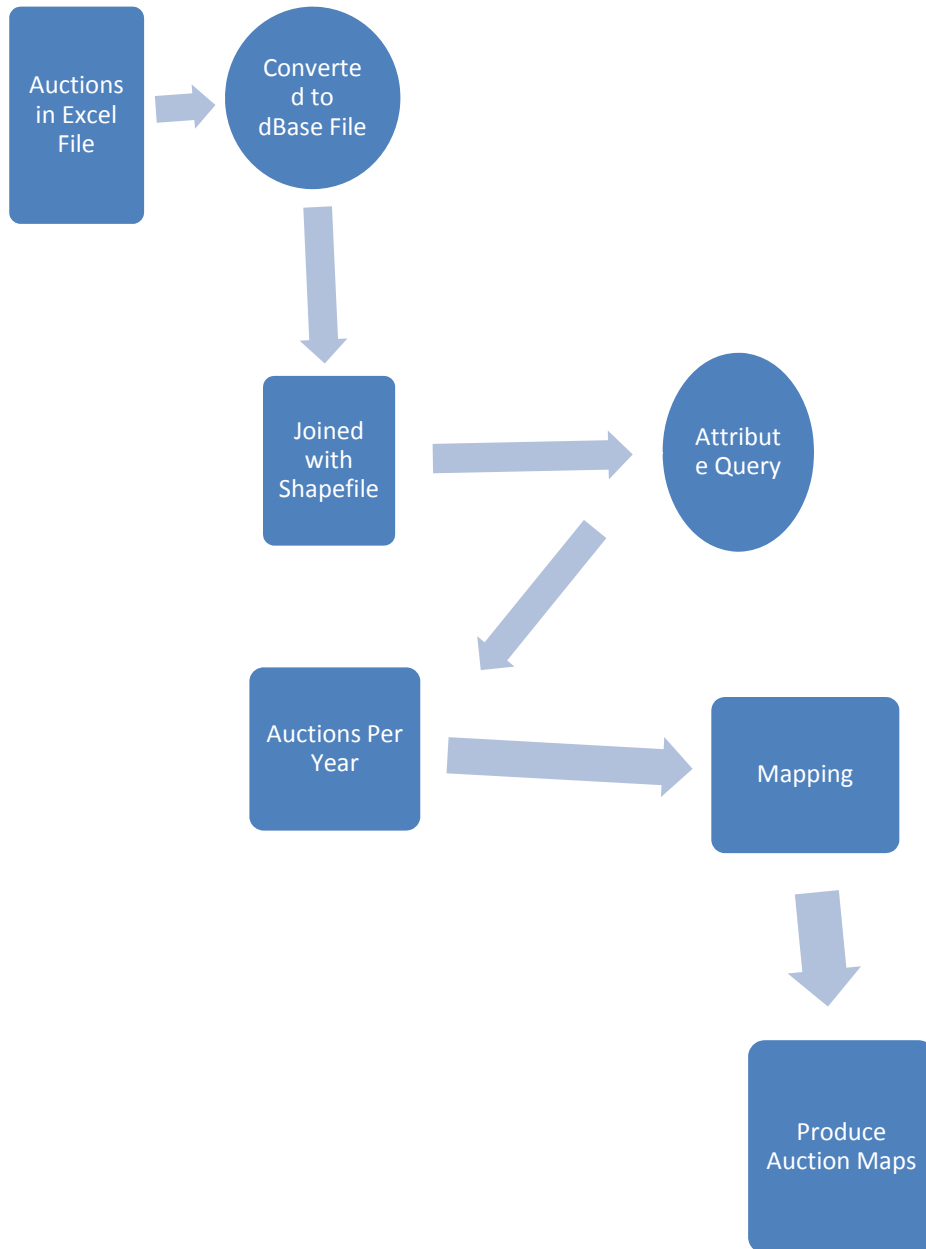


**PROCESS DIAGRAMS**

Hispanic Population by Community



Auctions by Community



## DATA ACQUISITION

### Introduction

The data dictionary will describe our main sources of data for our map making purposes. We not only needed a reliable community shapefile, but also data that met our needs. Each varying form of data sets required manipulation and normalization to satisfy ArcGIS's requirements for data and map making. After preparing each data set we performed the fitness of use requirements. This helps us make sure that our data was viable and accurate. It also gave us insight into any necessary changes that had to be made. Finally we theorized as to what, if any, data constraints we faced. Our biggest challenge was manipulating the data sets to conform to ArcGIS standards and to accurately represent our goal requirements.

### Data Dictionary

FILE NAME:	Woodstock Inst-Foreclosure Data.xls
SOURCE:	Latino Policy Forum
PROCESSING STEPS:	1) Create new Excel sheet with field headers: community name & year of foreclosure (total number of foreclosure per year) 2) Copy community name to new Excel sheet 3) Create column from years 2007 – 2012 4) Save data as xls file
SPATIAL OBJECT TYPE:	Point
ATTRIBUTES:	Community: community names in Chicago Auction2010: Rate of Actions in 2010 Auction2011: Rate of Actions in 2011 Auctions2012: Rate of Actions in 2012
DATA FORMAT:	Excel File
FILE NAME:	CommAreas.shp
SOURCE:	City of Chicago Data Portal <a href="https://data.cityofchicago.org/Facilities-Geographic-Boundaries/Boundaries-Community-Areas/i65m-w5fr">https://data.cityofchicago.org/Facilities-Geographic-Boundaries/Boundaries-Community-Areas/i65m-w5fr</a>
SPATIAL OBJECT TYPE:	Polygon
ATTRIBUTES:	AREA: NULL VALUE PERIMETER: NULL VALUE

	COMAREA: NULL VALUE COMAREA_ID: NULL VALUE AREA_NUMBE: Community Area Number COMMUNITY: Community Name AREA_NUM_1: Community Area Number SHAPE_AREA: X-Coordinate SHAPE_LEN: Y-Coordinate
DATA FORMAT:	Shape File
FILE NAME:	Pop Census Data Formatted.xls
SOURCE:	U.S. Census American Fact Finder Website; Census 2010
PROCESSING STEPS:	1) Create census data report using website wizard 2) Download data 3) Scrub and reformat data to include only needed data 4) Cross-reference census tract data to community data 5) Save file in new Excel workbook
SPATIAL OBJECT TYPE:	Point
ATTRIBUTES:	AREA_NUMBE: Community Area Number TOTAL POPULATION: Total population HISPANIC POPULATION: Total Hispanic Population
DATA FORMAT:	Excel File
FILE NAME:	Housing Census Data Formatted
SOURCE:	U.S. Census American Fact Finder Website
PROCESSING STEPS:	1) Create census data report using website wizard 2) Download data 3) Scrub and reformat data to include only needed data 4) Cross-reference census tract data to community data 5) Save file in new Excel workbook
SPATIAL OBJECT TYPE:	Point
ATTRIBUTES:	AREA_NUMBE: Community Area Number OWNER-OCCUPIED: Total Hispanic owned houses RENTER-OCCUPIED: Total Hispanic rental units
DATA FORMAT:	Excel File

## **FITNESS FOR USE**

### **Data Set Name: Woodstock Institute Foreclosures Data**

The measurement level of foreclosure attribute data is ratio. All values in attribute table appear to be accurate. All necessary attribute values (number of foreclosures by community area) are present in the attribute table. The foreclosure data contains no duplicate instances, all columns contain only one attribute value and each column is relevant to our research. In addition, all values for the primary key are present. The data provided was acquired from the Woodstock Institute so we trust that it is current and accurate. Because the data provided only goes as far back as 2007, we are unable to assess foreclosures by community area which occurred prior to 2007.

### **Data Set Name: Population Census Data**

All values in the attribute table are accurate after clearing unnecessary fields in an excel spreadsheet before joining tables. There is no reference data consistent with the analysis of this project. All necessary values appear in the attribute table with no errors found. There are no missing features; the attributes display information for all 77 community areas. There are no duplicate instances, multi valued attributes, irrelevant attributes or missing values for the primary and foreign key. All attribute values are consistent. Data is used from the 2010 census and is current for the needs of our analysis. The data acquired may be limited in comparison to other variables in our analysis (foreclosures and housing data).

### **Data Set Name: Housing Census Data**

All values for housing data are accurate in attribute table. In addition, there are no missing values in the attribute table. The housing data is consistent with all 77 community areas needed for the analysis. The foreclosure census data is consistent in the attribute table, no duplicates or inconsistencies. All values are present for determining foreign key and primary key. Data is from the 2010 census, it is current for the analysis. One limitation is that the data doesn't take into account any specific instances of foreclosures on Latino populations.

### **Data Set Name: Community Area shapefile**

The community area shapefile was acquired from the City of Chicago website and was last updated in November of 2011 per their website. All 77 community areas are displayed and attribute data overlays properly. The geometry type for the shapefile is polygon and the project coordinate system is NAD\_1983\_StatePlane\_Illinois\_East\_FIPS\_1201\_Feet. The linear unit used is Feet\_US and the angular unit is Degree. One limitation of using this dataset is that it confines our visualization to the community area unit of analysis.

## **DATA ACQUISITION CONSTRAINTS**

Our main data constraints were in formatting our data so that it became useful to our needs. Obtaining the data from the Census Bureau was easy; however, the file contained much more data than what was needed. We needed to clean the worksheet and remove many of the columns. Additionally, the data was only delineated by the Census tract. This required us to

join the data to a census tract shapefile via a key field. Our second main limitation to data was our inability to obtain mortgage rates of Hispanic people. We feel that this type of data would help show if the Hispanic population was being targeted with unfair mortgage practices.

## **DATA ANALYSIS AND VISUALIZATION**

### **Introduction**

This section outlines the GIS functions that have been used to produce the information products in this report. This section includes a description of the information products, and how each information product will be created. Also, the process diagrams are part of this section and they show the steps in making each map. The squares are the input/output (and also represent data layers) and the circles are the operation's that need to be completed. The data visualization shows what format the maps will be in, for example, the data classification, map elements, and symbols used.

### **Information products**

The first information product is a map representing the population density of Latinos in Chicago by community area. The operations we must complete are as follows: import census data into ArcGIS, add the community area shapefile. We must spatially join population data to transfer the data from census tract to community areas. We will calculate population density of Hispanics in the field calculator and then show the population with natural breaks to create a color gradient map of Hispanic population density. The two layers we will need for this product are community area layer and the census tract population layer.

The second information product is a map representing the percent of auctions in Chicago by community area. The completed map contains three separate mini-maps showing the percent of auctions for 2010, 2011, and 2012. The foreclosure data is already assigned to community area so we do not have to spatially join the data. We will add the foreclosure data to a blank map on ArcGIS. We will then join the auction data to the community area shapefile and represent percent of foreclosures using graduated color for each community.

### **Map 1 Hispanic Population per Community**

The Hispanic population and total population per census tract in Chicago was downloaded from the U.S. Census Bureau website. The data was normalized and saved in a csv file for import into ArcGIS. Once the data was imported into ArcGIS, a percentage density was calculated and the data was joined to a census tract shapefile that was downloaded from the City of Chicago Data Portal website. A community shapefile was also downloaded from the website and added to ArcGIS. The census tract shapefile, with the population data, was then spatially joined to the community shapefile. A natural breaks of color gradient was applied to the community map to depict differences in Hispanic density in each community. All essential map elements were then added to the completed map including a scale bar, north arrow and legend.

## **Map 2 Total Auctions per Year**

The total auctions per year data was obtained from the Woodstock Institute. The data contained total auctions, which are completed foreclosures and was a requirement by our client. The data file needed to be normalized and converted into a csv file for use in ArcGIS. The data was segregated by community in Chicago which allowed us to join the data file to the community shapefile. The data was for years: 2010, 2011, and 2012 and was converted to a percentage of auctions per total auctions for Chicago. Each year was attached to a separate shapefile and a color gradient was used to visually represent the percentage of foreclosures per community. Since three separate mini-maps were created for each year, the gradient categories were the same for each mini-map. This would reduce the confusion of the viewer when looking at each year. All essential map elements were then added to the completed map including labels for each mini-map, a north arrow, a scale bar and a legend.

## **DATA VISUALIZATION**

### **Map 1 Hispanic Population per Community**

This map displays the percentage of the Hispanic population per community in Chicago. The graduated colors represent the percentage density of the Hispanic population and increase in color intensity for higher percentages of Hispanics. The map is displayed in a NAD 83 State Plane projection and contains census data from the American Census Survey 5 year estimates from 2007-2011 which gives us the ability to segregate the demographics per census tract for our region of study. Each community is separated by a black border and a north arrow, scale bar and legend were added to the map to aid the viewer.

### **Map 2 Total Auctions per Year**

This map represents the rate of auctions per year per community. In order to demonstrate a change of the rate of auctions through the last 3 years, 3 separate mini maps were created. To maintain the aspect ratio of the gradients for each map, each category was manually set. The map is projected in the NAD 83 State Plane projection to keep symmetry among the maps. Each mini-map is titled to represent the corresponding year and a legend, north arrow and scale bar were added for visual reference.

## **RESULTS**

### **Latino population density 2010 map:**

This map was created by dividing the total population by the Latino population in a given community area. According to the map Latino populations are relatively sparse on the north, far north, northwest, and central sides of the city. An exception is Edison Park on the far north side. There is also a relatively small Latino population density in the west side. However, East



and West Garfield Park each contain high numbers of Latinos. Latino populations are significantly more concentrated on the south, southwest, far southwest, and far southeast sides of the city. In particular, Douglas, Armor Square, Kenwood, West Englewood, Beverly, Avalon Park, Pullman, and Woodlawn contain significantly high Latino populations.

### **Auction rates maps:**

**2010:** High auction rates in 2010 are dispersed throughout the city. We see the highest rates in West Ridge, Austin, Humboldt Park, Chicago Lawn and West Englewood. Auction rates are also particularly high in New City, Englewood, Auburn Gresham, and South Shore. In comparison to the Latino population map we see that West Englewood, which has a high Latino population, also has a high percentage of auctions. In general, Latino populations are largely concentrated on the southern portion of the city. In this area, constituting the south, southwest, far southwest, and far southeast sides of the city, there is also a particularly high number of auctions suggesting a relationship between the two.

**2011:** In 2011 auction rates appear to have increased on the north and west sides. Some community areas on the southwest and far southwest sides also saw increased. However, Chicago Lawn and West Englewood saw slight decreases in auction rates. In comparison to the 2010 Latino population map we see that community areas containing a high number of Latinos also saw relatively high auction rates in 2011.

**2012:** In 2012 auction rates remained relatively similar to those in 2011. However, auctions rates did increase in the western portion of the far north side while some community areas on the north and west sides saw decreases in auction rates. In comparison to the 2010 Latino population map we see that in 2012 auction rates remained relatively high in community areas with large Latino populations.

## **SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

The research conducted in this report provides more insight on housing issues facing the Latino population. There is an increasing amount of evidence that Latinos are disproportionately affected by the foreclosure crisis and consequently disadvantaged from fair housing opportunities. The maps created through this analysis provide insight on recent trends in foreclosure auctions and provide insight on community areas with high density Latino populations.

The auction rates in 2010 show a high concentration of auctions in areas with high Latino populations. Certain community areas such as West Englewood and Humboldt Park had high amounts of auctions. These areas are located in Southern parts of the city and have high concentrations of Latino populations. Auction rates have increased in total around the city and many different areas are affected by the foreclosure crisis.

Research suggests that discrimination against Latino's regarding foreclosure and housing is much more complex than what is seen in the maps. There are many reasons for the foreclosure crisis disproportionately impacting the Latino community. Cultural barriers to advocacy are a major impact of discrimination against the Latino population. The Latino Policy Forum can use the findings of our analysis to facilitate education, research, policy agendas and community engagement within the Latino community.

To further this research, the consequences of foreclosures on the Latino community can be added to this analysis. Due to the impacts of foreclosures in the city of Chicago, suburbs are experiencing a large migration of the Latino population. Latino's are still discriminated against in suburban areas as well. "Violations of Fair Housing Law abound in suburban communities, with Latinos complaining about selective enforcement of municipal codes; landlords steering applicants to housing options in select neighborhoods based on race, income, or family size; and municipalities discouraging the development of affordable rental housing for minority, low-income or immigrant communities." These consequences can further the analysis of the foreclosure crisis on the Latino population.

Maps are unlike any other form of research or visual representation of data. The information products created in this analysis can be interpreted by many different populations. Maps visualize information that is complex to understand in other forms of analysis. Hopefully the analysis of this report can be interpreted on different platforms to fit the needs of this organization's broad mission to serve the Latino community.

## TECHNICAL APPENDICES

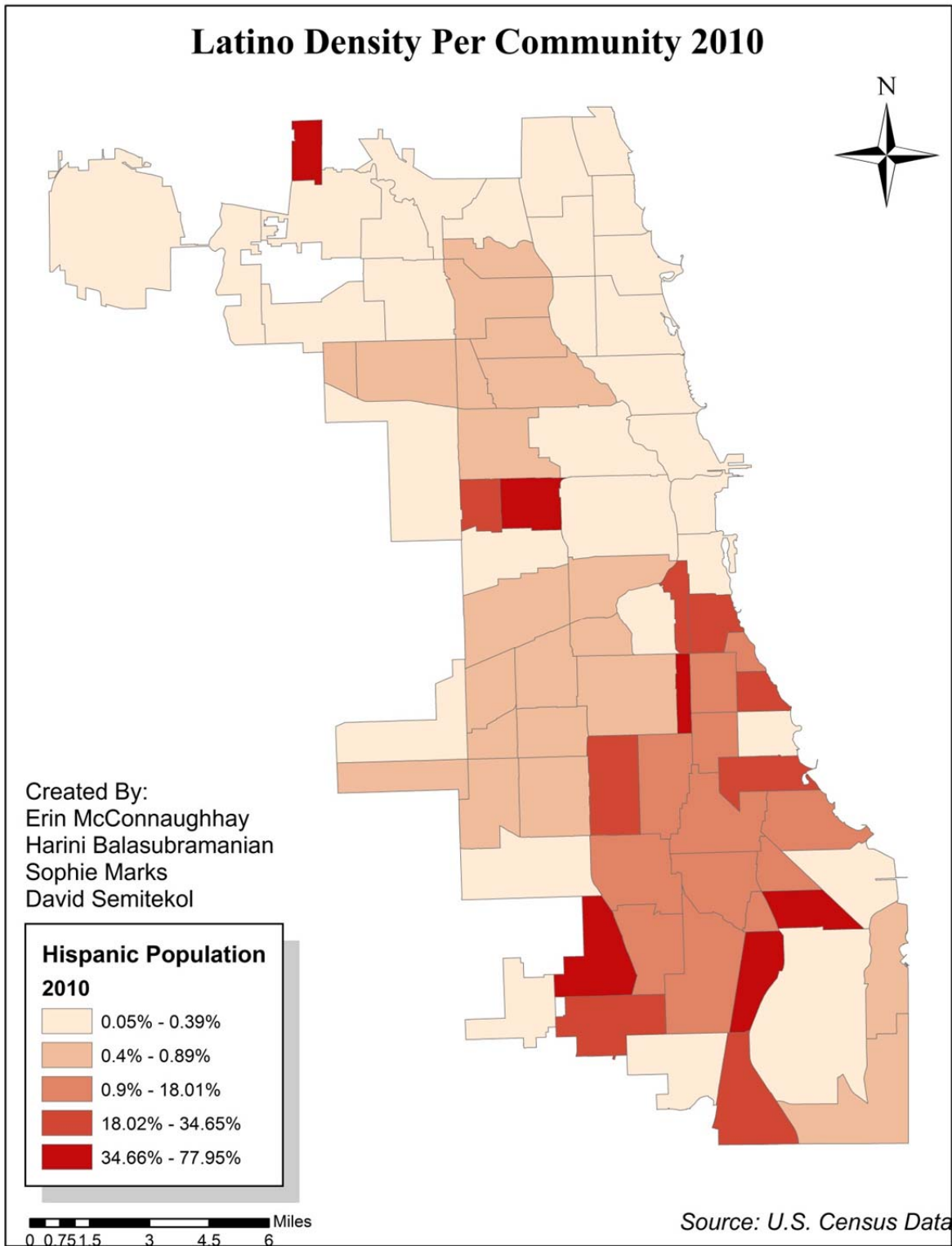
### REFERENCES

*Allen, Ryan. "The Relationship between Residential Foreclosures, Race, Ethnicity, and Nativity Status." Journal of Planning Education and Research (2011)31: 125-142. Print.*

*Cowan, Spencer. (2012). Struggling to stay afloat: negative equity in communities of color in the Chicago six county region (Policy brief)*

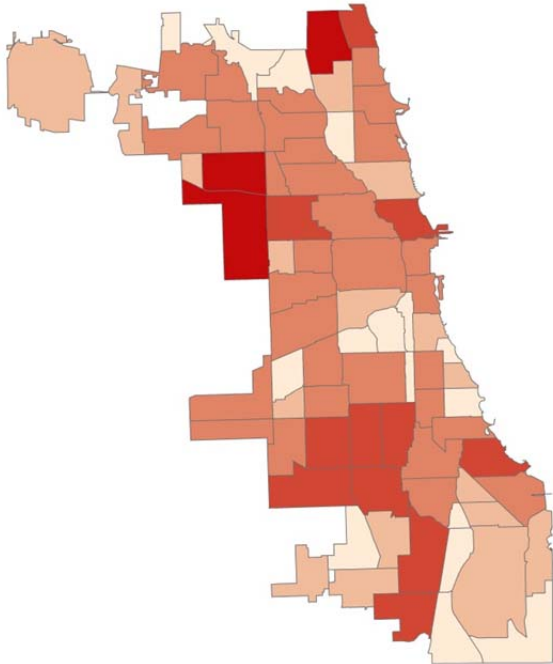
*Troche-Rodriguez, Madeline. "Latinos and Their Housing Experiences in Metropolitan Chicago: Challenges and Recommendations." Harvard Journal of Hispanic Policy 21 (2008-2009): 17-33. Print.*

APPENDIX A

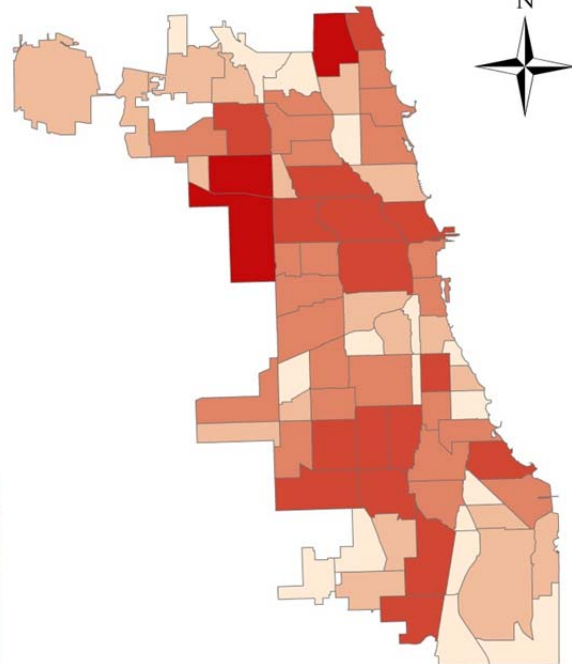


APPENDIX B

2012 Auction Percentage



2011 Auction Percentage

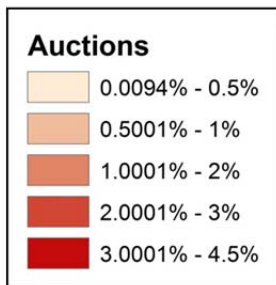
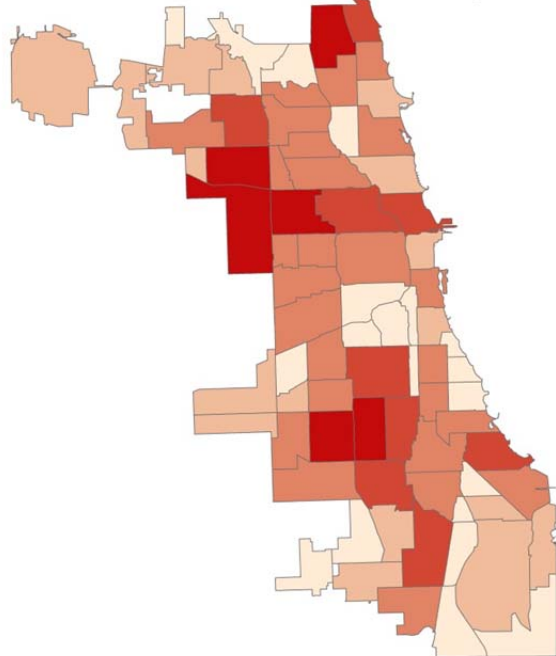


**Percentage of Auctions**

*Per Community*

Created By:  
Erin McConaughay  
Harini Balasubramanian  
Sophie Marks  
David Semitekoi

2010 Auction Percentage



Source:  
Woodstock Institute