



PART II

Demographics and Issues Concerning Asian Americans





Chapter 6

Disability, the Census, and the Geographic Information System

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Disability and the Census

There is no universally accepted definition of disability in use. As a result, the rate of disability varies greatly due to discrepancies in definition, sampling size, and surveillance method (Fujiura & Rutkowski-Kmita, 2001). Past counts of the disability population have largely used definitions based on loss of function or a limited capacity to perform certain life tasks. For the 2000 U.S. census, for example, the Census Bureau used a definition of functional limitations derived from Nagi's (1969) framework, which states that disability is created when an individual's impairment limits his/her ability to perform or complete a fundamental life activity. This definition was also used in past versions of the American Community Survey (ACS), a Census Bureau survey that replaces the longer 10 year form and provides more-frequent estimates. The definition of disability used for the 2000 Census and the ACS updates for 2003–2007 is as follows:

A long-lasting physical, mental, or emotional condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering (asked of persons ages 5 years old and older). Such conditions can also limit a person's ability to go outside the home alone or work at a job or business (asked of persons ages 15 years old and older).



The Falling Petals event was utilized to promote disability awareness among Asian Americans. For more information, please see Chapter 12.

The Census Bureau no longer uses this definition for large-scale surveys because it focused on individual limitations but ignored social factors that may contribute to disability. Nevertheless, this toolkit relies on the definition used in the 2000 census and the 2003–2007 ACS to estimate the numbers of Asian Americans with disabilities, as these are the only resources based upon sample sizes large enough to make comparisons across multiple years at the local, city, and state levels.

However, for purposes of presenting the most-up-to-date information on disability, future research can use the 2008 ACS data (Weathers, 2005) which had an entirely new methodology and set of questions. To reveal the impact of the environment on disability, these questions considered outside social factors along with the individual limitations caused by a disability. This was the first Census Bureau survey to remove the word *limitation* from the questions related to disability. The new definition is based on the following questions (Erickson & Lee, 2010); any respondents answering affirmatively to at least one question are counted as having a disability:

- Hearing Disability (asked of all ages): Is this person deaf or does he/she have serious difficulty hearing?
- Visual Disability (asked of all ages): Is this person blind or does he/she have serious difficulty seeing even when wearing glasses?
- Cognitive Disability (asked of persons age 5 or older): Because of a physical, mental, or emotional condition, does this person have serious difficulty concentrating, remembering, or making decisions?
- Ambulatory Disability (asked of persons age 5 or older): Does this person have serious difficulty walking or climbing stairs?
- Self-Care Disability (asked of persons age 5 or older): Does this person have difficulty dressing or bathing?
- Independent Living Disability (asked of persons age 15 or older): Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone, such as visiting a doctor's office or shopping?

The Census Bureau formulated these questions using a new empirical and conceptual framework (Erickson & Lee, 2010). Removing questions based on functional limitation signifies a shift in conceptualizing disability from a basis of individual functional limitations to one that incorporates the disabling effects of society. The Census Bureau's decision to update its definition reflects recent changes in the understanding of cultural, environmental, attitudinal, and institutional factors that contribute to disability.

Disability Studies and Population Surveillance

Definitions of disability have varied for many national and international population estimates, and they continue to change. For example, more than 20 definitions of disability have been used by government agencies for surveillance measures in the United States (Mashaw & Reno, 1996). Depending on the environmental factors that contribute to disabling conditions, the definition of disability varies according to how the statistics will be used and the needs of the population with disabilities. People with disabilities may have little need for support in some areas of life and greater need in others.

It is important to fully document and justify these definitions because individuals needs vary according to the situations and environments (Erickson & Lee, 2008). When defining disability, individual limitations (the factors that were used to define disability in previous census surveillance tools) do not account for the full process of disablement. From a disability studies perspective, for instance, the definition of disability incorporates personal experience as well as environmental, social, and cultural contexts (Fujiura & Rutkowski-Kmita, 2001). Disability surveillance methods and definitions, including the most current definition used by the U.S. Census Bureau, have also evolved and now incorporate the environmental and social factors that contribute to the experience of disability.



The Falling Petals Tree illustrates the different views of disabilities in different Asian cultures and languages.

Use of the American Community Survey

The new definition used by the Census Bureau incorporates an understanding of environmental and social factors that contribute to disability. Therefore, the Census Bureau does not recommend comparing past surveys, which used the functional limitation definition of disability, to the most recent ACS survey (2008). Ideally, the population estimates from the 2008 survey would be used to compile data for the Asian American population in the context of Asians and disability because that is the most current dataset, and it uses an updated definition of disability.

However, given the sample size and physical area under analysis, a single-year sample is insufficient as a base for reliable estimates. The margin of error (MOE) for a one-year estimate from the ACS would be greater than the actual population of Asian Americans with disabilities in most Chicago-area communities. Given the large MOE, the 2005–2007 three-year estimate more accurately depicts the small population across Chicago's neighborhoods. These estimates are based on three years of accumulated data and have three times the sample size of a one-year estimate. Because the disability questions changed only in 2008, no three-year estimates have been made using the newest definition of disability.

As this section is being written, the 2005–2007 ACS data offers the most accurate count of the Asian population with disabilities in Chicago area. The purpose of this section is to highlight the Asian population with disabilities, and this three-year estimate is the most recent survey that breaks down data across the smallest subsections of Chicago. These divisions are called Public Use Micro Areas (PUMAs) and are based on neighborhood boundaries and municipal areas that contain at least 100,000 people (Weathers, 2005). The population estimates here for the 19 PUMAs of Chicago are based on the 2005–2007 ACS estimates.

Demographics for the Asian Community

The 2007 Illinois Disability Report supplies perhaps the most complete statistics on disability in Illinois, based on 2007 ACS estimates. The 2007 ACS report uses a functional limitation definition of disability (Erickson & Lee, 2008) and is based on three questions about disability. The total disability estimates are based on an affirmative response to any of the questions, which categorize people with disabilities as having either self-care disability, employment disability, or go-outside-home disability (Erickson & Lee, 2008).

The 2007 Illinois Disability Report estimates that about 10.3% of the working-age population (21–64) in Illinois has a disability. Females have a higher prevalence of disability than males (13.4 and 12.1%, respectively). Among the major ethnic groups recognized by the census (African/African American, Caucasian, Hispanic, Asian/Asian American, and Native American), Asian populations are reported as having the lowest percentage of disabilities.

Total Population of Asians in Illinois	Number of Asians with Disabilities in Illinois	Percentage of Asian Population with a Disability	Margin of Error	Sample Size
354,000	20,000	5.6	0.82	3,004

Demographics for the Asian Community in Chicago

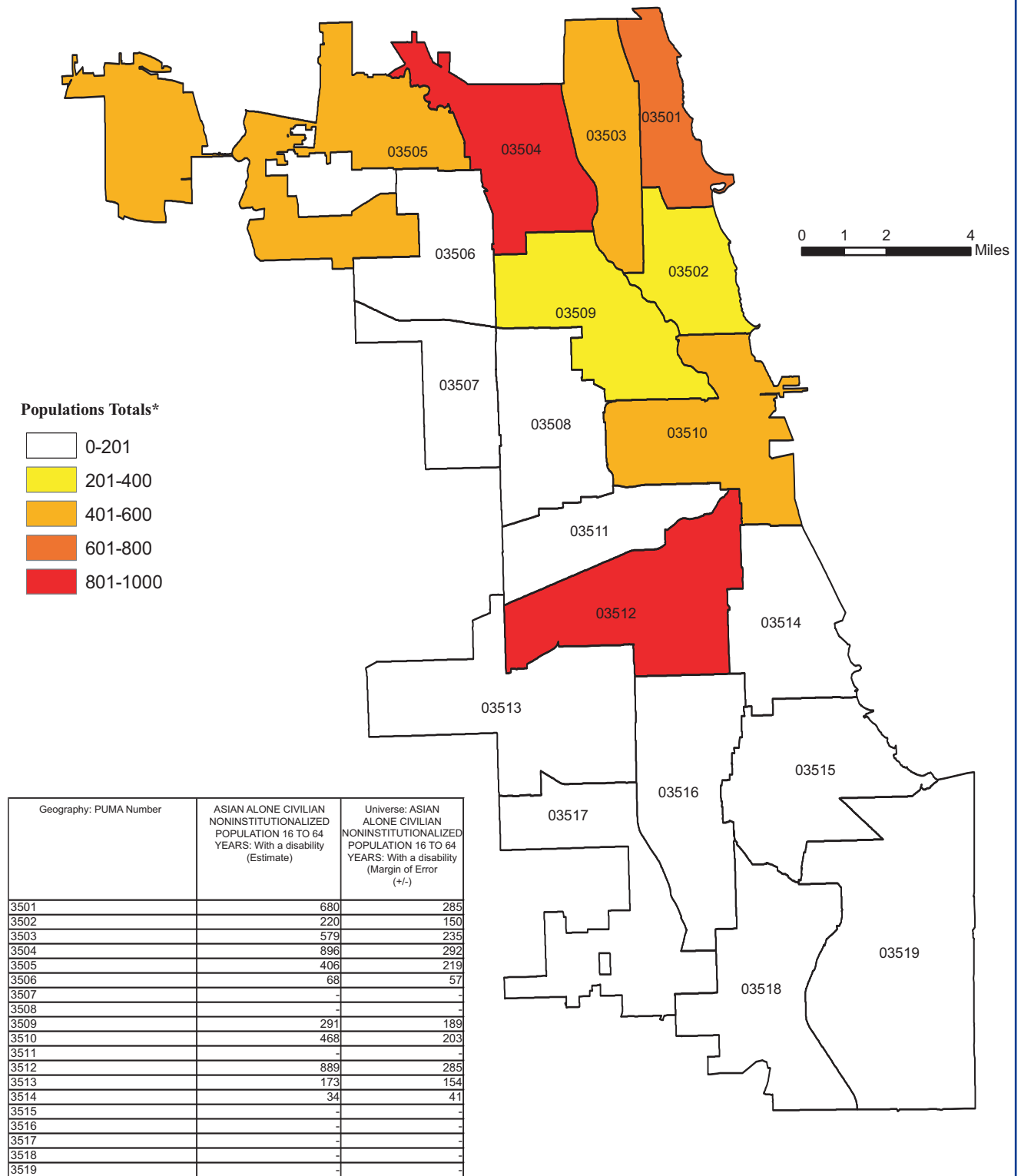
According to the 2005–2007 ACS estimates, approximately 99,150 Asians of working-age were living in the city of Chicago (MOE \pm 3,351). Of that population, approximately 4,946 (MOE \pm 631) were identified as having a disability, again using the 2005–2007 ACS estimate. Of the Asians with disabilities, approximately 2,165 were identified as working. A slightly higher percentage of women than men made up the workforce (approximately 1,180 versus 985). Figure 6.2 shows the distribution of the population of Asians with disabilities across the 19 Chicago PUMAs. (A description of the data's accuracy is located at <http://www.census.gov/acs/www/Downloads/ACS/accuracy2005-2007.pdf>. For information on confidentiality protection, sampling error, non-sampling error, and definitions, see Survey Methodology at http://www.census.gov/acs/www/SBasics/desgn_meth.htm).

Figure 6.1. Disability status by sex, age, and employment status.

	Illinois		Cook County		Chicago	
	Estimate	Margin of Error (+/-)	Estimate	Margin of Error (+/-)	Estimate	Margin of Error (+/-)
TOTAL	386,425	+/-1,930	215,097	+/-1,470	99,151	+/-3,351
With any disability:	20,092	+/-1,127	12,133	+/-1,073	4,946	+/-631
Male:	9,663	+/-846	5,831	+/-678	2,349	+/-472
16–34 years:	2,673	+/-477	1,380	+/-353	555	+/-202
Employed	1,358	+/-388	767	+/-278	281	+/-151
Not employed	1,315	+/-326	613	+/-224	274	+/-142
35–64 years:	6,990	+/-655	4,451	+/-560	1,794	+/-430
Employed	3,591	+/-505	2,346	+/-420	704	+/-227
Not employed	3,399	+/-528	2,105	+/-410	1,090	+/-336
Female:	10,429	+/-926	6,302	+/-825	2,597	+/-445
16–34 years:	2,096	+/-464	1,092	+/-315	309	+/-146
Employed	1,078	+/-367	683	+/-293	201	+/-141
Not employed	1,018	+/-264	409	+/-143	108	+/-74
35–64 years:	8,333	+/-765	5,210	+/-695	2,288	+/-436
Employed	3,324	+/-507	2,121	+/-397	979	+/-275
Not employed	5,009	+/-615	3,089	+/-518	1,309	+/-345
No disability:	366,333	+/-2,065	202,964	+/-1,563	94,205	+/-3,347
Male:	181,425	+/-1,555	100,723	+/-1,042	46,360	+/-2,023
16–34 years:	83,429	+/-1,141	45,486	+/-704	21,260	+/-1,334
Employed	56,324	+/-1,531	31,263	+/-1,091	14,414	+/-1,118
Not employed	27,105	+/-1,365	14,223	+/-958	6,846	+/-884
35–64 years:	97,996	+/-961	55,237	+/-687	25,100	+/-1,221
Employed	84,251	+/-1,386	46,923	+/-1,005	20,797	+/-1,107
Not employed	13,745	+/-1,052	8,314	+/-916	4,303	+/-738
Female:	184,908	+/-1,543	102,241	+/-1,295	47,845	+/-1,792
16–34 years:	81,369	+/-1,111	44,818	+/-1,025	23,259	+/-1,042
Employed	44,998	+/-1,377	25,206	+/-915	13,414	+/-814
Not employed	36,371	+/-1,413	19,612	+/-937	9,845	+/-776
35–64 years:	103,539	+/-1,111	57,423	+/-757	24,586	+/-1,065
Employed	69,837	+/-1,526	39,769	+/-1,320	17,726	+/-1,148
Not employed	33,702	+/-1,571	17,654	+/-1,258	6,860	+/-870

Figure 6.2.

Chicago Demographics: 2007 Distribution of Asian Residents with Disabilities in Chicago Public Use Microdata Areas (PUMAs)



*Totals based on 2005-2007 American Community Survey 3-year estimates.

NOTE: Data for the following geographic area(s) cannot be displayed because the number of sample cases is too small.
PUMA 03507, 03508, 03511, 03515, 03516, 30517, 30518, 30519

Geographic Information System and Disability

To supplement numeric census data, geographical information system (GIS) software (for example, Arcview) is sometimes used to present a visual display of population counts. It can also be used to create a visual representation of geographic areas, usually in the form of a map. The software can display distances, population density, and the distribution of services. Arcview software enables researchers to analyze the relationships visually while examining quantitative aspects, (e.g., average travel distances, commute times, and additional physical barriers to accessing spaces).

At this time, the available quantitative data have yet to be analyzed for the vocational and cultural services that are available to Asians with disabilities in Chicago. Future inquiry will include analyses of available data from Chicago and the U.S. Census Bureau on the availability of services and population dispersion throughout the city. This section provides a map of cultural services in Chicago, vocational rehabilitation facilities, and counts of the Asian population in various neighborhoods. The map is solely a visual representation of the dispersion of the Asian community throughout Chicago and the variety of services available throughout the city.



GIS map of Chicago area community-based organizations.

Analyzing the distribution of welfare services in relation to geography is of particular importance in pinpointing the vocational service needs of underserved populations. For example, Wolch and Dear (1993) used spatial relations measures to investigate employment services in the Los Angeles area. They revealed that welfare services used to gain employment were more commonly located in affluent areas than in impoverished areas. Their study illustrates how geographical survey instruments, including GIS software, are particularly useful in analyzing and presenting issues of inaccessibility for underserved populations. People with disabilities can benefit from the study of living space and distribution of services.

Recent geographic studies have analyzed how city development has often occurred in ways that have disadvantaged many people with disabilities, physically and socially (e.g., Gleeson, 1999; Metzel, 2005; Metzel & Giordano, 2007). Urban spaces pose additional barriers and accessibility problems that prevent people with disabilities from actively participating in society.

Research using GIS software "successfully draws" attention to issues that make such participation impossible. Analyses using the software provide concrete visual data that calls attention to the inaccessibility of employment and welfare services and can be used by disability lobbyists. GIS software is an effective tool for analyzing and publicizing issues of access to vocational services for underserved populations.

In spite of the known advantages and success of geographically analyzing public services, GIS software and geographical analysis have been used only minimally in studying the availability of services for people with disabilities. Little research has been done on the relationship between geography and employment services for this group. Metzel and Giordano (2007) began to address this gap with their GIS analysis of state vocational rehabilitation and other employment service agencies.

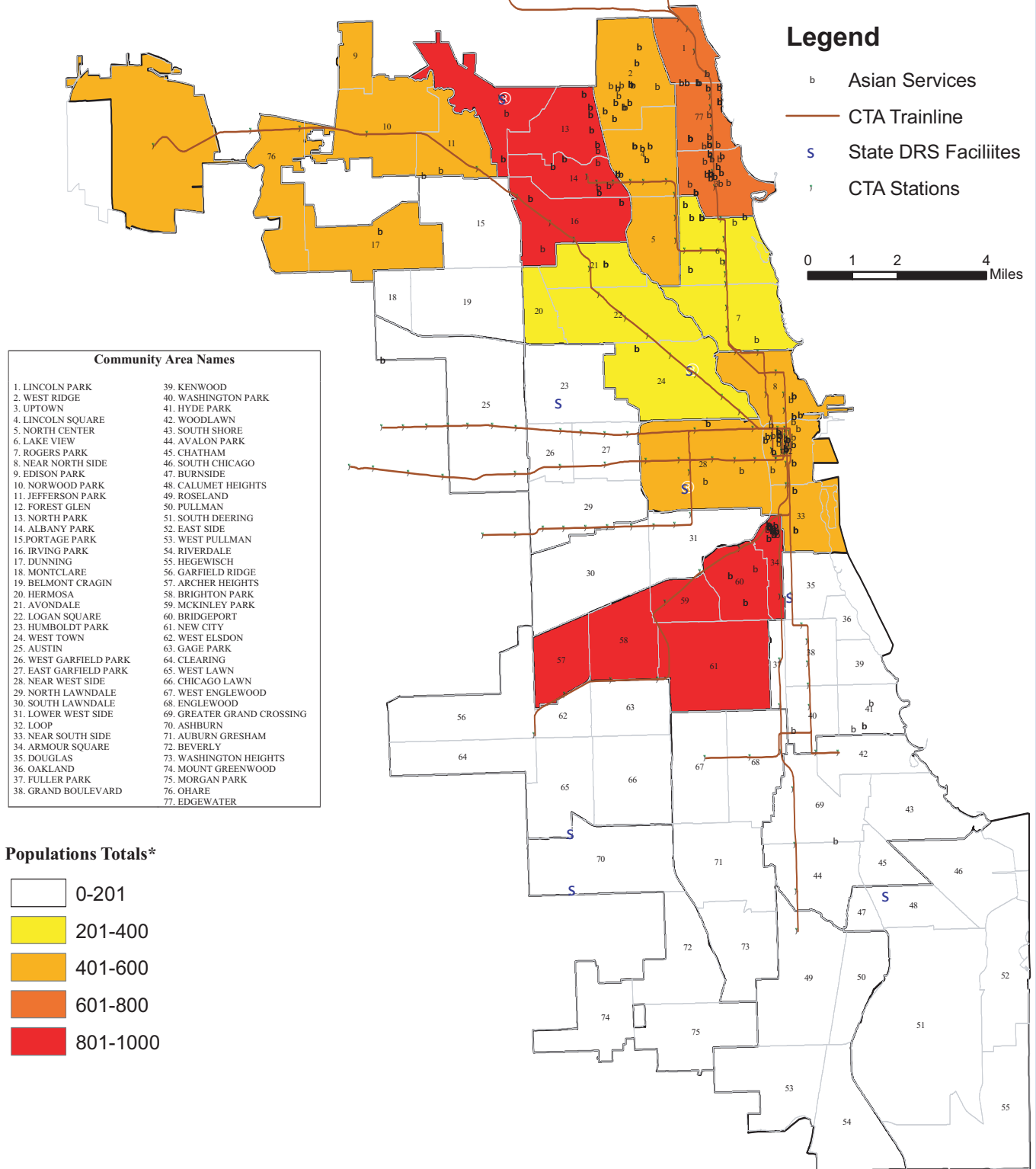
They determined that many unemployed people with disabilities across the United States are underserved by rehabilitation facilities. Joassart-Marcelli and Giordano (2006) conducted a GIS analysis of vocational services in city settings to show that Asians with disabilities are less likely than other groups to benefit from access to state vocational rehabilitation services, such as one-stop career centers.

Minority populations, especially Latinos and Asians, may turn to the nonprofit sector for assistance in the employment process more often than nonminority populations (Joassart-Marcelli & Giordano, 2006, p. 354). Culturally specific nonprofit organizations, such as cultural centers, may provide information on job training and services to Asians if their needs are not being met by mainstream vocational services.

To this researcher's knowledge, access to cultural centers and nonprofit services that benefit Asian populations with disabilities have not been analyzed using GIS software. Figures 6.2 and 6.3 show Chicago's Asian cultural centers and vocational rehabilitation sites. Analyzing maps like these will help to determine if new VR offices need to be opened in neighborhoods with high densities of Asian Americans.

Figure 6.3.

Chicago Demographics: 2007 Distribution of Asian Residents with Disabilities



*Totals based on 2005-2007 American Community Survey 3-year estimates.

Chapter 6 References

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