Target Populations to Receive PCEC Assistance in Minneapolis, Minnesota

Advanced Geographic Information Systems: Concepts and Applications Class
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December 2005

In Conjunction with
The Phillips Community Energy Co-operative
The Green Institute
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Minneapolis, MN 55407

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Executive Summary

From October 2005 to December 2005, the Macalester College Advanced Geographic Information Systems: Concepts and Applications class conducted a study in conjunction with the Phillips Community Energy Co-operative (PCEC) to determine target populations in the city of Minneapolis eligible to receive free, energy-efficient refrigerators and air-conditioning units. PCEC previously received a grant from Xcel Energy to distribute these refrigerators and air-conditioners to people who meet the following criteria:

- Recipients must earn less than half of the median income of the state of Minnesota.
- They must own the appliance to be replaced.
- The refrigerator or air conditioner to be replaced must be more than ten years old.
- The recipient must live in a housing structure with less than five units.

The primary goal of the Macalester study was to identify 3,000 homes in Minneapolis that would be likely to meet the above required criteria. A separate component of the project was to create a profile of PCEC's membership base in the Phillips Neighborhood.

We acquired data from the U.S. Census Bureau and produced maps using a Geographic Information System (GIS). The city was mapped by block group, a Census jurisdiction of about 1,500 residents. To generate maps for the refrigerator/air-conditioner replacement component of the project, we chose a select group of variables that would indicate whether homes in a certain block group were likely to qualify for replacement units and mapped the occurrence of these variables throughout the city.

After mapping these variables we used index values to create a composite map that would depict all four variables on one map. The purpose of this suitability index was to standardize each variable to a range of scores. A block group score is a calculation that includes scores of all four variables, allowing us to determine which block groups match most closely with all of the qualifying requirements for a replacement unit. Each variable was weighted according to its importance determined by PCEC Director Jeff Cook-Coyle. The income index was doubled in weight, housing age weighted 1.5 times, owner occupied units stayed at one, and housing units per structure were half the original value. Therefore, areas with the highest index values are the areas most likely to meet the qualifications for replacement refrigerators and air conditioners. The final map identifies three block groups in Minneapolis that are likely to meet all of Xcel's specifications, representing approximately 1,266 homes. Block groups in the moderately suitable category are also likely to have homes that qualify for refrigerator replacement.

We created the profiling component of the project from membership lists provided by PCEC and data from the U.S. Census Bureau. We created 13 maps outlining the locations of PCEC members in the Phillips neighborhood and the distribution of racial groups in the neighborhood. The center of the Phillips neighborhood is its most ethnically diverse area, and is also the area that is most likely to qualify for replacement refrigerators. Its racial composition is approximately 30% White, 25% Black, 25% Latino or Hispanic,15% Native American, 15% Some Other Race, and 10% Asian. It also has a membership rate of approximately 40%.

After analyzing the data, we make the following recommendations to PCEC:

1. Target the following areas for refrigerator replacement: Block Groups 270530001021 and 270531009005 in North Minneapolis and Block Group 270531072001 in the Phillips Neighborhood (see Map 1, page 7).

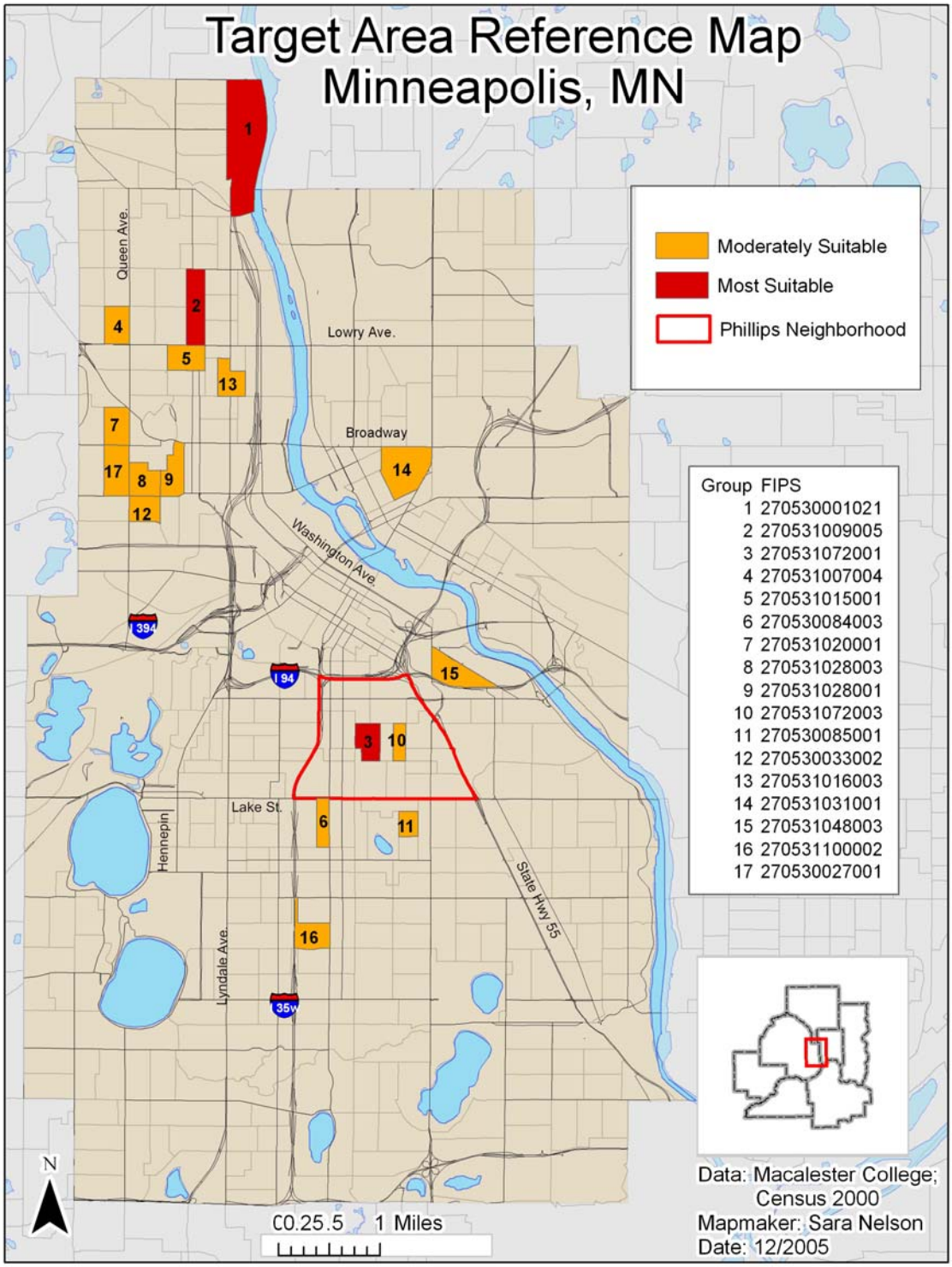
2. Begin distribution of refrigerator/air-conditioner replacements in the central portion of the Phillips Neighborhood, the area of Phillips most likely to qualify for units.

3. Target block groups that fall just above the median income for Minnesota.

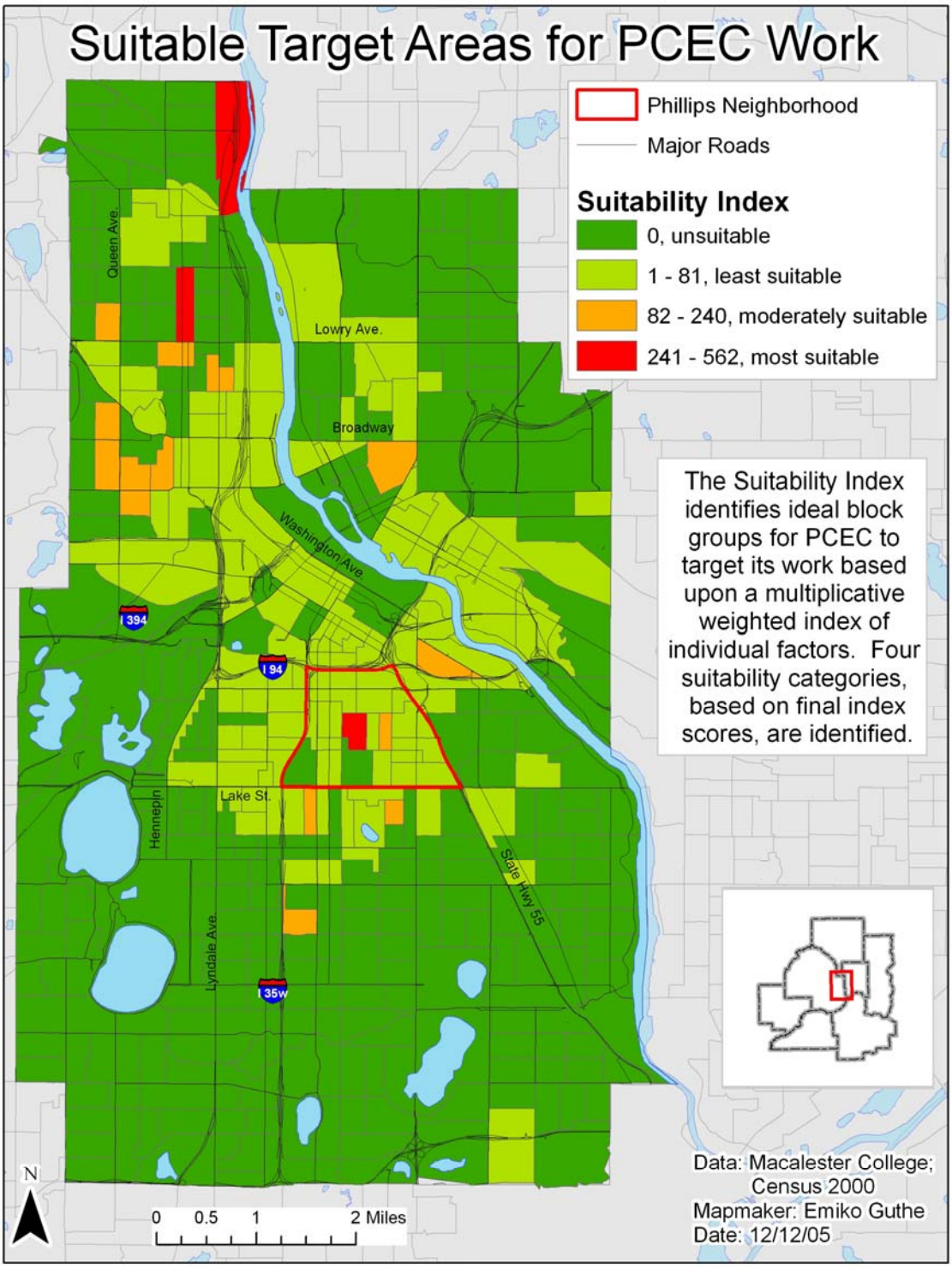
4. Begin a PCEC membership drive in Eastern Phillips, where membership rates are lowest.

5. Expand programming and initiatives into North Minneapolis, an area that qualifies for refrigerator/air-conditioner replacements and would likely benefit from other PCEC assistance.

Map 1


Target Area Reference Map
Minneapolis, MN
Moderately Suitable
Most Suitable
Phillips Neighborhood
Group FIPS
1 270530001021
2 270531009005
3 270531072001
4 270531007004
5 270531015001
6 270530084003
7 270531020001
8 270531028003
9 270531028001
10 270531072003
11 270530085001
12 270530033002
13 270531016003
14 270531031001
15 270531048003
16 270531100002
17 270530027001
Queen Ave.
Lowry Ave.
Broadway
Washington Ave.
Lake St.
Hennepin
Lyndale Ave.
State Hwy 55
394
I 94
35w
N
0 0.25 0.5 1 Miles
Data: Macalester College; Census 2000
Mapmaker: Sara Nelson
Date: 12/2005

Map 2


Suitable Target Areas for PCEC Work
Phillips Neighborhood
Major Roads
Suitability Index
0, unsuitable
1 - 81, least suitable
82 - 240, moderately suitable
241 - 562, most suitable
The Suitability Index identifies ideal block groups for PCEC to target its work based upon a multiplicative weighted index of individual factors. Four suitability categories, based on final index scores, are identified.
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Lowry Ave.
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Washington Ave.
I 394
I 94
Lake St.
Hennepin
Lyndale Ave.
I 35w
State Hwy 55
N
0 0.5 1 2 Miles
Data: Macalester College; Census 2000
Mapmaker: Emiko Guthe
Date: 12/12/05

Introduction and Background

As fuel prices rise, the cost of powering a house climbs as well. Many residents of Minneapolis struggle to keep up with these costs and find themselves at the mercy of the energy companies. The Phillips Community Energy Co-op (PCEC) is trying to help residents to reduce their energy bills through more efficient home appliances. A self-described urban energy co-op, PCEC works to help members save money on their utility bills by providing affordable, energy-efficient products and services (The Green Institute, 2005). These include distributing compact, long-lasting fluorescent light bulbs and window insulation kits as well as replacing window air-conditioning units and refrigerators with newer, more efficient appliances. Until recently, PCEC has focused on serving residents of the Phillips neighborhood. Now it hopes to extend its services to include all of Minneapolis.

Minnesota state law requires public utilities to invest a portion of their state revenues in projects that encourage reducing energy consumption and improving efficiency of energy use (Minnesota Department of Commerce, 2005). These projects have been aptly named Conservation Improvement Programs. Xcel Energy, one of four electric providers in Minnesota, is required to invest two percent of its revenues in these projects, which it distributes to several different organizations. In 2004, PCEC received 10 percent of Xcel's Conservation Improvement Programs funds to finance its operations in the Phillips Neighborhood (PCEC Informational Handout, 2005). For 2006 Xcel will consolidate its efforts and put one organization in charge of the entire Conservation Improvement Programs budget. In 2006, Xcel seeks to replace 192 refrigerators and 256 window air conditioner units, and PCEC aims to be the organization to take charge of this project.

As a class of advanced Geographic Information Systems (GIS) students, we have been consultants for PCEC to help them learn more about the Phillips Neighborhood and their members, and to identify likely communities in Minneapolis that could use their help. PCEC Director Jeff Cook-Coyle identified criteria often used to ascertain the potential need of communities to guide our efforts. The objectives of this project were to identify areas likely to have residents who meet these criteria, and thus likely in need of a replacement appliance, and to map the locations of PCEC members and learn more about them. To accomplish these objectives, we used GIS to analyze a variety of demographic data for Minneapolis.

Methodology

Using 2000 Census Data, we gathered indicators that would be used to determine PCEC's target area for its refrigerator and air conditioner replacement program. These indicators were determined by Xcel Energy's grant requirements and include income level, housing type, housing age, and housing tenure. To qualify for Xcel's grant money, the recipients of the new refrigerators and window air conditioning units must meet four conditions:

- The recipients must earn less than half of the median income of the state of Minnesota.
- They must own the appliance to be replaced.
- The refrigerator or air conditioner must be more than ten years old.
- The recipients must live in a housing structure with less than five (5) units.

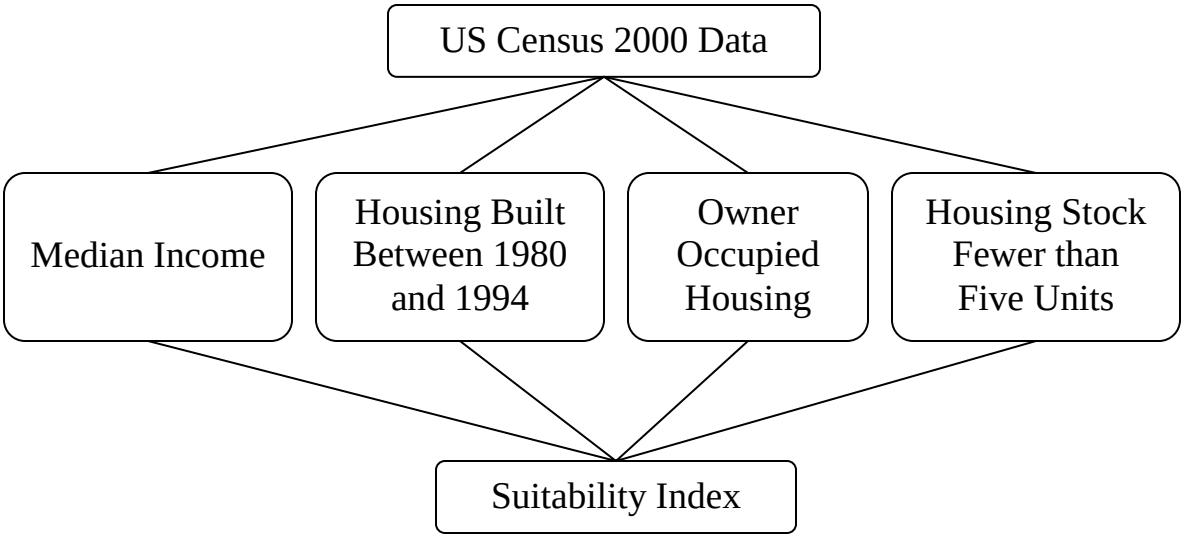
We examined data from the 2000 US Census of Population and Housing to determine geographic areas in Minneapolis that are best suited for PCEC's program. We created maps detailing each of these characteristics for the city of Minneapolis, using the Census-defined block groups, a unit that incorporates an average of 1,500 people. By mapping the data, we were able to find the areas that had the highest percentages of people who satisfied each of the individual conditions listed above.

To combine the four maps into one, we created the suitability index, which integrates a series of data into a single value, allowing for the compilation of many characteristics into one output. Indices are commonly used in mapping to incorporate many variables into one final output.

The values for the variables are assigned ordinal numbers, which indicate their relative rank. In this case, each of the variables, with the exception of income, in each block group was assigned values of 1 to 5, with 1 corresponding to the value that least fit our qualifications and 5 corresponding to the value that most fit our qualifications. Income was assigned a value 0 to 5, with 0 corresponding to values greater than 70% of the median household income of the state and 1 to 5 corresponding to the remaining values. Creating a 0 value for income eliminated the block groups that were outside of the income range determined by Xcel and would not qualify to receive a replacement refrigerator under any circumstances.

These index values were then weighted to indicate the relative importance of each variable. The relative weight of each variable was determined in consultation with PCEC Director Jeff Cook-Coyle. We then combined the four maps that we had created, incorporating income, housing type, tenure, and housing age data together to form a single index map that defined the block groups in Minneapolis whose residents are most likely to qualify for PCEC's program. (see Figure 1)

Figure 1 – Index Construction



Suitability Index

Indices are often constructed in situations where multiple variables are combined to produce a single output. Earl Babbie (1998, p. G3) defines an index as, "a type of composite measure that summarizes several specific observations and represents some more general dimension." The specific observations that are of interest to PCEC are the percent of people in Minneapolis that qualify for all of the conditions outlined above, dictated by Xcel Energy's grant program. By using an index, we were able to indicate which areas of Minneapolis best fit all of the given requirements.

Indices are often used in social science research and policy analysis for several reasons. First, social situations are often complex and best reflected by a combination of variables instead of a single indicator. Second, an index makes it easier to create an ordinal set of values in order to rank objects under some set of criteria. Lastly, indices are good for analyzing data, as it combines several factors into one, instead of simply comparing raw data. (Babbie 1998) In these ways, an index is the best choice to determine which Minneapolis block groups are best suited for PCEC's program. There are several indicators that need to be combined into one rating of suitability, ranking the block groups allows PCEC to concentrate its efforts to maximize efficiency, and the index will allow the comparison of several data sets at one time.

The individual indicators (income, ownership rates, etc.) were weighted and combined to create a single value that can be used to target areas of interest for PCEC and its refrigerator and air conditioner replacement program. Weighting was done based on recommendations of Jeff Cook-Coyle, who ranked the indicators in terms of relative importance. Weighting determined by policy makers and/or experts in the field is a standard practice in index construction (Booysen 2002; Drewnowski 1972).

Income (Map 3)

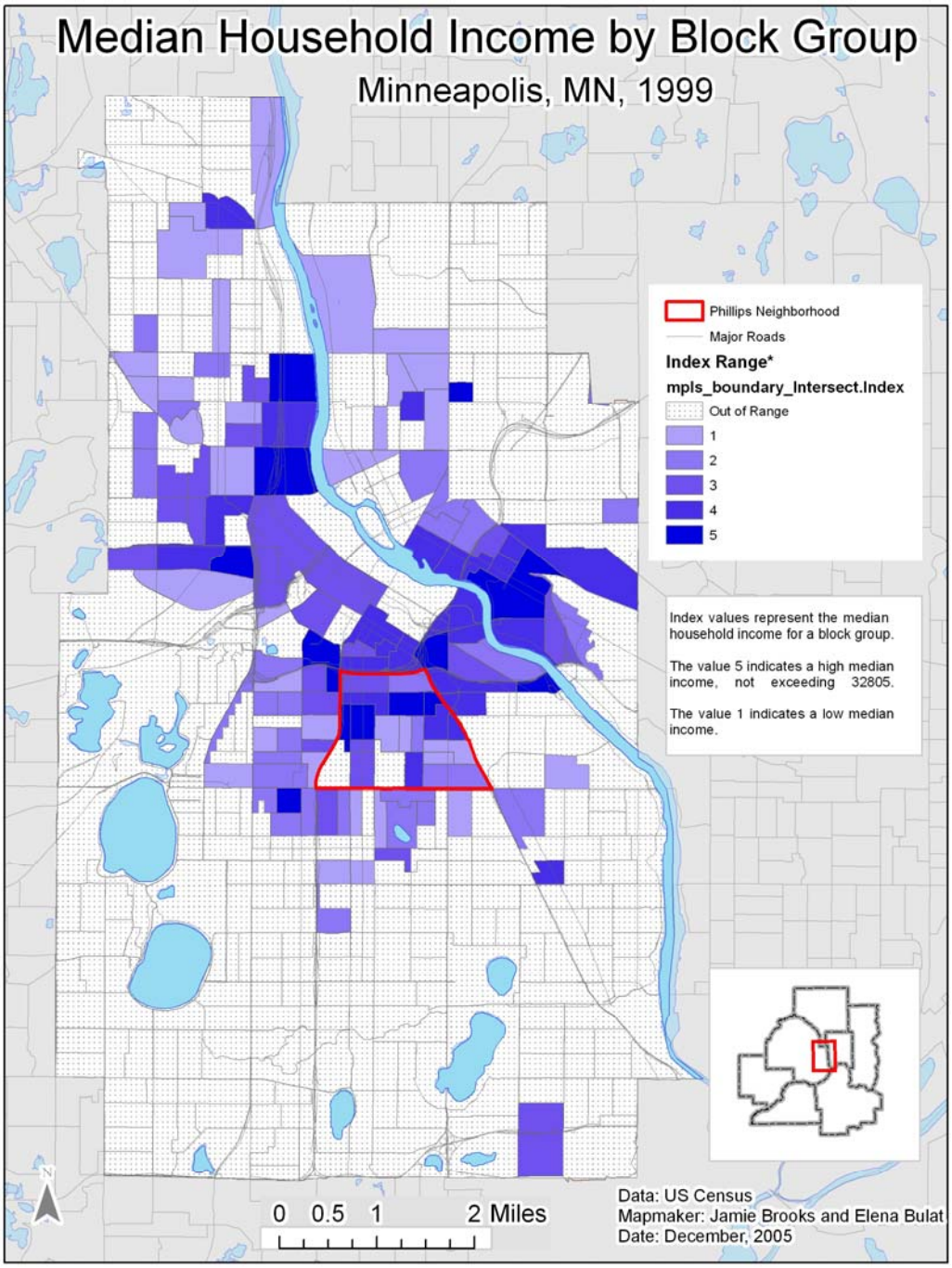
Variable: Because PCEC cannot provide refrigerator replacement to households with more than half the state median income, this variable was included as the first in our index.

Patterns: Block groups with the lowest median household income (a score of 5, the darkest blue on our index) are concentrated in the northern center of Minneapolis, but within that area seem relatively dispersed. There is a large collection of block groups around the river next to downtown that do not qualify for inclusion in the index. In the fifth category, all block groups border major roads. It appears that housing with close proximity to a major road tends to have residents with lower median incomes.

Phillips Neighborhood Patterns: Most of the Phillips Neighborhood is qualified based on the income requirement for refrigerator replacement.

Problems: It was difficult to decide where to make the cut-off, because many block groups have a median household income very near the $23,555.00 figure that is half of the state median household income. Many individual households in such block groups will qualify below $23,555. Also, in order not to discount the other variables that we have, we chose to broaden the range of households to include median income up to 70% of the state median.

Map 3


Median Household Income by Block Group
Minneapolis, MN, 1999
Phillips Neighborhood
Major Roads
Index Range*
mpls_boundary_Intersect.Index
Out of Range
1
2
3
4
5
Index values represent the median household income for a block group.
The value 5 indicates a high median income, not exceeding 32805.
The value 1 indicates a low median income.
N
0 0.5 1 2 Miles
Data: US Census
Mapmaker: Jamie Brooks and Elena Bulat
Date: December, 2005

Composition of Housing Stock (Map 4)

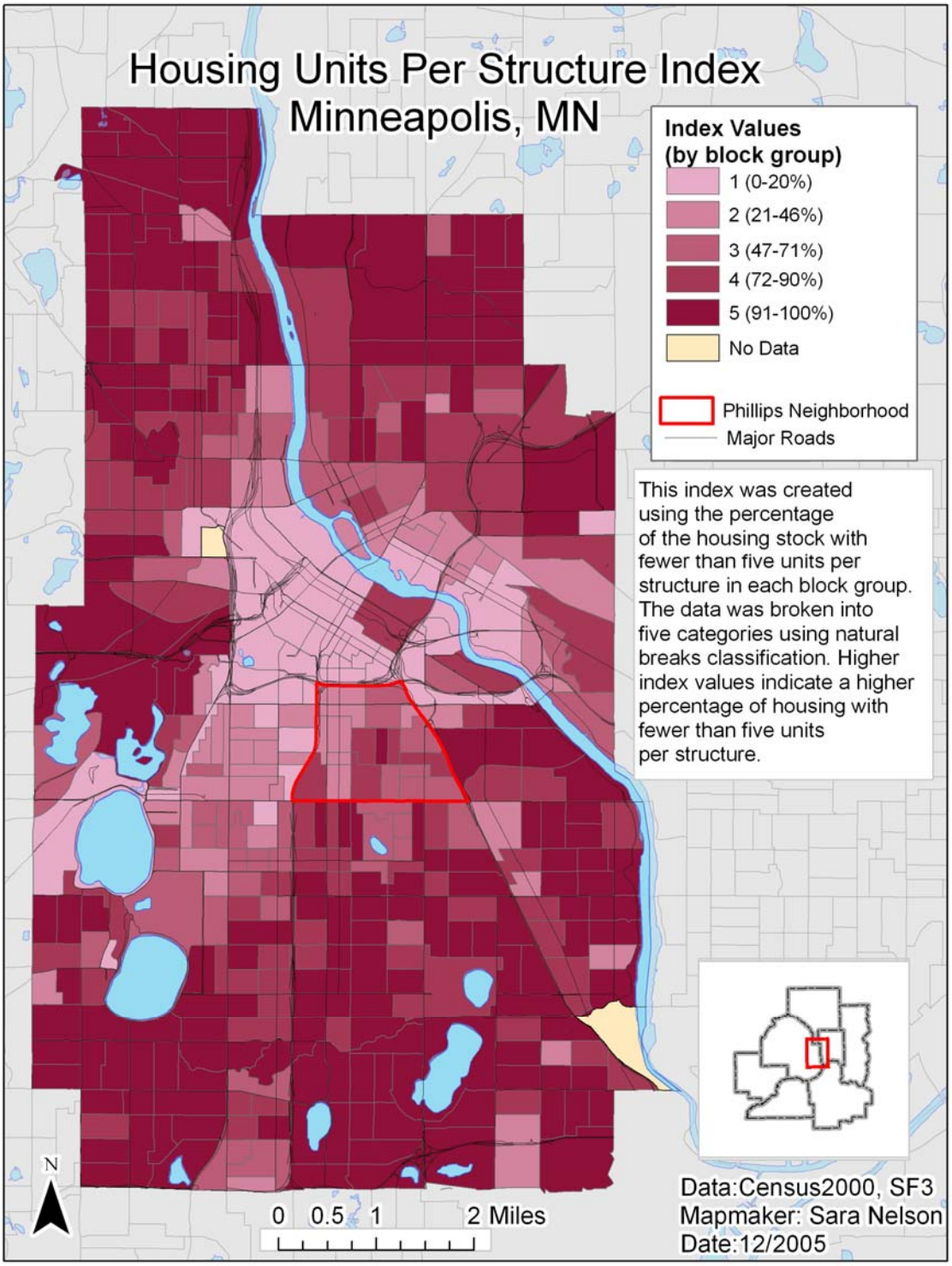
Variable: Multi-unit housing with more than five residential units per structure is ineligible for refrigerator replacement. This variable was included to exclude multifamily units with more than five households.

Patterns: There is a strong concentration of housing structures in the city center that have more than five units per structure. The lightest blue areas indicate that less than 17.3% of the residential properties in these block groups are single family homes, or even duplex properties. That would imply a high rate of renter occupied household in these same block groups, which you can see on the next map. There is a corridor of block groups that have a low percent of housing stock with fewer than five units per structure south west of the city center, neighboring the Phillips Neighborhood.

Phillips Neighborhood Patterns: The Phillips neighborhood has a more diverse housing stock, but no block groups that fall below 17.3%, meaning that all the block groups in Phillips have more than 17.3% multifamily housing units with more than 5 residences per structure.

Problems: The data was based on a sample and not a population collection, which is a technique used by the Census collectors that sometimes can lead to misleading data.

Map 4


Housing Units Per Structure Index
Minneapolis, MN
Index Values
(by block group)
1 (0-20%)
2 (21-46%)
3 (47-71%)
4 (72-90%)
5 (91-100%)
No Data
Phillips Neighborhood
Major Roads
This index was created using the percentage of the housing stock with fewer than five units per structure in each block group. The data was broken into five categories using natural breaks classification. Higher index values indicate a higher percentage of housing with fewer than five units per structure.
N
0 0.5 1 2 Miles
Data:Census2000, SF3
Mapmaker: Sara Nelson
Date:12/2005

Housing Tenure (Map 5)

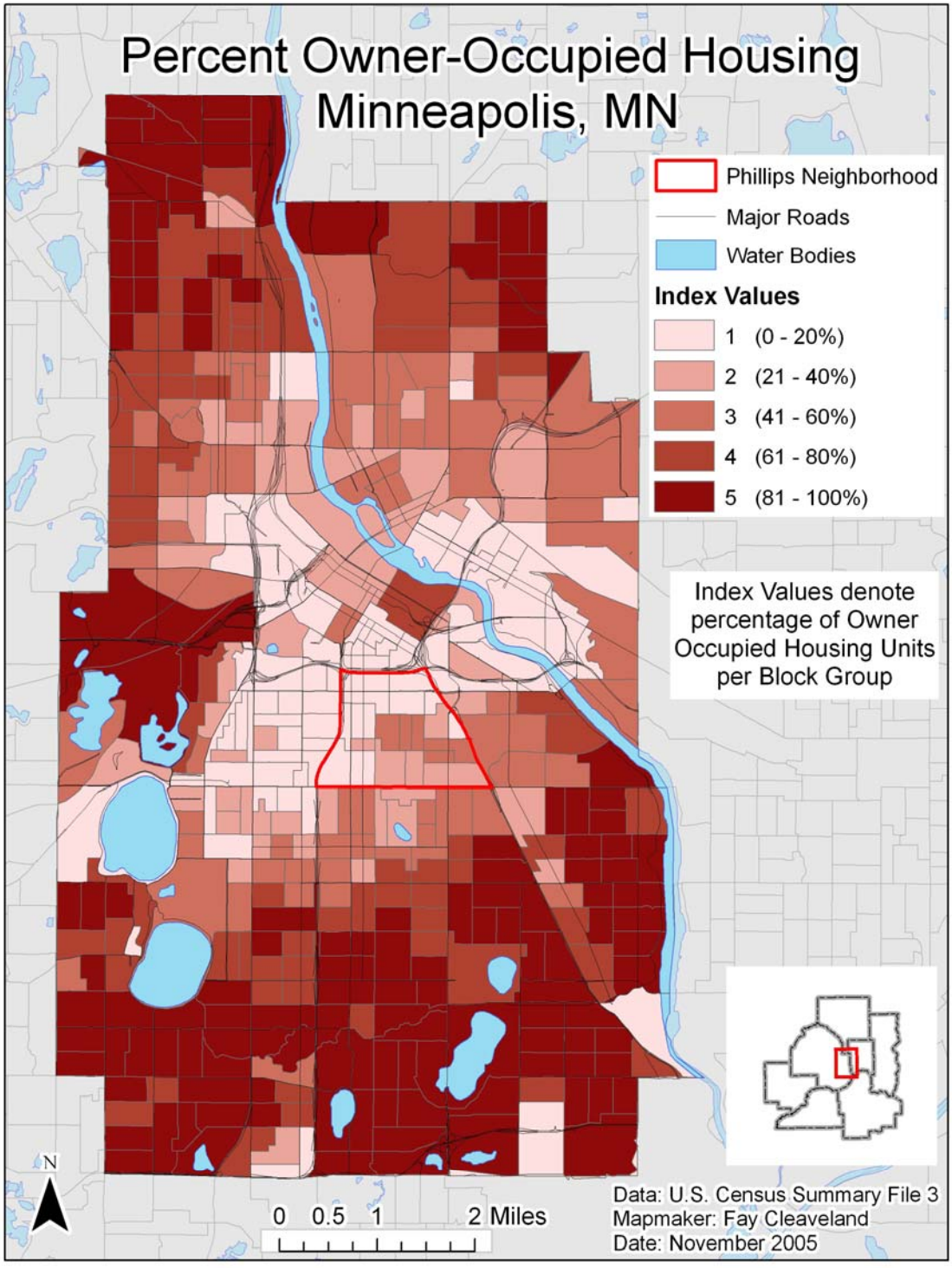
Variable: This variable is included in the index because refrigerators can only be replaced in owner-occupied houses. Air-conditioner replacements are targeted at participants who are renters because they are likely to own these appliances.

Patterns: Renter occupied housing units are concentrated in the city center, and owner occupied housing units are concentrated outside of the downtown. Logically, the renter occupied map is very similar to the housing units map, because structures with more than five units are usually renter occupied, with the exception of condominiums. There is a visible outlier in the center of the city, where the income is high and owner occupied percentage is also high. This block group has only 42 households, and very low density of population compared to the surrounding area.

Phillips Neighborhood Patterns: There is a visible diagonal split within the Phillips neighborhood regarding this variable. The north-west side is more renter-occupied, where the southeast has a higher percentage of owner occupied properties.

Problems: The only problem that shows up on the map is the southwest block group by the river that shows up with an index score of 1. According to the Census, all of the residents of that block group live in a group home facility, so it is neither renter nor owner occupied.

Map 5


Percent Owner-Occupied Housing
Minneapolis, MN
Phillips Neighborhood
Major Roads
Water Bodies
Index Values
1 (0 - 20%)
2 (21 - 40%)
3 (41 - 60%)
4 (61 - 80%)
5 (81 - 100%)
Index Values denote percentage of Owner Occupied Housing Units per Block Group
N
0 0.5 1 2 Miles
Data: U.S. Census Summary File 3
Mapmaker: Fay Cleaveland
Date: November 2005

Housing Age (Map 6)

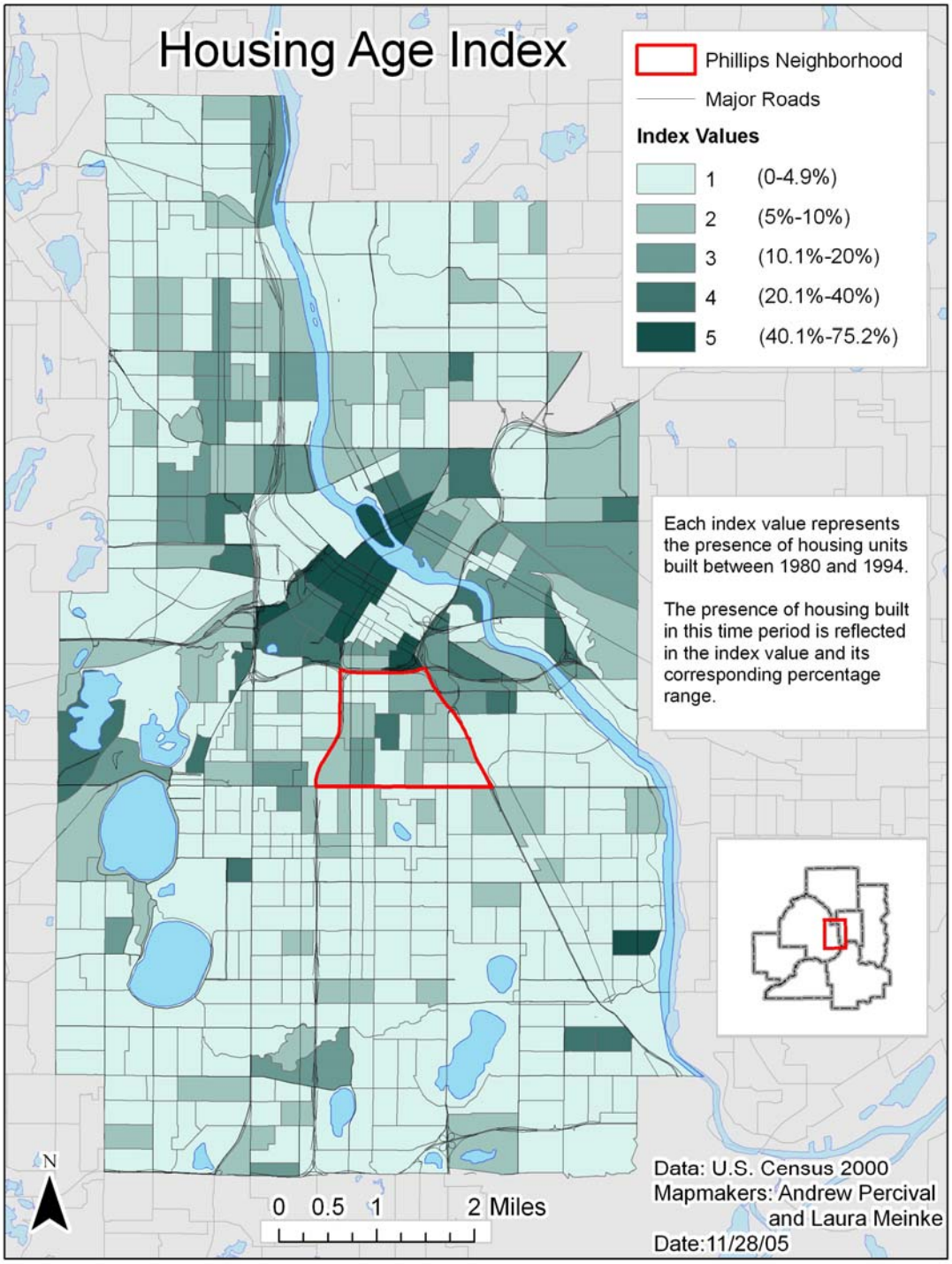
Variable: Refrigerators can only be replaced that are more than ten years old. New houses built between the years 1980 and 1994 should theoretically have refrigerators in them of the target age. Therefore these properties were included in our index.

Patterns: There is a large concentration of block groups in the city center with a high percentage of properties built during these years. There are two distinct areas with an especially high concentration near the city center, and one block group in the southeast corner of Minneapolis with up to 75.2% of the housing stock built during this time. Other than these areas, there is a lack of housing built during this period, most block groups register under 11%. There seems to be a horizontal stripe across the city, with more housing during this time built in an east west direction, than in north.

Phillips Neighborhood Patterns: Most houses in the Phillips neighborhood were built prior to 1980, and the percentage of housing stock built during this period is low, most block groups have less than 11%. There are several block groups in the center that have up to 24.3% housing stock built between 1980 and 1994.

Problems: The main question with the housing age data was whether or not it really is a good indicator of having a refrigerator over 10 years old. This variable does not directly tell us anything about the age of refrigerators, and many scenarios could have an effect on refrigerator age besides age of the house.

Map 6


Housing Age Index
Phillips Neighborhood
Major Roads
Index Values
1 (0-4.9%)
2 (5%-10%)
3 (10.1%-20%)
4 (20.1%-40%)
5 (40.1%-75.2%)
Each index value represents the presence of housing units built between 1980 and 1994.
The presence of housing built in this time period is reflected in the index value and its corresponding percentage range.
N
0 0.5 1 2 Miles
Data: U.S. Census 2000
Mapmakers: Andrew Percival and Laura Meinke
Date:11/28/05

Analysis of Suitability Index and Findings

The Suitability Index describes the most ideal block groups in Minneapolis for PCEC to target its work. It is a compilation of the individual indicators of income, age of housing stock, percent owner occupied units, and number of housing units per structure. Individual indices define a portion of the query as determined by PCEC, but the final index allows all four of the individual indicators to be compiled into one comprehensive map which determines the best locations for PCEC to focus its work.

In creating the final index, the individual indicators' indices were used. With the exception of the income index, each of the four individual indices range from one to five with five being the most suitable for PCEC's work (see Table 1). The income index also includes a zero category to be able to eliminate block groups which fall above the specified range of half of the state median income.[1] In creating the final index, each of the individual indicators was weighted (see Table 2). The income index was doubled in weight, housing age weighted 1.5 times, owner occupied units stayed at one, and housing units per structure were half the original weight.[1] As mentioned above, this allows income and housing age to factor heavily in the final index.

Table 1

Suitability Index Variables	Index Rankings	Explanation of Rankings	Weight Assigned to Variable
Median Income Level	0 to 5	0= > $32805, which is 70% MN median income 1= < $13307 2= $13308-20300 3= $20301 - 24886 4= $24887 - 29107 5= $29108 - 32805	2
%Housing Owner Occupied	1 to 5	1= 0-20% 2= 21-40% 3= 41-60% 4= 61-80% 5= 81-100%	1
Age of Housing Stock (# houses built between 1980 and 1994)	1 to 5	1= 0-4.9% 2= 5-10% 3= 10.1-20% 4= 21-40% 5= 40.1-71.2%	1.5
Number of Units per Structure (% housing with <5 units per structure)	1 to 5	1= 0-20% 2= 21-46% 3= 47-71% 4= 72-90% 5= 91-100%	0.5

After the weighted values of the individual indicators were obtained, the weighted values were multiplied together to achieve a multiplicative index. A multiplicative index was chosen to

[1] In a meeting with Jeff Cook-Coyle, he asked that more important indicators be weighted heavily.

easily eliminate the block groups which exceed half the state median income. Thus, block groups with a final index value of zero fall above the desired median income. The final values of the multiplicative index comprise the final index. The values range from zero to 562. Table 2 shows what the numbers in the final index describe:

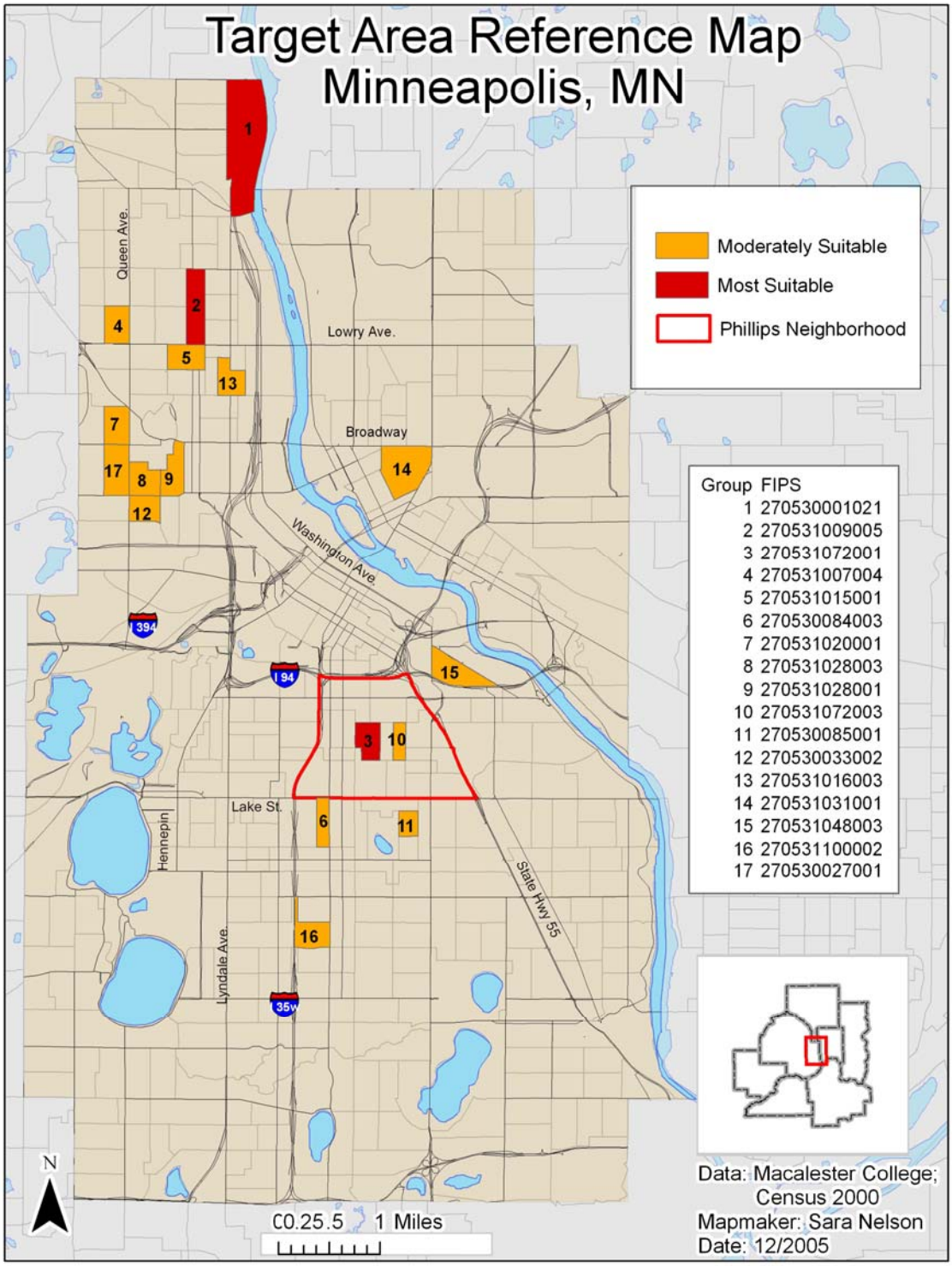
Table 2

Category	Final Index Score	# of Block Groups	Average Weighted Indicator
Unsuitable	0 to 0	273	Block Group fails to meet income criteria
Least Suitable	1 to 81	109	3.00 to 3.99
Moderately Suitable	96 to 240	14	4.00 to 4.99
Most Suitable	360 to 562	3	5.00 or higher
		TOTAL: 399	

The final index (see Maps 7-8) shows four categories (unsuitable, least suitable, moderately suitable and most suitable) which correspond with final index score values. The final index score values are correlated with the average weighted indicator. After taking the average of the weighted indicators, the index shows that the three most suitable block groups for PCEC to target have an average weighted indicator of five or higher. For the moderately suitable block groups, areas into which PCEC would likely find many of the target population, the final index score tends to describe a weighted indicator of four. Least suitable areas tend to have an average weighted indicator of 3, but the variation within the category is much more widespread than other categories (see Appendix C for detailed data tables).

Using the average weighted indicator to describe the final index score gives a clear pattern to the study's findings. The three most suitable block groups are in North Minneapolis or the Philips neighborhood. The fourteen moderately suitable block groups identified by the final index cluster in North Minneapolis and just south of the Philips neighborhood. The final index shows demand for PCEC's services within and south of the Philips neighborhood as well as in North Minneapolis.

Map 7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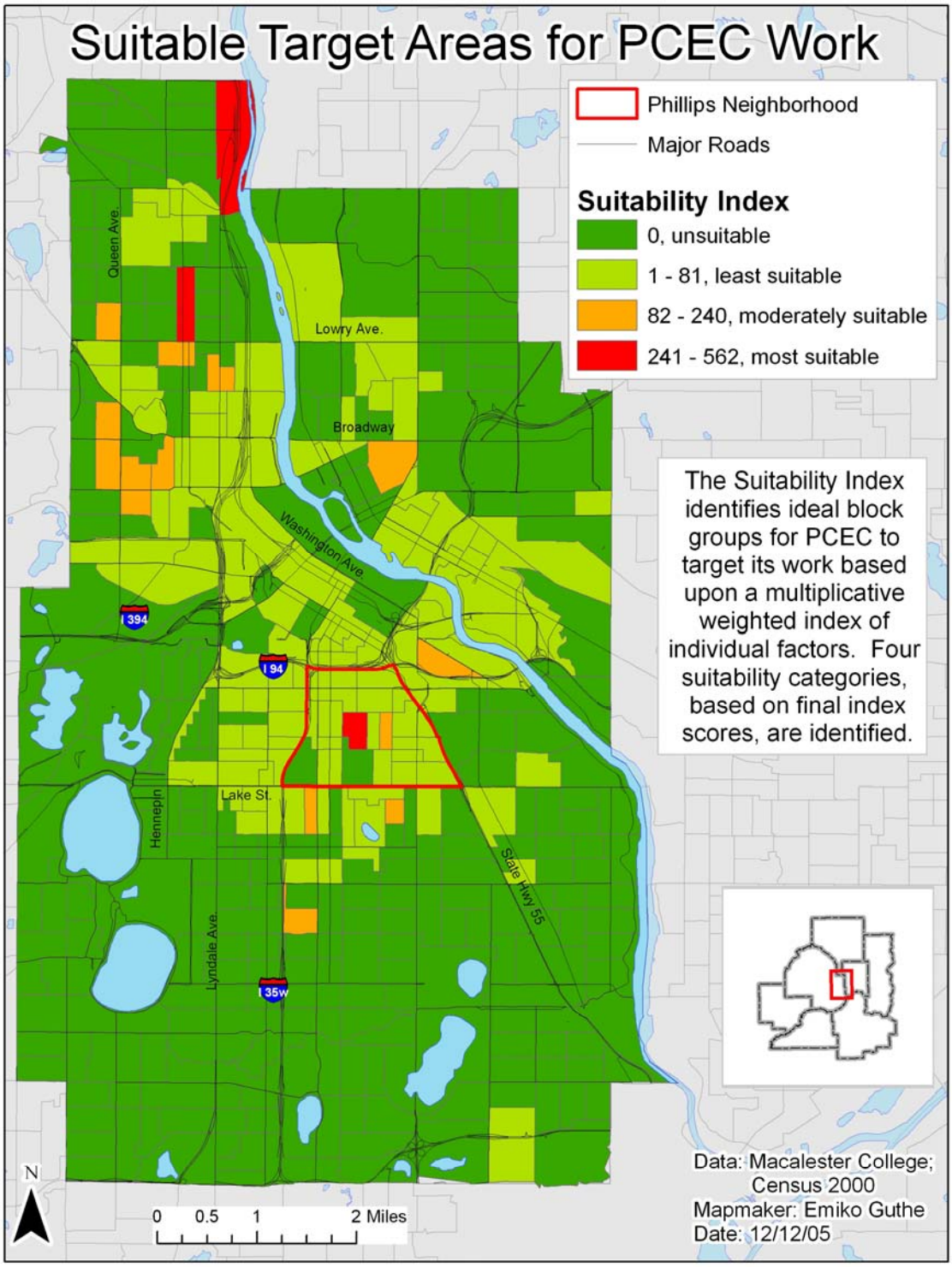
Data: Macalester College; Census 2000
Mapmaker: Sara Nelson
Date: 12/2005

Map 8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Lyndale Ave.
I 35W
State Hwy 55
N
0 0.5 1 2 Miles
Data: Macalester College; Census 2000
Mapmaker: Emiko Guthe
Date: 12/12/05

Recommendations for PCEC

The following are our recommendations to PCEC based on the data we collected and patterns we found over the course of completing this project.

1. Target the following areas for refrigerator replacement:

The areas in which PCEC is likely to find the most eligible candidates for its refrigerator replacement program are in the moderately suitable and most suitable categories of the suitability index, as these have the highest average weighted index values. As Table 1 indicates, the block groups in the most suitable category contain 1,266 housing units that are likely to be within the target population. Because this number of homes is under our target goal of 3,000, we chose to include the moderately suitable category because it is likely that these block groups contain many individuals who are eligible for refrigerator/air-conditioner replacement because all are low income and have moderate to high rates of home ownership.

The block group with the highest index value, 270530001021, is located in North Minneapolis. The Mississippi River borders it and I-94 passes through it. Its suitability index value is 562, meaning it ranks high in all of the indicator categories. According to the 2000 Census, this block group has a total population of 1,134. The largest racial group is white, but there are also sizable Black and Asian populations here. A high percentage (79%) of this block group's total housing units are owner occupied and the average household income is about 60% of the median for the state of Minnesota (U.S. Census, 2000), meaning that it is likely this block group will contain a number of individuals who meet the criteria for refrigerator replacement.

The next two highest block groups both had index values of 360. The main difference between these two block groups and the highest block group is that these two have lower percentages of owner occupied housing. One block group, 270531009005, is also located in North Minneapolis. As of 2004, it had a total population of 1,977, of which almost half is Black. About 68% of its housing units are owner occupied and the average income is also about 60% of the median for the state of Minnesota (U.S. Census, 2000), meaning that there are likely many low income individuals in this block group who are also home owners.

Block group 270531072001, located in the central part of the Phillips neighborhood, is among Phillips' most diverse. It is 9% Asian, 32% White and 28.2% Black, with about 20% of those individuals being foreign born (U.S. Census, 2000). Thirty nine percent of this block group's residents are PCEC members. It has a high percentage of single family and smaller multifamily units and a moderate percentage of home owners.

2. Target block groups that fall just above the median income for Minnesota.

Because the block group level is the smallest scale at which one can obtain Census data, many low-income individuals who would benefit from PCEC's services may be missed because the block group in which they live has too high a median income. People whose income falls at or just above the state median are much more likely to own homes than those whose income is much lower than the state median. Thus, it is likely that block groups whose median income is slightly above the state average contain a high percentage of low-income homeowners who would qualify for PCEC assistance.

3. Expand Programming and Initiatives into North Minneapolis:

PCEC is committed to making energy efficient appliances accessible to low income residents of the Phillips Neighborhood in South Minneapolis. When making maps for this project, we noticed that many block groups in North Minneapolis ranked highly in many of the indicators as well. North Minneapolis would be an appropriate place for PCEC to expand, if resources are available.

Most of the block groups in North Minneapolis fall into the most suitable category, meaning that they have low average incomes, moderate to high rates of ownership and many single family and smaller multiunit buildings that fall within the appropriate age range. North Minneapolis also has a high percentage of Black Population, which is a group that PCEC might consider targeting (see Map 20).

Detailed Description of Data and Methods

After several introductory planning meetings with PCEC representative Jeff Cook-Coyle, we identified the concepts that would define this project. We agreed that income, housing age, single-family versus multi-family housing, and renters versus owners were all going to be determining variables in aiding PCEC locate target areas to receive energy- reducing assistance. The most readily available data source for these variables was the 2000 U.S. Census. Individual variables were assigned to small groups in our class.

Through this initial mapping process and further conversations with our client, we realized our focus need only be on the city of Minneapolis. There simply was not a concentration of people in suburban Hennepin County meeting the established PCEC criteria that recipients have an income below half of the state median. Through familiarity with their maps and data, the group decided upon the best classification system for the maps. Data familiarity also empowered small groups to determine the method in which their variable was to be indexed.

Findings Within PCEC Membership and the Phillips Neighborhood

Maps and Metadata

The maps created for the profile of the Phillips Neighborhood of Minneapolis have two different data sources. Thirteen maps came from the 2000 U.S. Census. These maps include race (6), ethnicity (1), median income (3), vacancy (1), owner-occupied housing (1), and foreign born (1). Two maps came from the PCEC membership data. These maps include members per block group (1) and percent of households that are members per block group (1).

The two PCEC membership maps (see Maps 9-10) came from geocoding all unique addresses in the provided membership database. A separate field was created for the number of members that shared the same address. This was to account for all of the apartment buildings, duplexes, and other multi-family dwellings in the Phillips Neighborhood. The members' locations were aggregated to the block group level. This was done through the overlay method. One map was made to show the number of members per block group and another map normalized members by the number of households. The household data came from Summary File 3 of the 2000 Census. The idea to normalize by households came from conversations with PCEC stating that members were only allowed one membership per family.

General Trends in the Phillips Neighborhood

The general theme of the Phillips Neighborhood is one of remarkable diversity. The heart of the neighborhood is among the city's most diverse racially, ethnically, and economically. Racially, the Black/African American population lives toward the west and more specifically toward the northwest nestled against Interstate 35-W (see Map 11). The American Indian population lives on the eastside of Phillips up against Hiawatha and radiating out from the 64% American Indian block group that contains the Little Earth of United Tribes housing project (see Map 12). The Asian, Some Other Race, and Latino/Hispanic populations live in the southern section of Phillips, near their respective businesses communities along Lake Street (see Maps 13-15). The White population lives in high concentrations in the northeast near the West Bank (see Map 16).

Economically, the wealth seems to be with the White population in the northeast and in the highly diverse center (see Map 17). The nature of this center is quite intriguing. The center can be defined as Census tract 1072. The average household income is roughly $30,000. There is a 45%/55% split between owner and renter. The racial composition is roughly 30% White, 25% Black, 15% Native American, 15% Some Other Race, and 10% Asian. Twenty-five percent of the community identifies as Latino or Hispanic. This Census tract also has a 40% membership rate. Census tract 1072 seems to be a stable environment for the working class minorities of the area that have experienced relative degrees of upward mobility, and thereby moved to the center of Phillips from their nearby quasi-enclaves.

Recommendations for the PCEC

The central portion of the Phillips Neighborhood seems to be the perfect place to distribute refrigerators and air conditioners to the community. This area would capture the community that has financially stable renters who might own their air conditioners and impoverished homeowners who may qualify for refrigerators.

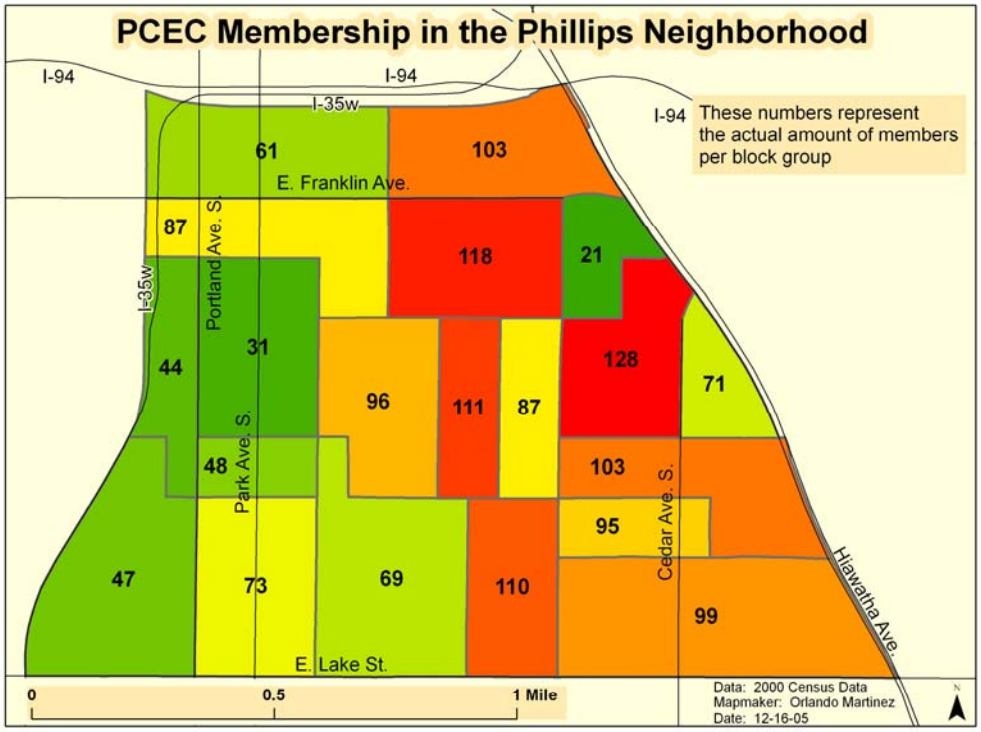
As far as membership recruitment, the eastern part of Phillips is the best place to start. Membership could be improved by an effort to solicit membership on both Park and Portland

Avenues between Lake Street and I-94. As far as distribution of PCEC membership information, it might be helpful to distribute information in Spanish as there are many Latinos in the southeast portion of the neighborhood.

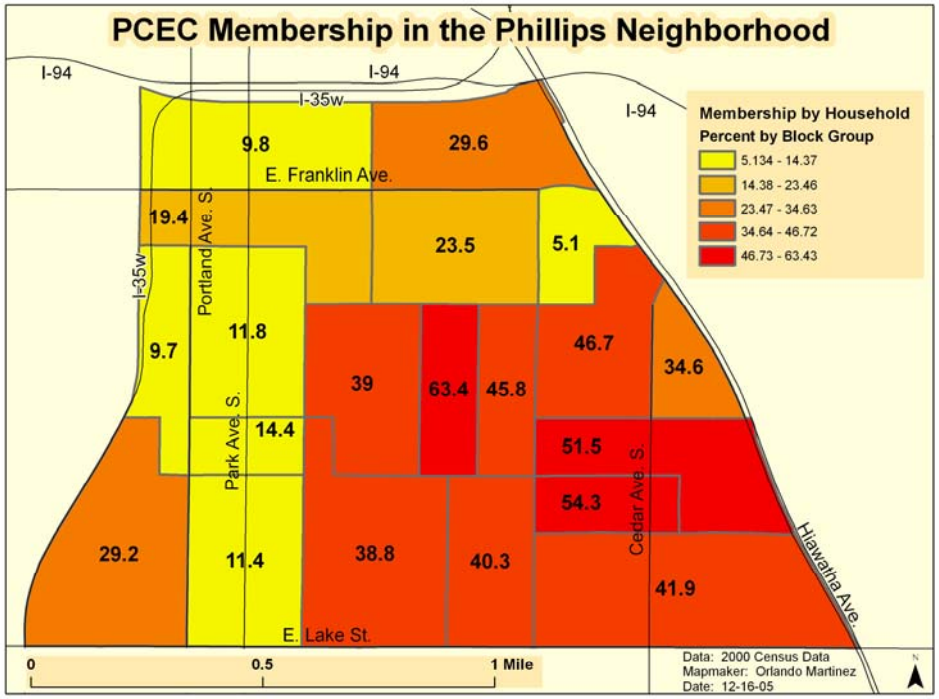
Table 3: Index Values for Most Suitable and Moderately Suitable Block Groups

Group	FIPS	Index Value	Income Weight	Type Weight	Age Weight	Owner Weight	Average Weight	Population (2004)
1	270530001021	562	10	2.50	3	7.50	5.750	1134
	270531009005	360	10	2.00	3	6.00	5.250	1977
	270531072001	360	10	2.00	4	4.50	5.125	1024
2	270531007004	240	8	2.50	2	6.00	4.625	772
	270531015001	216	8	2.00	3	4.50	4.375	992
	270530084003	180	8	2.50	2	4.50	4.250	853
	270531020001	180	8	2.50	2	4.50	4.250	1194
	270531028003	162	6	2.00	3	4.50	3.875	1040
	270531028001	162	6	2.00	3	4.50	3.875	1041
	270531072003	144	8	2.00	2	4.50	4.125	798
	270530085001	108	8	1.50	2	4.50	4.000	920
	270530033002	108	6	2.00	3	3.00	3.500	816
	270531016003	108	6	2.00	2	4.50	3.625	825
	270531031001	108	8	1.50	3	3.00	3.875	2147
	270531048003	108	6	1.50	4	3.00	3.625	1483
	270531100002	96	8	2.00	1	6.00	4.250	650
	270530027001	96	8	2.00	1	6.00	4.250	1336

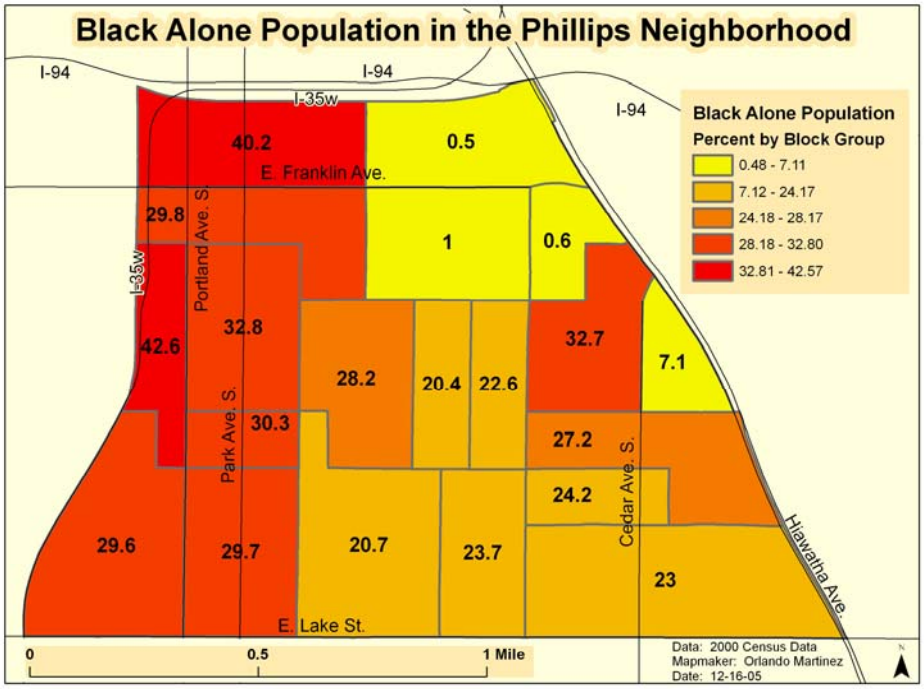
Map 9


PCEC Membership in the Phillips Neighborhood
I-94
I-35w
These numbers represent the actual amount of members per block group
E. Franklin Ave.
Portland Ave. S.
Park Ave. S.
Cedar Ave. S.
Hiawatha Ave.
E. Lake St.
61
103
87
118
21
31
44
96
111
87
128
71
48
103
95
47
73
69
110
99
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

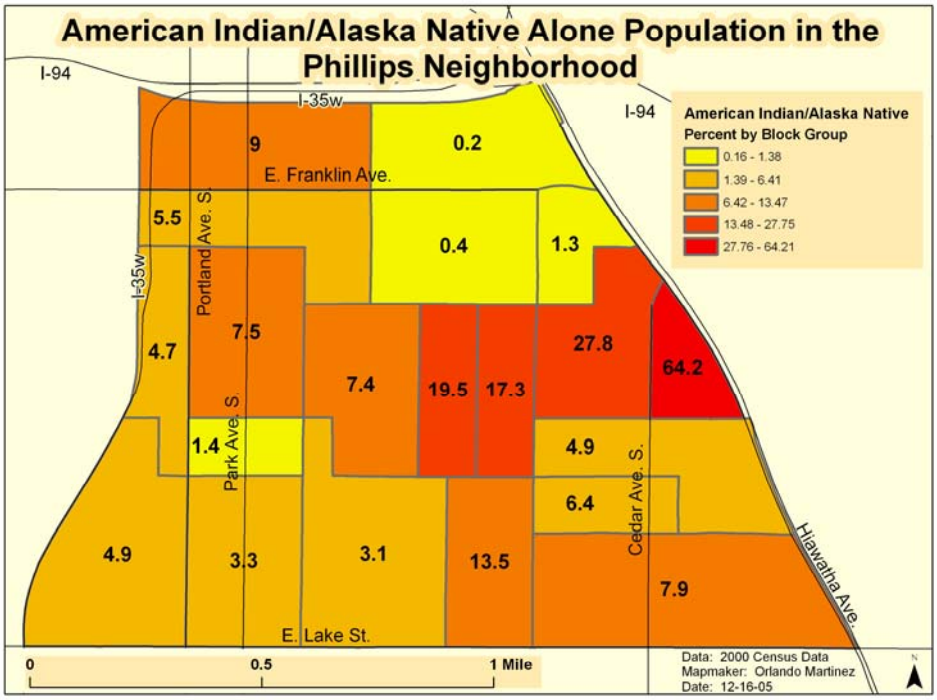
Map 10


PCEC Membership in the Phillips Neighborhood
I-94
I-35w
Membership by Household
Percent by Block Group
5.134 - 14.37
14.38 - 23.46
23.47 - 34.63
34.64 - 46.72
46.73 - 63.43
E. Franklin Ave.
Portland Ave. S.
Park Ave. S.
Cedar Ave. S.
Hiawatha Ave.
E. Lake St.
9.8
29.6
19.4
23.5
5.1
11.8
9.7
46.7
34.6
39
63.4
45.8
14.4
51.5
54.3
29.2
11.4
38.8
40.3
41.9
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

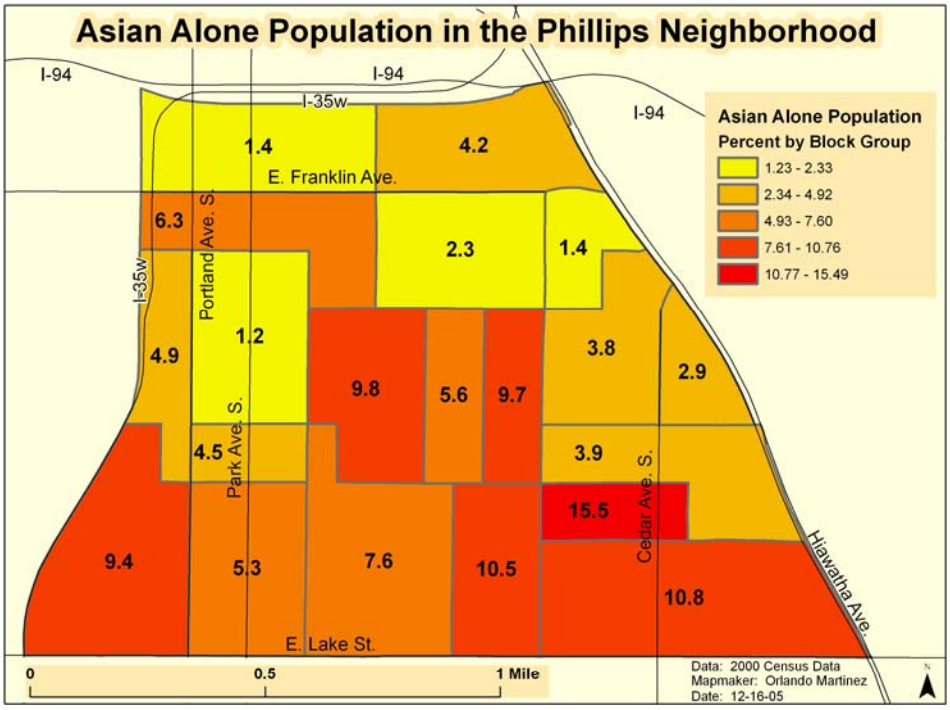
Map 11


Black Alone Population in the Phillips Neighborhood
I-94
I-35w
Black Alone Population
Percent by Block Group
0.48 - 7.11
7.12 - 24.17
24.18 - 28.17
28.18 - 32.80
32.81 - 42.57
40.2
0.5
E. Franklin Ave.
29.8
Portland Ave. S.
1
0.6
42.6
32.8
28.2
20.4
22.6
32.7
7.1
30.3
Park Ave. S.
27.2
Cedar Ave. S.
24.2
29.6
29.7
20.7
23.7
23
Hiawatha Ave.
E. Lake St.
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

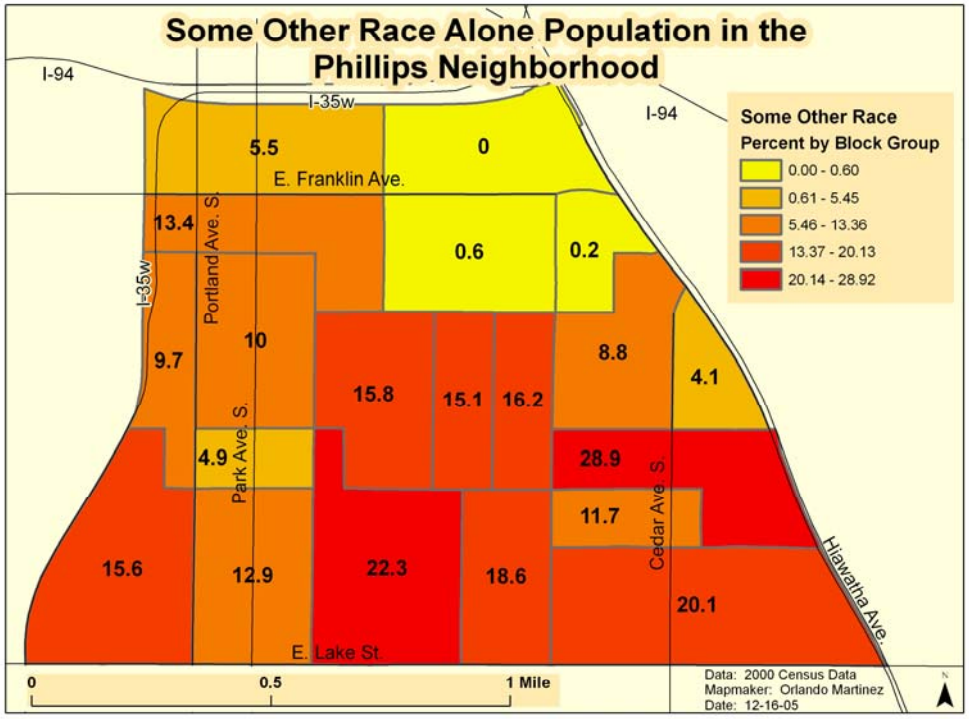
Map 12


American Indian/Alaska Native Alone Population in the Phillips Neighborhood
I-94
I-35w
American Indian/Alaska Native
Percent by Block Group
0.16 - 1.38
1.39 - 6.41
6.42 - 13.47
13.48 - 27.75
27.76 - 64.21
9
0.2
E. Franklin Ave.
5.5
Portland Ave. S.
0.4
1.3
4.7
7.5
27.8
64.2
7.4
19.5
17.3
1.4
Park Ave. S.
4.9
Cedar Ave. S.
6.4
4.9
3.3
3.1
13.5
7.9
Hiawatha Ave.
E. Lake St.
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

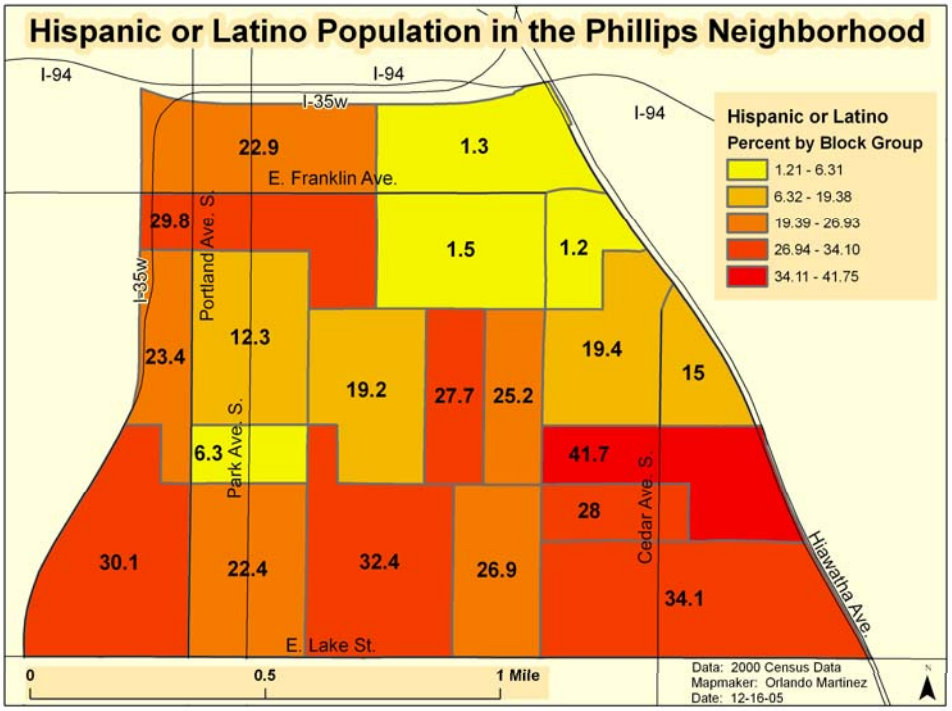
Map 13


Asian Alone Population in the Phillips Neighborhood
I-94
I-35w
E. Franklin Ave.
Portland Ave. S.
Park Ave. S.
Cedar Ave. S.
Hiawatha Ave.
E. Lake St.
1.4
4.2
6.3
2.3
1.4
4.9
1.2
9.8
5.6
9.7
3.8
2.9
4.5
3.9
15.5
9.4
5.3
7.6
10.5
10.8
Asian Alone Population
Percent by Block Group
1.23 - 2.33
2.34 - 4.92
4.93 - 7.60
7.61 - 10.76
10.77 - 15.49
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

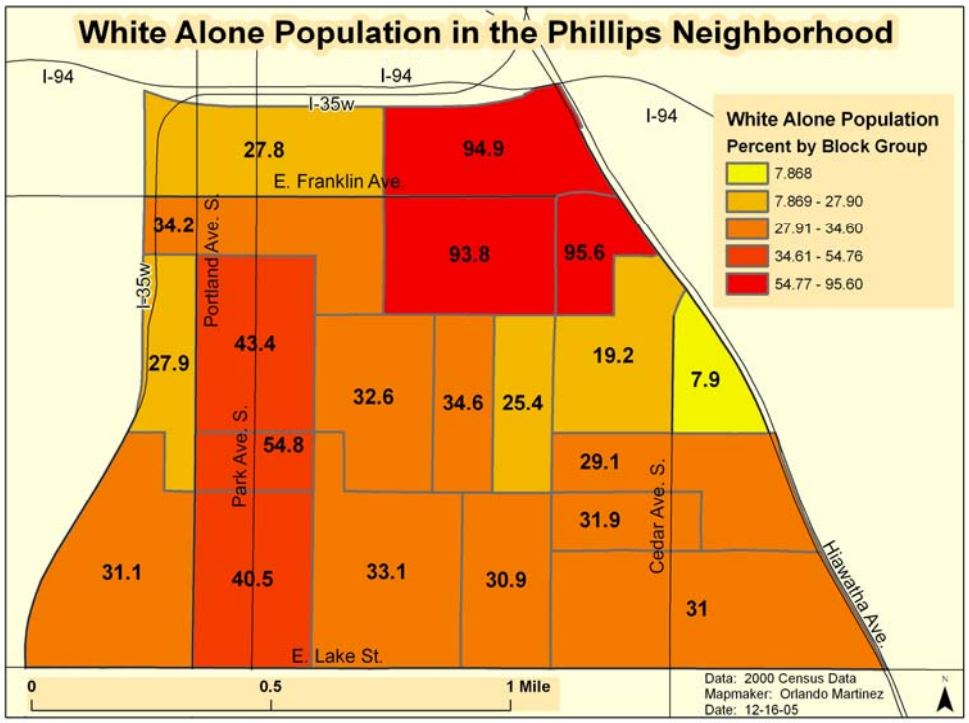
Map 14


Some Other Race Alone Population in the Phillips Neighborhood
I-94
I-35w
E. Franklin Ave.
Portland Ave. S.
Park Ave. S.
Cedar Ave. S.
Hiawatha Ave.
E. Lake St.
5.5
0
13.4
0.6
0.2
9.7
10
8.8
4.1
15.8
15.1
16.2
4.9
28.9
11.7
15.6
12.9
22.3
18.6
20.1
Some Other Race
Percent by Block Group
0.00 - 0.60
0.61 - 5.45
5.46 - 13.36
13.37 - 20.13
20.14 - 28.92
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

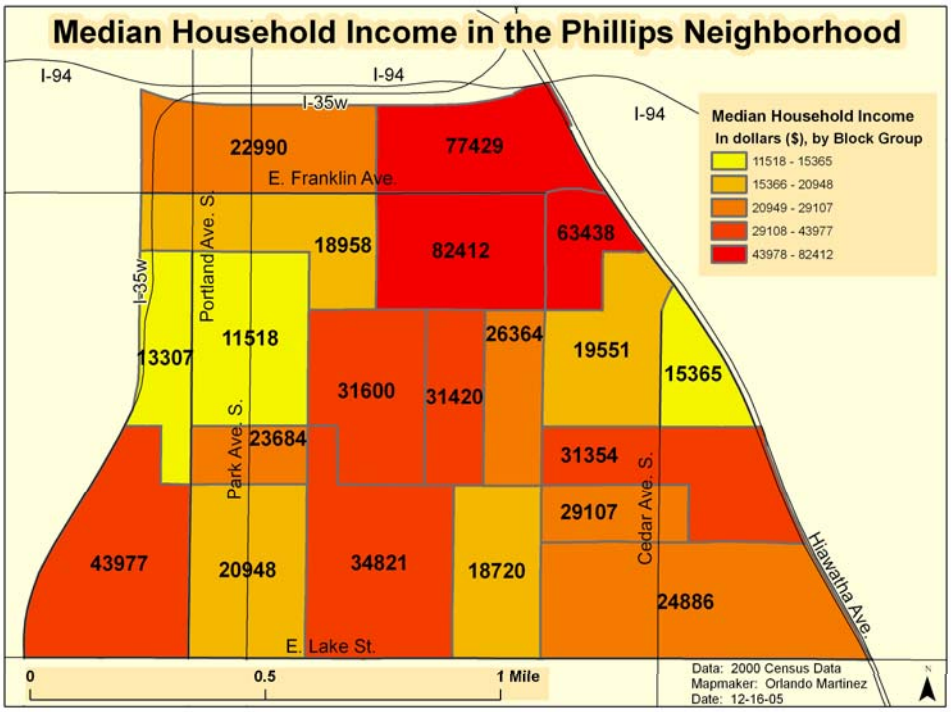
Map 15


Hispanic or Latino Population in the Phillips Neighborhood
I-94
I-94
I-35w
I-94
E. Franklin Ave.
Portland Ave. S.
I-35w
Park Ave. S.
Cedar Ave. S.
Hiawatha Ave.
E. Lake St.
22.9
1.3
29.8
1.5
1.2
23.4
12.3
19.2
27.7
25.2
19.4
15
6.3
41.7
28
30.1
22.4
32.4
26.9
34.1
Hispanic or Latino
Percent by Block Group
1.21 - 6.31
6.32 - 19.38
19.39 - 26.93
26.94 - 34.10
34.11 - 41.75
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05
N

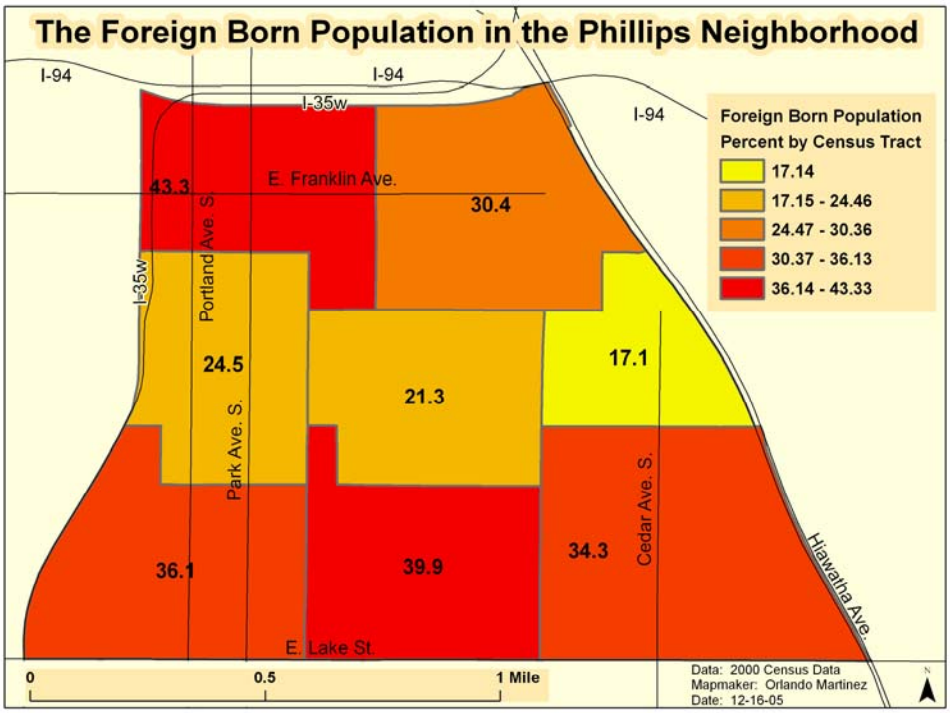
Map 16


White Alone Population in the Phillips Neighborhood
I-94
I-94
I-35w
I-94
E. Franklin Ave.
Portland Ave. S.
I-35w
Park Ave. S.
Cedar Ave. S.
Hiawatha Ave.
E. Lake St.
27.8
94.9
34.2
93.8
95.6
27.9
43.4
32.6
34.6
25.4
19.2
7.9
54.8
29.1
31.9
31.1
40.5
33.1
30.9
31
White Alone Population
Percent by Block Group
7.868
7.869 - 27.90
27.91 - 34.60
34.61 - 54.76
54.77 - 95.60
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05
N

Map 17

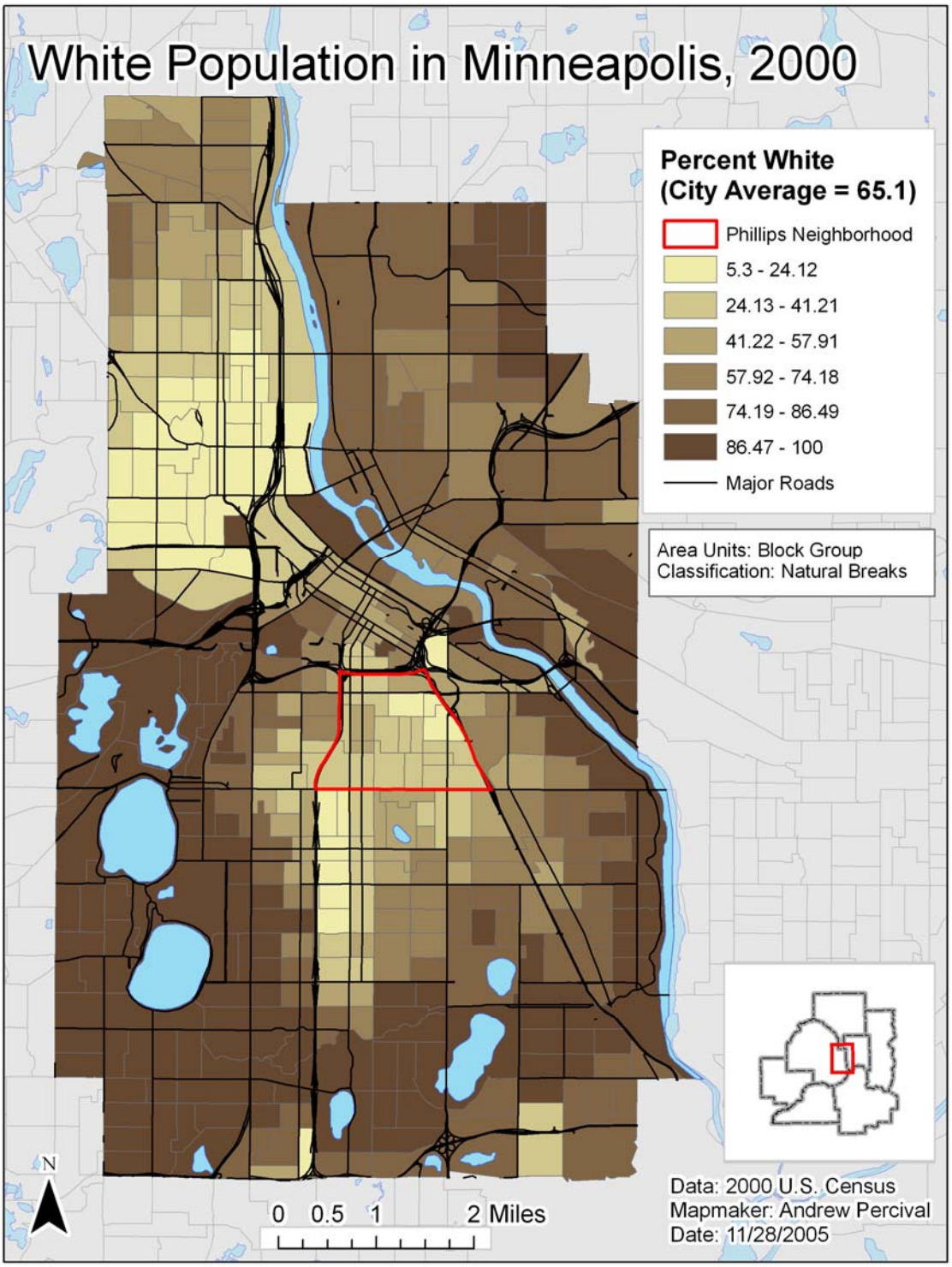

Median Household Income in the Phillips Neighborhood
I-94
I-94
I-35w
I-94
Median Household Income
In dollars ($), by Block Group
11518 - 15365
15366 - 20948
20949 - 29107
29108 - 43977
43978 - 82412
22990
77429
E. Franklin Ave.
Portland Ave. S.
18958
82412
63438
I-35w
11518
13307
26364
19551
15365
31600
31420
Park Ave. S.
23684
31354
Cedar Ave. S.
29107
43977
20948
34821
18720
24886
Hiawatha Ave.
E. Lake St.
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

Map 18

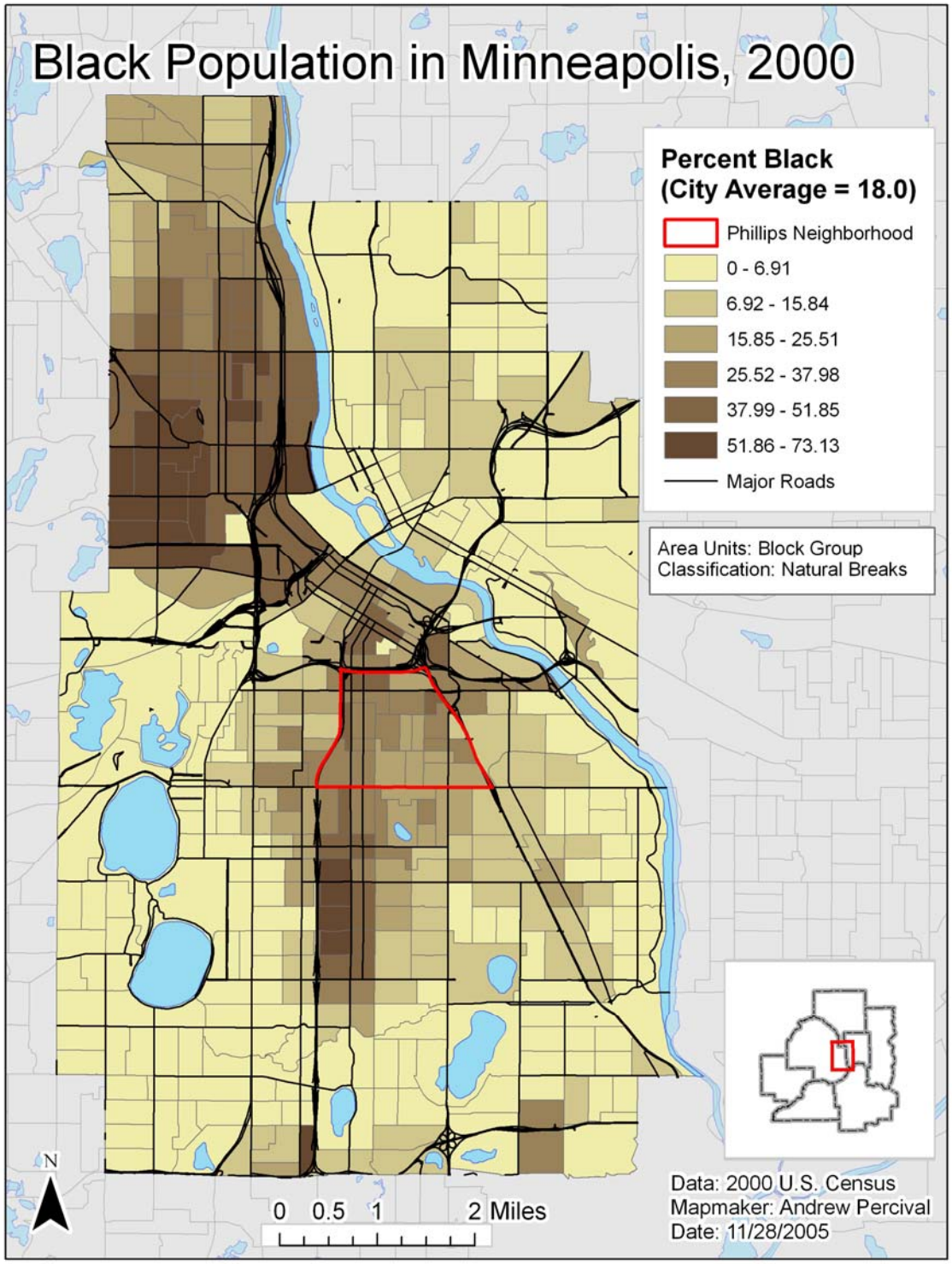

The Foreign Born Population in the Phillips Neighborhood
I-94
I-94
I-35w
I-94
Foreign Born Population
Percent by Census Tract
17.14
17.15 - 24.46
24.47 - 30.36
30.37 - 36.13
36.14 - 43.33
43.3
E. Franklin Ave.
30.4
Portland Ave. S.
I-35w
24.5
21.3
17.1
Park Ave. S.
Cedar Ave. S.
36.1
39.9
34.3
Hiawatha Ave.
E. Lake St.
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05

Appendix A - Additional Maps

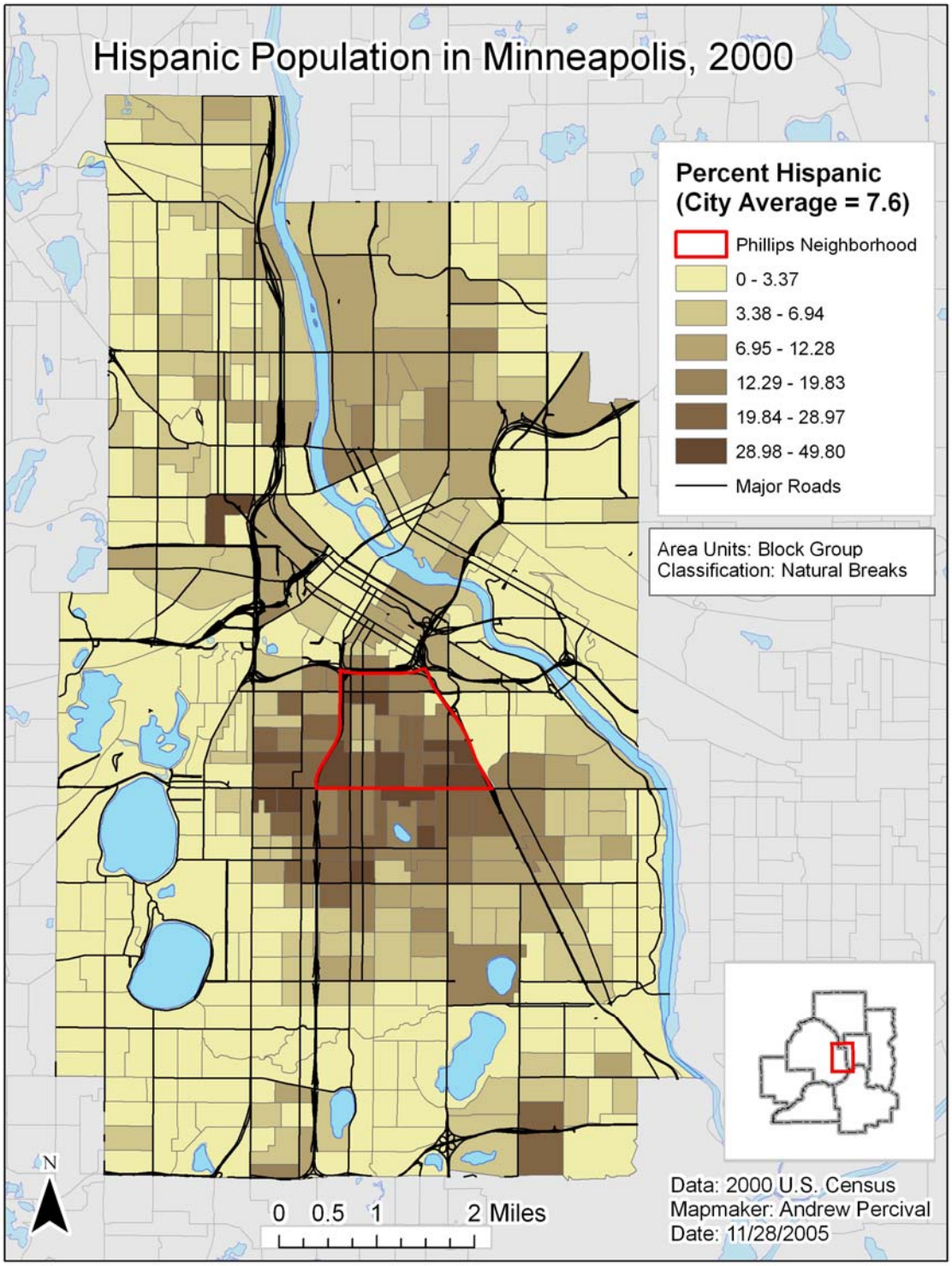
Map 19



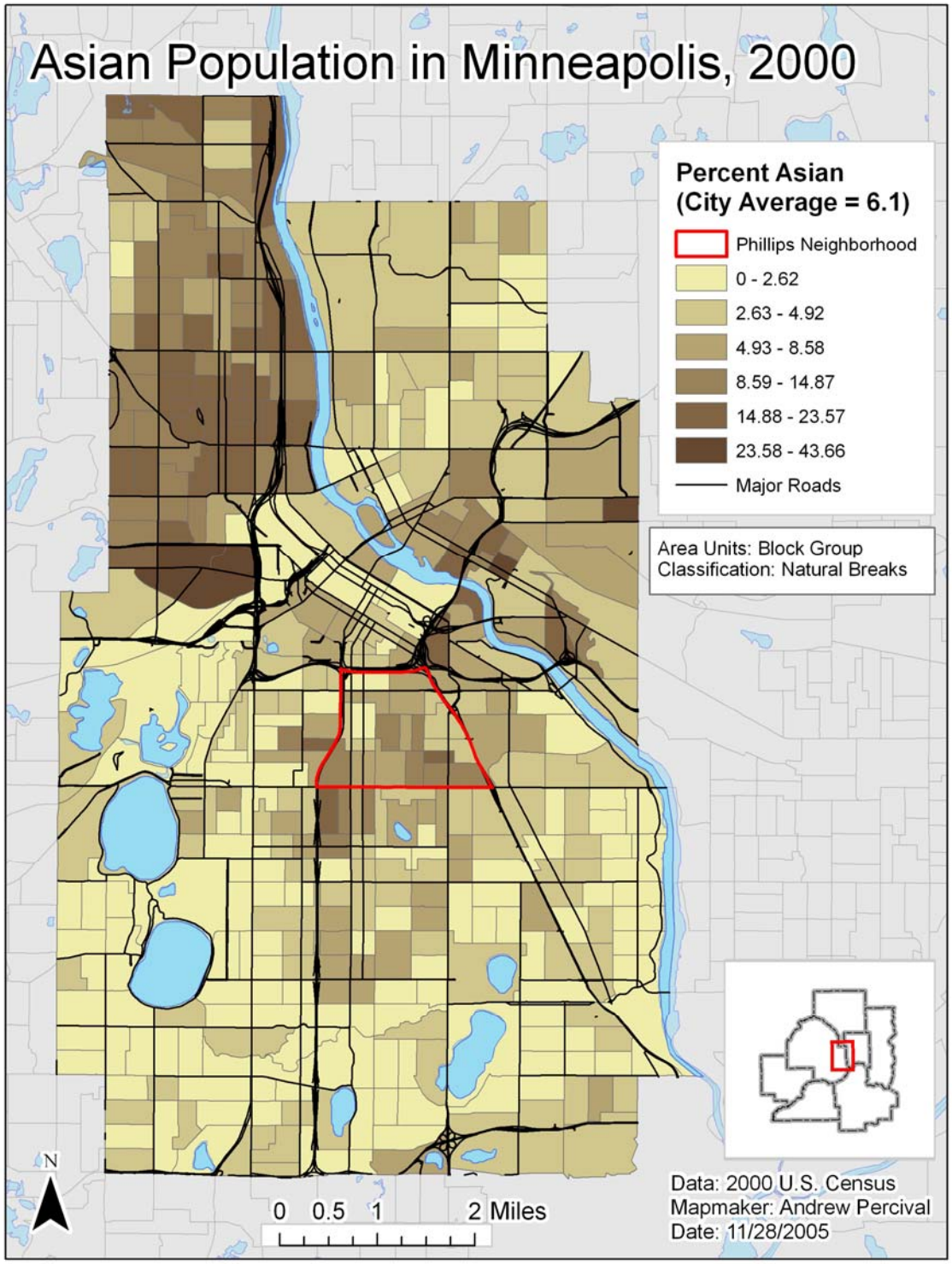
Map 20


Black Population in Minneapolis, 2000
Percent Black
(City Average = 18.0)
Phillips Neighborhood
0 - 6.91
6.92 - 15.84
15.85 - 25.51
25.52 - 37.98
37.99 - 51.85
51.86 - 73.13
Major Roads
Area Units: Block Group
Classification: Natural Breaks
N
0 0.5 1 2 Miles
Data: 2000 U.S. Census
Mapmaker: Andrew Percival
Date: 11/28/2005

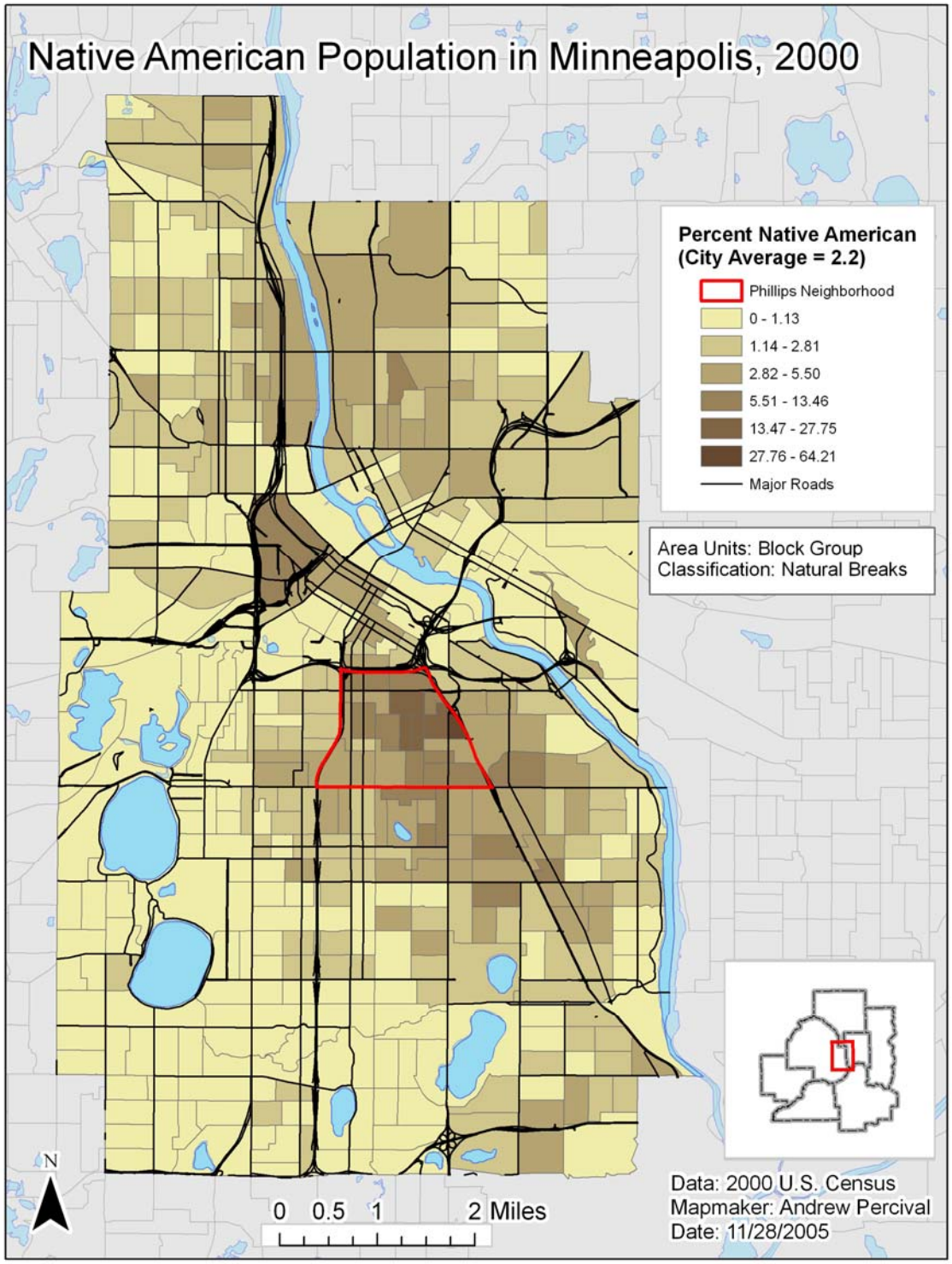
Map 21


Hispanic Population in Minneapolis, 2000
Percent Hispanic
(City Average = 7.6)
Phillips Neighborhood
0 - 3.37
3.38 - 6.94
6.95 - 12.28
12.29 - 19.83
19.84 - 28.97
28.98 - 49.80
Major Roads
Area Units: Block Group
Classification: Natural Breaks
N
0 0.5 1 2 Miles
Data: 2000 U.S. Census
Mapmaker: Andrew Percival
Date: 11/28/2005

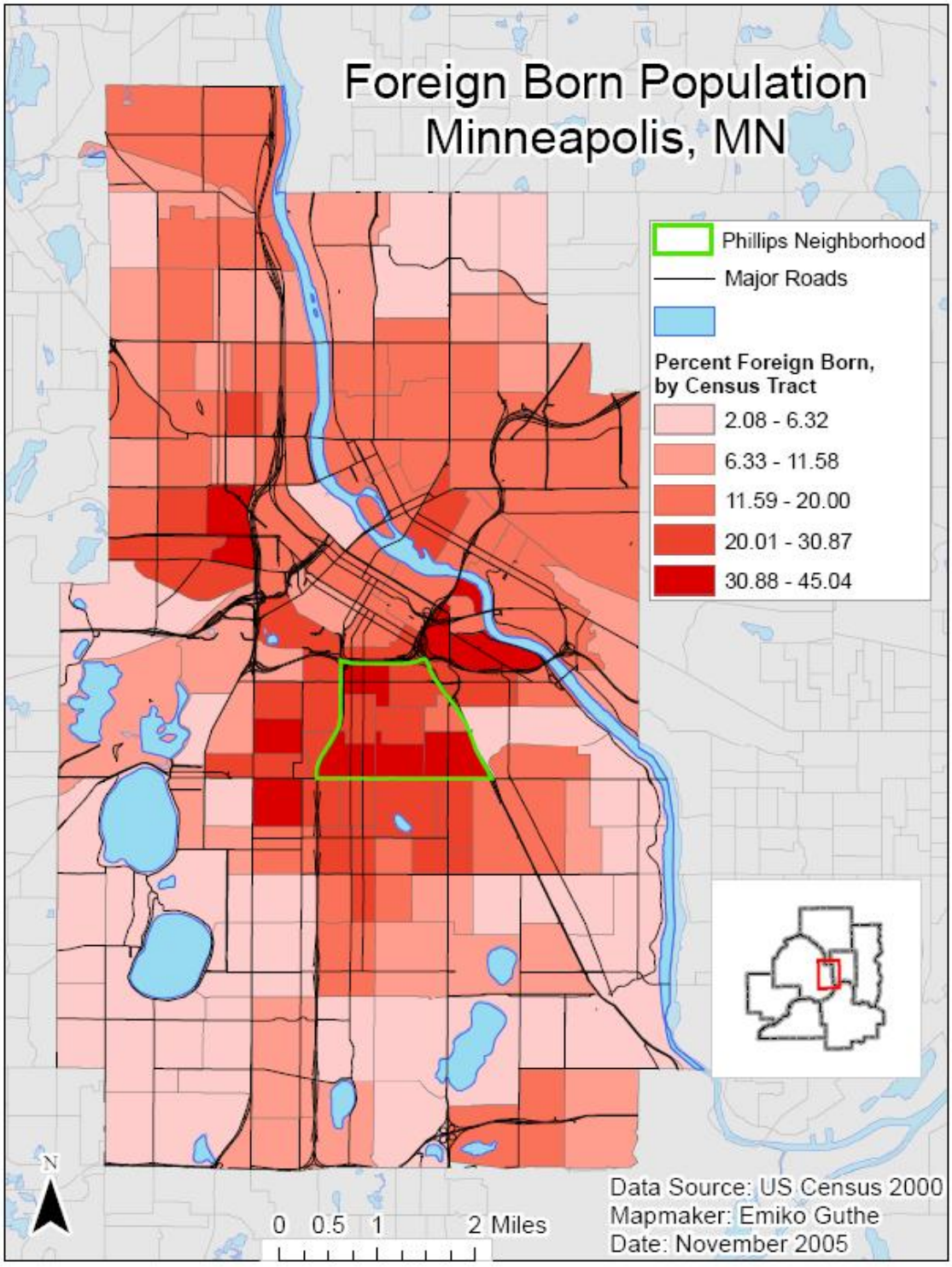
Map 22


Asian Population in Minneapolis, 2000
Percent Asian
(City Average = 6.1)
Phillips Neighborhood
0 - 2.62
2.63 - 4.92
4.93 - 8.58
8.59 - 14.87
14.88 - 23.57
23.58 - 43.66
Major Roads
Area Units: Block Group
Classification: Natural Breaks
N
0 0.5 1 2 Miles
Data: 2000 U.S. Census
Mapmaker: Andrew Percival
Date: 11/28/2005

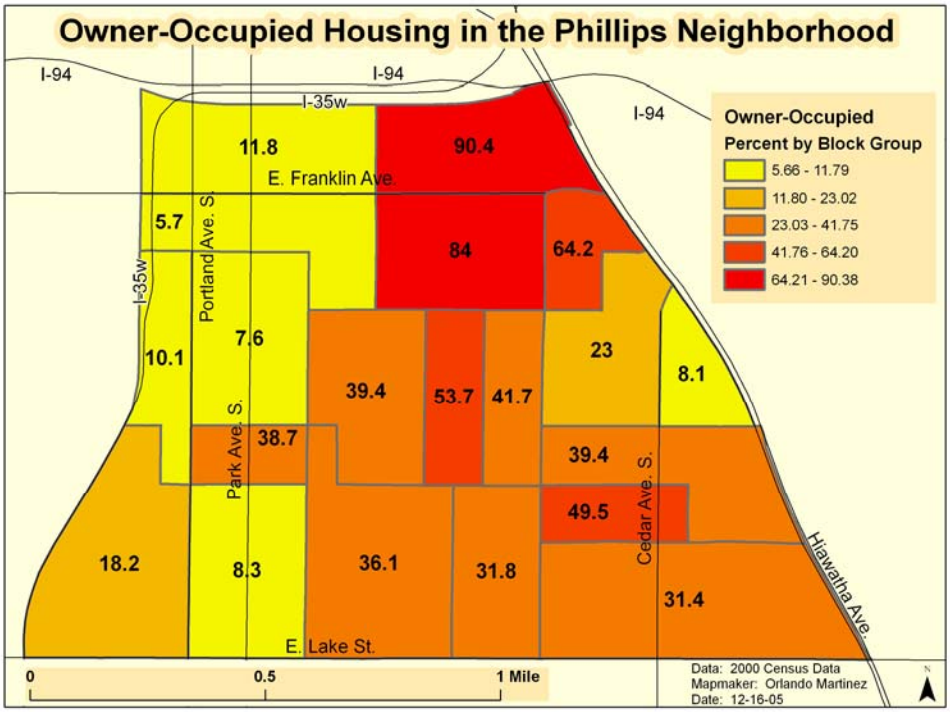
Map 23


Native American Population in Minneapolis, 2000
Percent Native American
(City Average = 2.2)
Phillips Neighborhood
0 - 1.13
1.14 - 2.81
2.82 - 5.50
5.51 - 13.46
13.47 - 27.75
27.76 - 64.21
Major Roads
Area Units: Block Group
Classification: Natural Breaks
N
0 0.5 1 2 Miles
Data: 2000 U.S. Census
Mapmaker: Andrew Percival
Date: 11/28/2005

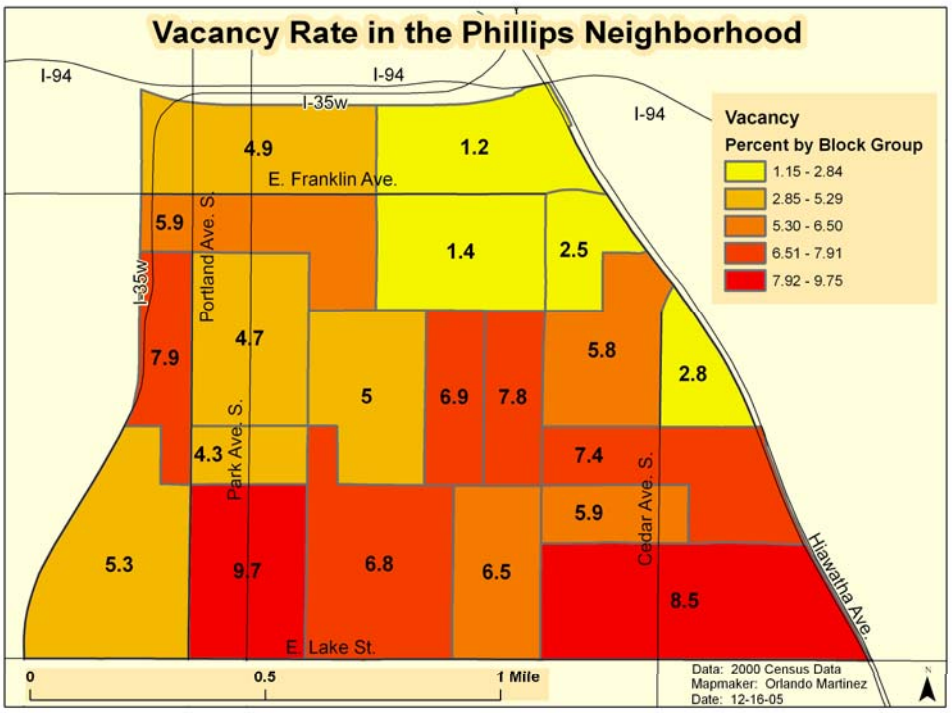
Map 24


Foreign Born Population
Minneapolis, MN
Phillips Neighborhood
Major Roads
Percent Foreign Born,
by Census Tract
2.08 - 6.32
6.33 - 11.58
11.59 - 20.00
20.01 - 30.87
30.88 - 45.04
N
0 0.5 1 2 Miles
Data Source: US Census 2000
Mapmaker: Emiko Guthe
Date: November 2005

Map 25


Owner-Occupied Housing in the Phillips Neighborhood
I-94
I-35w
Owner-Occupied
Percent by Block Group
5.66 - 11.79
11.80 - 23.02
23.03 - 41.75
41.76 - 64.20
64.21 - 90.38
11.8
90.4
E. Franklin Ave.
5.7
84
64.2
Portland Ave. S.
10.1
7.6
23
8.1
39.4
53.7
41.7
38.7
39.4
Park Ave. S.
Cedar Ave. S.
49.5
18.2
8.3
36.1
31.8
31.4
Hiawatha Ave.
E. Lake St.
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05
N

Map 26


Vacancy Rate in the Phillips Neighborhood
I-94
I-35w
Vacancy
Percent by Block Group
1.15 - 2.84
2.85 - 5.29
5.30 - 6.50
6.51 - 7.91
7.92 - 9.75
4.9
1.2
E. Franklin Ave.
5.9
1.4
2.5
Portland Ave. S.
7.9
4.7
5
6.9
7.8
5.8
2.8
4.3
7.4
Park Ave. S.
Cedar Ave. S.
5.9
5.3
9.7
6.8
6.5
8.5
Hiawatha Ave.
E. Lake St.
0
0.5
1 Mile
Data: 2000 Census Data
Mapmaker: Orlando Martinez
Date: 12-16-05
N

Appendix B - Data Sources

All race data came from Summary File 1 of the 2000 Census and was at the block group level. The race data was for Black/African-American alone, American Indian/Alaska Native alone, Native Hawaiian/Other Pacific Islander alone, Asian alone, White alone, and Some Other Race alone. Race data were normalized by the total population to give a percentage of overall presence within each block group. These race maps exclude all people who consider themselves Bi-racial or Multi-racial.

The Latino or Hispanic data came from Summary File 1 of the 2000 Census and was at the block group level. This data was normalized by the total population to produce the percent Latino or Hispanic. This data is separate from the racial data as the U.S. Census Bureau defines Latino/Hispanic as an ethnicity separate from race.

The Median Incomes data is from Summary File 3 of the 2000 Census and was at the block group level. This data includes Median Household Income, Median Family Income, and Median Non-family Household Income.

The Vacancy and Owner-Occupied data came from Summary File 1 of the 2000 Census and was at the block group level. The number of vacancies and the number of owner-occupied housing units were both normalized by the total number of housing units to yield the vacancy rate and owner-occupied rate for each block group.

The Foreign Born data was from Summary File 3 of the 2000 Census and was at the Census tract level. The number of foreign-born residents was normalized by the total population to give a percentage foreign born.

Appendix C – Index Values for all Minneapolis Block Groups

FIPS Code	Population (2000)	Index Values				Weighted Index Values				Average of weighted indices	Suitability Index
		Income	Housing age	Ownership	Housing type	Income	Housing Age	Ownership	Housing type		
270530001021	1133	5	3	5	5	10	3	7.5	2.5	5.8	562
270531009005	1945	5	3	4	4	10	3	6.0	2.0	5.3	360
270531072001	994	5	4	3	4	10	4	4.5	2.0	5.1	360
270531007004	793	4	2	4	5	8	2	6.0	2.5	4.6	240
270531015001	971	4	3	3	4	8	3	4.5	2.0	4.4	216
270530084003	860	4	2	3	5	8	2	4.5	2.5	4.3	180
270531020001	1116	4	2	3	5	8	2	4.5	2.5	4.3	180
270531028003	1083	3	3	3	4	6	3	4.5	2.0	3.9	162
270531028001	1000	3	3	3	4	6	3	4.5	2.0	3.9	162
270531072003	786	4	2	3	4	8	2	4.5	2.0	4.1	144
270530085001	912	4	2	3	3	8	2	4.5	1.5	4.0	108
270530033002	800	3	3	2	4	6	3	3.0	2.0	3.5	108
270531016003	844	3	2	3	4	6	2	4.5	2.0	3.6	108
270531031001	2148	4	3	2	3	8	3	3.0	1.5	3.9	108
270531048003	1503	3	4	2	3	6	4	3.0	1.5	3.6	108
270531100002	630	4	1	4	4	8	1	6.0	2.0	4.3	96
270530027001	1401	4	1	4	4	8	1	6.0	2.0	4.3	96
270530033001	785	3	3	2	3	6	3	3.0	1.5	3.4	81
270531021003	819	4	1	3	4	8	1	4.5	2.0	3.9	72
270531041003	577	3	1	3	5	6	1	4.5	2.5	3.5	68
270530022001	890	5	3	3	4	2	3	4.5	2.0	2.9	54
270531071003	871	3	3	2	2	6	3	3.0	1.0	3.3	54
270531088004	1469	4	2	2	2	8	2	3.0	1.0	3.5	48
270531088001	653	2	2	2	2	8	2	3.0	1.0	3.5	48
270531002001	1122	2	2	2	2	8	2	3.0	1.0	3.5	48
270531037001	797	4	2	2	2	8	2	3.0	1.0	3.5	48
270531048001	862	2	4	2	1	8	4	3.0	0.5	3.9	48
270531048004	1280	4	2	1	4	8	2	1.5	2.0	3.4	48
270531016004	619	1	3	1	2	10	3	1.5	1.0	3.9	45
270531021002	1167	5	2	3	5	2	2	4.5	2.5	2.8	45

270531046002	1321	3	5	2	1	6	5	3.0	0.5	3.6	45
270530096001	812	3	1	3	3	6	1	4.5	1.5	3.3	40
270531002002	671	5	1	5	5	2	1	7.5	2.5	3.3	38
270530077001	1360	4	3	1	2	8	3	1.5	1.0	3.4	36
270530083002	893	4	2	1	3	8	2	1.5	1.5	3.3	36
270530079002	854	2	2	2	3	4	2	3.0	1.5	2.6	36
270530073023	874	4	1	2	3	8	1	3.0	1.5	3.4	36
270530083001	1471	3	1	2	4	6	1	3.0	2.0	3.0	36
270530085005	1137	4	1	2	3	8	1	3.0	1.5	3.4	36
270530085003	680	4	1	2	3	8	1	3.0	1.5	3.4	36
270531023001	968	2	1	2	3	8	1	3.0	1.5	3.4	36
270531029001	1466	5	2	3	4	2	2	4.5	2.0	2.6	36
270531041001	1732	2	2	2	3	4	2	3.0	1.5	2.6	36
270531018002	1157	5	2	3	4	2	2	4.5	2.0	2.6	36
270531018003	998	5	2	3	4	2	2	4.5	2.0	2.6	36
270531025002	805	2	2	2	3	4	2	3.0	1.5	2.6	36
270531037002	1304	4	3	1	2	8	3	1.5	1.0	3.4	36
270531060001	1431	4	2	1	3	8	2	1.5	1.5	3.3	36
270531062003	722	2	3	2	2	4	3	3.0	1.0	2.8	36
270530073011	1027	2	2	2	3	4	2	3.0	1.5	2.6	36
270530073021	709	5	2	3	4	2	2	4.5	2.0	2.6	36
270531040002	743	2	3	1	2	8	3	1.5	1.0	3.4	36
270531049002	1894	3	4	1	2	6	4	1.5	1.0	3.1	36
270530085004	928	5	2	2	5	2	2	3.0	2.5	2.4	30
270531013001	1096	5	1	4	5	2	1	6.0	2.5	2.9	30
270531013002	780	5	1	4	5	2	1	6.0	2.5	2.9	30
270531004003	1227	5	1	4	5	2	1	6.0	2.5	2.9	30
270531018001	1450	5	1	4	5	2	1	6.0	2.5	2.9	30
270531014002	1120	5	1	4	5	2	1	6.0	2.5	2.9	30
270531019002	877	1	2	1	2	10	2	1.5	1.0	3.6	30
270531052001	830	1	4	1	1	10	4	1.5	0.5	4.0	30
270531071001	1036	1	2	1	2	10	2	1.5	1.0	3.6	30
270531071002	814	1	2	1	2	10	2	1.5	1.0	3.6	30
270530059012	1179	2	5	1	1	8	5	1.5	0.5	3.8	30
270531060003	754	1	2	1	2	10	2	1.5	1.0	3.6	30

270530078022	1422	3	3	1	2	6	3	1.5	1.0	2.9	27
270530022002	834	3	1	2	3	6	1	3.0	1.5	2.9	27
270530073022	749	5	2	3	3	2	2	4.5	1.5	2.5	27
270530038001	1133	3	3	1	2	6	3	1.5	1.0	2.9	27
270530082002	1040	4	1	2	2	8	1	3.0	1.0	3.3	24
270531034001	1237	2	4	1	1	8	4	1.5	0.5	3.5	24
270531070002	1751	4	2	1	2	8	2	1.5	1.0	3.1	24
270530038004	1339	4	2	1	2	8	2	1.5	1.0	3.1	24
270531039001	921	2	2	1	2	8	2	1.5	1.0	3.1	24
270531040004	940	4	4	1	1	8	4	1.5	0.5	3.5	24
270530082001	1764	1	3	1	1	10	3	1.5	0.5	3.8	22
270531094002	943	5	1	3	5	2	1	4.5	2.5	2.5	22
270530024001	415	5	1	3	5	2	1	4.5	2.5	2.5	22
270531025001	662	5	1	3	5	2	1	4.5	2.5	2.5	22
270531048002	3889	1	3	1	1	10	3	1.5	0.5	3.8	22
270531072002	734	5	1	3	5	2	1	4.5	2.5	2.5	22
270531049005	835	1	3	1	1	10	3	1.5	0.5	3.8	22
270530082004	1093	4	1	1	3	8	1	1.5	1.5	3.0	18
270530084002	939	5	1	3	4	2	1	4.5	2.0	2.4	18
270531086002	1332	5	1	3	4	2	1	4.5	2.0	2.4	18
270531074002	940	5	1	3	4	2	1	4.5	2.0	2.4	18
270531005002	1342	5	1	3	4	2	1	4.5	2.0	2.4	18
270531023002	627	1	3	2	2	2	3	3.0	1.0	2.3	18
270531041002	1847	5	1	3	4	2	1	4.5	2.0	2.4	18
270531030001	1099	5	2	2	3	2	2	3.0	1.5	2.1	18
270531037003	1103	2	3	1	1	8	3	1.5	0.5	3.3	18
270531044002	363	3	4	1	1	6	4	1.5	0.5	3.0	18
270531054001	918	2	3	1	1	8	3	1.5	0.5	3.3	18
270530078011	852	3	2	1	2	6	2	1.5	1.0	2.6	18
270530073012	788	2	1	1	3	8	1	1.5	1.5	3.0	18
270531049001	1547	4	1	1	3	8	1	1.5	1.5	3.0	18
270531062001	1827	2	3	1	1	8	3	1.5	0.5	3.3	18
270531064001	854	1	2	1	1	10	2	1.5	0.5	3.5	15
270531054002	927	3	3	1	1	6	3	1.5	0.5	2.8	14
270531060002	1277	1	3	1	3	2	3	1.5	1.5	2.0	14

270530095002	1040	5	1	2	4	2	1	3.0	2.0	2.0	12
270531034003	142	1	4	1	2	2	4	1.5	1.0	2.1	12
270531070001	1434	4	1	1	2	8	1	1.5	1.0	2.9	12
270530068003	1585	4	1	1	2	8	1	1.5	1.0	2.9	12
270530068001	1748	4	2	1	1	8	2	1.5	0.5	3.0	12
270530038003	873	2	2	1	1	8	2	1.5	0.5	3.0	12
270530059011	1881	2	2	1	1	8	2	1.5	0.5	3.0	12
270530059022	1235	2	1	1	2	8	1	1.5	1.0	2.9	12
270530038002	828	2	1	1	2	8	1	1.5	1.0	2.9	12
270530121012	1238	3	1	1	2	6	1	1.5	1.0	2.4	9
270530059021	2072	3	1	1	2	6	1	1.5	1.0	2.4	9
270531069001	996	3	1	1	2	6	1	1.5	1.0	2.4	9
270531052003	956	5	5	1	1	2	5	1.5	0.5	2.3	8
270531057002	904	1	1	1	1	10	1	1.5	0.5	3.3	8
270530077002	688	5	2	1	2	2	2	1.5	1.0	1.6	6
270531070003	1305	5	1	2	2	2	1	3.0	1.0	1.8	6
270531056001	2780	4	1	1	1	8	1	1.5	0.5	2.8	6
270531067005	1394	4	1	1	1	8	1	1.5	0.5	2.8	6
270531054003	1571	2	1	1	1	8	1	1.5	0.5	2.8	6
270531039002	711	2	1	1	1	8	1	1.5	0.5	2.8	6
270531049004	3202	2	1	1	1	8	1	1.5	0.5	2.8	6
270530035011	716	3	1	1	1	6	1	1.5	0.5	2.3	4
270531057001	1973	3	1	1	1	6	1	1.5	0.5	2.3	4
270530078012	961	5	1	1	1	2	1	1.5	0.5	1.3	2
270531056002	1071	5	1	1	1	2	1	1.5	0.5	1.3	2
270531069002	2125	5	1	1	1	2	1	1.5	0.5	1.3	2
270530106003	909	0	1	4	4	0	1	6.0	2.0	2.3	0
270530106002	1160	0	1	5	5	0	1	7.5	2.5	2.8	0
270531113004	816	0	1	5	5	0	1	7.5	2.5	2.8	0
270531113003	864	0	1	5	5	0	1	7.5	2.5	2.8	0
270531113002	779	0	1	5	5	0	1	7.5	2.5	2.8	0
270531065002	1402	0	3	2	1	0	3	3.0	0.5	1.6	0
270531091001	1259	0	2	1	1	0	2	1.5	0.5	1.0	0
270531091002	670	0	2	4	4	0	2	6.0	2.0	2.5	0
270531098002	818	0	1	5	5	0	1	7.5	2.5	2.8	0

270531098001	734	0	1	5	5	0	1	7.5	2.5	2.8	0
270531091003	710	0	1	5	5	0	1	7.5	2.5	2.8	0
270531091004	620	0	3	4	3	0	3	6.0	1.5	2.6	0
270531091005	607	0	1	1	1	0	1	1.5	0.5	0.8	0
270531098003	817	0	1	4	4	0	1	6.0	2.0	2.3	0
270531098005	715	0	1	5	5	0	1	7.5	2.5	2.8	0
270531098004	770	0	1	3	2	0	1	4.5	1.0	1.6	0
270531112001	1038	0	1	5	5	0	1	7.5	2.5	2.8	0
270531112002	773	0	1	5	5	0	1	7.5	2.5	2.8	0
270531112003	915	0	1	5	5	0	1	7.5	2.5	2.8	0
270531113005	669	0	1	5	5	0	1	7.5	2.5	2.8	0
270531113006	622	0	1	4	5	0	1	6.0	2.5	2.4	0
270530120017	743	0	1	4	4	0	1	6.0	2.0	2.3	0
270530120014	1104	0	1	5	5	0	1	7.5	2.5	2.8	0
270530120016	896	0	2	5	5	0	2	7.5	2.5	3.0	0
270530120015	725	0	1	5	5	0	1	7.5	2.5	2.8	0
270531099004	1014	0	1	3	3	0	1	4.5	1.5	1.8	0
270531109002	715	0	1	5	4	0	1	7.5	2.0	2.6	0
270531109001	497	0	1	5	5	0	1	7.5	2.5	2.8	0
270530110005	776	0	1	5	5	0	1	7.5	2.5	2.8	0
270531109003	1277	0	1	5	5	0	1	7.5	2.5	2.8	0
270531109004	1158	0	2	5	5	0	2	7.5	2.5	3.0	0
270530110004	595	0	1	5	5	0	1	7.5	2.5	2.8	0
270530106001	623	0	1	5	5	0	1	7.5	2.5	2.8	0
270531116001	639	0	1	4	4	0	1	6.0	2.0	2.3	0
270531116004	729	0	1	5	5	0	1	7.5	2.5	2.8	0
270531113001	718	0	1	5	5	0	1	7.5	2.5	2.8	0
270531114004	1220	0	2	5	5	0	2	7.5	2.5	3.0	0
270530120013	615	0	1	5	5	0	1	7.5	2.5	2.8	0
270530120012	1016	0	1	5	5	0	1	7.5	2.5	2.8	0
270531108001	785	0	1	4	4	0	1	6.0	2.0	2.3	0
270531108006	732	0	2	4	4	0	2	6.0	2.0	2.5	0
270531108005	684	0	1	5	5	0	1	7.5	2.5	2.8	0
270530107001	650	0	1	4	4	0	1	6.0	2.0	2.3	0
270530107003	823	0	1	4	5	0	1	6.0	2.5	2.4	0

270531108004	688	0	1	4	4	0	1	6.0	2.0	2.3	0
270530107002	943	0	1	5	5	0	1	7.5	2.5	2.8	0
270531108002	683	0	1	4	4	0	1	6.0	2.0	2.3	0
270531108003	678	0	1	4	5	0	1	6.0	2.5	2.4	0
270531115008	932	0	1	5	4	0	1	7.5	2.0	2.6	0
270531114001	959	0	1	5	5	0	1	7.5	2.5	2.8	0
270531115006	607	0	2	5	5	0	2	7.5	2.5	3.0	0
270531115007	625	0	1	5	5	0	1	7.5	2.5	2.8	0
270531114002	832	0	1	5	5	0	1	7.5	2.5	2.8	0
270531114003	759	0	1	5	5	0	1	7.5	2.5	2.8	0
270531115005	738	0	3	3	3	0	3	4.5	1.5	2.3	0
270531115003	573	0	1	5	4	0	1	7.5	2.0	2.6	0
270531115004	551	0	1	4	4	0	1	6.0	2.0	2.3	0
270531115001	592	0	2	4	5	0	2	6.0	2.5	2.6	0
270530120011	642	0	1	5	5	0	1	7.5	2.5	2.8	0
270531115002	578	0	1	5	4	0	1	7.5	2.0	2.6	0
270530120034	691	0	1	1	3	0	1	1.5	1.5	1.0	0
270530120036	687	0	1	2	3	0	1	3.0	1.5	1.4	0
270530120037	499	0	2	4	3	0	2	6.0	1.5	2.4	0
270531080001	972	0	1	1	1	0	1	1.5	0.5	0.8	0
270530081004	1013	0	1	1	2	0	1	1.5	1.0	0.9	0
270531080002	1171	0	1	2	2	0	1	3.0	1.0	1.3	0
270531080003	726	0	1	3	4	0	1	4.5	2.0	1.9	0
270531080004	648	0	1	3	3	0	1	4.5	1.5	1.8	0
270531093001	1007	0	1	3	4	0	1	4.5	2.0	1.9	0
270531093002	1011	0	1	3	3	0	1	4.5	1.5	1.8	0
270531099002	1187	0	1	5	5	0	1	7.5	2.5	2.8	0
270531099001	868	0	1	3	3	0	1	4.5	1.5	1.8	0
270531099003	854	0	1	4	4	0	1	6.0	2.0	2.3	0
270530081002	784	0	1	2	3	0	1	3.0	1.5	1.4	0
270530081001	897	0	1	2	3	0	1	3.0	1.5	1.4	0
270530082003	700	0	1	2	3	0	1	3.0	1.5	1.4	0
270530081003	809	0	1	2	3	0	1	3.0	1.5	1.4	0
270531093005	729	0	1	2	3	0	1	3.0	1.5	1.4	0
270531093004	697	0	1	3	3	0	1	4.5	1.5	1.8	0

270531092001	2404	0	1	1	2	0	1	1.5	1.0	0.9	0
270531093003	774	0	1	2	3	0	1	3.0	1.5	1.4	0
270531092002	1512	0	4	2	2	0	4	3.0	1.0	2.0	0
270530079001	750	0	1	2	4	0	1	3.0	2.0	1.5	0
270530078021	628	0	2	1	4	0	2	1.5	2.0	1.4	0
270530096002	941	0	1	4	5	0	1	6.0	2.5	2.4	0
270530095003	1216	0	1	4	5	0	1	6.0	2.5	2.4	0
270530096003	934	0	1	4	5	0	1	6.0	2.5	2.4	0
270530096004	888	0	1	5	5	0	1	7.5	2.5	2.8	0
270530084001	961	0	1	3	5	0	1	4.5	2.5	2.0	0
270531094001	1079	0	2	3	4	0	2	4.5	2.0	2.1	0
270530095001	857	0	1	3	4	0	1	4.5	2.0	1.9	0
270531100001	943	0	1	3	5	0	1	4.5	2.5	2.0	0
270531086003	1104	0	1	3	5	0	1	4.5	2.5	2.0	0
270530085002	844	0	1	3	3	0	1	4.5	1.5	1.8	0
270531086001	651	0	1	4	5	0	1	6.0	2.5	2.4	0
270531097003	669	0	1	3	4	0	1	4.5	2.0	1.9	0
270531097002	930	0	1	4	5	0	1	6.0	2.5	2.4	0
270531097001	648	0	1	4	4	0	1	6.0	2.0	2.3	0
270531101002	1021	0	1	4	5	0	1	6.0	2.5	2.4	0
270531101001	1161	0	1	5	5	0	1	7.5	2.5	2.8	0
270531101003	763	0	1	4	3	0	1	6.0	1.5	2.1	0
270530110001	789	0	1	4	4	0	1	6.0	2.0	2.3	0
270530110002	782	0	1	5	5	0	1	7.5	2.5	2.8	0
270530110003	558	0	2	5	4	0	2	7.5	2.0	2.9	0
270530117035	835	0	1	5	5	0	1	7.5	2.5	2.8	0
270530117034	721	0	1	5	5	0	1	7.5	2.5	2.8	0
270531116002	895	0	1	5	5	0	1	7.5	2.5	2.8	0
270531116003	787	0	3	5	5	0	3	7.5	2.5	3.3	0
270530117033	949	0	1	5	5	0	1	7.5	2.5	2.8	0
270530120033	598	0	1	5	5	0	1	7.5	2.5	2.8	0
270530117042	689	0	1	5	5	0	1	7.5	2.5	2.8	0
270530120031	792	0	1	5	5	0	1	7.5	2.5	2.8	0
270530120032	868	0	1	5	5	0	1	7.5	2.5	2.8	0
270530117031	857	0	1	5	5	0	1	7.5	2.5	2.8	0

270530117032	669	0	1	5	5	0	1	7.5	2.5	2.8	0
270530117041	984	0	1	5	5	0	1	7.5	2.5	2.8	0
270530117044	741	0	1	5	5	0	1	7.5	2.5	2.8	0
270530117043	579	0	1	5	5	0	1	7.5	2.5	2.8	0
270530120035	813	0	3	1	2	0	3	1.5	1.0	1.4	0
270530118003	732	0	1	5	5	0	1	7.5	2.5	2.8	0
270530119982	772	0	1	5	5	0	1	7.5	2.5	2.8	0
270530119983	579	0	1	5	5	0	1	7.5	2.5	2.8	0
270530121023	736	0	1	5	5	0	1	7.5	2.5	2.8	0
270530121024	967	0	1	5	0	0	1	7.5	0.0	2.1	0
270530121011	933	0	1	4	4	0	1	6.0	2.0	2.3	0
270530121022	554	0	1	5	5	0	1	7.5	2.5	2.8	0
270531111001	639	0	1	4	4	0	1	6.0	2.0	2.3	0
270531111003	800	0	1	5	5	0	1	7.5	2.5	2.8	0
270531111004	931	0	1	5	5	0	1	7.5	2.5	2.8	0
270531105003	1042	0	1	4	4	0	1	6.0	2.0	2.3	0
270531111002	779	0	1	5	5	0	1	7.5	2.5	2.8	0
270530118001	839	0	1	5	4	0	1	7.5	2.0	2.6	0
270530119986	637	0	1	5	5	0	1	7.5	2.5	2.8	0
270530118004	756	0	1	5	5	0	1	7.5	2.5	2.8	0
270530119984	722	0	4	5	2	0	4	7.5	1.0	3.1	0
270530118002	859	0	1	5	5	0	1	7.5	2.5	2.8	0
270530118005	1338	0	1	5	5	0	1	7.5	2.5	2.8	0
270530121013	905	0	2	5	5	0	2	7.5	2.5	3.0	0
270531074001	773	0	1	3	4	0	1	4.5	2.0	1.9	0
270531087001	1276	0	2	3	3	0	2	4.5	1.5	2.0	0
270531088003	787	0	1	5	5	0	1	7.5	2.5	2.8	0
270531089003	1003	0	1	5	5	0	1	7.5	2.5	2.8	0
270531076003	606	0	1	5	5	0	1	7.5	2.5	2.8	0
270531076004	782	0	1	5	5	0	1	7.5	2.5	2.8	0
270531087002	969	0	1	5	5	0	1	7.5	2.5	2.8	0
270531087003	1305	0	1	5	5	0	1	7.5	2.5	2.8	0
270531102001	1096	0	2	5	4	0	2	7.5	2.0	2.9	0
270531102003	764	0	1	5	5	0	1	7.5	2.5	2.8	0
270531102002	747	0	1	5	5	0	1	7.5	2.5	2.8	0

270531089002	685	0	1	5	5	0	1	7.5	2.5	2.8	0
270531088002	904	0	1	4	4	0	1	6.0	2.0	2.3	0
270531089001	742	0	1	5	5	0	1	7.5	2.5	2.8	0
270531104001	702	0	1	5	5	0	1	7.5	2.5	2.8	0
270531104004	714	0	1	3	4	0	1	4.5	2.0	1.9	0
270531102004	911	0	1	5	5	0	1	7.5	2.5	2.8	0
270531104002	794	0	1	5	5	0	1	7.5	2.5	2.8	0
270531104003	719	0	1	4	4	0	1	6.0	2.0	2.3	0
270531076001	907	0	2	4	4	0	2	6.0	2.0	2.5	0
270531090002	613	0	1	5	5	0	1	7.5	2.5	2.8	0
270531090001	564	0	1	5	5	0	1	7.5	2.5	2.8	0
270531090003	654	0	1	5	5	0	1	7.5	2.5	2.8	0
270531105006	647	0	1	5	5	0	1	7.5	2.5	2.8	0
270531105005	861	0	1	5	5	0	1	7.5	2.5	2.8	0
270531105004	628	0	5	5	2	0	5	7.5	1.0	3.4	0
270531105002	908	0	1	5	5	0	1	7.5	2.5	2.8	0
270530119985	614	0	4	5	4	0	4	7.5	2.0	3.4	0
270530119981	734	0	1	4	4	0	1	6.0	2.0	2.3	0
270530121021	727	0	1	5	5	0	1	7.5	2.5	2.8	0
270530027002	1421	0	1	4	4	0	1	6.0	2.0	2.3	0
270530032001	948	0	1	4	4	0	1	6.0	2.0	2.3	0
270530032002	987	0	1	4	5	0	1	6.0	2.5	2.4	0
270531020002	699	0	1	4	5	0	1	6.0	2.5	2.4	0
270531020003	716	0	1	4	4	0	1	6.0	2.0	2.3	0
270531051001	1330	0	1	5	5	0	1	7.5	2.5	2.8	0
270531051003	751	0	2	5	5	0	2	7.5	2.5	3.0	0
270531065001	1533	0	1	5	5	0	1	7.5	2.5	2.8	0
270531065003	1902	0	4	3	3	0	4	4.5	1.5	2.5	0
270531007001	992	0	2	5	4	0	2	7.5	2.0	2.9	0
270531008004	1170	0	2	4	4	0	2	6.0	2.0	2.5	0
270531008003	1077	0	2	4	4	0	2	6.0	2.0	2.5	0
270530001014	793	0	1	5	5	0	1	7.5	2.5	2.8	0
270530001011	901	0	1	5	5	0	1	7.5	2.5	2.8	0
270530001012	752	0	1	5	5	0	1	7.5	2.5	2.8	0
270530001013	724	0	1	5	5	0	1	7.5	2.5	2.8	0

270531002003	1484	0	1	5	5	0	1	7.5	2.5	2.8	0
270530003004	844	0	1	5	5	0	1	7.5	2.5	2.8	0
270530003001	892	0	1	5	5	0	1	7.5	2.5	2.8	0
270530003003	805	0	1	5	5	0	1	7.5	2.5	2.8	0
270530003002	950	0	1	5	5	0	1	7.5	2.5	2.8	0
270531007002	850	0	1	5	5	0	1	7.5	2.5	2.8	0
270531007003	805	0	1	5	5	0	1	7.5	2.5	2.8	0
270530001025	943	0	2	5	5	0	2	7.5	2.5	3.0	0
270531004001	1087	0	1	4	4	0	1	6.0	2.0	2.3	0
270531009004	859	0	1	5	5	0	1	7.5	2.5	2.8	0
270531009001	792	0	2	4	5	0	2	6.0	2.5	2.6	0
270531009003	950	0	2	4	5	0	2	6.0	2.5	2.6	0
270531009002	1057	0	2	4	4	0	2	6.0	2.0	2.5	0
270530001024	626	0	1	5	5	0	1	7.5	2.5	2.8	0
270530001023	968	0	1	5	5	0	1	7.5	2.5	2.8	0
270530001022	778	0	1	4	5	0	1	6.0	2.5	2.4	0
270531002004	521	0	1	5	5	0	1	7.5	2.5	2.8	0
270531004002	1048	0	1	5	5	0	1	7.5	2.5	2.8	0
270531008001	811	0	1	5	4	0	1	7.5	2.0	2.6	0
270531008002	1328	0	1	5	5	0	1	7.5	2.5	2.8	0
270530006015	693	0	1	4	3	0	1	6.0	1.5	2.1	0
270530006014	1227	0	1	4	5	0	1	6.0	2.5	2.4	0
270531005001	607	0	1	5	5	0	1	7.5	2.5	2.8	0
270531105001	352	0	1	0	0	0	1	0.0	0.0	0.3	0
270531044001	734	0	4	1	1	0	4	1.5	0.5	1.5	0
270531052002	2935	0	4	2	1	0	4	3.0	0.5	1.9	0
270530033003	1002	0	3	3	5	0	3	4.5	2.5	2.5	0
270531055004	631	0	2	5	5	0	2	7.5	2.5	3.0	0
270531051002	581	0	1	5	5	0	1	7.5	2.5	2.8	0
270531055003	846	0	2	4	5	0	2	6.0	2.5	2.6	0
270531066001	843	0	1	2	3	0	1	3.0	1.5	1.4	0
270531066003	647	0	1	4	4	0	1	6.0	2.0	2.3	0
270530068002	1130	0	1	1	2	0	1	1.5	1.0	0.9	0
270531066002	878	0	4	3	2	0	4	4.5	1.0	2.4	0
270531055001	1180	0	4	1	1	0	4	1.5	0.5	1.5	0

270531055002	1310	0	1	2	2	0	1	3.0	1.0	1.3	0
270531067002	1462	0	2	1	2	0	2	1.5	1.0	1.1	0
270531067001	732	0	2	1	2	0	2	1.5	1.0	1.1	0
270531067004	870	0	1	1	2	0	1	1.5	1.0	0.9	0
270531067003	766	0	1	2	3	0	1	3.0	1.5	1.4	0
270531014001	1273	0	2	4	5	0	2	6.0	2.5	2.6	0
270531016001	999	0	1	3	5	0	1	4.5	2.5	2.0	0
270531016002	706	0	2	3	5	0	2	4.5	2.5	2.3	0
270531015002	1318	0	3	4	5	0	3	6.0	2.5	2.9	0
270531021001	1078	0	3	2	4	0	3	3.0	2.0	2.0	0
270531028002	906	0	1	4	5	0	1	6.0	2.5	2.4	0
270531019003	815	0	4	2	4	0	4	3.0	2.0	2.3	0
270530017002	1254	0	2	3	4	0	2	4.5	2.0	2.1	0
270530017001	776	0	1	3	5	0	1	4.5	2.5	2.0	0
270530024003	643	0	2	3	3	0	2	4.5	1.5	2.0	0
270530024002	947	0	1	2	4	0	1	3.0	2.0	1.5	0
270531025004	698	0	1	3	5	0	1	4.5	2.5	2.0	0
270531030002	702	0	1	3	3	0	1	4.5	1.5	1.8	0
270531036001	822	0	4	3	4	0	4	4.5	2.0	2.6	0
270531025003	755	0	1	3	4	0	1	4.5	2.0	1.9	0
270530035021	799	0	1	2	1	0	1	3.0	0.5	1.1	0
270531036002	828	0	5	2	2	0	5	3.0	1.0	2.3	0
270531046001	1761	0	5	2	1	0	5	3.0	0.5	2.1	0
270531047001	128	0	1	4	4	0	1	6.0	2.0	2.3	0
270531044003	402	0	5	3	1	0	5	4.5	0.5	2.5	0
270531040003	1392	0	3	3	4	0	3	4.5	2.0	2.4	0
270531050001	1278	0	2	3	4	0	2	4.5	2.0	2.1	0
270531049003	558	0	3	1	2	0	3	1.5	1.0	1.4	0
270531050002	1049	0	1	3	3	0	1	4.5	1.5	1.8	0
270531064002	945	0	1	4	5	0	1	6.0	2.5	2.4	0
270531075001	1147	0	1	4	5	0	1	6.0	2.5	2.4	0
270531062002	807	0	4	3	4	0	4	4.5	2.0	2.6	0
270531075002	872	0	1	3	5	0	1	4.5	2.5	2.0	0
270531012005	430	0	2	5	5	0	2	7.5	2.5	3.0	0
270531026001	882	0	0	3	4	0	0	4.5	2.0	1.6	0

270531012003	986	0	1	4	4	0	1	6.0	2.0	2.3	0
270531019001	1252	0	1	4	5	0	1	6.0	2.5	2.4	0
270531012004	1426	0	1	3	3	0	1	4.5	1.5	1.8	0
270531040005	1029	0	2	3	5	0	2	4.5	2.5	2.3	0
270531040001	1602	0	1	2	4	0	1	3.0	2.0	1.5	0
270531026002	1277	0	4	3	4	0	4	4.5	2.0	2.6	0
270531076002	1153	0	1	5	5	0	1	7.5	2.5	2.8	0
270530006031	604	0	2	5	5	0	2	7.5	2.5	3.0	0
270530006032	735	0	1	5	5	0	1	7.5	2.5	2.8	0
270530006011	540	0	2	5	5	0	2	7.5	2.5	3.0	0
270530006012	1184	0	1	5	5	0	1	7.5	2.5	2.8	0
270530006033	844	0	1	5	5	0	1	7.5	2.5	2.8	0
270530006013	1193	0	2	4	5	0	2	6.0	2.5	2.6	0
270530006034	605	0	1	5	5	0	1	7.5	2.5	2.8	0
270531012001	936	0	1	5	5	0	1	7.5	2.5	2.8	0
270530011001	920	0	1	4	5	0	1	6.0	2.5	2.4	0
270531012002	952	0	1	5	5	0	1	7.5	2.5	2.8	0
270530011002	1255	0	1	3	5	0	1	4.5	2.5	2.0	0
270531034002	2	0	1	1	0	0	1	1.5	0.0	0.6	0

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