Asset Mapping and Community Development Planning with GIS:
A Look at the Heart of West Michigan United Way's Innovative Approach

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Introduction

Ever since 1993 when John McKnight and John Kretzmann voiced their protest that the institutional approaches toward community development were too focused on community deficiencies and not community strengths, nonprofit organizations have been struggling with how to incorporate this new perspective to their work (McKnight and Kretzmann 1993). Their concept is asset mapping, identifying the strengths of a community – it's assets – and building development work on top of this foundation.

McKnight and Kretzmann's contribution to the discussion of how communities can best develop successfully is much needed. Conceptually and emotionally the concept of assets is powerful due to its positive approach and it feeds into current thinking of empowerment and self-sufficiency. Practically, however, making the shift from a needs based approach to a strengths-based one is not easy. An organizational and funding paradigm has been established which bases the focus of work on needs assessments and community deficiencies. Perhaps the slowness of the shift toward an assets-based approach is due to the seeming polarization of the concepts of assets and needs even though they can be, in fact, complementary. Or perhaps, organizations and communities lack the appropriate tools to meld the ideas in to one in an effective, easy to use way which can lead to enhanced understanding of their environment and better decision-making.

Methodology Oriented Paper

This paper will not attempt to answer the debate between which is better: asset or needs-based development approaches. Rather, it will present how a Geographic Information System (GIS) is being used by the Heart of West Michigan United Way (HWMUW or The United Way) in Grand Rapids, Michigan to combine the strengths of assets-based community development with the traditional methodology of needs assessments. The HWMUW is in a transition stage within its program priority setting and funding allocation mechanisms, trying to transform its approach from a filtering down county-wide perspective to a building up neighborhood one. As such, the idea of community assets is central to the new approach. What the HWMUW is currently struggling with is how best to make this change.

The HWMUW GIS experiment is unique for several reasons. First, GIS allows data about assets and needs to be combined and analyzed together thereby potentially eliminating the dichotomy between the two approaches. Second, the HWMUW is seeking to use GIS in both a bottom-up community-driven planning and development process as well as a top-down regional planning approach. Third, the HWMUW is

determining if combining needs assessments and asset mapping through the use of GIS will be a more effective methodology for setting funding priorities for the institution. The results of this experiment could have significant impact as its results and methods are replicated to other United Way agencies, as well as other philanthropic and nonprofit organizations across the country.

Experiment In Process

Very few attempts have been undertaken nationwide within the nonprofit community which incorporate GIS into the planning, funding, and development process. It is unclear whether the current HWMUW experiment will eventually lead to permanent changes in how the United Way operates, but the current experiment in Kent County, Michigan is a unique opportunity for the nonprofit community to observe how and if GIS can be incorporated into the planning process to empower neighborhoods to make better decisions for themselves as well as for regional institutions to better coordinate and integrate local development initiatives into a more cohesive whole.

The Heart of West Michigan United Way

The mission of the HWMUW is: "To increase the organized capacity of people to care for one another". While the end goal is for communities that are better able to meet their own needs, a significant mean to achieving the goal for the United Way includes allocating funds to community groups, nonprofit organizations and voluntary associations. As a regional institution, the United Way is also interested in maintaining a coordinated and regional approach to its efforts in order to most effectively improve the citizenry as a whole without duplication and waste.

The United Way has always used needs assessments as the way to develop community priorities. Their basic methodology has been to conduct a county wide population and needs survey and extrapolate the results down to the neighborhood level. The surveys were targeted broadly to the community as a whole despite the suspicion that needs of specific neighborhoods may vary greatly across the county. Several deficiencies of this approach have become apparent over time, including: county-wide samples neglect specific neighborhood trends, the county-wide surveys have been telephone-based and thus excluded an important segment of the population such as those without phones or permanent homes, and being a top-down instrument, many potential community issues were not even included in the survey questionnaire (Heart of West Michigan United Way 1997a). Moreover, this prior approach focused exclusively on what was deficient in the community and failed to incorporate the positive characteristics into the survey instrument.

In December, 1996, the HWMUW began evaluating its approaches toward community investment by appointing a steering committee to help design a process to measure human service needs and related community assets. This steering committee was given the role of identifying a new method which better reflected neighborhoods' needs, desires, assets, and capacities which could then translate into more effective programming and fund allocation by the United Way. The end goal was to achieve sustainable improvements for the communities of Kent County.

This new approach by the United Way is significant in many ways. First, the approach would be grassroots in character which would constitute a major shift in approach for the centrally planned and regionally based charitable organization. The new methodology would for the first time allow for intra-county comparisons between neighborhoods as well as between neighborhoods and the county as a whole.

Because neighborhoods would be chosen as the unit of analysis, the steering committee was charged with identifying new ways of compiling and presenting data so that the results could be shared with neighborhood associations. Creating a direct feedback loop between the community and the United Way in another shift in approach for the agency (the United Way traditionally deals with local non-profit organizations and not directly with community groups). Finally, by incorporating the concept of community assets into their perspective, the steering committee would build a conceptual foundation for planners and community residents to build on to develop successful initiatives and programs. In all, this steering committee was given the responsibility for potentially radically shifting their corporate paradigm from a view that the county is full of needs and deficiencies to a belief that the county is comprised of diverse neighborhoods which have a mixture of assets, capacities, and strengths along with their needs.

When the steering committee ended its exploration a year and a half later, three different methods had been investigated: an enhanced needs assessment, an in-depth ethnographic study of four neighborhoods, and GIS analysis of assets and needs.

Traditional Needs Assessment – Plus. Not wanting to completely abandon the concept of needs assessment, a county-wide survey was taken to determine what problems people in the county faced. However, four specific neighborhoods were targeted and over sampled in order to see if differences existed among specific localities. Two of the selected neighborhoods represented stable, needy environments, one urban (Oakdale) and the other rural (Cedar Springs). The other two neighborhoods were experiencing some type of transition, one in terms of population change (Wyoming) and the other experiencing economic shifts (Roosevelt Park) (Heart of West Michigan United Way 1997b).

Ethnographic Investigation. Two ethnographers were hired who then went to each of the four neighborhoods and spent time interviewing residents and community leaders in order to develop a holistic picture of the areas. Both needs and assets were discussed and what resulted were four comprehensive community profiles.

GIS Analysis of Assets and Needs. The third method is the use of GIS to get a sense of these neighborhoods as well as the county as a whole.

The three methodologies mentioned above were not identified at the outset of the steering committee's work, rather they were the result of evolving discussions about the most effective ways to best understand the community and which would lead to the best decision-making. The initial mandate simply focused on the desire to have a neighborhood focus and to include communities' assets as well as needs.

The results of each approach were presented at a steering committee meeting in July, 1998. Discussion ensued after the presentation of the needs assessment as well as the more asset focused ethnographic work. After these two discussions, debate began between committee members on which approach is better: needs or assets. It seemed to the committee that the two were mutually exclusive because they were based on disparate foundations and assumptions. Moreover, it seemed that combining the results from the different approaches would be difficult and potentially confusing. As it turned out, the third presentation on GIS resolved many of these issues. GIS is a technology which can merge the approaches into one thereby allowing the United Way to meet its goals of combining bottom-up and top-down development approaches while basing decisions on data about both community needs and assets.

While each methodology is worthy of description and analysis, the remainder of this paper will focus on GIS because it is the newest approach toward community development and holds the most promise in facilitating the diverse needs of community residents, organizational administrators, funders, and public policy makers.

GIS: An Integrating Tool and Methodology

Understanding what GIS does is important to understanding why it is such a potentially useful approach toward community development. There are many definitions of GIS ranging from the academic and esoteric to the practical. For the purposes and uses for which GIS is being used by the HWMUW, the following is a good definition: "[GIS is] a powerful set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world" (Burrough 1986, 6). The important component of the definition is *spatial data*. Spatial data is data which refers to a point or place on the earth. It is estimated that as much as 75 – 80% of all data collected is spatial in nature. In other words, most data collected refers to a place on the earth. For example, school districts have geographical boundaries, organizations have addresses and service areas, and people have home and work locations.

A GIS is much like a database program, but unlike traditional database structures, GIS includes geography. A GIS makes it possible to place data onto a map and then query, sort, and categorize the data based on its location. For example, suppose it was desired to know how well health care clinics are dispersed across the county. As long as the addresses of the clinics are known, they can be represented on a map giving the user a visual overview of the dispersion, rather than having to imagine the distribution by looking at a long table of clinic's names and addresses.

Another feature of GIS is its organization of data into layers. For example, GIS may display a downtown in distinct layers such as: a street layer, a building layer, a parcel layer, and a zoning layer. These layers can be analyzed in isolation or be cross-referenced and analyzed together. For the above referenced health clinic example, suppose that we had a layer of Census data at the Census tract level in addition to the layer of clinics. We could view the two simultaneously to determine if the clinics were in the areas of greatest population. Moreover, because a GIS is based in geography, it is possible to query these data layers based on location and distance. A standard question

may be: How many people, and what are their characteristics, live within 1 mile of each health care site? Such questions can be asked of specific locations or across regions.

Why use a GIS

There are several reasons why GIS is a useful tool for the nonprofit community. First, viewing data in a map as opposed to in a list or table format makes the data easier to understand and interpret. Look at the table and map below. Each shows the elderly

### Figure 1: Elderly Density – *Table Format*

BLOCKGR	AREA	TOTPOP	AGE60_64	AGE65_74	AGE75_84	AGE85_UP	AGE65_UP	DENSITY
260810026.00:1	0.458124	749	20	29	27	7	63	138
260810026.00:2	0.872743	1049	0	54	19	9	82	94
260810026.00:3	0.146842	1226	21	21	3	0	24	163
260810031.00:2	0.145300	1031	36	5	9	0	14	96
260810032.00:5	0.075196	849	7	8	0	0	8	106
260810032.00:6	0.047961	679	14	21	7	0	28	584
260810035.00:1	0.143632	1623	24	34	44	6	84	585
260810035.00:2	0.153358	1615	42	98	118	30	246	1604
260810035.00:3	0.136316	1077	33	59	13	0	72	528
260810035.00:4	0.252253	1622	31	80	28	21	129	511
260810036.00:1	0.264804	1559	36	106	24	18	148	559
260810037.00:1	0.194981	614	5	25	7	6	38	195
260810037.00:2	0.180792	1729	48	46	44	9	99	548
260810039.00:1	0.198015	1540	34	34	18	3	55	278
260810039.00:2	0.142443	1178	10	77	19	0	96	674
260810040.00:2	0.190498	891	11	15	12	0	27	142
260810042.00:1	0.249892	1725	54	78	67	31	176	704
260810043.00:1	1.180781	3845	223	423	175	48	646	547
260810133.00:1	0.408470	1147	49	64	28	7	99	242
260810133.00:2	0.295865	1708	61	51	46	30	127	429

Source: U.S. Census, Summary Tape File 3A, 1990.

density (number of people aged 65 and older per square mile) of a region of Kent County, Michigan (Roosevelt Park and Oakdale neighborhoods are outlined). While the table is presented neatly and clearly, it is hard to develop a mental image of the neighborhoods through the listing of numbers. The map on the other hand is interpretable in seconds and not only gives information about the specific neighborhoods in question, but it also illustrates the attributes of the surrounding area.

Because data presented in a map format is easier to understand, it is also easier to communicate to others. This is a particularly important point for nonprofit organizations such as the United Way who are trying to work with a diverse group of people to identify and achieve shared goals. Often, projects involve representatives from an executive board, agency staff, and community leaders, as well as community residents. All of these participants have different backgrounds which can make it difficult to ensure that everyone understands the data the same way. Language, educational, social, and cultural barriers can be overcome with this visual approach. Most people, with little training, can understand data in a map view, thereby making discussions, planning, and decision-making more focused and consistent among participants. Thus, presenting data in a visual language invites diverse participation into the community planning process.

Figure 2: Elderly Density - *Map Format*

Legend:
- 0 - 228
- 228 - 559
- 559 - 1,050
- 1,050 - 2,253
- No Data
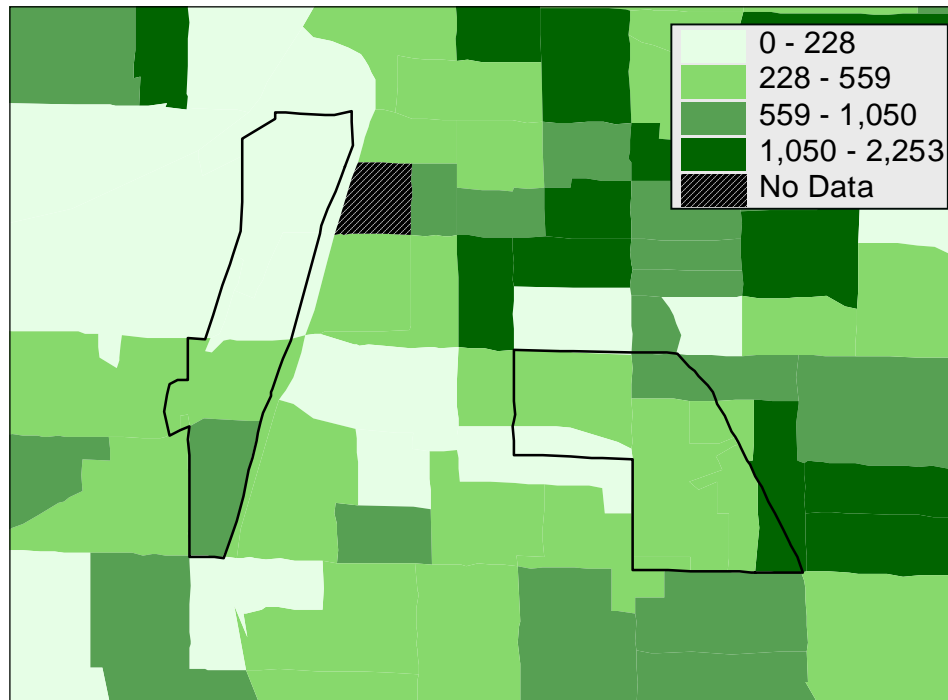
Source: U.S. Census, Summary Tape File 3A, 1990 (block groups).

Another benefit of GIS is that it allows users to quickly get past the questions of "what" and "where" and move on to the question of "why". When problem solving, the most important question to answer is "why". Why is crime higher in one area than another? Why is a certain service underutilized? When "why" is answered, meaningful discussion and solutions can be addressed. Being able to see spatial patterns of data rather than simply looking at tables or graphs facilitates the understanding of root causes of problems and helps lay foundations for solutions.

GIS and the HWMUW

With these GIS benefits in mind, the HWMUW decided to undertake a pilot GIS project to determine if it is a viable technology that can be used for grass roots decision making as well as regional planning. While the initial intention was to use GIS simply for the asset mapping exercise, it was quickly realized that it could be used for both asset and needs analysis. Before displaying and discussing some of the results, it is important to have an understanding of some of the core components of the project.

Personnel. At the beginning of the project, the HWMUW had only limited GIS experience. They had conceptual knowledge of GIS and one staff person with only minor hands-on experience. The United Way thus sought assistance from the University of Michigan-Ann Arbor and contracted with the Urban and Regional Planning Program for the endeavor. Concurrently, the United Way staff person with limited GIS experience enrolled in a GIS course to augment his skills and knowledge of both the software and some of the theoretical underpinnings of the technology.

Data. Data for the project came from a variety of sources depending on whether it was being used to characterize the neighborhoods, identify needs, or locate community assets. The 1990 United States Census was used to paint a general picture of the county and the specified neighborhoods. Additional needs related data was acquired from the juvenile courts which provided addresses of juveniles who were referred to the court for various reasons including delinquency and neglect[1]. Asset data included a listing of nonprofit organizations which receive referrals from the United Way's First Call for Help program (over 570 institutions), religious institutions, school locations, and businesses. Additional assets such as key community leaders, block club locations, libraries, and others will be identified and gathered as the process moves forward. Other data sets which have been acquired, but are being reserved for future analysis include information on schools, parcel maps of downtown, bus lines, and empowerment zones, among others.

Project Goals

The main goal for the GIS project was to demonstrate the capacity of a GIS as a useful method for both grass roots and regional decision-making. The analysis had to be completed in such a way that the results could be presented to the United Way Executive Board as well as to the neighborhood associations which participated in the survey and ethnographic investigations.

The First Step – A Social Atlas

GIS was a new concept to the Heart of West Michigan United Way and only a few of the many steering committee members knew what it was and what it could do. The first task for the GIS project was to educate committee members. The initial educational vehicle was accomplished through the publication of a limited community atlas. The atlas provided Census-based maps of Kent County as well as the four neighborhoods. Attributes displayed included: population density, average household income, poor and very poor rates, minority breakdowns, youth and elderly concentrations, high school dropout percentages, and female headed household percentages. Figure 3 illustrates one of the pages from the Atlas. A point map showing the locations of the organizations which participate in the United Way's First Call for Help program was also included in order to demonstrate how assets could be incorporated into the process. Finally, some sample base maps were included to delineate a few of the potential layers of data which could be included for analysis. These base maps included: zip codes, school districts, townships, voting precincts, Census blocks, Census block groups, and Census tracts.

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[1] In order to retain the confidentiality of the minors, the point locations of their addresses were aggregated to the Census block group level. Each block group contains approximately 1,100 people thus making it nearly impossible to identify specific juveniles.

Figure 3: Social Atlas - % African American
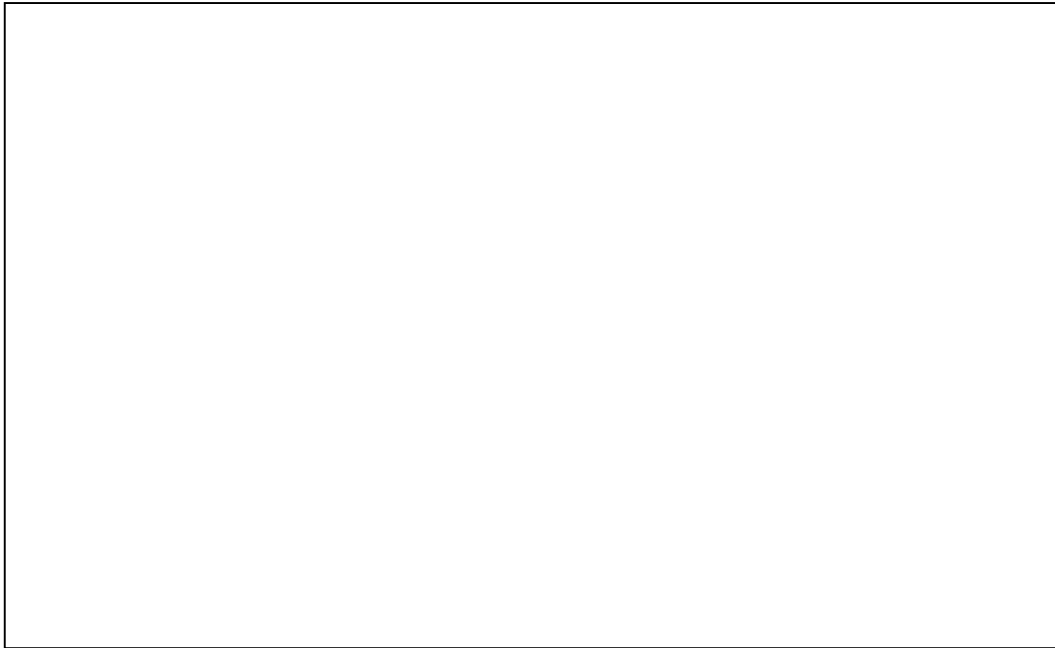
Source: 1990 U.S. Census Summary Tape File 3A (block groups).

### *The Second Step – Needs and Asset Mapping*

Concurrent to the development of the Social Atlas, data sets were being obtained from the U.S. Census, the Michigan Department of Education, the juvenile court system, the United Way, and the Department of Health. Most of these data sets required extensive manipulation in order to be in GIS ready format.

For this initial phase of the GIS project, the HWMUW simply wanted to see spatial patterns from the data rather than any in depth spatial analysis. Being able to see patterns across the County as well as differences between neighborhoods would be a good starting point for discussion of community issues, a good way to fuse the information collected from the needs assessment survey and ethnographic investigation into a visual image, an opportunity to determine if the maps are consistent with committee members' own images of the communities, and an opportunity to ask more pointed questions of the data and their meaning. With these objectives in mind, a series of maps were created and presented to the Needs Assessment/Asset Mapping Committee of the United Way in July, 1998.

Population Characteristics. One of the fundamental data sets used in many social science related mapping projects is the Census. While the most current Census is from 1990 and already eight years old, it is still the most comprehensive and accurate source for population and housing characteristics. In this case, the steering committee felt that anecdotally the neighborhood characteristics of 1998 had not changed much from that described in the 1990 Census. Below are two maps which show the percentage of people who are Hispanic in and around the neighborhoods of Roosevelt Park (left) and Oakdale (right). Darker colors mean there are a higher concentrations. Figures 4 and 5 show the same data, but Figure 5 breaks the data down into categories of standard deviation. This method allows for the comparison of the neighborhoods to the other parts of the County. Darker shades mean that those areas have higher concentrations of people who are Hispanic as compared to the county as a whole.

Figure 4: % Hispanic - Roosevelt and Oakdale Communities
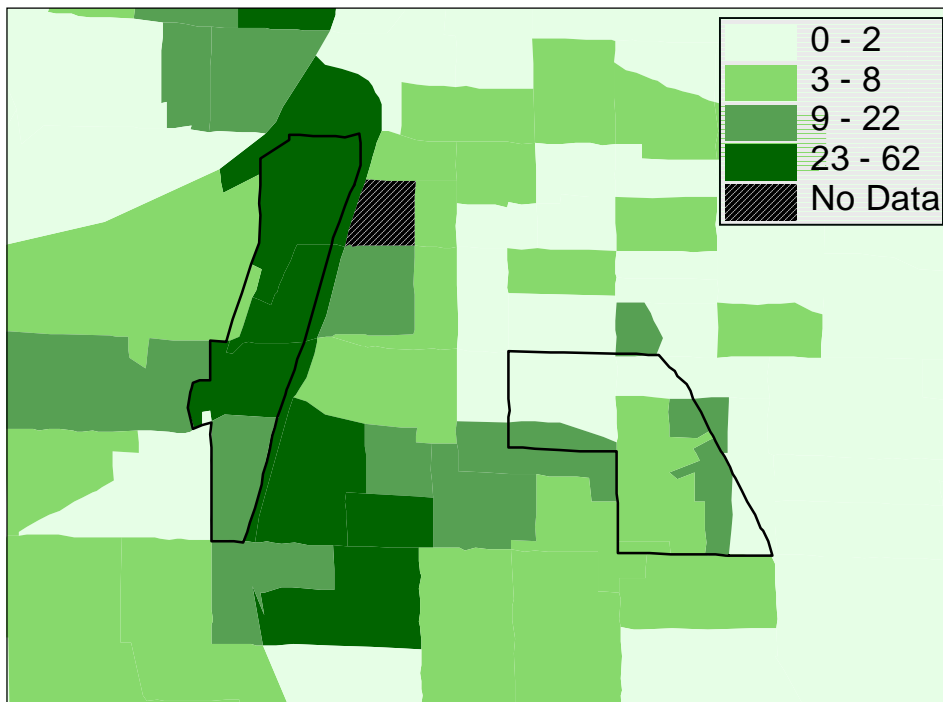
Source: 1990 U.S. Census, Summary Tape File 3A (block groups).

An initial view and analysis of the maps would indicate that there is a large Hispanic population within the Roosevelt neighborhood and a moderate presence in Oakdale. Perhaps equally important, with the map view, it is possible to see the characteristics of the areas immediately surrounding these two communities which show that the Hispanic community extends beyond the neighborhoods under study and in fact forms a larger regional presence. If one of the conclusions were to increase bilingual services in the area, it might be misguided to simply focus on Roosevelt Park and ignore the immediately surrounding area.


Figure 5: % Hispanic (standard deviations)
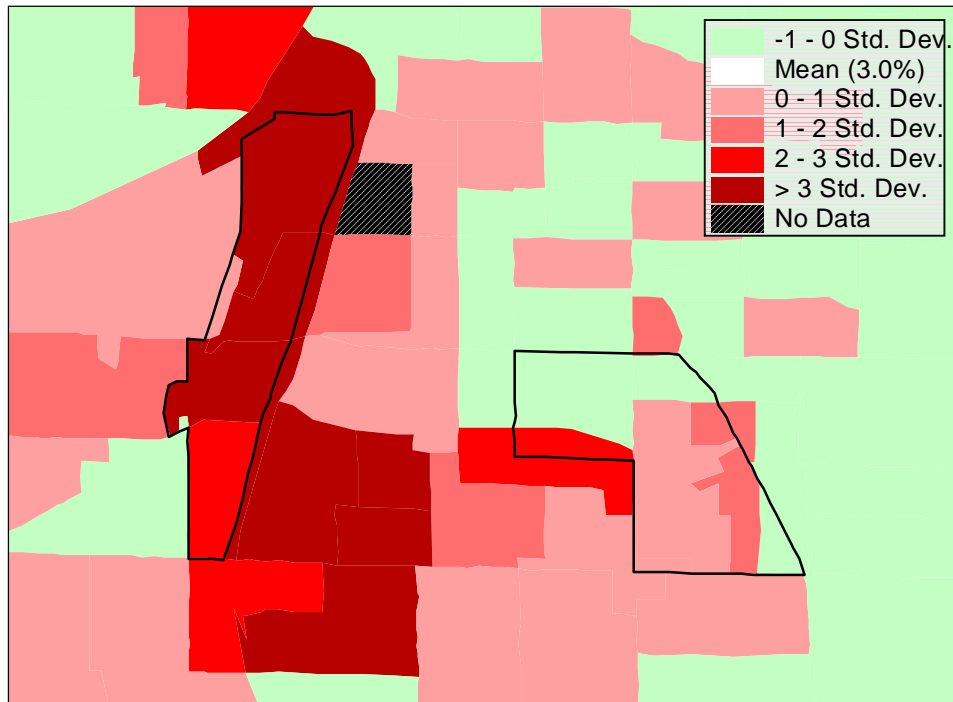
Source: 1990 U.S. Census, Summary Tape File 3A (block groups)

These types of questions are much more difficult to ask without a GIS. These same pictures would be difficult to mentally generate by simply viewing Census data in the form of a table. Moreover, it is likely that when developing a table of Census data, only those Census areas which fall within the communities would be selected for analysis. With GIS, it is possible to see the whole area, overlay the neighborhood boundaries and then, if desired, ask the GIS for the characteristics of the specific area underneath these borders. In this way, both broad regional patterns can be analyzed as well as those relating to specific geographic areas of interest.

Needs. In addition to general population characteristics, the Census contains information which can be translated into neighborhood deficiencies which can then in turn be categorized into community needs. Some of these data categories include: median income, persons per room in a house (a sign of overcrowding), number of single parent households, and number of high school dropouts, among others. For this project, the HWMUW wanted to gather additional information about youth so a database of juvenile court referrals was obtained. This databases covered a two year period (1995 and 1996) and contained over 7,000 young people and over 14,000 court referrals. The two categories of particular interest were those of child neglect and youth delinquency. The data set contained addresses of the young people. These addresses could be matched to a street layer in the GIS to identify each youth's home location. The result was a map which contained almost 5,000 points (70% of the 7,000 addresses were able to be correctly located) dispersed around the county. From this map, patterns of concentration could be seen easily due to the clustering together of addresses in certain areas.

In order to protect the confidentiality of the minors, this point data set was aggregated up to the Census block group level which masked the location of any single individual. An additional benefit of this aggregation was the ability to link the court data to the Census[2]. The result was that it was possible to make a map of juvenile delinquent density – the number of delinquents per year divided by the number of 10 to 17 year olds. A benefit of developing a density map based on area is that the data becomes normalized and can be compared between Census regions regardless of the size of a particular Census block group. Figure 6 illustrates the juvenile delinquency density map and Figure 7 shows juvenile neglect density (neglect cases per year divided by the total number of 0 to 13 year olds).
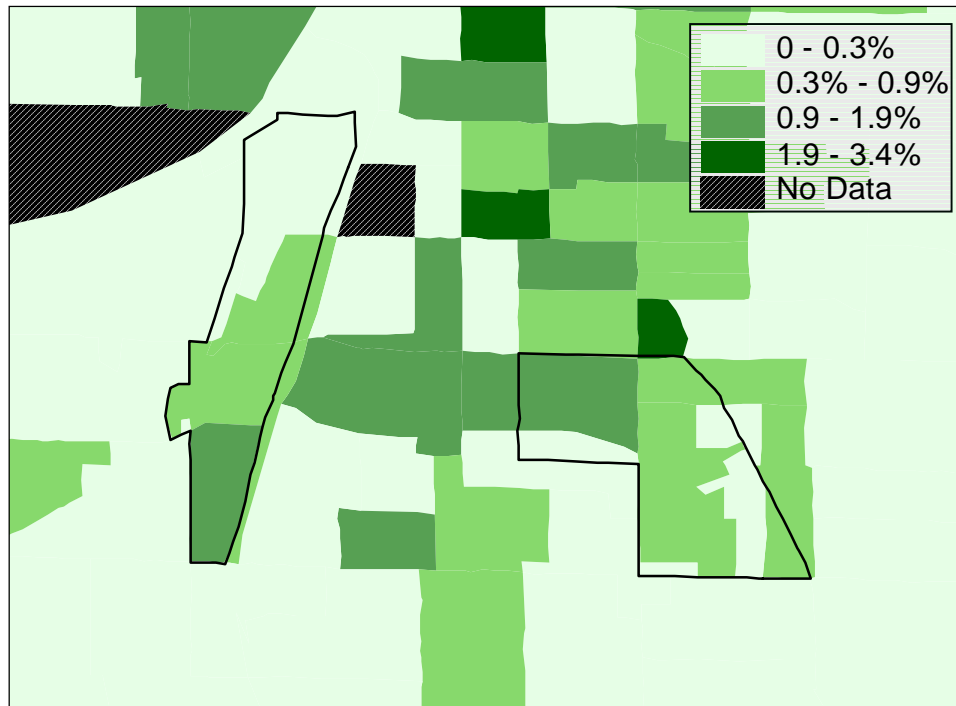
Figure 6: Juvenile Delinquency Density
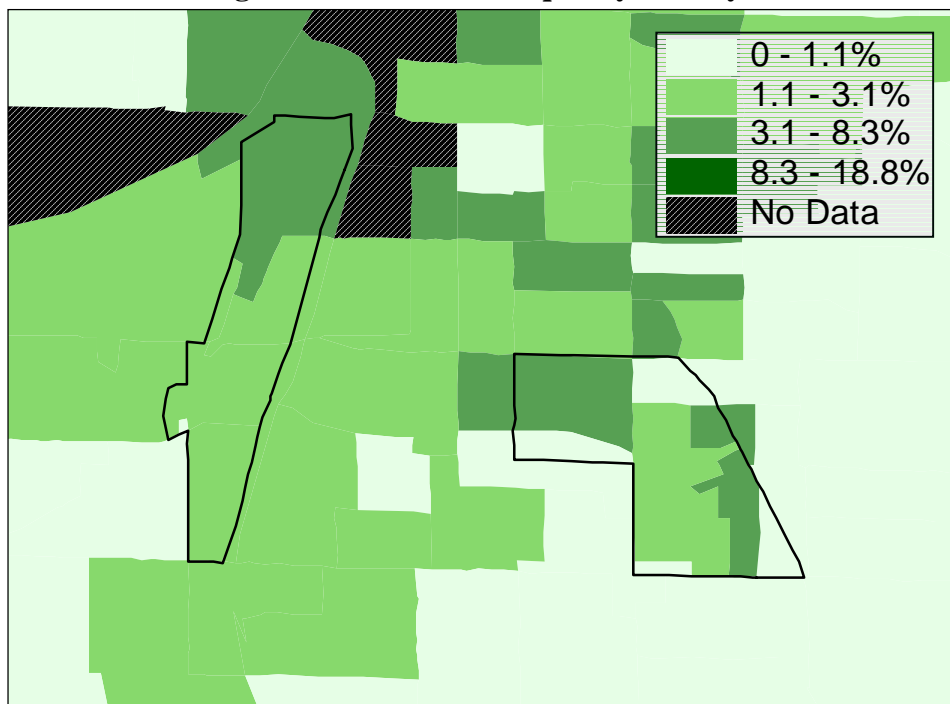
Source: 1990 U.S. Census, Summary Tape File 3A (block groups); Juvenile Court System of Kent County, Michigan.

It is important to note that this type of analysis would not be possible without the use of a GIS. Because GIS has a basis in geography, distinct data sets with nothing in common except that they refer to data which occur on the same place on the earth can be combined. There is nothing inherently in common between Census data and juvenile court data. But because they share the same geography, the two data sets can be linked and analyzed together.

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[2] There was a slight error in comparing the court data to the Census because the court data was collected in 1995 and 1996 while the Census data was from 1990.

Figure 7: Juvenile Neglect Density

Legend:
- 0 - 0.3%
- 0.3% - 0.9%
- 0.9 - 1.9%
- 1.9 - 3.4%
- No Data

Source: 1990 U.S. Census, Summary Tape File 3A (block groups); Juvenile Court System of Kent County, Michigan.

Assets. The final step was to map some of the asset databases collected. For this initial phase, three primary asset databases were obtained. The United Way maintains a database of all the nonprofit organizations which it refers people to – over 570 different organizational locations. These agencies vary across the wide spectrum of nonprofit services. The second asset database mapped was a listing of religious institutions in the area. In many communities, churches play a central community organizing and development role in addition to the role of helping people in need. The third data base included in this component of the mapping was the location of schools in the county. It was unclear what, if any, role the physical location of a school might play in a community's development efforts, but it was deemed interesting enough of a question to plot. Once mapped, it is possible for the GIS to be queried to identify the number of each asset which exists in each neighborhood. A related query may ask how many of the assets occur within a quarter of a mile of the neighborhood's edge.

While there are scores of other assets which could be mapped such as libraries, parks, grocery stores, community leaders, block clubs, etc. (and probably will be in the upcoming year) United Way referral agencies, churches, and schools were chosen in order to gain an initial understanding of the capacity of GIS to give meaningful insight into seemingly disparate data sets. Figure 8 shows all three of these data sets mapped simultaneously.

Figure 8: Community Agencies, Schools, and Churches
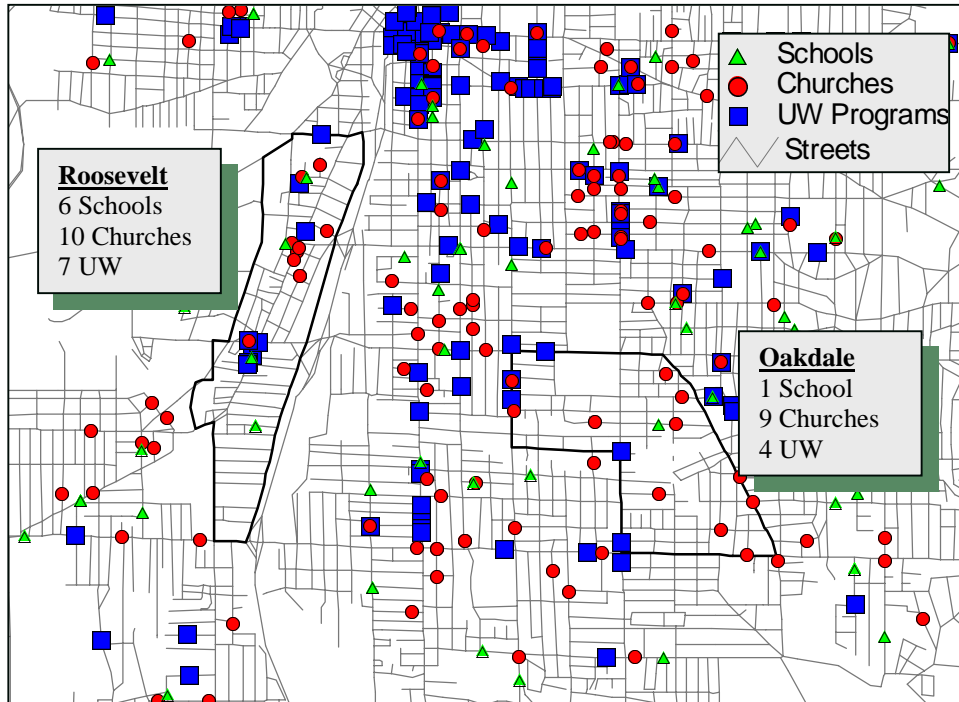
Source: Heart of West Michigan United Way, Kent County, Michigan; Michigan Department of Education (http://www.mde.state.mi.us/); Grand Rapids Area Center for Ecumenism (GRACE).

As mentioned earlier, one of the unique features of a GIS is its ability to extract data from one layer of data using another layer as the "cookie cutter". In this case, data was selected from three separate layers – the institutions, churches, and schools – based on their location falling inside of the neighborhood layer. The results of the query are beside each neighborhood and give a quick idea as to the number of these particular community assets which exist within the area's borders.

One additional approach not pictured here would be to overlay a community's assets with its deficiencies. For example, on top of the juvenile delinquency map (Figure 6) could be a layer showing the location of teen programs and youth outreach centers. It could then be determined if there is a relationship between needs and assets. Moreover, if a Census population layer were added, it would be possible to calculate how many teens live within a certain distance of the youth center in order to conclude if there is an appropriate center-youth ratio. One final potential use of GIS would be to determine the appropriate location for a new youth center based on characteristics deemed important – total number of teens, race, income level, or proximity to other programs.

HWMUW Response

The purpose of the GIS project outlined above was to give the United Way an introduction to the technology and its capacity to assist the agency to set funding priorities and allocations as well as to be a potential tool for bottom-up planning at the neighborhood level. These initial results were presented to the Needs Assessment/Asset

Mapping committee of the United Way for discussion and review. While there were some questions regarding data maintenance, the overwhelming response was positive – GIS is a potentially effective method for meeting the agency's goals as funder and capacity builder.

The committee decided that it would be an important exercise to present the maps directly to the neighborhood associations and community leaders who were involved in the ethnographic assessment. The goals of these presentations would be to see if the maps reflect the reality of the residents, to ascertain whether the data generated useful discussion, and to listen if the maps generated "what if" and "is it possible to do this?" questions – i.e. would the maps help generate enthusiasm at the grass roots.

A two tiered strategy was recommended to the committee which was adopted in principle. In addition to presenting the GIS results directly to the neighborhood, during the short term, the HWMUW should continue to identify and sort through existing public data sources. Of particular interest is the infant mortality database from the Department of Health and assets such as libraries, health care providers, voluntary associations, and the addressees of local board members. Moreover, effort should be exerted in the immediate future to develop a core group of stakeholders in the process including concerned residents, neighborhood groups, funding agencies, planners, and politicians. One of the future ideas of using GIS is for the community to gather the data about its area. To do this, there must be a series of parties which feel as though they have a key decision-making role in the process.

The second tier involves building capacity, developing local community projects, and seeking long-term funding. Aside from the time it takes to learn how to operate a GIS, GIS involves a conceptual learning curve because it represents a new way of thinking and seeing the world. As such, considerable training and workshops will be needed in order to build local capacity. This local ability refers both to the neighborhoods and the United Way. Neighborhood groups which may eventually be the data gatherers and interpreters need to learn approaches for doing both jobs efficiently and correctly. The HWMUW also needs to strengthen its GIS-capacity. The work highlighted here was performed mostly by the University of Michigan about 200 miles away from Grand Rapids where the United Way is based. The HWMUW has already taken initial steps in this area by sending a key staff person to a GIS course. With GIS, building capacity is as much an organizational exercise as an individual skills enhancement. As such, the management structure of the United Way will need to be trained and perhaps slightly re-configured in order to be consistent with a GIS-based approach toward community development. GIS requires shared resources and open communication and often times organizations need to make modifications to their managing structure and style if they are to get the most out of GIS (Huxhold and Levinsohn 1995).

Cautions
While there is great potential for GIS to be used in the community development process, there are some cautions. The three biggest issues are personnel, the technology

itself, and data availability. GIS is not difficult to learn, especially for someone who has even modest computer or database experience. Yet, it requires institutional commitment to the people enlisted to do the GIS analysis. Regardless of organizational size, to do GIS competently requires at least one full-time person dedicated to its maintenance. Nonprofit agencies which are already struggling with tight budgets and human resources, as well as a technology deficiency, may not be able to commit to this requirement.

Acquiring useful data is not difficult, especially in the current Internet-inspired atmosphere of data sharing and exchange. Most data sets however are not in GIS-ready format. On some GIS projects, as much as 80% of the time is dedicated to cleaning existing data sets. A related issue is data currency – how the data is maintained and updated over time.

Finally, the technology itself may be a barrier. If, as it is in the United Way project, a goal to include neighborhood residents into the planning process, a slick, technological approach may actually be counterproductive and against the original goals to conduct a process which is accessible to anyone regardless of their background. In the short term, it is unlikely that GIS itself can be transferred to neighborhood associations, although it is conceivable to do so in the medium term.

Conclusion

Despite these potential drawbacks, GIS has demonstrated in this project that it can be an effective methodology for converging the dual goals of bottom up and top down decision making. Data presented with the aid of GIS is more easily understood by the communities served as well as organizational administrators, funders and public officials. As the concept of asset mapping continues to be considered seriously and incorporated into the community development process – whether by communities themselves or nonprofit organizations working to build community capacity – GIS will be one of the tools to make it effective. GIS has been used by the business and planning communities for over a decade, but is only now beginning to make its way into the nonprofit sector. As nonprofit organizations and voluntary associations seek new ways to help communities improve their quality of life, GIS should be considered an integral instrument in achieving effective results. How the HWMUW chooses to proceed with its GIS approach will be a great learning exercise for the rest of the social service and philanthropic communities.

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