

Moving Towards Revitalization and Safety: An Analysis  
of Little Village

Sponsor: Enlace Chicago

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GEO 242

March 2012

Project Summary:

Originally we had intended on working with an organization committed to providing “safe” spaces for children. These “Safe Havens” were intended to deter kids from gang violence, activity, and membership. Additionally, these spaces attempt to provide an outlet for childhood development: safety, comfort, and sense of community. To date, we have altered our focus, due to lack of communication with our original community organization. With missing data files we are not able to complete the “safe haven” geographical analysis. Our current concentration is still in Little Village. However, we have opted to shift our focus to youth specific demographics. Mapped demographics include: poverty levels, educational attainment, population density and percent of youth. We couple these maps with Community Crime data and Elementary school locations in order to locate correlations between demographics, infrastructure, and social tensions. This information becomes vital to the revitalization process of Little Village. Our Maps are intended to be a tool which can geographically locate areas that conflict with the community area’s current and future goals. These maps can be updated by interested community organizations to show the evolutionary progress of the area.

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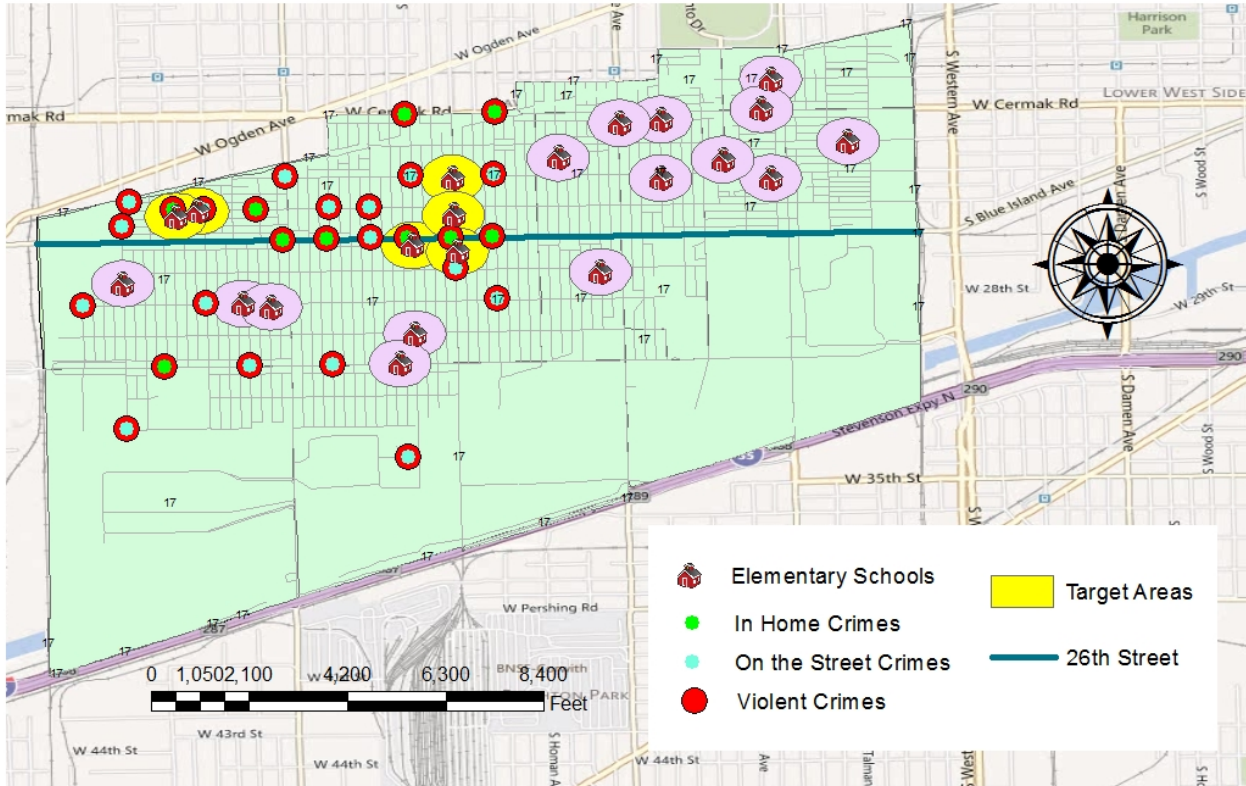
Introduction:

Little Village lies within the community area boundaries of South Lawndale. Currently it stands in transition. The Industrial sites, which have previously characterized the area, are projected to close down. Rational for the “close down” can be contributed to community activism and environmental and health factors which threaten residents. This new development, combined with Little Village’s commitment to economically renew the neighborhood, highlights the significance of demographic information and current social tensions.

In this report, we attempt to geographically characterize the area through the use of ArcGIS, US Census, TIGER/line, EveryBlock, and American Fact Finder. The needs assessment section within the report looks to provide background information about Little Village, and also provide the context of the project. The system requirement sections provides the data requirements and processing information that was utilized in the creation of the data sets used as part of this report. Data aquisition identifies data sets used in the project. Data analysis and visualization section describes the steps of how the information products used were created.

Results

# Violent Crime in Little Village



**Overview:**

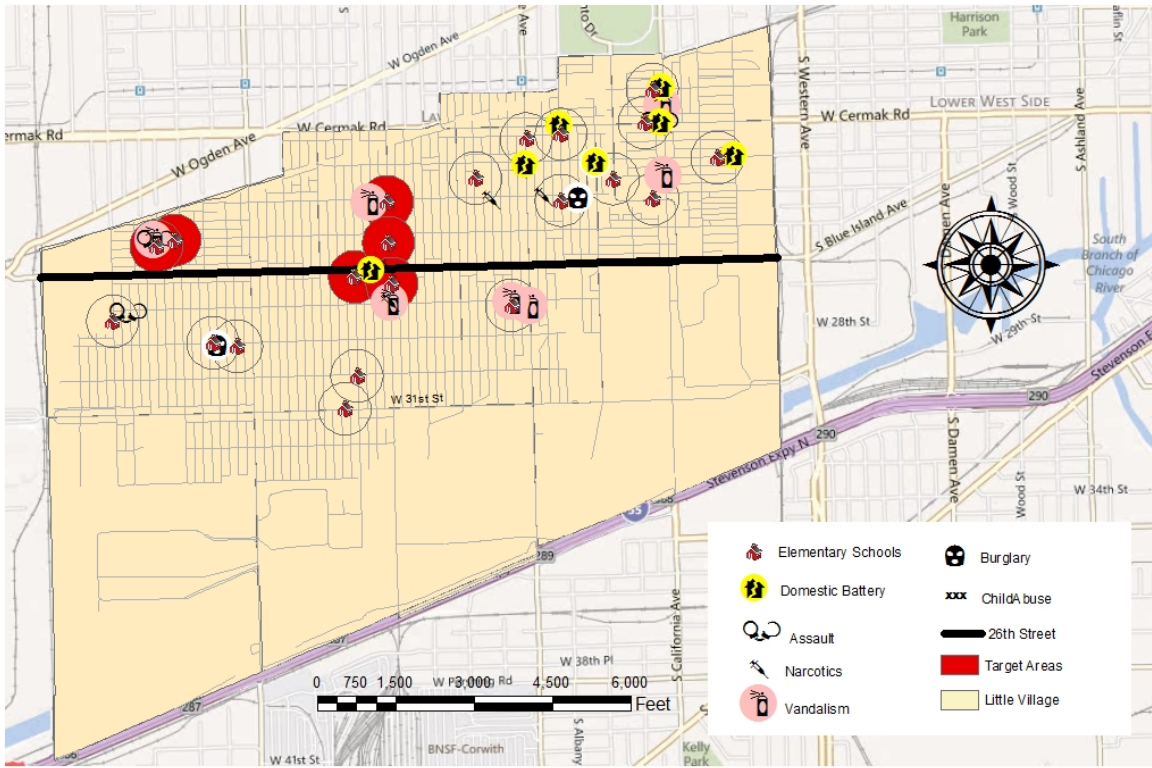
Map 1: “Violent Crime Locations in Little Village: In Home and On the Street (2012)”

This map provides a spatial breakdown of violent crimes and their relationship to elementary schools and Downtown. Violent Crimes are classified by location. If the Police Crime Department has identified the crime’s location as a home address, I have identified the crime as “In Home.” Crimes that have been identified by the Police Crime Department as Street Address, I have identified as “On the Street.” External Circles, around the elementary schools, identify distance of 500 feet. The circles which I have highlighted in yellow have violent crimes within the 500 feet distance.

One can observe through this map, the location of violent crimes occur on only one side of Little Village. On this one side, five schools, have violent crimes occurring within 500 feet. These violent crimes are nearly all “In Home.” Children, who attend highlighted yellow schools, have a high likelihood of observing and partaking in violent crimes. Hence, in this map, one may spatially locate Community Area trends associated with violent crimes AND may be able to locate “at risk” schools. These “at risk” schools have violent crimes occurring within 500 feet of

them. This increases the likelihood that school children are witnessing “violent crime.” Additionally, along 26th Street, this map locates violent crimes in a specific location. Through use of this map, readers should be able to identify at risk “violent” school areas, and at risk locations in the downtown area to focus resources.

## Little Village: Crimes within 500 ft of Schools



This map was made in Cooperation with EveryBloc

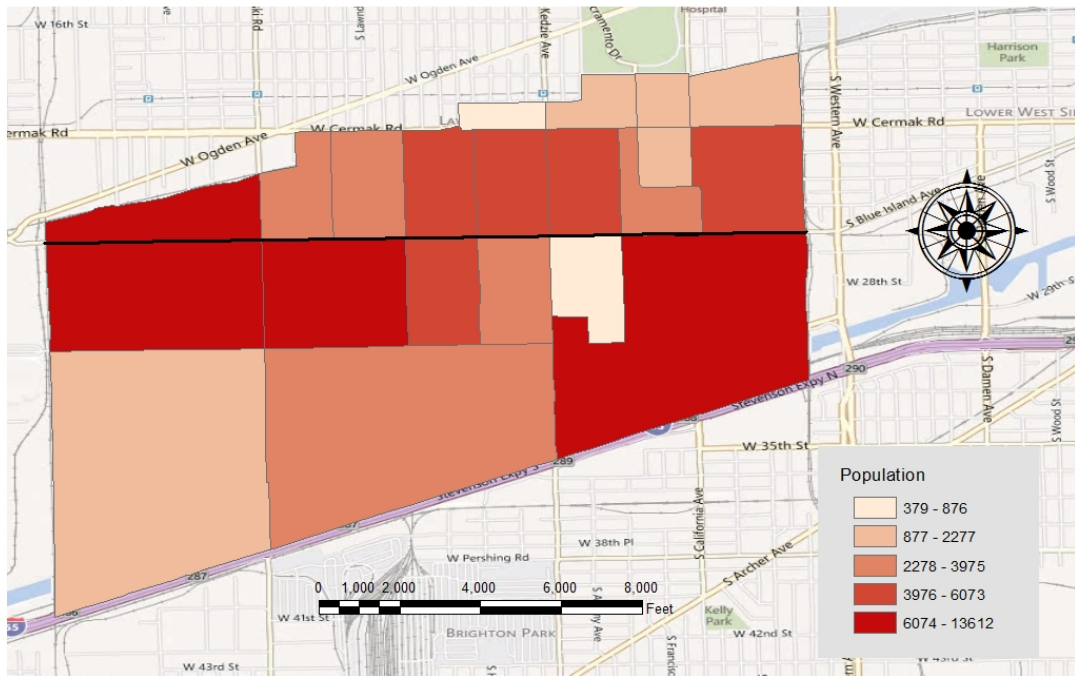
### **Overview:**

#### Map 2: “Crimes that Occur within 500 feet of Elementary Schools” (2012)

This map identifies all elementary schools within the community area of Little Village. Within this community area, we have identified different types of crimes which occur within 500 feet of schools. Schools which have the most *occurring* crimes in their 500 feet distance are highlighted red. These schools have reported instances of vandalism, child abuse, narcotics violation and domestic violence.

Through this map, one can observe that types of crimes are more widely spread out throughout the region. One can also observe that the most occurring crimes, regardless of type, still occur in the same region as violent crimes. The same area along 26th Street is also affected. Within this community area, areas of continued focus are made clear.

# Population Density in Little Village



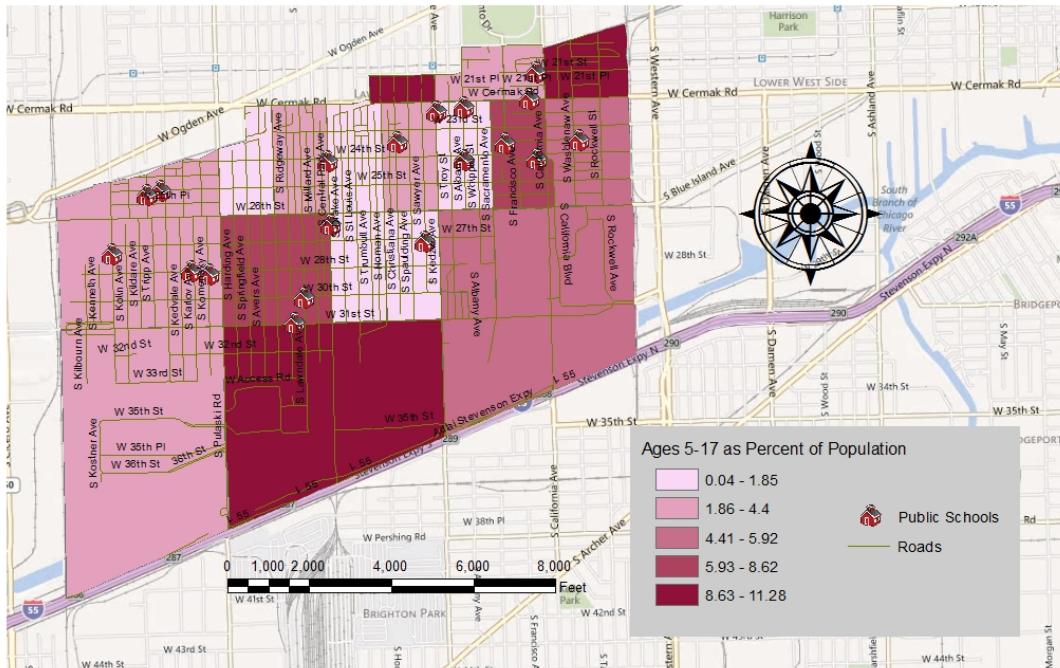
## **Overview:**

Map 3: “Population Density in Little Village” (2010)

This map shows the distribution of the community population of Little Village. The bold black line represents 26th street, which is the main downtown area of Little Village. With this marker, we can compare the distribution of people to the downtown area.

The darker red colors symbolize areas of high population density, which appear to be located on the western side of the community near the 26th street, and also in the southeastern quadrant. Areas with low population density are located further away from 26th street, along with a small area located on the street; the smaller area is the Cook County prison. This population density map can be used to recognize areas that lack urbanization in Little Village. Inversely, it can be used to locate future areas for environmental oasis’ that can help revitalize the community in an aesthetic sense.

# % Youth Population in Little Village



## **Overview:**

### Map 4: “Percent Youth Population in Little Village”

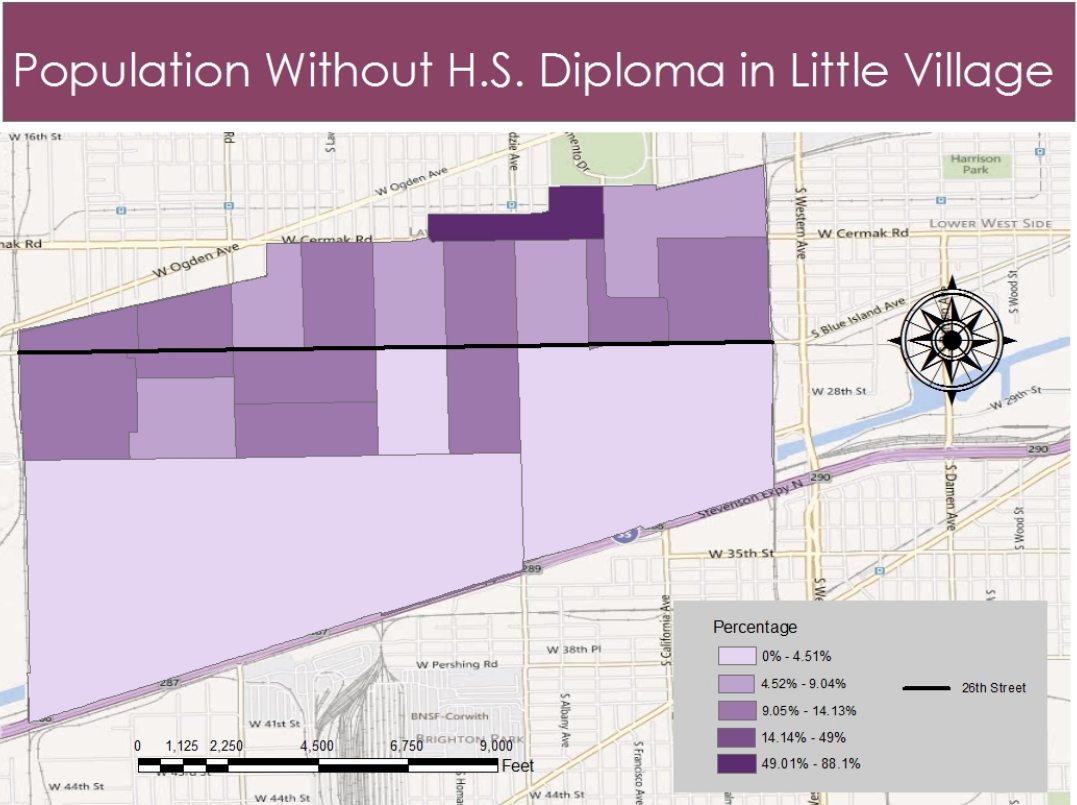
This map contains information on the distribution of youth in Little Village, along with the public schools and main roads in the neighborhood. The roads were added to this map to show route accessibility from areas of high youth population density to the public schools. Little Village is a very youthful community, with much of its future depending on the ethics of this age group. This map can be used to assist community organizations in enforcing the safety of residential youth, so that they are not threatened by violence in their neighborhood.

The darker colors represent areas in Little Village where youth (ages 5-17) most heavily reside. These density percentages are the percentage of youth in that block compared to the total population; this data representation was made by normalizing the population of youth values to the total population. Through this choropleth mapping, we can see that there is not much correlation between the population distribution and the percentage of youth in the area. There is a large area in the southern part of the community (8.63-11.28% youth) that shows lack of public schooling for the amount of youth in the area. Most of the schools are located in the northern half of the community, thus making a long route for many children on their way to school.

Considering the gangs and violence in the community, this trek can be dangerous. When revitalizing the community, this map helps indicate where schools and safe haven locations should be situated. Areas with high youth density can be core locations for community development in the future. There are some areas of concern around 26th Street, where a higher



percentage of youth reside on some blocks. Since the downtown area does correlate with higher incidence of crime, this indicates a more dangerous environment for the residents. Safe havens should be easily accessible for the youth in the downtown area, allowing them a refuge from street violence and gang-related activities after school.

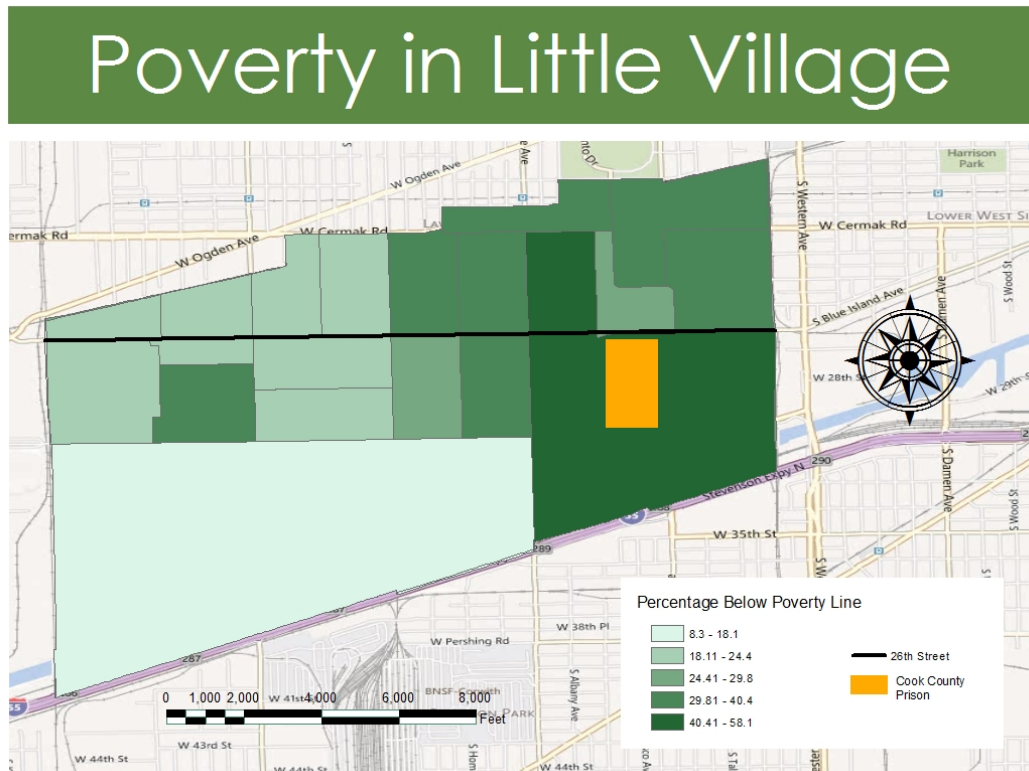


**Overview:**

Map 5: “Population Without H.S. Diploma in Little Village”

This is a choropleth map illustrating the percentage of people living in the Little Village community area by census tract without a high school diploma. Areas with a darker shade of purple indicate higher rates of people without a high school diploma, while the lighter shades of purple indicates a lower percentage rate of people without a high school diploma. As visible on the map the northern most part of Little Village has the highest rate of people without a high school diploma as well as as being the area with the largest concentration of youth as visible above on Map 4. When attempting to revitalize Little village this area pointed out can be a place of interest to those seeking to establish safe havens,community centers and school’s for the current, and future residents of Little Village.One thing that should be noted is that although the southern part of Little Village is a light shade of purple which indicates a lower percentage of people without a high school diploma,the establishment of Industrial site as well the Cook County Correctional Facility located on the southeastern part of the community on 26th street and California influence the data. Community leaders and interest groups seeking to revitalize the Little Village area may use the map as a means for grant proposals that could positively

affect the community in the near future. Numerical data, census tracts, and the 26th Street shapefile were obtained from the U.S. Census Bureau through American FactFinder 2 and TIGER/Line.



**Overview:**

Map 6: “Poverty in Little Village”

This is a choropleth map showing the percentage of the population of Little Village living below the poverty level for each given census tract. Areas with lower levels of the population living below the poverty line are shown in light green, while areas with higher levels darken accordingly. As one can see, the eastern half, and more specifically the southeastern portion of Little Village generally contains much higher levels of poverty than the rest. However, this information does not appear to correlate with crime rates, education levels, or population density. A possible reason for the high poverty levels in the southeast of Little Village could be the location of the Cook County Prison (shown on the map) located at the intersection of 26th Street and California, which occupies a significant portion of the area. The national poverty level according to the 2010 U.S. census is 15.1%. The majority of Little Village lies at 18% or higher. Numerical data, census tracts, and the 26th Street shapefile were obtained from the U.S. Census Bureau through American FactFinder 2 and TIGER/Line.

### Needs Assessment

The overall goal for this project was to create maps that would be used to contribute to the safety and community development of Little Village. This was achieved by using ArcGIS to provide a geographical characterization of the surrounding area. Demographic information of the area was used in order to provide a visual understanding of the community distribution patterns. The ultimate goal for the project is to eliminate gang presence and make the community a safer place for people to live in thus making it a safer place for children to obtain an education. Little Village was our focused community for several reasons. It is an important community in Chicago (financially and culturally), it is an area that has high gang activity, it is a low income community, educational attainment is low in many of the tracts within the area, and it also has a large youth population that is potentially placed at risk when considering all the factors.

Looking at several different sources helped provide a better understanding as to why this project needed to be conducted.

### Literature Review

Schwab-Stone, Mary and Tim Ayers. " No Safe Haven: A Study of Violence Exposure in an Urban Community." *Journal of the American Academy of Child & Adolescent Psychiatry*, (34) 10. 1995. 1343-135.

- This article examines different levels of violence exposure and reports of feeling unsafe in relation to the consequential characteristics of these youth in an urban setting. This article is closely related to our study of Safe Havens in Little Village because it is in a low-income, urban setting of Chicago, where crime and violence are prominent. It is important to understand the consequences of violence in an urban city and how it can be dealt with, in order to fully grasp the scope of this project and its goals. In this article, the authors make a comprehensive study of the lives of urban students with a survey administered to 6th, 8th, and 10th graders, which include attitudes, behavior and daily involvements. What was shown from this study is that more than 40% of youths reported exposure to shooting or stabbing in the past year, and 74% reported feeling unsafe in their environmental context. Analyses of kids' attitudes show significant relationships between exposure to unsafe environments and a set of indicators of psychological and behavioral adaptation and expressed attitudes. This article conclusively attributes violence as a common factor in urban youths lives, which causes a hefty toll on their psychological development to chronic threat and lack of safety. With an understanding of what kids go through in areas of violence and low-income neighborhoods, it is apparent that the lack of safety must be counteracted with safe havens, so the youth can experience a non-threatening environment that every kid deserves. As stated in the article, students often give in to criminal activity due to the

fear of not joining into it. Gangs, especially, seem to offer a sense of safety that kids want and need, compared to the threat of being victimized. What is missing in many urban places is the opportunity of safety that safe havens offer.

Haynes, Norris. "Creating Safe and Caring School Communities: Comer School Development Program Schools" *The Journal of Negro Education* (65) 3. 1996. 308-314.

- This case study, of the Comer School Development Program (SDP), shows the great potential of safe havens to support healthy development, foster optimal learning, and discourage youth violence. While the previous article pinpointed the problem of youth violence, this article suggests a program that counteracts youth violence in an urban setting. It has been observed, "the increase in violence may be related to the failure of our nation's social institutions, including its families and schools, to adequately address the psycho-emotional and educational needs of children in holistic and collaborative ways (p.308)". Much like our Safe Haven project, the SDP's goal is to give the opportunity to every child to succeed by having a place to escape the violence going on in the community. The authors give responsibility to the community and school systems to buffer youth from the pressing violent environment around them. They believe that a safe school environment is vital to the psychological health of its students; however, seeing from a national survey, 22% of kids indicated that their peers carry guns or knives to school, 43% responded to frequent school fights, 33% claimed they trusted their teacher to protect them from violence, and about half of students reported that they felt their school was safe. With the intention of giving students a refuge in their community, it is especially important for their school, which is their primary institution of education, to be a safe haven in itself. The SDP program, has designed a program that supports children's development in several domains. The program components include a school planning team that shape school policy and environment, a student and staff support team with working professionals, and an integrative parent involvement program. With their well-thought out teaching objectives and focus on a safe environment in school and throughout the community, SDP, is a great model for any neighborhood to base their school system around. In our safe haven project, it would be great in the long-term to locate schools that have implemented a program similar to SDP, and have other schools strive for that kind of commitment to its students.

Borden, Lynne., Perkins, Daniel. "Challenges and Opportunities to Latino Youth Development" *Hispanic Journal of Behavioral Sciences*. (28) 2. 2006. 187-208.

- This article goes explores the tribulations that Hispanic communities experience through gang violence and other factors, and how the youth feel in these communities. Little Village is primarily a Latino community, meaning that this area may need more conceptual understanding of this Hispanic ethnicity to gain participants at safe havens. Although much is known about the affect of youth programs/safe havens have on

individuals, there is little known on why or why not kids choose to participate in a safe activity vs. an unsafe activity. This study surveys Latino kids to figure out what is lacking from youth programs, so that the safe haven system can be strengthened. This study offers a viable method that Little Village can use as well, which depends on data collection, concept systems analysis, and analyzing the results that show what prominently encourages/discourages Latino youth to get involved in a community program. This model can be very useful in Little Village in terms of finding and developing safe havens that cater to the needs of non-participating youths. For example, a resulting reason for girls to not participate in a youth program is that there are not enough programs that offer dance and crafts. The safe haven program can use local data from the community that translates into locating a dance studio, for example, that would be willing to accommodate a safe haven dance program.

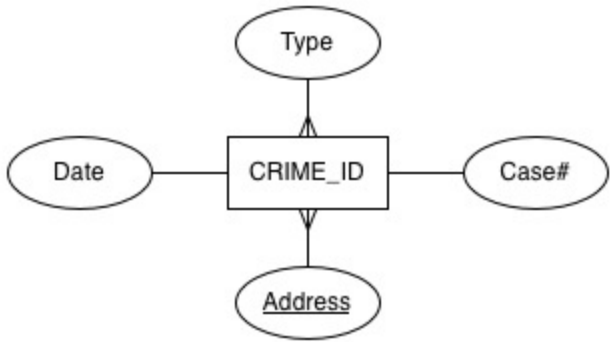
There are several questions that were addressed in order to carry out the final project. To begin with, what kinds of crimes are occurring and where are they most prominent. Along with the previous question, what are the demographics of the community members, such as poverty and educational levels, would allow for a better understanding of the conditions of Little Village. The last question that this project looked to answer was where are the youth located compared to the public schools in Little Village.

### System Requirements

Our project team aims to create a correlation between demographics, using several different resources. Starting with mapping the elementary schools in Little Village demographic information in order to create a correlation between demographics, infrastructure, and social tensions. Our eventual goal is to create maps which characterize Little Village needs. To do this, we use Census Information which provides: population density, crime levels, education levels, and income levels. System tools we used: Tiger/Line to transfer infrastructure into a spatial analysis of Little Village, xy-geocoding to landmark the relationship between crime and elementary schools, and U.S. Census Data and Community Fact Data to analyze community conditions. All of our data can cumulatively be concentrated into maps and spatial analysis using ArcMap and ArcScene.

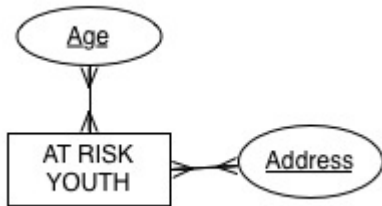
### **Data Set: Crime Data**

Identify and map where elementary schools are in relationship to crimes.

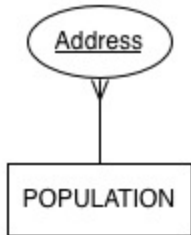


**Data Set: Population Density and Percentage of Youth Population**

- Identify where the youth population are within Little Village.

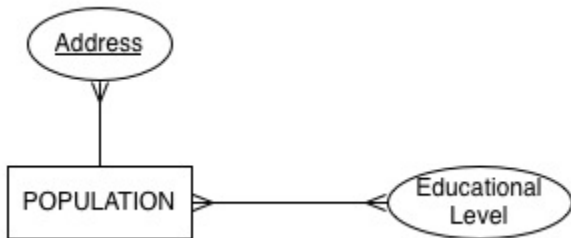


- Identify how the general population is dispersed.



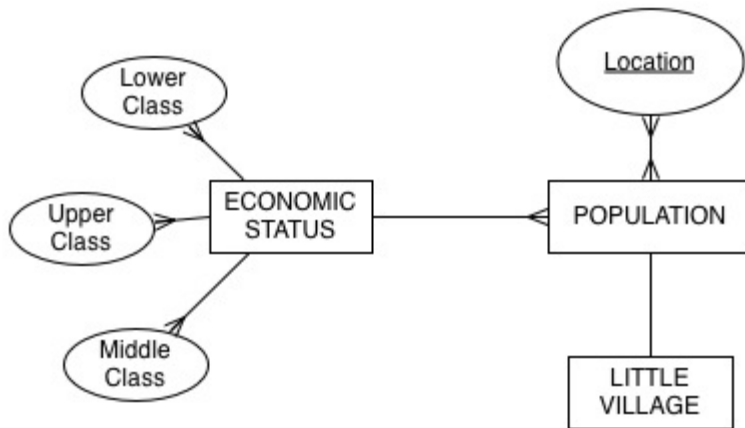
**Data Set: Education (Population without H.S. diploma)**

- Identify educational attainment within Little Village



**Data Set: Poverty**

- Identify how poverty is dispersed within Little Village.



### Data Acquisition

The following section contains a data dictionary for each data set being used for the purpose of analysing Little Village’s various demographics along with community crime and elementary school locations in order to find a relationship between demographics, infrastructure, and social tensions. For each data set needed the fitness for use is addressed in order to understand the purpose of each data set within the project. The digital data base, Every Block Crime Data is needed to identify recent areas of crime. Through City Data and Chicago Census data, the percent of population per trach block will assist our organization in pinpointing where the youth population is located. In addition, the population density map will show the general distribution of people in Little Village, thus making it easier to understand how crime affects the community. The percentage of population living without a high school diploma and individuals living below the poverty level, is needed to locate what areas houses large percentage of individuals with low levels of educational attainment and also economic disadvantages exists.

### **Data Set: Crime Data**

**File Name:** Every Block Crime Data

- **Description:** EveryBlock is a website which provides a forum for residents of Chicago to access characteristic information about their neighborhood area. This particular information, Crime Data, is derived from the Chicago Police Department reports. Every Block includes the case number, and the place in which the crime occurred.

Source of the data: Chicago Every Block

Spatial object type: Point

Data format: Geodatabase

Chicago Every Block Crime: Little Village

<http://chicago.everyblock.com/crime/>

Steps to Creation of Maps:

- 1) Download Crime Listings from Chicago Every Block Crime in Little Village
- 2) Clean up the Crime Data for 2012 in Excel using and modify Data through address matching (see Codd's Rule for Normalization).
- 3) Join Crime Data to Census Tract Layer
- 4) Select Attributes which correspond with certain types of Crime and select specific Symbology
- 5) Add normalized Excel Spreadsheet with addresses of elementary Schools and modify Data using Address matching
- 6) Create buffer
- 7) Select Areas in the Attribute Table which you wish to enhance
- 8) Add Legend, Title, Scale, and North Arrow

### **Data Set: Population Density and Percentage of Youth Population**

**File Name:** Census Blocks

- Description: The U.S. Census Bureau's mission is to be the leading source of quality data about the nation's people and economy. In order to stay current and account for any community changes, data is collected through surveys every ten years on population and housing, every five years for economic standings and government information, and annually an American community survey is given. Their data is crucial from a government level all the way down to a neighborhood level, assisting with decision making.
  - Source of data: U.S. Census Bureau
  - Specific data is used from Chicago Population data on the U.S. Census Bureau digital database Census 2010 Gateway:  
[http://www2.census.gov/census\\_2010/01-Redistricting\\_File--PL\\_94-171/Illinois/](http://www2.census.gov/census_2010/01-Redistricting_File--PL_94-171/Illinois/)  
TIGER/Line: [http://www.census.gov/geo/www/cob/bdy\\_files.html](http://www.census.gov/geo/www/cob/bdy_files.html)

Steps to Creation of Maps:

1. Download 2010 Chicago census data from the U.S. Census Bureau digital database.
2. Normalize population data in Excel and geocode data.
3. Join census data in tabular format with census block cartographic boundaries files



4. Design a readable choropleth map with population density and youth density attribute layers.
5. Use spatial query with community area.
6. Add map features such as legend, scale, and north arrow.

**Data Set: Education (Population without H.S. diploma)**

**File Name:** U.S. Census 2010 Fact Finder 2

Description: The U.S. Census Bureau’s mission is to be the leading source of quality data about the nation’s people and economy. In order to stay current and account for any community changes, data is collected through surveys every ten years on population and housing, every five years for economic standings and government information, and annually an American community survey is given. Their data is crucial from a government level all the way down to a neighborhood level, assisting with decision making.

Source of Data: U.S. Census Bureau

Specific Data is used from Educational Attainment on the U.S. Census Bureau website

<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

Processing Steps:

1. Download 2010 Educational Attainment data from the U.S. Census Bureau website of percentages of people without a high school degree
2. Normalize Education Data in Excel file and geocode data through polygon matching
3. Open Arc GIS and extract the Excel File of Educational attainment and open it as a tract layer
4. Design a readable choropleth map of the percentage of people living in Little Village without a high school diploma by tracts
5. Add map feats such as legend, scale, and north arrow.

Spatial Object Type: Polygon

Attributes: N/A

Filed Data:

Description:

ID:

This attribute is the census tract area that relates to percentage of population without a high school diploma within that tract. These ID tracts are broken up areas that exist in every neighborhood in Chicago for the purpose of a more refined census data. Each population has a matching tract

Data Format: Geodatabase

**Data Set: Poverty**

File Name: U.S. Census 2010 Fact Finder 2

- Description: The U.S. Census Bureau’s mission is to be the leading source of quality data about the nation’s people and economy. In order to stay current and account for any community changes, data is collected through

surveys every ten years on population and housing, every five years for economic standings and government information, and annually an American community survey is given. Their data is crucial from a government level all the way down to a neighborhood level, assisting with decision making.

- Source of Data: U.S. Census Bureau
- Specific Data is used from Poverty Levels on the U.S. Census Bureau website  
<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

Steps to Creation of Maps:

1. Download 2010 Poverty Levels data from the U.S. Census Bureau website
2. Normalize Poverty Data in Excel file and geocode data through polygon matching
3. Open Arc GIS and extract the Excel File of Poverty levels and open it as a tract layer
4. Design a readable choropleth map of the percentage of poverty in the Little Village community area.
5. Add map feats such as legend, scale, and north arrow.

### Data Analysis and Visualization

#### **Data Set: Crime Data**

Content and Format of Information Product: (1) map showing spatial distribution of crime “location” (ie. Block centroid) in relationship to elementary school locations (1) map showing the spatial distribution of different “crime types” in Little Village

User Applicability: Through the use of Every Block Crime Data, Little Village may use maps, which highlight crime data as a cohesive tool to in Little Village.

#### Crime Data Map Characteristics:

- Rule#1.choosing **map projection**: SPC for Chicago Map
- Rule#2.choosing **map symbols**: Map symbols needed for Crime Data Map(s): include Crime Symbol, Crime Type Symbol, School Symbol
- Rule#3.choosing **map types**: Crime Data Map(s) require proportional symbol map for representing magnitudes at point locations.
- Rule#4.choosing **data classification** methods: While data classification may be necessary when Applying graduated color/symbol maps in Arc GIS, in mapping Crime Data, data classification is not necessary.
- Rule#5.choosing whether to **normalize data**: Because Crime Data Mapping does not need to consider the effect of varying areal size in choropleth mapping, normalizing data to those specifications are not necessary.
- Rule#6. Arranging **map elements**: In creating the Crime Data Map(s) the group must consider visual hierarchy. The visual importance of map elements,

combined with intellectual importance requires that visually crime and Safe Havens do not visually compete with each other. Arranging Map Elements also requires that the group add necessary map elements such as north arrow, scale, and legend based on purpose and audience.

### **Data Set: Population Density and Percentage of Youth Population**

Content and Format of Information Product: (1) map showing spatial distribution of population density (ie. choropleth mapping) in relationship to safe haven location (1) map showing the spatial distribution of youth density population (ie. choropleth mapping) in relationship mapping. These maps overlay a census tract layer to establish spatial reference system.

User Applicability: With the use of spatial maps indicating the population density and the youth population density (ages preK-18-years old), Where there are many people, and/or, many youth in an area, there should be a correlation with many elementary schools in that area. With visual representation of the existing correlation between density and schools, awareness and ideas can be spread throughout the community.

#### Population Map Characteristics:

Rule#1.choosing **map projection**: SPC for Chicago Map

Rule#2.choosing **map symbols**: Map symbols needed for Population Density map(s): include shading and lighting to show gradient change in density mapping, and Elementary School Symbol

Rule#3.choosing **map types**: Population Density Map(s) require choropleth map for areal data, such that joins with a census layer.

Rule#4.choosing **data classification** methods: With population density mapping, classification methods that apply to graduated color are necessary. Population density and youth density maps will both be classified with five natural breaks. This will allow a natural breakup of data based on the population of the community.

Rule#5.choosing whether to **normalize data**: Population density mapping does require normalizing any variation in areal size in the choropleth maps. Also, the percent of youth mapping is normalized against the percent of total population per census tract in the symbology tab.

Rule#6. Arranging **map elements**: In creating the density population and youth density maps, the group must consider visual hierarchy. The visual importance of map elements, combined with intellectual importance requires that visually density population and elementary schools do not visually compete with each other. The safe haven data will lay on top of the population layers. Arranging Map Elements also requires that the group add necessary map elements such as north arrow, scale, and legend based on purpose and audience.

### **Data Set: Education (Population without H.S. diploma)**

Content and Format of Information Product: Map showing spatial distribution of the percentage of high school graduates and more (25 and older) by tracts in Little Village.

User Applicability: Through the use of Education Data, the community can use the map to highlight the percentage of population without a high school diploma are living in Little Village to better understand where the correlation between education and crime in the area.

Education Data Map Characteristics:

Rule#1.choosing **map projection**: SPC for Chicago Map

Rule#2.choosing **map symbols**: Map symbols needed for Education Data Map(s): include different color shading (light to dark) depicting the percentage rates of poverty levels.

Rule#3.choosing **map types**: Education Data Map(s) require choropleth map to show the percentage of non-high school graduates in Little Village

Rule#4.choosing **data classification** methods: Natural breaks will be used in order to show areas with high percentage rates of high school graduates.

Rule#5.choosing whether to **normalize data**: This group must manually vary this dataset in size. We will be manually modifying the data such that the tract will be visible and included in attribute table.

Rule#6. Arranging **map elements**: In creating the Education Data Map(s) it is important to illustrate a clear distinction between the percentages of high school graduates by the tracts within the Little Village Community while choosing colors that display the data clearly. A legend will be added to show the exact values of the colors/shades and a north arrow, scale, title and source will also be included.

**Data Set: Poverty**

Content and Format of Information Product: Map showing spatial distribution of the percentage of the population living below the poverty level by tracts in Little Village.

User Applicability: Through the use of Poverty Data, the community can use to highlight the percentage living below the poverty level in Little Village to better understand the correlation that exists with crime in the area.

Poverty Data Map Characteristics:

Rule#1.choosing **map projection**: SPC for Chicago Map

Rule#2.choosing **map symbols**: Map symbols needed for Poverty Data Map: include different color shading (light to dark) depicting the percentage rates of poverty levels.

Rule#3.choosing **map types**: Poverty Data Map require choropleth map to show percentage of those living below the poverty level.

Rule#4.choosing **data classification** methods: Natural breaks will be used in order to show areas with higher levels of poverty within Little Village more effectively.

Rule#5.choosing whether to **normalize data**: This group must manually vary this dataset in size. We will be manually modifying the data such that the tract will be visible and included in attribute table.

Rule#6. Arranging **map elements**: In creating the Poverty Data Map it is important to show a clear distinction between the percentages of those living below the poverty level within Little Village and choose colors that display the information clearly. A legend will be added to show exact values of the colors/shades. A north arrow, scale, source, and title will also be included.

### Summary, Conclusions, and Recommendations

After completion of the maps several conclusions were derived. Most of the in-home and street crimes are isolated on the west side of Little Village and along 26th street. Crimes mainly occur in the northern half of the community. Areas that have a high density of youth lack public schools in the south side of Little Village. This area can be a possible location for the inclusion of infrastructure and safe havens. Since many adults in Little Village are in poverty and work more than one job, a watchful eye is often missing for children after school. When returning home from school on the north side, kids can feel threatened and isolated without access to community centers and safe havens.

However, for the youth that live near the downtown area, many more precautions are needed in order for them to feel safe in their home. We speculate that more safe havens should be located in the downtown area to account for the higher densities of population and crime. The downtown area correlates with high crime rates thus making it a vital zone to revitalize in order to ensure the safety of Little Village residents. Areas of revitalization should expect to also secure more safety precautions, for example higher number of police force and safe havens for youth. Areas with high poverty levels are usually associated with areas of crime, and our maps do somewhat represent this generalization. The eastern half of the neighborhood harbors many residents in poverty, along with many instances of crime, particularly domestic battery. In areas of relatively high poverty, it could be beneficial to improve police resources and infrastructure to create jobs. The poverty map, along with the map representing residents without a High School diploma, can be used as a resource to assist in unemployment services and opportunity. The map communicating the amount of residents who graduated high school generally can assist in demographic observation. With updates to the geodatabase, the community can one day see progress in the amount of High School graduates, and hopefully correlate the improvement to a safer environment for youth development.

With further data collection as well as data analyzes, the mapping of privately owned businesses (along with downtown) will provide a better understanding. Also buffered crime around areas of poverty and youth density would provide further correlations and information pertaining to “at risk” geographical areas within the community.

Recommendations that can be made is to attain safe haven locations from a database to assist in youth safety and development in the area. Ensure locations close to public schools and areas of high youth density. As well as to investigate through community association where gangs are predominately based, in order to locate dangerous zones. We hope to see community organizations update the maps that we have made through further data acquisition. When revitalizing a community, it is important to assess progress or failure in certain areas in order to grow as a community.

### Challenges:

Our data is incomplete at the moment due to the lack of consistency of communication with our organization. The leader of the Safe Haven project has not responded to us with the data we need to map the locations of the existing Safe Havens in Little Village. Without this dataset we do not have the addresses of existing Safe Havens. Further acquisition of safe haven data would significantly help in securing safety in Little Village for youth. If the environment for children's development is safe and nurturing, instead of hostile, the rehabilitation of the entire community would naturally follow in suite.

### Definitions:

For Codd's Rule of Normalization (when "cleaning up data for ArcMAP in Excel) see Yale's database website: [http://ycmi.med.yale.edu/nadkarni/db\\_course/Norm\\_contents.htm](http://ycmi.med.yale.edu/nadkarni/db_course/Norm_contents.htm)

### Technical Appendices

1. Addresses of schools within Little Village
2. Educational Attainment Levels in Little Village
3. Poverty Levels in Little Village