

Appendix A: Some Notes on Methodology

Where did all of this data come from?

As noted in the introduction, with the exception of data from the countywide survey, all of this data already existed prior to the State of Chattanooga Region Report. There are really four different types of data that we rely upon in the report:

Data from the 2000 Census: Every ten years, the Bureau of the Census seeks to collect basic demographic data from every household in the United States. The comprehensive nature of the Census data collection process often obscures the fact that, essentially, Census data is survey data. Despite the efforts of the Census Bureau, not every household participates in the Census: for example, the Hispanic or Latino population is believed to be undercounted.

Moreover, not all Census data comes from what the Bureau refers to as a one hundred percent sample. Much of the data on economic, education and housing questions is based on responses from one-in-six respondents to the Census and then weighted to correspond with the one hundred percent census.

Nevertheless, Census data is undoubtedly the most comprehensive source of data on a wide range of variables. Unfortunately, there is only a Census every ten years. Recognizing that more timely data is needed, the Census Bureau has undertaken a series of initiatives to provide inter-decennial data. There are annual population estimates at the County and city level and, more recently, there is now an annual American Community Survey (ACS): this year, for the first time, ACS data is available at the city level for places the size of Chattanooga.

There are a series of caveats, however, about Census estimates and ACS data: as a result, this Report generally avoids their use. First, population estimates are just that – estimates. They are based on a series of administrative data. Historically, Census estimates have – when measured against the actual Census – proven to be off by several percent: that is an amazing level of accuracy at the national or statewide level. But at a city or county level, it can be the difference between a city appearing to be in decline when in fact, it is growing. Second, ACS data is based on a survey: national ACS data is based on a survey of 2.5% of all households in the United States. In Hamilton County, this means that data is based on a survey of approximately 3,000 households. Moreover, ACS data does not include information on residents living in institutions or group quarters.

Federal Data Sources: In addition to the Census, the federal government regularly collects and reports on data describing current educational, economic, health and other conditions. Sometimes data is collected from state and local government agencies. Sometimes it is collected from individuals or private entities.

The State of Chattanooga Region Report includes the following examples of non-Census federally collected data:

- Federal Bureau of Investigation Uniform Crime Report data on murder;
- Center for Disease Control data on disease and behavioral risk factors;
- Substance Abuse and Mental Health Services Administration data on access to substance abuse treatment;
- U.S. Department of Commerce (Bureau of Economic Analysis, Census Bureau), U.S. Department of Labor (Bureau of Labor Statistics) and Equal Employment Opportunity Commission data on employment and the economy;
- Federal Aviation Administration data on air passenger enplanements;
- National Center for Education Statistics data on private and public school enrollment; and
- Department of Housing and Urban Development data on fair market rents and Home Mortgage Disclosure Act data collected from banks on home loans.

State and Local Government Administrative Data: While Census data and most of the data from other federal sources are regularly reported and accessible, administrative data from state and local government departments are generally not. The State of Chattanooga Region Report relied extensively on data collected by state and local government – frequently obtaining access to data disaggregated to the individual case or to neighborhoods or sub-county geographic regions. It is important to note, however, that the Community Research Council did not seek to independently validate this administrative data. The data are as they were provided to CRC. In some cases, we were able to call attention to what we believed were major discrepancies in the reported data: when serious questions were unresolved, we did not use the data. But

in most cases, CRC can only accept responsibility for the analysis – not the accuracy – of the administrative data.

The comprehensive nature of the Report would have been impossible to achieve without the assistance of the following state and local government sources:

- Tennessee Bureau of Investigation provided arrest and complaint data by jurisdiction (which is also provided in annual reports), but also provided offense data disaggregated by offender race, gender and age;
- Tennessee Board of Probation and Parole provided data, at the zip code level, on offenders by race, gender, age and offense;
- Tennessee Department of Children Services provided data at the zip code level on child abuse allegations and foster care placements by race, gender and age;
- Tennessee Department of Health provided extensive data at the county and zip code level on reported disease and causes of death, as well as data on area hospitals from the Joint Annual Report;
- Tennessee Department of Human Services provided detailed information on child care availability and quality at the zip code level;
- Data from both the University of Tennessee at Chattanooga and Chattanooga State were available on line regarding enrollment and student demographics;
- Hamilton County Department of Education provided detailed data on students by race and gender, family income, attendance and performance customized at the neighborhood level;
- Hamilton County Sheriff Department provided detailed information on complaints and arrests by individual offense, as well as information on jail admissions;
- Hamilton County Election Commission provided individual level records on voter registration;
- Hamilton County Assessor of Property and the Register of Deeds both provided parcel level data on home ownership, sales and

foreclosures;

- Hamilton County Clerk provided individual level data on all business licenses;
- Chattanooga Police Department provided incident level data, including detailed information about offense location and victim age, race and gender;
- City of Chattanooga, Information Services provided detailed parcel level data on complaints and service requests to the City's 311 system;
- Chattanooga Housing Authority provided detailed data on housing vouchers;
- Electric Power Board provided individual level data on new applications for customer services; and
- Multiple Listing Service, a non-governmental entity, provided parcel level information on home sales.

Survey Data: The Report relies upon survey data from three different surveys undertaken over the last three and a half years: CRC was directly involved in the administration of all three surveys – the 2002 Youth Risk Behavior Survey (YRBS), the 2004 Behavior Risk Factor Surveillance Survey (BRFSS) and the 2006 countywide State of Chattanooga Region Report (SOCRR) survey -- and most directly involved in the design and implementation of the 2006 SOCRR survey.

- The 2002 Hamilton County Youth Risk Behavior Survey (YRBS), was conducted among 2,752 Hamilton County students in grades 9 through 12. A total of 19 schools, including 16 public and 3 private schools, participated in the survey. The questionnaire was designed by the Centers for Disease Control with eight questions generated by the Chattanooga Hamilton County Regional Health Council. The survey was administered in the classroom and relies on anonymous, self-reported responses.
- The Behavioral Risk Factor Surveillance System (BRFSS), a program of the Centers for Disease Control (CDC), is an annual telephone survey which tracks health conditions and risk behaviors on national and state levels. The 2004 Hamilton County BRFSS,

conducted under the auspices of the Chattanooga-Hamilton County Regional Health Council, included surveys of 2,574 Hamilton County residents age 18 and older. The data were weighted to reflect the 2000 Census information for age, race and sex. All activities and personal information were self-reported.

- The 2006 SOCRR survey was administered to a random sample of 1,000 adult residents of Hamilton County. Interviews were conducted April 10-28, 2006. The sample was based on random-digit-dial methodology designed to ensure maximum coverage of Hamilton County. Data were weighted slightly on age, education, and race/ethnicity.

Often, survey research is the best – if not, only – means of getting information. Nevertheless, surveys – as mentioned in the discussion of non-decennial Census Bureau data – come with certain caveats:

- First, two of the three surveys used telephone contacts as a means of conducting data collection. Not all residents of Hamilton County have telephones: in particular, the poorest members of the community may not be surveyed. Depending on the amount of time that the survey is in the field and when calls are made, there may be a bias toward respondents who are more likely to be at home to take the calls.
- Second, surveys have margins of error which increase as the size of the sample decreases. So, for example, the margin of error – based on 95% confidence intervals – for the SOCRR survey was 3.1% compared to 1.9% for the BRFS survey with two and a half times the sample size. Margins of error are greater for subgroups within the larger sample. The following chart summarizes margin of error for each of the regions discussed in the Report:

Region	SOCRR Survey Sample Size	*Margin of Error (+/-)	BRFSS Survey Sample Size	*Margin of Error (+/-)
Total	1,000	3.1%	2,574¹	1.9%
<u>East Brainerd</u>	<u>121</u>	<u>8.9%</u>	<u>320</u>	<u>5.4%</u>
<u>East Hamilton County</u>	<u>114</u>	<u>5.4%</u>	<u>309</u>	<u>5.5%</u>
<u>North Hamilton County</u>	<u>102</u>	<u>9.7%</u>	<u>240</u>	<u>6.3%</u>
<u>Hixson</u>	<u>102</u>	<u>9.7%</u>	<u>334</u>	<u>5.3%</u>
<u>Lookout Mountain/ Signal Mountain</u>	<u>55</u>	<u>13.2%</u>	<u>185</u>	<u>7.1%</u>
<u>North Chattanooga/ Red Bank</u>	<u>131</u>	<u>8.5%</u>	<u>316</u>	<u>5.5%</u>
<u>Downtown/ South Chattanooga</u>	<u>124</u>	<u>8.8%</u>	<u>217</u>	<u>6.6%</u>
<u>East Ridge/Brainerd</u>	<u>131</u>	<u>8.5%</u>	<u>334</u>	<u>5.3%</u>
<u>East Chattanooga</u>	<u>97</u>	<u>9.9%</u>	<u>178</u>	<u>7.3%</u>

Margins of error are based on 95% confidence intervals.

Throughout the report, there are no references to subsamples where there were fewer than 100 responses to the SOCRR survey – resulting in no survey data specifically for either the Lookout Mountain/Signal Mountain region or, for example, for Latinos.

Discussing Race and Ethnicity

How are race and ethnicity reported and characterized throughout the report?

The short answer is that, for the most part, we characterize and report race and ethnicity in the same way that the entity that collected the data characterizes them. So, for the purposes of analyzing Census data, we look at data on race based on respondents who characterize themselves as either white or black or other. In the 2000 Census, for the first time, respondents had the opportunity to identify themselves as multi-racial: but in Hamilton County, less than 1% of the population did so.

Data on Hispanics or Latinos from the 2000 Census are based on those indicating that they are of Spanish, Hispanic or Latino origin. For the purposes of the Census, Hispanics or Latinos are counted separately from race: thus, an individual can be classified as both white and Latino. Often, when comparing the white, black or African American and Latino or Hispanic populations, the white population is identified as “non-Hispanic white.”

In the SOCRR survey, respondents were asked two separate questions on race and ethnicity: they were asked whether they were Latino, Hispanic or

of Spanish descent and then asked if they were black, white, Asian, Native American or some other race. Among survey respondents, 2% indicated that they were Latino or Hispanic and 92% out of the 97% responding indicated that they were either black or white.

For purposes of reporting the data, the terms “Hispanic” and “Latino” and the terms “African American” and “black” are interchangeable.

Using GIS

Geographic Information System (GIS) mapping software was used to analyze and display visual data in this report. GIS software is a database management system that organizes and displays information by geographic location. In some cases data was available by zip code or by census boundaries. In others (e.g., crime data), information was provided by a source at the address level, transferred to street files and then redisplayed at the neighborhood level.

Overall, approximately 95% of the total addresses could be successfully coded, that is, placed properly where they belong. Although efforts were made to minimize the likelihood that an address was not coded in the correct location, error and bias can exist in instances where the data source is wrong or where the street database is not up to date. For example, street files may be deficient in areas with new housing developments.

In most cases a statistical method – Jenks natural breaks-- is used to create the categories used to map data. This method creates classes that are based on natural groupings inherent in the data. The mapping software identifies break points – boundaries -- by picking the classes that best group similar values and maximize the differences between classes.

Data sources for GIS included:

- US Census Bureau TIGER 2000-based streets dataset
- Hamilton County GIS street file
- US Census Bureau TIGER shape files.

Endnotes

¹ 141 BRFS respondents did not provide their zip code.