

# Potential Green Spaces In Proximity to Camp Butterfly

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## **I. Introduction**

Our client was Camp Butterfly and our project leader was Toni Anderson. Our goal was to assess what areas within the Bronzeville community needed greening and how these spaces could in turn create opportunities for the young women of Camp Butterfly. The reason for this project is to create an environment in which the young women of Camp Butterfly can learn to not only be proud of their community, but also learn how to sustain themselves by selling crops grown in their gardens. This final report is broken up into the following parts: a) Needs Assessment – This section describes what we have accomplished as well as our motivation for embarking on this project based on our clients' needs as well as our own interest in the project. b) Systems Requirements – Provided a visual of what was needed to allow us to meet the desired goals. Here we were able to separate three components, Youth Centers, Prospective Lots and Green Areas in an effort to align them with Camp Butterfly's agenda by using GIS Technology. c) Data Acquisition – Our ERD Model put into perspective what the linkage was between Camp Butterfly, current green spaces, youth center and prospective lots. d) Data Analysis – Through the collection of our own data, create spreadsheets and eventually create maps illustrating the distance of these areas in relation to Camp Butterfly's location. e) Conclusions – There are many prospective areas that could be used for greening in and around the Bronzeville area.

## **Project Summary**

In continuing with Niambi Jaha – Echols dream for Camp Butterfly, our goal was to examine the areas in and around the Bronzeville area to see where and if sustainable projects. The purpose of this project was to examine what areas in the Bronzeville neighborhood needed 'greening' and how these spaces can be used as employment opportunities for the youth in Camp Butterfly. The Community Garden Initiative of Camp Butterfly seeks to inspire change so the maps created will serve as an assessment tool for current conditions to emphasize what changes need to occur in the future as well as illustrating what green spaces currently exist. The spaces targeted for sustainable development included vacant lots brownfield sites, youth centers, current community gardens, urban farms and farmer's markets. Though our project manager was in hospital for most of the time worked on this project, we were able to broaden our perimeter in terms of the area studied, but this meant however, that we had to remove one aspect of study (youth centers) because our team was unsure of the relevance of this for the purpose of the project. We were able to discover that while the Bronzeville area does not have as many green spaces as some other neighborhood in the City of Chicago, the Bronzeville Community through organizations such as Camp Butterfly, are working tirelessly to ensure that more areas are converted into green spaces, not just for environmental purposes, but for employment reasons as well. Camp Butterfly is an organization that emphasizes the importance of "self identity" and knowing who you are. What better way to that than to begin with one's own back yard.

## II. Needs Assessment

We intended to plot all the areas within the Bronzeville area that needed greening. With Camp Butterfly's own community garden located a few miles south, our task was to see if there any areas closer to Camp Butterfly's location. Also, we were tasked with the goal of finding other networks like Youth Centers, schools, churches that could collaborate with Camp Butterfly in achieving these goals and creating more areas of sustainable development for youth women. Our team unfortunately only had one meeting with our client due to illness so the flexibility of the parameter surveyed increased, but we were concerned that this may be too vague and broad of an area for our clients needs. Much like its name, Camp Butterfly allows for a metamorphosis within these young girls, many of whom are or have been in foster care and or come from unstable homes. This project hopes to alleviate some of the cyclical effect of poverty by offering these youth a chance to "reap what they sow."

### III. System Requirements

#### Introduction

Systems requirement of this project allows us to visualize the system requirements needed to meet the user needs of Camp Butterfly participants. We have divided the system requirements into three components: Youth Centers, Prospective Lots, and Green Areas. Camp Butterfly has asked us to connect these three types of spaces using GIS technology in order to identify sustainable employment opportunities for young women involved in the Green Butterfly Project.

#### 1. Data Requirements

- a. The need-to-know questions that we have based our database design on are as follows:
  - i. What spaces within the vicinity of Camp Butterfly are in need of 'greening'? (Such as Brownfield sites, vacant lots)
  - ii. Where are the program participants located in relation to Camp Butterfly? (Youth Centers, churches, schools)
  - iii. Are there pre-existing green spaces within the vicinity of Camp Butterfly? (Community gardens, farmer's markets, urban farms)

Our database is designed to represent how closely these questions are tied together and to Camp Butterfly. In order to do this, we have listed each Entity-Relationship Diagram (ERD) as a primary key (PK) and created four total entities. Three represent our "need-to-know" questions and one represents Camp Butterfly as a spatial reference point. The "need-to-know" ERDs are linked to the Camp Butterfly ERD using Visio crow's feet (many-to-one) modeling. We did this because we primarily want to identify sites in spatial relation to Camp Butterfly; next, we want to examine these sites in relation to each other. Once we identify all of the green areas, youth centers, and prospective lots within close proximity to CB, we can then represent these spaces and their relationships using GIS.

#### 2. Processing Requirements

- a. Data Transfer: Brownfields, Vacant Lots, Schools, Churches, Youth Centers, After School programs, Farmer's markets, Parks, Urban Farms, community gardens
- b. GPS Data collection: Green Spaces
- c. Normalization: Green spaces, community centers, and prospective lots
- d. Geocoding: Green spaces, community centers, prospective lots (address matching)
- e. Data Analysis: Spatial interpolation, Network analysis or Spatial Query
- f. Point (symbol) mapping

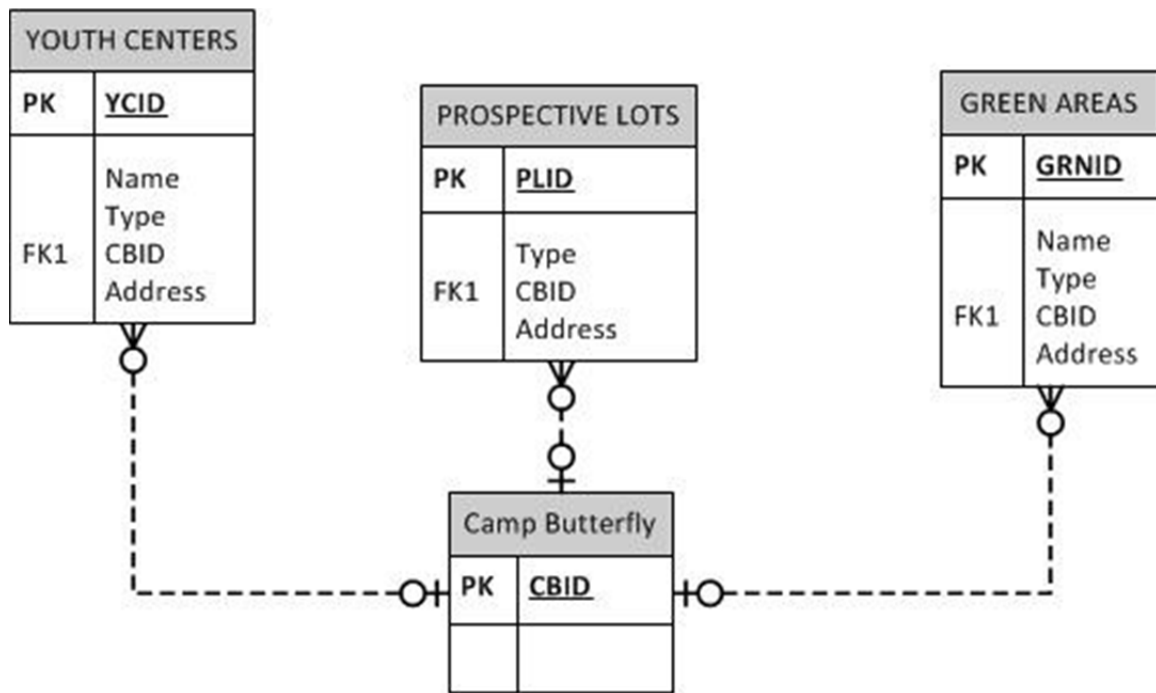


Image 1: Point (Symbol) Map.

## IV. Data Acquisition

### Introduction

We created our database specification off of our ERD model. We know that we need to have data involving; youth centers, green areas, and prospective lots. The youth centers are all locations that the girls participating in Camp Butterfly are a part of, such as schools, churches, after school care programs, and community organizations. The green areas are all locations that are already considered green areas in the Bronzeville parameters, such as community gardens, food co-ops, urban farms, farmer's markets, and green organizations. The prospective lots are all the locations within Bronzeville that could be formed into green spaces. These areas include brownfields, vacant lots, and abandoned buildings. Due to the fact that our sponsor has been hospitalized we have gotten all the data ourselves from relevant websites and research. We have to geocode some of our data as well. We have looked through all of our data and weeded out what is relevant and what is not for our project.

### Data Dictionary

#### *Data Set 1: Youth Centers*

File Name: YCID

Description: Data surveyed on Youth Centers in the Bronzeville area such as public schools and catholic churches. Also, data surveyed on areas that have potential youth programs with community support.

Source of Data: Camp Butterfly, Toni Anderson [toni@campbutterfly.org](mailto:toni@campbutterfly.org) (312)-328-0800, 2929 S Wabash Ave. Suite 202 Chicago, IL 60616

Processing Steps: (1) the locations of the schools and Youth Centers were collected through Chicago Public Schools within the Bronzeville area; (2) The location of the schools, youth centers and are entered into a shapefile, and are joined to GPS point data.

Spatial Object Type: Point

Attributes: Name, Address, Type

Data format: Shapefile

#### *Data Set 2: Prospective Lots*

File Name: PLID

Description: The City of Chicago provides a complete list of city-owned vacant lots available for purchase through the Adjacent Neighbors Land Acquisition Program (ANLAP). We extracted data from this database for use in our project.

Source of the Data: City of Chicago,  
<<http://www.cityofchicago.org/city/en/depts/doi/provdrs/gis.html>>.

Vacant Lots:

<[http://www.cityofchicago.org/content/city/en/depts/dcd/supp\\_info/city-owned\\_land\\_inventory.html](http://www.cityofchicago.org/content/city/en/depts/dcd/supp_info/city-owned_land_inventory.html)>, or in .pdf format at  
<[http://www.cityofchicago.org/content/dam/city/depts/dcd/supp\\_info/RealEstate/CITYOWNED\\_FINAL\\_OCT2011.pdf](http://www.cityofchicago.org/content/dam/city/depts/dcd/supp_info/RealEstate/CITYOWNED_FINAL_OCT2011.pdf)>.

Brown Fields: [www.cmap.illinois.gov](http://www.cmap.illinois.gov)

Processing Steps: Because the data is organized by community area rather than neighborhood, we chose to include vacant lots from the Community Areas (CAs) found within the neighborhood of Bronzeville. These include the Near South Side, Armour Square, Douglass, Oakland, Fuller Park, and Grand Boulevard. We chose CA as our boundary parameter instead of ward because CA boundaries more closely fit the parameters of Bronzeville than ward boundaries. We converted the data from .pdf format to an excel spreadsheet, and are currently processing more than 1,100 lots to be readable by ArcGIS.

Spatial Object Type: Point

Attributes: Type, Address

Data Format: Shapefile

### *Data Set 3: Green Areas*

File Name: GRNID

Description: The green spaces highlighted in this data set cover the areas in the Bronzeville area that have current green initiatives. We extracted data via their individual websites.

Source of Data:

Farmers Market:

<<http://www.chicagobotanic.org/greenyouthfarm/dyett/map>>

Urban Farms: <<http://www.chicagobotanic.org/greenyouthfarm/dyett/>>;  
<<http://www.edenplacenaturecenter.com/About-Us.html>>



Processing Steps: Through geocoding we identified the few green spaces that were within the Bronzeville area, we were able to see the possibilities in action for Camp Butterfly. We calculated how far the current green spaces are from Camp Butterfly using proximity analysis, in ArcToolbox to calculate the distance from these green spaces to Camp Butterfly.

Spatial Objective Type: Point

Attributes: Name, Type, Address

Data Format: Shapefile

## **Fitness for Use**

### *Data Set 1: YCID*

1. Is the scale or resolution appropriate?
  - a. The scale of this data is within the parameters of the Bronzeville neighborhood, so the data is the appropriate scale for our project.
2. Is the accuracy what you hoped for?
  - a. The data was supplied by our client, so it will meet the specifications/needs of Camp Butterfly.
3. Is the data complete?
  - a. The data is complete to the best of our knowledge, but there is no reference data by which to compare. We will have to do a physical land survey to verify that the data is complete.
4. Is the data logically consistent?
  - a. It is logically consistent because we are aware that there is a very limited number of existing community gardens in Bronzeville, and our data reflects this reality. We have not found any contradictions or conflicts within the data set.
5. Is the data current?
  - a. The data is current as of the beginning of 2012.
6. What are the limitations of using this particular data set?
  - a. This data comes from our client, and since we do not know the research methods used to compile the data it is not guaranteed to be complete or accurate.

### *Data Set 2: PLID*

1. Is the scale or resolution appropriate?
  - a. The scale is not exactly ideal for our project, but it will be acceptable because the Vacant Lots fall within the parameters of Bronzeville.
2. Is the accuracy what you hoped for?
  - a. The data comes directly from the City of Chicago website, so it is as accurate as possible.
3. Is the data complete?

- a. The data provided by the City of Chicago is complete (to the best of our knowledge).
- 4. Is the data logically consistent?
  - a. The data includes information on PIN, list and geocode address so it can be organized logically and all the relevant fields are consistently filled in.
- 5. Is the data current?
  - a. Yes, the data is from October 21, 2011.
- 6. What are the limitations of using this particular data set?
  - a. This data set only includes vacant lots owned by the city, so any vacant lots *not* owned by the city are not included in our list.

### *Data Set 3:GRNID*

- 1. Is the scale or resolution appropriate?
  - a. The scale is not exactly ideal for our project, but it will be acceptable because the Green Areas fall within the parameters of Bronzeville.
- 2. Is the accuracy what you hoped for?
  - a. The data is not exactly ideal because one of our points does not fall directly within the parameters of Bronzeville .
- 3. Is the data complete?
  - a. The data is complete, but more data would be preferred.
- 4. Is the data logically consistent?
  - a. The data follows the address matching for every space.
- 5. Is the data current?
  - a. Yes, the data is current up to the beginning of 2012.
- 6. What are the limitations of using this particular data set?
  - a. The limitations only shows current active and existing spaces within the Bronzeville Area.

### **Data Acquisition Constraints**

What we were unable to acquire was information about many of the youth centers around the Bronzeville location. This is because our sponsor Toni has been in the hospital so we are not sure which youth centers are relevant to our project. This has influenced our project because we are now steering away from where the youth centers are located in approximation to Camp Butterfly and the schools that the girls are attending. We have to now focus more on solely where the girls go to school and where the green spaces are located. Due to the fact that we have schools under youth centers it does not change our ERD model, just limits the amount of locations we will have under the youth centers choice. Where the existing green areas, such as urban farms and farmers markets, and prospective lots, like brownfields and vacant lots, will have more importance to the youth centers and Camp Butterfly

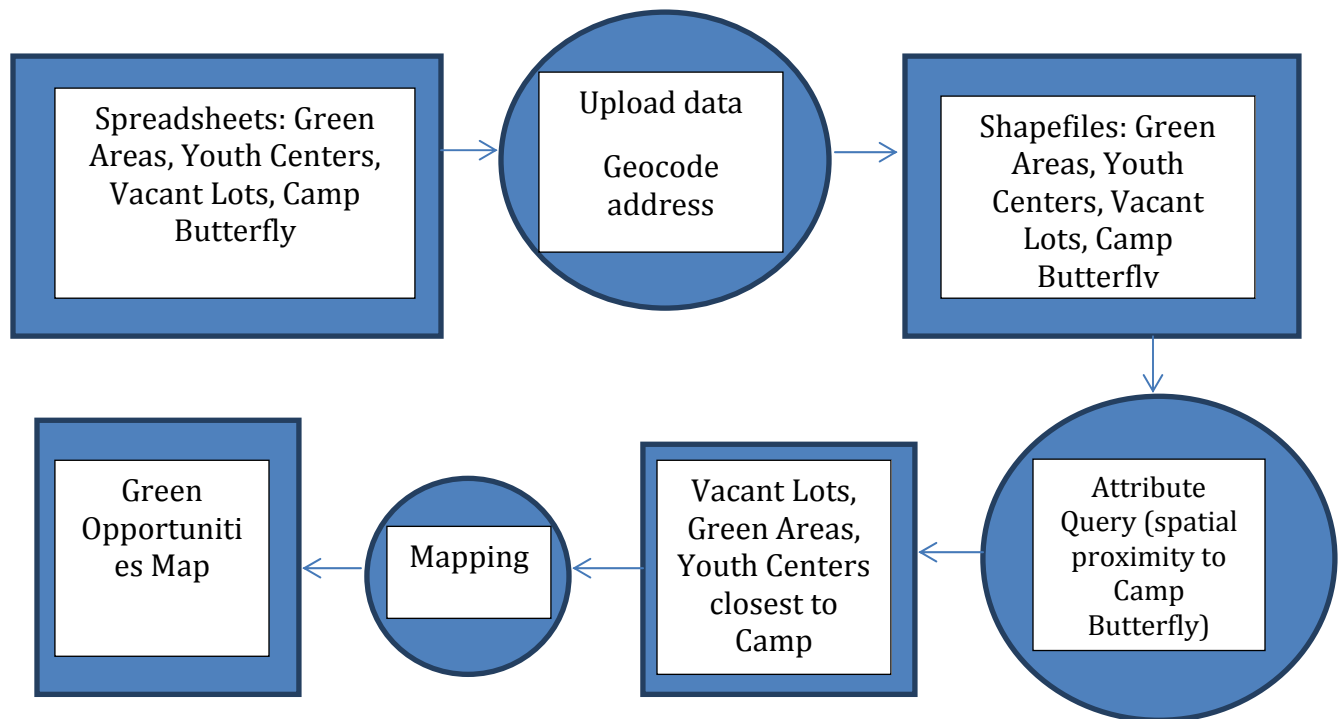
## V. Data Analysis and Visualization

### Introduction

For data analysis and visualization we had to collect most of our own data. We compiled spreadsheets of each sets of data we needed and uploaded them making them recognizable to ArcGIS. WE then made maps showing the relationship of the distance between all of our entities.

### Data Analysis

We began our data collection by compiling spreadsheets of vacant lots, youth centers, and green spaces, which contained information including site name, address, city, state, and zip code. Next, we arranged the foundation of our map by uploading shapefiles provided by the City of Chicago that differentiated community areas and wards. There is no shapefile available that we have found that provides Chicago neighborhood differentiation, which has been challenging given that our parameter for this project is the Bronzeville neighborhood. We then uploaded the data for each separate data set (vacant lots, youth centers, and green areas) into ArcGIS and geocoded the addresses. After creating an overlay of the three data sets, we were able to visualize how these places are spatially related (or not) throughout the neighborhood.



## Data Visualization

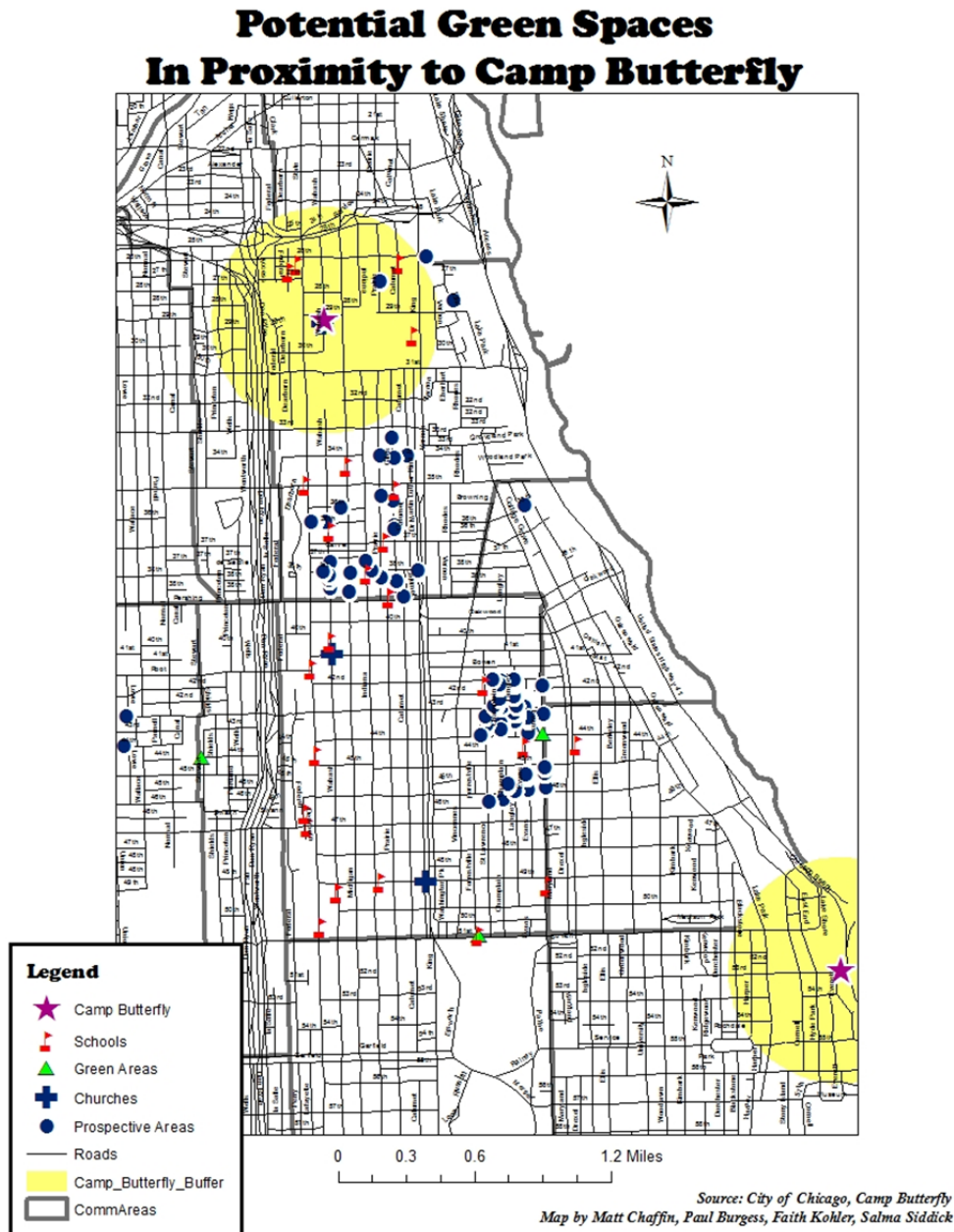
We created maps to display the spatial relationship between Camp Butterfly and surrounding youth centers (schools and churches) and potential green spaces (vacant lots). This map is intended to be used by Camp Butterfly organizers and participants; by analyzing these spatial relationships, vacant lots closest to Camp Butterfly and youth centers can be identified and utilized by the girls of Camp Butterfly to convert these spaces into green initiative sites in their neighborhood.

Our map adheres to the map projection requirements as it is a SPC Chicago map; we have clearly differentiated our map symbols for easy viewing; we have chosen a proportional symbol map to represent spatial relationships; data classification is manual because we are comparing relative distances; our data has been normalized based on community area; finally, the elements of our map have been arranged in order of spatial importance – Camp Butterfly being at the top, with schools, churches, green areas, and vacant lots following – and we have included the necessary scale bar, north arrow, legend, source, and title.

## VI. Results

### Map A.

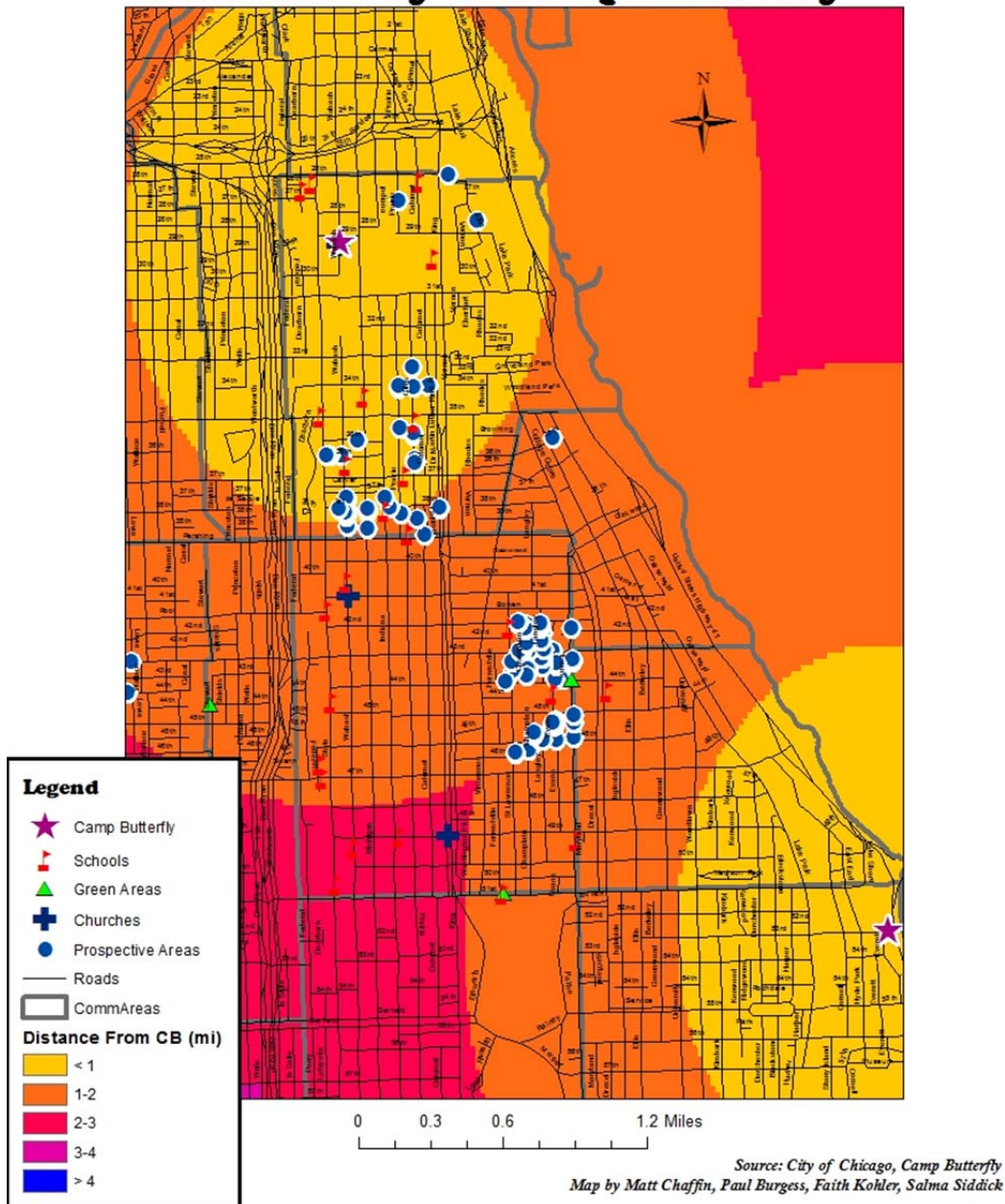
The results of our research identify favorable sites for 'greening' in the Bronzeville neighborhood. Our first map below identifies relevant data such as schools, churches, existing green spaces, and vacant lots. This provides a visual of Camp Butterfly's location (2929 S. Wabash) in relation to the Camp Butterfly Community Garden located on the Southeast corner of 48<sup>th</sup> and King Drive.



## Map B.

Our second map provides a deeper spatial analysis of potential green spaces. The Yellow area represents the approximate 1 mile walking distance radius of Camp Butterfly and the Community Garden, so that girls involved in the program can see what is close to Camp. On the other hand, the orange space represents approximately 2 mile radius which may be identified by the girls as a potential green space close to school or church.

### Potential Green Spaces In Proximity to Camp Butterfly



## VII. Summary, Conclusions, and Recommendations

The Bronzeville neighborhood is a progressive community on the South side of Chicago that is taking advantage of the recent laws passed by the city of Chicago to utilize green areas for employment opportunities and resources. Camp Butterfly is a strong youth women's organization that is focused on providing as many opportunities as possible for its members in order to give a strong foundation for their future.

The goals of this group were strongly supported because we were able to acquire large amounts of data for the Bronzeville community that will be utilized by Camp Butterfly. Currently, there is a youth farm program set up at Dyett/Washington High school in Bronzeville, which allows students to tend the garden and receive internships for their work. The work in this project effectively located goal areas that Camp Butterfly can use to set up a working Urban Farm. The schools and catholic churches are communication outlets to develop community support from the adults and leaders in Bronzeville.

Recommendations for further work include compiling a data set of Brownfield lots in the Bronzeville area. Brownfields were one of the groups initial foci for prospective lots, but due to lack of public data, were unable to be compiled and utilized. The greatest recommendation for Camp Butterfly is to contact other youth centers in the area after narrowing down the list of prospective lots in order to develop a program at a specific site. Camp butterfly currently is developing a youth farm program close to Lake Michigan, but a network of farms could give Camp Butterfly the edge when applying for grant money or seeking donations. A Bronzeville farm sponsored by Camp Butterfly could evolve into a community center that multiple schools would be able to utilize for youth development. Collaboration with a local school or church could ensure that progress is made on the youth farm because the students and adults will be working toward a cause that betters the Bronzeville community and its future.

## VIII. Technical Appendices

### Appendix A:

Toni Anderson, Camp Butterfly, Director of Programs  
toni@campbutterfly.org  
2929 S. Wabash Avenue  
Chicago, IL 60616

### Appendix B:

Dyett/Washington Park Youth Farm Project  
(<http://www.chicagobotanic.org/greenyouthfarm/dyett/>)

### Appendix C:

ArcMap Basemaps  
Vacant Lots in the City of Chicago  
([http://www.cityofchicago.org/content/dam/city/depts/dcd/supp\\_info/RealEstate/CITYOWNED\\_FINAL\\_OCT2011.pdf](http://www.cityofchicago.org/content/dam/city/depts/dcd/supp_info/RealEstate/CITYOWNED_FINAL_OCT2011.pdf))

Chicago Public Schools  
(<http://www.cps.edu/SiteCollectionDocuments/HighSchoolDirectoryEnglish.pdf>)