Madison Neighborhood Indicators Pilot Project

Preliminary Evaluation Brief

Prepared by the University of Wisconsin Applied Population
Laboratory with input from the Madison NI advisory group

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Many of the population attributes and indicators developed for the pilot project merit further consideration with respect to sources, methods, and rationales. Listed below are a few items that the staff believed to be most significant in this regard.

Data Comparability & Normalization Issues:
For many of the population characteristic variables and indicators, the supplied data tables include counts, as well as rates or percentages. For instance, the population characteristic variables include population counts and percentages of the total population for each item. Users easily can make comparisons across neighborhoods, using either counts or percentages depending on the users' purpose.

Some of the indicators prove more challenging in this regard. In cases where the appropriate base from which to calculate a rate is not obvious, the tables show only counts. Community pride violations is an example of an item that is shown only as a count. Users might deem it appropriate to calculate a rate for these occurrences using counts per person, per household, or per acre, each of which would produce a different result. In these instances, the omission of rates from the report requires users to determine for themselves the appropriate base from which to generate rates and perform their own calculation.

Claritas-sourced basic demographic attributes (See Data Definitions):
Lacking a local data source for most basic demographic descriptors, APL based the neighborhood estimates of these attributes on interpolated values from the Claritas current year estimates. Because the Claritas data are estimates provided for geographic units that differ from neighborhoods, users should read these data as best guess estimates. Due to the nature of the interpolation methods, smaller neighborhood geographies will generally contain greater amounts of error than larger ones. There was no need for interpolation of data corresponding to block groups that nested entirely within neighborhood boundaries.

Despite the measure of uncertainty associated with the neighborhood demographic estimates, the project steering group felt these characteristics could serve as a useful backdrop to the indicators provided. Other neighborhood indicator projects have tended to supply only demographic estimates based on the 2000 Census, which is currently long out of date. In the future, the 2010 Census will provide a more reliable source for some of the demographic characteristics, but the Census likely will not make these data public until 2012.

Number of housing units (occupied):
For this item, APL used Claritas estimates, although the City of Madison could provide an alternate source. Two principal limitations are preventing us from using City data. The first is that vacancy status is not contained within the SITUS database. The second is that for structures with more than seven dwelling units, calculations would need to rely on a second database. The merger of these

sources would require in-house expertise of those most familiar with the data and should not be handled be APL.

Sourcing this data from the City merits consideration because the data are likely more accurate and more easily reconciled with the neighborhood geographic scale without the use of interpolation. The City of Madison data is likely to be more accurate than Claritas estimates, particularly if vacancy status can be determined. Use of the SITUS data as-is produced neighborhood dwelling unit estimates that deviated in value from the Claritas-based estimates of occupied housing units by anywhere from 20 to 146 units. This suggests that the choice of source may significantly affect the results.

Crimes against persons, property, and society:

The crimes shown in this report consist of incidents as denoted by the Madison Police Department's incident-based reporting system. As a local, up-to-date, address-based data source, the crime data represent a valuable component of the project. APL georeferenced the incidents based on the address field associated with each incident. In each category of incident, a certain percentage of the incidents could not be successfully georeferenced (see Data Definitions). Improvements in geocoding services will likely improve the match rates in the future. The level of detail and accuracy in the police source data will also affect future geocoding match rates.

Crashes:

Crashes were particularly problematic in terms of georeferencing. In the case of crashes, which often occur at street intersections rather than a discrete street address, APL was unable to georeference more than half the records. Neighborhood level crash estimates are, therefore, considerably less reliable. APL could adapt geocoding tools and construct a reference database in an effort to georeference the crash data more effectively, but this would be an additional expense to the project.

Calls for fire service and emergency medical service:

These items were a late suggestion to the list of indicators. APL is currently processing source data.

Kindergarten preparedness, parent education level, high mobility students, students receiving free/reduced lunch:

These items originate from the Madison Metropolitan School District, and as such reflect another valuable, local source for timely data at a very fine level of geographic detail. At the same time, these data are limited to the MMSD student and student household population. In some cases this data included all MMSD students/households and in others it included only a portion. For the kindergarten preparedness and parent education level items, there are a significant number of student/households for which MMSD has no data (see Data Definitions). However, the mobility status and free/reduced lunch items are available for all students.

Public health roll-up:

Identifying an appropriate indicator in the area of public health has been challenging. There are many dimensions to public health and, in part to due to HIPAA regulations, there are many limitations in the availability of data for public use.

After considering dozens of areas and many potential data sources, the staff at Public Health Madison & Dane County recommended two indicators for use in the project: 1) "Maternal Health" operationalized by the proportion of women who gave birth who have received appropriate pre-natal care, and 2) "Infant Health" denoted by the proportion of births that are term or near term defined as greater than 32 weeks gestation. Both measures could be over one or more than one year (Public Health is considering a three year running average). Public Health would supply these data at the address level, to be aggregated by APL to the NH scale, thus conforming optimally to the NH boundaries without further need for geographic interpolation.

Voter turn-out:

APL investigated options for acquiring voter data through the WI Government Accountability Board. The cost would be roughly $900 and would include data from the most recent six elections. The City Clerks office also has reports available in paper format. The best option for voter data appears to be the City of Madison Division of Information Technology; a staff contact there has said they will be able to provide us with free data from the upcoming fall election and for subsequent elections. Our plan is to explore this item further at that time.

Even with a list of voters' addresses, there is not means by which to calculate neighborhood voter participation rates directly. APL will have address-based data for those registered to vote as well, so calculating the proportion of registered voters who participated will be feasible. Alternatively, APL could show the number of voters over the estimated adult population for neighborhoods. The project staff and steering group will revisit this question when the data become available.

Youth opportunity index:

The Data Dictionary details the method for calculating the youth opportunity index. APL modeled the indicator according to method outline in the "Charlotte Quality of Life" study (see Data Definitions). It is a complex formula that attempts to answer a question that is still more complicated. What constitutes an opportunity for youth varies according to age and a host of other socioeconomic factors that mediate access to opportunities. Despite the limitation of this measure, the project staff elected to provide this indicator in order to help cultivate further discussion and elaboration of the method.

Unemployed:

The current unemployment indicator relies on Claritas data estimates. Although this measure likely contains a high degree of uncertainty, APL regarded this as the best option in the short run. Charlotte's study used State of North Carolina government data tabulated at the zip code level, but this is geographically too coarse a grain for our purposes. The Wisconsin Department of Workforce Development is another potential data source for this item. One contact at DWD noted that they collect and report data on unemployment insurance claims on larger geographic scales such as municipalities.

At this time. However. DWD is not producing estimates at a geographic scale useful for neighborhood level analysis.

Families who received Medical Assistance, Food Stamps or W-2:

Like the poverty and free and reduced lunch indicators, this item attempts to capture the demand for and use of various forms of public assistance (see Data Definitions). Availability of address data from a local supplier makes this a particularly valuable data item inasmuch it does not require estimation or interpolation. One limitation is that the criteria for qualifying for public assistance do not remain constant. Therefore, increases in qualifying families, which users might read as more families in distress, may simply reflect the extension of services to families with greater income. Comparisons on this item may be best made across neighborhoods than for a single neighborhood over time.

Basic goods and services:

This indicator attempts to represent the availability of various goods and services in or immediately surrounding neighborhoods (see Data Definitions). While the item codes provide a reasonable indication of the physical presence of the goods and services providers in a neighborhood, they cannot show whether they are otherwise available or affordable to residents.

Among the goods and services items, the steering group has given the most attention to the hospital component. The presence of hospitals was particularly troublesome due to the various factors that mediate access to the services they provide; their presence offers only a crude measure of neighborhood residents' access to them. Despite this limitation of the data, the steering group saw significant value in showing the presence of healthcare facilities in a neighborhood. Based on input from listening sessions, the steering group determined that emergency medical care would be more desirable than showing hospitals alone. The Madison and Dane County Department of Public Health is working to supply a list of emergency care providers that more accurately describes their locations throughout Madison.

Community pride violations:

Community pride violations include several types of code violations noted by the City of Madison Building Inspection Unit (see Data Definitions). Unit staff familiar with Madison neighborhoods and patterns of change over time denoted several types of violations that provide a measure of neighborhood well being. They observed that increases in these types of violations often provided an early warning signal to the more intractable problems that often followed.

Many community pride violations originate with a citizen complaint. Consequently, the "sensitivity" of a neighborhood to community pride offenses will likely affect the rate of citations there. The data also include citations that results from planned surveys and referrals by Inspection Unit staff designed to target problems areas. Planned inspections of certain structures and areas may, likewise, affect the violations rates for these areas.

Average house value and square foot value of housing:

Although many neighborhood indicator sites use real estate sales records to estimate neighborhood housing estimate value, however, sales would not provide a good representative sample for our smaller neighborhood geographic scale. Instead of sales records, APL relied on data from the SITUS database originating in the Assessor's office. This is data that APL can update annually and easily aggregate to the neighborhood scale.

Owner occupancy counts and rates:

The Assessor's data would arguably be a good source for owner occupancy rate, but the current attribute relies on Claritas for the same reasons as denoted above with respect to housing units. Using Claritas as a source for housing data also has the advantage of being compatible with the much of the basic demographic data for which APL has no viable alternate source.

Metro proximity (parcels within 1/4 mi. proximity to bus stop), Metro service (minutes of service per person), and Households with access to a vehicle:

Madison Metro supplied these data using the pilot neighborhood geographies and population estimates that APL supplied. The proximity measure is one that Metro has developed and used internally to gauge service distribution efficacy. Minutes of service per person is another measure of coverage used by Metro and is consistent with state and federal metrics of transportation service provision. Households with access to a vehicle is shown as a proxy for service coverage demands given the supposition that Metro demand will be higher in neighborhoods where fewer households have access to a private vehicle.

Bike path access: The bike path access data suggest very good access to bike paths in the pilot neighborhoods and citywide. On close inspection however, many of the paths used in the selection process were small segments of path, less than one mile in length. The current measure of access does not allow users to distinguish between neighborhoods' access to these smaller segments and the City's major bike routes.

Listing of community/neighborhood organizations and services:

The steering group and numerous prospective users expressed an interest in showing the presence of social services and community organizations serving each of Madison's neighborhoods. Because the presence and activity of neighborhood organizations does not lend itself to characterization with a numeric value, the steering group opted to list organizations present in the neighborhood. This method would allow users to view organizations listed and make their own determination with respect to the extent and type of service provided to the neighborhood by these organizations.

Finding a source for a listing of Madison community services and organization proved more challenging than anticipated. The ideal source would be reliable and comprehensive. It would also contain a physical address and some description or categorization of the agencies' function. The project staff located several potential sources for information including the United Way, the Madison Office of Community Services, Wisconsin Department of Natural Resources, the Madison Planning and

Development Unit, and a national index called InfoUSA. The InfoUSA source best approximated the source needs of the project without requiring a lot of additional work to refine the source information.

With the physical addresses of agencies given, geocoding services coupled with geographic information systems can determine the presence of organizations within neighborhood boundaries. It remains up to the users, however, to determine the extent to which neighborhoods are, in fact, served by the agencies listed there or by other agencies outside their boundaries.

In anticipation of better data, the steering group decided prior to the October release that prior data did not reflect the desired intent of the indicator and recommended removal that the InfoUSA listings presented in earlier reports. The Madison Planning and Development Unit is currently in the midst of a project where they are working with neighborhood associations to develop lists of agencies and organizations relevant to each. Although the Planning Unit's listing is a long-term project, it may ultimately prove to be a useful supplement or substitute for the data provided here.