I. Public Health GIS (and related) Events:
SPECIAL NCHS/CDC GIS LECTURES

Rescheduled: Please join us **February 15, 2006**, for **"An Overview of a Bayesian Approach to Disease Mapping,"** by Mary M. Louie, Ph.D., Associate Service Fellow, National Center for Health Statistics (NCHS), CDC, **2:00P.M. (EST)**, live at NCHS (RM 1404). An abstract of this presentation is included in this edition. The NCHS GIS Guest Lecture Series has been presented continuously at NCHS since 1988. As with all live lectures, Envision (live interactive) will be available to offsite CDC locations as well as IPTV. Web access will be available to our national and worldwide public health audience. The cosponsors to the NCHS Cartography and GIS Guest Lecture Series include CDC's Behavioral and Social Science Working Group (BSSWG) and Statistical Advisory Group (SAG). Note: **NCHS Cartography and GIS lectures are open to all**. We look forward to having you join us. [Questions: please contact Editor, *Public Health GIS News and Information*, at cmc2@cdc.gov]

[Notes: (1) Calendar events are posted as received; for a more complete listing see NCHS GIS website and calendar; (2) Disclaimer: The findings and conclusions in this report are those of the Editor and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC)]

* National Health Policy Conference, February 6-7, 2006, Washington DC [See conference website for information: http://www.academyhealth.org/nhpc/index.htm]

* 27th Annual Minority Health Conference, "Community-Based Research and Practice: How Do We Make it Work for Everyone?," UNC School of Public health, February 24, 2006, Chapel Hill, NC [See url at: http://www.minority.unc.edu/sph/minconf/2006]

* Forum on Earth Observations: Managing Risk in the 21st Century, February 15-16, 2006, La Jolla CA [See site: http://www.forumoneo.com]

* 2006 National Conference on African-Americans and AIDS, February 27-28, 2006, Philadelphia PA [See details: http://www.minority-healthcare.com]

* 2006 International Symposium on Waterborne Pathogens (ISWP), American Water Works Association, March 16-18, 2005, Atlanta GA [See symposium website at: http://www.awwa.org/conferences/pathogens/call]

* 2006 International Symposium on Emerging Zoonosis (ISEZ), March 22-24, 2006, Atlanta GA [See website at: http://www.isezconference.org/home.htm]

* 2006 APA (American Psychiatric Association) Annual Meeting, May 20-25, 2006, Toronto Canada [See website: http://www.psych.org]

* The 4th UK National Crime Mapping Conference, May 24-25, 2006, London England [http://www.jdi.ucl.ac.uk]

* 9th Community-Campus Partnerships for Health Conference, "Walking the Talk: Achieving the Promise of Authentic Partnerships," May 31-June 3, 2006, Minneapolis MN [See the Partnerships for Health website at: http://depts.washington.edu/ccph/index.html]

* AUTO-CARTO 2006 (in conjunction with the UCGIS 2006 Summer Assembly), June 26-28, 2006, Vancouver WA [See: http://www.ec-gis.org/news.cfm?id=608]

* International Conference in GIS and Health: "Geospatial Research and Application Frontiers in Environmental and Public Health Systems," June 27-29, 2006, Hong Kong [See: http://geog.hku.hk/HealthGIS2006]

* 2006 Data Users Conference, National Center for Health Statistics, CDC, July 10-12, 2006, Washington D.C. [See: http://www.cdc.gov/nchs]

* International Conference on Interdisciplinary Social Sciences, July 18-21, 2006, Island of Rhodes, Greece [See: http://socialsciencesconference.com]

* American Sociological Association Conference, "Great Divides: Transgressing Boundaries," August 11-14 2006, Montreal, Canada [See: http://www.asanet.org/index.ww]

* The 44th Annual Conference of the Urban and Regional Information Systems Association: "Challenge the Limits," September 26-29, 2006, Vancouver, British Columbia [See: http://www.urisa.org]

* 23rd International Methodology Symposium "Methodological Issues in Measuring Population Health", Statistics Canada, November 1-3, 2006, Ottawa CAN http://www.statcan.ca/english/conferences/symposium2004/index.htm]

II. GIS News

[Public Health GIS Users are encouraged to communicate directly with colleagues referenced below on any items; note that the use of trade names and commercial sources that may appear in Public Health *GIS News and Information* is for identification only and does not imply endorsement by CDC]

A. General News and Training Opportunities

1. **Dartmouth Atlas web site update**, Center for Evaluative Clinical Sciences, Dartmouth University: On November 16, 2005, we released a major upgrade to the **Dartmouth Atlas of Health Care** web site. In addition to an entirely new look-and-feel, the Dartmouth Atlas project has made available hospital-specific data for all hospitals in California with at least 80 deaths during the five year period from 1999-2003. This new data was published in conjunction with the article "Evaluating the Efficiency of California Providers in Caring for Patients with Chronic Illnesses," published as a web exclusive in *Health Affairs* on November 16, 2005. The data used in this study, available to the public for the first time, enables direct comparisons of the efficiency of individual hospitals in treating patients with chronic illness based on the Medicare claims from hospitals and their associated physicians. The results make it possible to compare and rate market areas as well as individual hospitals on the efficiency with which they use health care resources. We hope to release this data for all U.S. hospitals in early 2006. [See Atlas: http://www.dartmouthatlas.org; you also may download Atlas data which includes ESRI ArcGIS shape files for Hospital Referral Regions and Health Service Areas at http://www.dartmouthatlas.org/data/download.shtm]

2. **Additional 2004 ACS Data Released**. The U.S. Census Bureau in November released over 600 additional base tables from the 2004 American Community Survey (ACS). Included are 258 new base tables as well as race iterations of most of the tables released last August. Some of the new tables include: median age by residence one year ago; place of birth by language spoken at home and ability to speak English; place of birth by marital status; means of transportation to work by industry; and median monthly housing costs. Also featured are Subject Tables, a new ACS data product. They are similar to the Census 2000 Quick Tables, but contain much more detail than Quick Tables. Subject tables display percent distributions rather than the estimates. Universe lines are displayed as numeric estimates to show the base of each distribution. Subject tables allow for other measures such as medians and means where appropriate, and include the imputation rates for relevant measures. We issued subject tables in 42 subject areas, including education, employment, poverty, income, language, and housing. [The additional data and tables may be found on the U. S. Census Bureau's American user-friendly FactFinder Web site at http://factfinder.census.gov/home/saff/main.html?_lang=en]

3. **Center for International Earth Science Information Network (CIESIN)**, Columbia University: We have recently made publicly available moderate and high resolution grids of US census data for the gulf-states, at http://beta.sedac.ciesin.columbia.edu/katrina2005.html. These data are derived from the census block data, and additional forthcoming variables (in income, housing
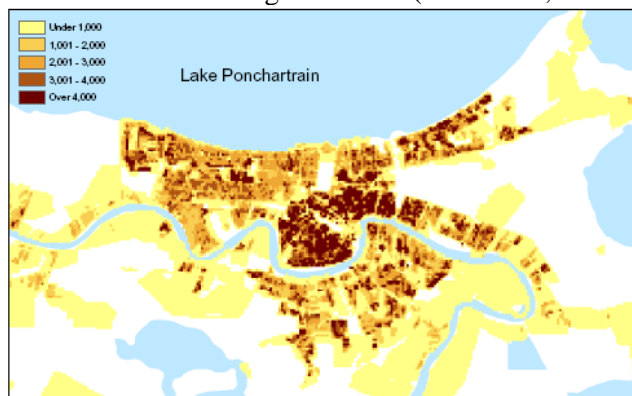
Population density per square km

stock, and public assistance derived from the block-group data) will soon be made available. The data are **gridded** rather than the native census vector data for easy in analysis with geophysical and other geographic data. We are undertaking some of these analyses ourselves, at Columbia University, (and I can inform you of findings as they become available,) but our first priority has been

to make the grids publicly available and provide them to some of the agencies providing relief in the region. These grids are preliminary [alpha version] data and are available for download from the above URL. [Contact: Deborah Balk, Associate Research Scientist and Project Scientist (SEDAC), at balk@ciesin.columbia.edu]

4. **Association of American Geographers** (AAG): The preliminary program for the **2006 AAG meeting** in Chicago is now available online at the conference site at http://communicate.aag.org/eseries/aag_org/program/index.cfm?mtgID=51. The full agenda of sessions, plenaries, and specialty group meetings are included in this web-based timetable of the AAG meeting, March 7-11, 2006. You may search the preliminary program by presenter's last name, keyword, session title, or AAG Specialty Group. More than 140 abstracts under **"Medical Geography"** are available for viewing. [Contact: Oscar Larson, Annual Meeting Coordinator at mail@communicate.aag.org]

5. **Spatial Statistical Analysis in the GIS Environment**. **Statistics Week of Short Courses, The University of Florida, March 13-14, 2006**. After a basic introduction to spatial autocorrelation and exploratory spatial data analysis, we explore techniques of variogram estimation and ordinary, universal and indicator kriging. Mapping of predictions, standard errors, probabilities and quantiles are also covered. Each attendee is strongly urged to bring a laptop computer with a copy of ArcGIS Versions 8 or 9 with the Geostatistical Analyst extension installed. A number of examples will be worked out and, time permitting, each attendee will have the opportunity to analyze and interpret the data and models used. We do not assume any familiarity with spatial statistics. We do assume familiarity with basic statistical concepts such as probability distributions, parameter estimates, standard errors, confidence intervals, and hypothesis testing at the level of Bain, Engelhardt's *Introduction to Probability & Mathematical Analysi*s. We do assume participants have basic GIS skills, such as use of ArcMap. [Contact: Instructors M. Christman and L. Young at ljyoung@ufl.edu; See: http://www.stat.ufl.edu/info/shortcourses/index06.htm]

B. Department of Health and Human Services
http://www.hhs.gov

6. Statement by Mike Leavitt Secretary of Health and Human Services Regarding **World AIDS Day** [excerpts]. The scope is clear. Since 1981, AIDS has claimed the lives of more than 20 million people. It has reached around the world, and there is hardly a demographic group that is without some cases. Worldwide, more than 40 million people live e with the virus. In 2004, between 4.6 million and 6.4 million people worldwide became infected-more than in any year before. In the United States, more than 1 million people live with the disease, and one-quarter of them do not realize they are infected. These facts amount to a worldwide call to renewed action against HIV/AIDS. So the Department of Health and Human Services takes as its World AIDS Day theme this year, **"Action Makes a Difference."** [Information source: HHS Announcements, 12/2/05; Catalogue of announcements also available for search]

Administration for Children and Families
http://www.acf.dhhs.gov

7. The **Empowerment Zones/Enterprise Communities Program** is a federal, state, local government partnership for stimulating comprehensive renewal--particularly economic growth and social development--in distressed urban neighborhoods and rural areas across the nation. It seeks to motivate long-term change in the designated localities and demonstrate a positive and productive working partnership among multiple layers of government. At the federal level, the program involves multiple agencies, primarily the Department of Health and Human Services, the Department of Agriculture, and the Department of Housing and Urban Development. Successful neighborhood renewal projects are developed by, rather than imposed on, communities. The most productive neighborhood revitalization projects are rooted in the vision of resident leaders and community-based organizations, not directed by federal or state action. Therefore, in seeking to stimulate community renewal, federal and state agencies should first cultivate community-based leadership and planning, then adapt their programs to address locally identified needs.

Administration on Aging
http://www.aoa.gov

8. Nineteen more states received **Aging and Disability Resource Center (ADRC) grants** this year. ADRC grants are part of the President's New Freedom Initiative and help states to organize their many long-term programs that support community living for the elderly and people with disabilities into a single system. The AoA mission is to work with a nationwide network of

organizations and service providers to make support services and resources available to older persons and their caregivers.

Agency for Healthcare Research and Quality
http://www.ahrq.gov

9. **Access to Primary Care**. Primary care is the underpinning of the health care system, and research studies have shown that having a usual source of care raises the chance that people receive adequate preventive care and other important health services. Data from AHRQ's **Medical Expenditure Panel Survey (MEPS)** reveal that: About 30 percent of Hispanic and 20 percent of black Americans lack a usual source of health care compared with less than 16 percent of whites; Hispanic children are nearly three times as likely as non-Hispanic white children to have no usual source of health care; and, African Americans and Hispanic Americans are far more likely to rely on hospitals or clinics for their usual source of care than are white Americans (16 and 13 percent, respectively, vs. 8 percent).

Centers for Disease Control and Prevention
[Includes the Agency for Toxic Substances and Disease Registry (ATSDR), in CDC's National Center for Environmental Health]
http://www.cdc.gov

10. CDC is pleased to announce the release of *Health, United States, 2005*, the 29th annual report card on the Nation's health. This year's report features an in-depth look at the 55-64 age group, which includes the oldest of the baby boomers. While many adults in their late 50s and early 60s enjoy good health, others are dealing with chronic and debilitating diseases and lack of health insurance. Minorities, primarily blacks and Hispanics, are more likely to fall into those categories. According to the report, half of U.S. adults aged 55-64 have high blood pressure and 2 in 5 are obese.

Overall Health of the Nation. The health of the Nation continues to improve overall, in part because of the significant resources devoted to public health programs, research, health care, and health education. Over the past century many diseases have been controlled or their morbidity and mortality substantially reduced. Notable achievements in public health have included the control of infectious diseases such as typhoid and cholera through decontamination of water; implementation of widespread vaccination programs to eradicate or contain polio, diphtheria, pertussis, and measles; fluoridation of water to drastically reduce the prevalence of dental caries; and improvements in motor vehicle safety through vehicle redesign and efforts to increase use of seatbelts and motorcycle helmets (1). A sharp decline in deaths from cardiovascular disease is a major public health achievement that resulted in large part from public education campaigns emphasizing a healthy lifestyle and increased use of cholesterol and hypertension-lowering medications (2). Yet even as progress is made in improving both the quantity and quality of life, increased longevity is accompanied by increased prevalence of chronic conditions and their associated pain and disability. In recent years, progress in some arenas-declines in infant and cause specific mortality, morbidity from chronic conditions, reduction in prevalence of risk factors including smoking and lack of exercise- has not been as rapid as in earlier years or trends have been moving in the wrong direction. It is equally important to keep in mind that these improvements have not been equally distributed by income, race, ethnicity, education, and geography. [See: http://www.cdc.gov/nchs]

11. **CDC Health Protection Research Guide 2006-2015**. Action: Notice and request for public comment. Summary: CDC/ATSDR announces the availability for public comment of the draft CDC Health Protection Research Guide, 2006-2015. The Research Guide will serve as a blueprint for research areas that should be addressed during the next decade by CDC and its partners in response to current and future needs and events. The Research Guide will also be used to help define the research priorities that support CDC's new Health Protection Goals, and will enable the creation of a shorter-term research agenda that stems from the goals implementation activities currently underway.

CDC is requesting input on this Research Guide because maximizing the health impact of public health research can only be achieved through the collective efforts of CDC, other federal agencies, state and local partners, academic partners, business and worker partners, non-profit organizations, professional societies and the public. Please provide input on any aspect of the Research Guide. Input is welcome. **The review and public comment period is from November 18, 2005 to January 15, 2006**. [See Health Protection Research Guide at url http://www.rsvpbook.com/custom_pages/50942/index.php; CDC is committed to reaching comprehensive Health Protection Goals]

Centers for Medicare and Medicaid Services
http://www.cms.hhs.gov

12. The Administrative Simplification provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA, Title II) **require HHS to establish national standards for electronic health care transactions and national identifiers for providers, health plans, and employers. It also addresses the security and privacy of health data.** Adopting these standards will improve the efficiency and effectiveness of the nation's health care system by encouraging the widespread use of electronic data interchange in health care.

13. **Benefits and Consequences for the Poor and the Disabled**. Excerpts. The new Medicare Part D will improve access to medications for millions of Americans. **One subgroup of beneficiaries, however, may inadvertently be made worse off: the 7.2 million people enrolled in both Medicaid (because they are poor) and Medicare (because they are elderly or disabled)**. These beneficiaries, known as the dually eligible, already receive drug benefits through state-run Medicaid programs; but as of 2006, they will be required to enroll in Medicare Part D.

The dually eligible are poorer and sicker than other Medicare patients (83 percent report fair or poor health vs. 57 percent of those who are not dually eligible), have a higher rate of mental illness or dementia (33 percent vs. 12 percent), are less educated (49 percent have graduated from high school vs. 75 percent), are more likely to be members of minority groups (43 percent vs. 16 percent), and are more likely to live in a nursing home (19 percent vs. 3 percent).[1] Of the country's 1.6 million nursing-home residents, 70 percent are dually eligible, and most take multiple medications. [Source: NEJM 353(26) 2739-2741 DEC 29, 2005; see full article online at the *New England Journal of Medicine* public website http://content.nejm.org/cgi/content/full/353/26/2739?query=TOC]

Food and Drug Administration
http://www.fda.gov

14. The FDA has issued a draft guidance that aims to further lower **children's exposure to small traces of lead present in certain candies**. In addition, FDA is concerned that there may be certain manufacturing processes or conditions that contribute to elevated lead levels in some of these candies, such as packing products or storing ingredients in improperly glazed ceramic vessels that may leach high levels of lead into the product.

Health Resources and Services Administration
http://www.hrsa.gov

15. As reported previously, HRSA's **Geospatial Data Warehouse** has been recognized and awarded for its GIS innovative technology. The true innovation of the HGDW is its combination of centralized data for query, reporting, and analysis purposes with a geospatial capability- meaning that the data can be displayed on computer maps. Those maps plot the location of all HRSA resources- grants, scholarship and loan programs, designation of underserved areas, and service demonstration programs- and overlay them with a variety of health care indicators and population features obtained primarily from the CDC and the Census Bureau. The result is a comprehensive picture that shows not only where HRSA's programs are, but also where they need to be. [See Web site: http://datawarehouse.hrsa.gov]

Indian Health Service
http://www.ihs.gov

16. The **Environmental Health Support Center** sponsors training courses on a wide variety of subjects related to the programs of the Indian Health Service's Office of Environmental Health and Engineering. Courses are advertised on a monthly basis by the IHS Area Training Coordinators. [Additional information is available by calling 505-248-4258 or through the Environmental Health Support Center public Web site at http://www.opheng.ihs.gov]

National Institutes of Health
http://www.nih.gov

17. **New NIH Roadmap Training for a New Interdisciplinary Workforce** RFA released. Executive Summary. This RFA is an initiative of the NIH Roadmap, a series of activities whose goal, in keeping with the NIH mission of uncovering new knowledge about the prevention, detection, diagnosis, and treatment of disease and disability, is to accelerate both the pace of discovery in these key areas and the translation of therapies from bench to bedside. Towards the goal of catalyzing the production of a scientific workforce capable of integrative research crossing traditional disciplinary boundaries, the National Institutes of Health

invites applications for developing and implementing novel training programs focused on interdisciplinary science. These programs will support a variety of new and innovative didactic and research experiences designed to provide students with the knowledge and research experiences necessary to develop interdisciplinary solutions to complex health problems and to increase quality and years of healthy life and eliminate health disparities. [See: RFA RM 06-006 at http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-06-006.html]

Substance Abuse and Mental Health Services Administration
http://www.samhsa.gov

18. HHS has launched a **national public service advertising (PSA) campaign** designed to encourage people who may be experiencing psychological distress following the recent hurricanes to consider seeking **mental health services**. The PSAs, the result of a partnership between SAMHSA and the Ad Council, will be distributed to 12,000 media outlets nationwide. According to SAMHSA, past research on the mental health consequences of major floods and hurricanes suggests that the psychological impacts of the recent hurricanes could be extensive. **SAMHSA estimates that - in those areas that have been significantly impacted by the hurricanes- 25 percent to 30 percent of the population may experience clinically significant mental health needs and an additional 10 percent to 20 percent may show sub-clinical, but not trivial, needs. Up to 500,000 people may be in need of assistance.**

C. Historically Black Colleges and Universities (HBCUs), Hispanic Association of Colleges and Universities (HACUs), and Other Minority Health News [A listing of HBCUs and HACUs may be found at the following websites http://www.smart.net/~pope/hbcu/hbculist.htm and

19. **Americans' Views of Disparities in Health Care-** A poll conducted by the Harvard School of Public Health, the Robert Wood Johnson Foundation and ICR/International Communications Research [released DEC 2005]. Selected highlights: Only 32 percent of Americans think that the problem of getting quality health care is worse for African Americans and Hispanics than it is for white Americans; Although most Americans are unaware of the disparities in health services provided

to African Americans and Hispanics, 65 percent of Americans say that the federal government should do more to address racial and ethnic health care disparities; and, **twenty-three percent of African Americans report that they received poor quality medical care because of their race or ethnicity, as compared to one percent of whites**. One in five Hispanic Americans report that they received poor quality medical treatment because of their accent or how well they spoke English. [See: http://www.rwjf.org/files/research/Disparities_Survey_Report.pdf]

20. New Handbook on Health Inequalities. **The Public Health Observatory Handbook of Health Inequalities Measurement,** Roy Carr-Hill and Paul Chalmers-Dixon, edited by Jennifer Lin; South East Public Health Observatory (SEPHO), Oxford England, 2005. SEPHO is one of nine regional Observatories throughout England and Wales and is a member of the Association of Public Health Observatories. This new SEPHO handbook primarily focuses on the measurement and interpretation of health inequalities. It provides a comprehensive collection of material for those concerned to document and understand health inequalities. [See report at Web site: http://www.sepho.org.uk/extras/rch_handbook.aspx]

21. **Community-Responsive Interventions to Reduce Cardiovascular Risk in American Indians and Alaska Natives** (RFA-HL-06-002). The National Heart, Lung, and Blood Institute (NHLBI), National Institutes of Health (NIH) invites applications for cooperative agreements to conduct five-year studies in American Indian/Alaskan Native (AI/AN) communities to test the effectiveness of **behavioral interventions to promote the adoption of healthy lifestyles and/or improve behaviors related to cardiovascular (CV) risk**, such as weight reduction, regular physical activity, and smoking cessation. [See url site: http://grants.nih.gov/grants/guide/rfa-files/RFA-HL-06-002.html]

22. **The Effect of Racial and Ethnic Discrimination/ Bias on Health Care Delivery** (PA-05-006). Executive Summary. The purposes of this Program Announcement (PA) from six component organizations of NIH are: (1) to improve the measurement of racial/ethnic discrimination in health care delivery systems through improved instrumentation, data collection and statistical/ analytical techniques; (2) to enhance understanding of the influence of racial/ethnic discrimination in health care

delivery and its association with disparities in disease incidence, treatment and outcomes among disadvantaged racial/ethnic minority groups; and (3) to reduce the prevalence of racial/ethnic health disparities through the development of interventions to reduce the influence of racial/ethnic discrimination on health care delivery systems in the United States. [See grants guide for this at url: http://grants.nih.gov/grants/guide/pa-files/PA-05-006.html]

23. **"Pulmonary Hypertension Surveillance: United States, 1980-2002,"** *MMWR* 54(SS05);1-28 NOV 11, 2005. Since 1980, the numbers of deaths and hospitalizations, death rates, and hospitalization rates have increased for pulmonary hypertension, particularly among women and older adults. During 1980-2000, death rates were higher for men than women; however, by 2002, no difference in rate was observed because of increasing death rates among women and declining death rates among men. Hospitalization rates were higher for men than for women until 1995; after 1995, higher rates were observed among women. Death rates since 1985 and Medicare hospitalization rates throughout the reporting period 1990-2002 have been higher for blacks than for whites. In addition, two distinct geographic clusters were observed for the highest hospitalization rates in the Medicare population and the highest death rates for pulmonary hypertension, in the western United States and in the Appalachian region. [See full CDC report http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5405a1.htm]

D. Other Related Public Health GIS News

24. *From* the Open Geospatial Consortium (OGC): OGC Web Services Progress and Plans. The **Sensor Web Enablement (SWE) thread of OWS-3 (OGC Web Services–3)** matured a unique and revolutionary framework of open standards for Web-connected sensors. It is now practical for sensors of virtually any type to connect to the Web, via open interfaces. The sensors can publish their existence, their locations and their capabilities. They can be controlled through open interfaces, and their data can be output for an array of uses. **Open standards bring these multitudes of sensors into a "virtual earth" available through open Web services**. Beyond viewing any location, we will be able to sense the environment anywhere on our globe. With this new interoperability framework for sensors, decision makers in life-critical situations can have many more sources of information than before to manage natural and human caused disasters. [See: *OGC News* NOV 2005- http://www.opengeospatial.org/press/?page=newsletter]

25. **SAIC Wins Biosurveillance Contracts from CDC** [*CQ Homeland Security News*, DEC 2005]. San Diego-based Science Applications International Corp. (SAIC)- a player in the defense contracting business- will help the CDC roll out its BioSense system by providing software and technical support to the surveillance initiative. BioSense is a nationwide program created to identify disease outbreaks and public health incidents, including potential bioterror attacks. The program collects information from doctors' offices, hospitals, pharmacies and schools to look for signs of an outbreak within a specific population. The company also will help the CDC to use statistical and data analysis techniques to detect sudden changes in a community's health status and to support rapid responses to any health crisis.

III. GIS Outreach

[Editor: All requests for Public Health GIS User Group assistance are welcomed; readers are encouraged to respond directly to colleagues]
From Zahra, Republic of Indonesia: I am a researcher in public health, and I am a government employee in the Ministry of Health, Republic of Indonesia. I have a project about **mapping diarrhea** using GIS but because this technique is a new kind of technique on health, especially in Indonesia, I need help and guidance. And there are few papers about it. Actually, I am analyzing survey data (National Health Survey) about diarrhea. I want to make maps about diarrhea spreading in Indonesia (there are 33 districts) using statistics and ArcView 3.3. Any information or resources that GIS Users can recommend to me would be appreciated. [Contact: Zahra at zahra@litbang.depkes.go.id]
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From Shelly McCoy, University of Delaware Library: I have a user looking for Health Insurance coverage for Delaware by census tract. From looking on the census.government page, I see that the smallest geographic area that there is information for is county. As a last ditch effort, does anyone know if there is more detailed statistics available by a local agency or anyone working on a project involving health insurance data? [Contact: Shelly, Head, Digital User Services Department at smccoy@udel.edu; George Yocher, Delaware Division of Public Health, helped to coordinate this request- thank you]
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From Anonymous: **Perplexing Geocoding Question**. State central cancer registries (and for that matter, national surveys) often have files with multiple years of data (e.g., cancer cases reported in 1990, 1991, 1992, . . 1999, 2000, 2001, 2002, 2003, 2004). **What base reference street file and methods should be used to assign geocodes to these types of data sets?** For example, should a 1990 base reference street file be used to assign geocodes to cases reported in 1990, a 1995 base reference street file be used to assign geocodes to the cases reported in 1995, or should the most recent base reference street file (e.g., 2005) be used to assign geocodes to all cases?

An argument potentially might be made that the most recent base reference street file should be used to geocode all the cases because: a) typically a 1-2 year "lag" often exists between the time that the information for a base reference street file is collected and the time that the base reference street file is released; b)some of the "problem geocoding" cases are ones with an address that actually exists, but where that address was not included on the base reference street file because the address did not exist at the time the information for the base reference street file was collected; and c) using the most recent file may help assure consistency in the assignment of geocodes over time (i.e., all cases would be assigned geocodes using the same base reference street file and software algorithm).

If the argument that "the most recent base reference street file" seems reasonable, then we pose one additional question that might be: **What is the most cost-effective strategy for resources for geocoding cancer registry cases over time? For example, should state cancer registries use resources to assign geocodes to cancer cases each year? Or, should cancer registries only assign geocodes after all the data for a study time period of interest has been collected?** [Responses are welcome and should be directed to the Editor at cmc2@cdc.gov]

IV. Public Health GIS Presentations and Literature
NCHS/CDC Cartography and GIS Guest Lecture
Join us February 15, 2006
"An Overview of a Bayesian Approach to Disease Mapping," Mary M. Louie, Ph.D., Associate Service Fellow, National Center for Health Statistics, CDC. Abstract. Disease mapping plays an enormously vital role in spatial epidemiology, allowing one to assess geographic patterns in disease risk and perhaps more importantly, to uncover risk factors associated with disease. We present the standard disease mapping framework, and discuss the challenges associated with using standardized rates and the task of quantifying structured and unstructured variation in excess of the standard measurement error. We then present a Bayesian framework, the so-called "borrowing strength across units," which addresses the deficiencies in the standard framework, resulting in maps of smoothed rates. To illustrate the methodologies throughout, we provide results from the analysis of mortality data from gastric cancer in a population of males from Tuscany, Italy.

<div align="center">*******</div>

CDC's *Emerging Infectious Diseases, MMWR* and *Preventing Chronic Disease*
(1)Emerging Infectious Diseases
Emerging Infectious Diseases (EID) is indexed in Index Medicus/Medline, Current Contents, Exerpta Medica, and other databases. EID is part of CDC's key plan for combating emerging infectious diseases; one of the main goals of CDC's plan is to enhance communication of public health information about emerging diseases so that prevention measures can be implemented without delay. The **January 2006 12(1)** edition of EID is now online. This edition is devoted mainly to articles on pandemic influenza, SARS and other emerging infectious diseases. [See EID website for this and other timely reports at: http://www.cdc.gov/ncidod/EID/index.htm]

(2) Morbidity and Mortality Weekly Report
Selected articles from CDC's *Morbidity and Mortality Weekly Report* (MMWR): [Readers may subscribe to MMWR and other CDC reports, without cost, at site http://www.cdc.gov/subscribe.html as well as access the MMWR online at website http://www.cdc.gov/mmwr. Note: Efforts are made to include themes which may lend themselves to spatial distribution] Vol. **54(50)**- QuickStats: Trends in Mean Total Cholesterol Among Adults Aged 20-74 Years, by Age Group: United States, 1960-1962 to 1999-2002; Notice To Readers: Publication of *Health, United States, 2005*; Vol. **54(49)**- West Nile Virus Activity, United States, January 1-December 1, 2005; QuickStats: Total Fertility Rates, by State, United States, 2003; Vol. **54(45)**- QuickStats: Percentage of Adults Aged ≥50 Years Told by a Health-Care Professional That They Had Diabetes, by Age Group, United States and Canada,

2002-2003; Vol. **54(44)**- Cigarette Smoking Among Adults, United States, 2004; State-Specific Prevalence of Cigarette Smoking and Quitting Among Adults, United States, 2004; Vol. **54(48)**- Epidemiology in Action Course; Epidemiology in Action: Intermediate Methods; Epi Info: A Course to Develop Public Health Software Applications; Vol. **54(47)**- Adult Participation in Recommended Levels of Physical Activity: United States, 2001 and 2003; QuickStats: Rate of Very Low Birthweight, by Age of Mother and Multiple-Birth Status: United States, 2003; Vol **54, SS-8**- Surveillance for Certain Health Behaviors Among States and Selected Local Areas: United States, 2003.

(3) Preventing Chronic Disease
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Mapping the social demography and location of HIV services across Toronto neighbourhoods, Kaukinen C, Fulcher C, *Health Soc Care Comm* 14(1):37-48 JAN 2006;

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Geostatistical analysis of disease data: estimation of cancer mortality risk from empirical frequencies using Poisson kriging, Goovaerts P, *Int J Health Geogr* 4(31) DEC 2005 (see breast cancer maps and discussion); **Results**. The analysis of age-adjusted mortality rates for breast and cervix cancers illustrated some key features of commonly used smoothing techniques. Because of the small weight assigned to the rate observed over the entity being smoothed (kernel weight), the population-weighted average leads to risk maps that show little variability. Other techniques assign larger and similar kernel weights but they use a different piece of auxiliary information in the prediction: global or local means for global or local empirical Bayes smoothers, and spatial combination of

surrounding rates for the geostatistical estimator. Simulation studies indicated that Poisson kriging outperforms other approaches for most scenarios, with a clear benefit when the risk values are spatially correlated. Global empirical Bayes smoothers provide more accurate
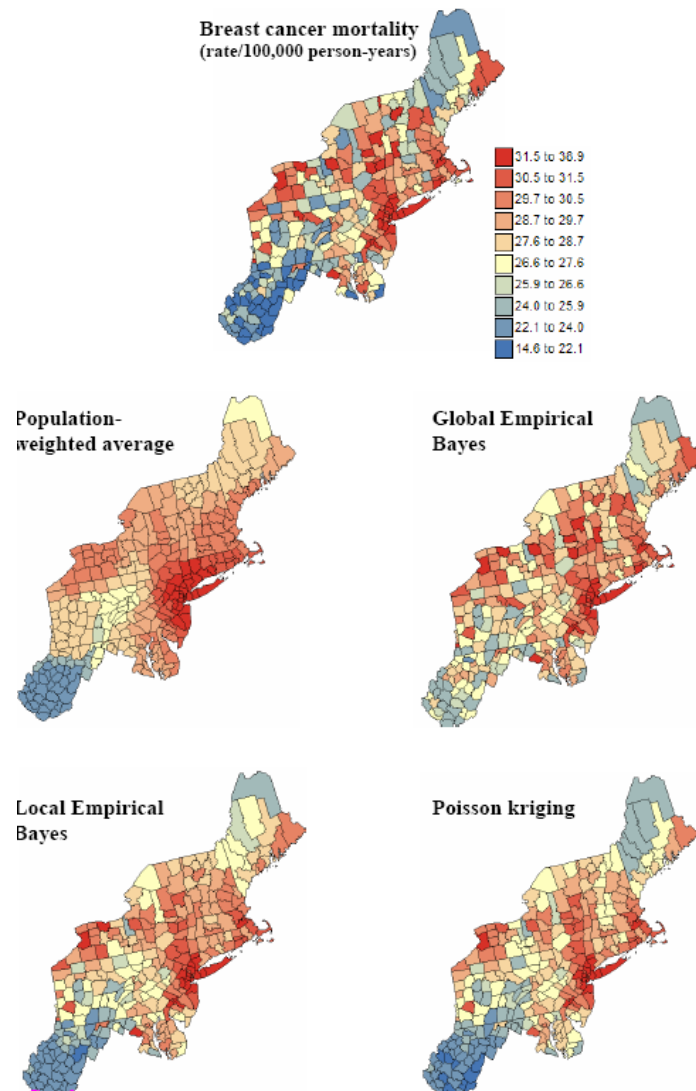
predictions under the least frequent scenario of spatially random risk. **Conclusion**. The approach presented in this paper enables researchers to incorporate the pattern of spatial dependence of mortality rates into the mapping of risk values and the quantification of the associated uncertainty, while being easier to implement than a full Bayesian model. The availability of a public-domain executable makes the geostatistical analysis of health data, and its comparison to traditional smoothers, more accessible to common users. In future papers this

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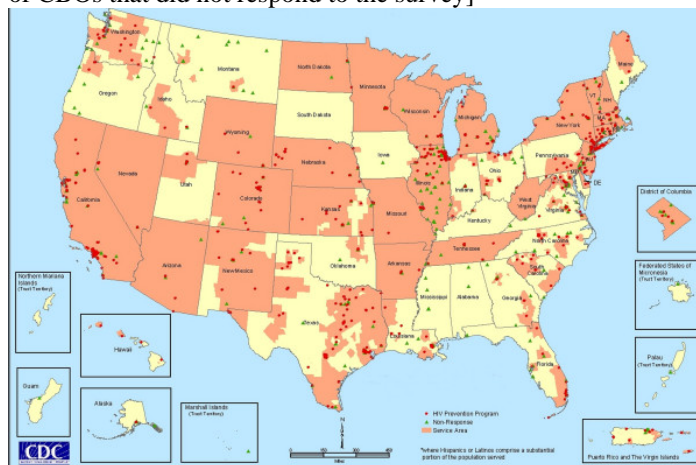
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● Locations with reported plague outbreak   100 0 100 200 Kilometers
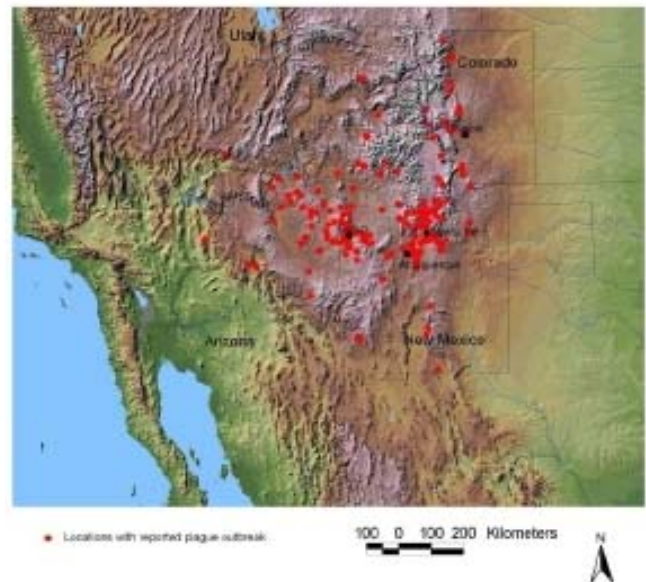
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New Survey: Public Unprepared for Emergency

Katrina and Rita: Public Not Moved To Prepare
"The bottom line from these surveys is that while almost all Americans have been psychologically affected by all these tragedies, most Americans have yet to be personally motivated to prepare for what may be ahead," Peter Hart, Research and Public Opinion Strategies, for The Council for Excellence in Government and the

American Red Cross, from the December 2005 Council's *e-News*. Excerpts. A new poll by the Council and the American Red Cross finds the public less prepared for an emergency today than it was before Hurricane Katrina struck the Gulf Coast. That is the key finding of a new poll released by the Council for Excellence in Government and the American Red Cross. The survey shows that a plurality of Americans (38%) was not motivated at all by Hurricanes Katrina and Rita to prepare for an emergency. Only 12% say they've done a great deal to prepare for a natural disaster, terrorist attack or other major emergency.

The percentage of Americans who said they hadn't prepared because they didn't know what to do actually increased by nine percentage points after Katrina. Despite the televised pleas of family members separated by Katrina, most Americans still have no plan on how to communicate with family members during or after a disaster. Just 36% report that they have prepared a communications plan to contact loved ones in an emergency if they get separated. Only one-quarter have established a specific meeting place in the event that they or their family are evacuated or cannot return home. Only one in three have stored extra food or bottled water for emergencies. And only one in ten have stocked up on first aid kits or emergency supplies since Katrina.

More than half of Americans say that one reason they have not done more to prepare is because they do not think another disaster is likely to happen to them. The poll, which was originally conducted before and during Hurricane Katrina (August 26-31) and then replicated two months later (October 26-30), provides a unique freeze-frame of public attitudes before and then after the flood waters and headlines receded. [See full report at: http://www.excelgov.org/UserFiles/File/America%20Get%20Prepared%20report.pdf]

GIS Research
Expansion of Simple Models for Bioterrorism Response to Determine Demographics and Critical Infrastructure Needs

Jim Tobias, GIS Programmer, Science Applications International Corporation, Centers for Disease Control and Prevention, National Immunization Program [Sequel article on Geographic Information Systems (GIS) and Bioterrorism/ Disaster Planning, see November 2005 edition]

Introduction. The first article, published in the November 2005 edition of CDC's *Public Health GIS News and Information*, described the construction of simple models to find first responders during a potential attack on the Atlanta MARTA train system. This article will expand upon this model and go beyond simply finding first responders.

Purpose: The purpose of this paper is the expansion of a simple model, which found first responders, to provide more detailed information for emergency management. The expanded model will examine disaster-area infrastructure including population demographics, hospital bed size capacity, special-needs locations, and potential evacuation routes within the disaster area.

Methods: The process of Model Building (for this paper) involved the use of specific software: ArcGIS 9.1, ArcGIS Spatial Analyst Extension, ArcGIS Model Builder, and Python. The Spatial Analyst Extension is required for Model Building.

Model 1 (basic)
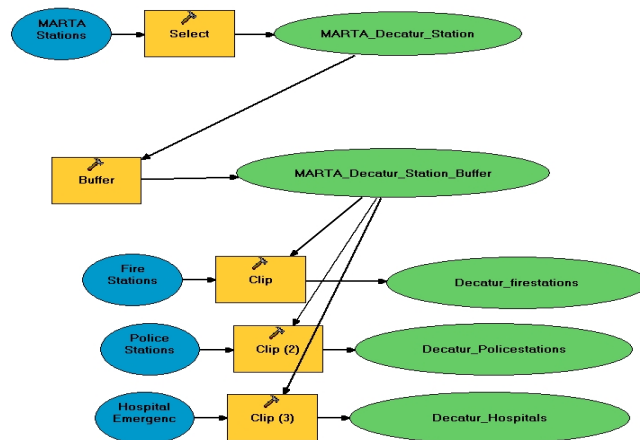
All models make basic assumptions. The assumptions that the expanded model will make are as follows: Disaster at a specific Atlanta MARTA station will affect a 5 mile radius around the station; First responders who are within 5 miles of the MARTA station will respond to the disaster; The Census tracts within the 5 mile buffer area will contain the affected population [we will assume the entire population of a tract is affected even if only part of the tract is contained within the 5 mile buffer]; Nursing homes and schools that may need to be evacuated or used as emergency shelters will be contained within the 5 mile buffer area; and, Evacuation routes will constitute major interstates.

Step 1. Expanding the basic model to answer population questions. Part of the flexibility of model building is that

simple models can be used as building blocks for more complex models. The first step is to re-examine the simple model built in the previous article to find first responders.

The model selected a specific Atlanta MARTA station (the Decatur station) and created a five-mile radius buffer around that station. The model then clipped features such as fire stations, police stations, and hospital emergency rooms by the five-mile buffer.

First responders and emergency managers would benefit from more information about the disaster-area. It would be helpful if to provide first responders with answers to specific questions about the composition of the disaster area. Some expected questions might be: What is the age distribution of this area? Does the area have a large population of senior citizens or infants that may require assistance? What is the healthcare capacity of the disaster-area? Will the hospitals be able to handle large numbers of disaster victims? Where are the potential evacuation routes for disaster victims?

The simple model can be expanded to provide some back-of-the-envelope answers to these basic questions. The next step is to determine the potential population and demographic impact of a disaster on the community. A Census tract layer is added to the model and clipped by the 5 mile buffer in the same manner as fire stations, police stations, and hospital emergency rooms. The expanded model looks like this:

Model 2 (added census tract layer for demographics)
Notice that the model has simply added a 4th layer to be clipped by the 5-mile buffer. The 4th layer is a Census

Tract feature class with population demographics (age, race, sex). Next, the model will be further expanded to clip schools and nursing homes within the 5-mile buffer.

Model 3 (Added schools and nursing homes)
Notice that the model has been further expanded to include a 5th and 6th layer to be clipped by the 5-mile buffer. The 5th layer to be clipped is a feature class of schools. The 6th layer to be clipped is a feature class of nursing homes. This will allow us to map the schools and

nursing homes within the disaster area.

Results. This model will build all the feature classes needed to create a map with affected census tracts, hospitals scaled by bed size capacity, and age demographics of the affected population. Note: This map is created manually, but templates can be made to speed map production in the case of an emergency. The model creates all feature classes used in this map.

The map displays the hospital bed size capacity by a series of size proportional symbols with the standard Hospital "H" enclosed in a circle. Pie charts, sized proportionally by total population, and wedged by age group are displayed within each affected Census tract within the disaster area. Local Interstate highways are also present on the map (we will assume that these will be used as evacuation routes). In this manner, one can get a quick visual on the approximate healthcare bed capacity, populations affected, and evacuation routes in one map. Senior citizens have the darkest red pie wedges and small children have the darkest blue pie wedges. The

reader also can quickly see where groups of persons who may require special needs and assistance with evacuation are located (both in facilities and within residential populations).

Conclusions: The purpose of this paper was the expansion of a simple model to provide more information for emergency management. A simple model was easily expanded to incorporate additional layers and create feature classes needed to answer basic emergency management questions.

In this scenario, an attack has occurred on the Decatur MARTA station on the East-West line of the Atlanta MARTA system. An expanded model created a 5-mile buffer (disaster area), selected the first responders,

Decatur MARTA Station, 5-Mile Radius, First Responders, Schools, Nursing Homes, and Age Demographics by Census Tracts, 2000
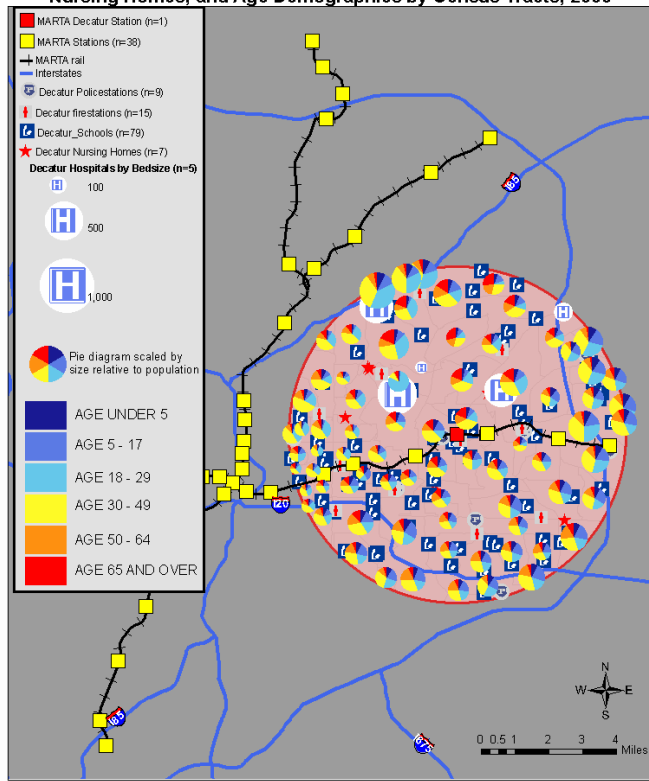
identified hospital emergency rooms, bed size capacity, and population demographics within the disaster area. A single map was created of the model generated feature classes to present information. A total of 79 schools and 7 nursing homes were located within the disaster area. Major interstate highways in the vicinity include I-20 (East-West), I-85 (just north of buffer) and the I-285

beltway loop that surrounds Atlanta.

This paper demonstrates how a simple model can be expanded to accommodate additional layers and variables of concern. Simple models can be used as building blocks for more complex models that yield greater information for emergency management personnel. The use of models as building blocks allows use and re-use of models without building from scratch each time.

Models are representations of reality or potential realities. Often, models are criticized because they over-simplify a reality. This paper shows that simple models can easily be expanded to accommodate additional variables of concern. Concerns about the limitations of models are outweighed by the need for disaster planning and a back-of-the-envelope method to examine various disaster scenarios. Planners should begin to build very simple models for disaster response to anticipate various public health threats. Simple models can be expanded to deal with various scenarios and public health threats. All models can be shared within an enterprise geodatabase.

Hurricanes Katrina and Rita tested the ability of the government agencies to respond to a national disaster. Certainly, there were failures at all levels of government in response to a disaster that was forecasted well in advance. Planning and preparedness are the keys to effective disaster response. Models will not be perfect, but will help to improve disaster scenario response in advance of a crisis. Effective response requires an effective plan. Public health should create plans for disaster response that anticipate potential catastrophes such as major earthquakes, hurricanes, floods, building collapses, airliner disasters, and terrorist attacks on the built environment. [Author contact: Jim at jtobias@cdc.gov]

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V. Related Census, HHS, FGDC and Other Federal/State Developments
Reaffirming the U.S. Environmental Protection Agency's Commitment to Environmental Justice

[EPA Administrator Stephen L. Johnson, NOV 4, 2005] The U.S. Environmental Protection Agency maintains an ongoing commitment to ensure environmental justice for all people, regardless of race, color, national origin, or income. In recognizing that minority and/or low-income communities frequently may be exposed disproportionately to environmental harms and risks, EPA works to protect these and other burdened communities from adverse human health and environmental effects of its programs, consistent with existing environmental and civil rights laws, and their implementing regulations, as well as Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." (Feb. 11, 1994) Ensuring environmental justice means not only protecting human health and the environment for everyone, but also ensuring that all people are treated fairly and are given the opportunity to participate meaningfully in the development, implementation, and enforcement of environmental laws, regulations, and policies.

This memorandum reaffirms EPA's commitment to environmental justice and directs EPA to more fully and effectively integrate environmental justice considerations into its programs, policies, and activities. Specifically, I am directing the Agency to incorporate environmental justice considerations into its planning and budgeting processes. I have asked the Chief Financial Officer to issue supplemental guidance to incorporate environmental justice considerations through the use of the existing Goal Teams process. In the Strategic Plan for Fiscal Years 2006-2011, EPA will: (1) establish, as appropriate, measurable environmental justice commitments (such as strategic targets) for eight national environmental priorities and other critical areas of focus; and (2) identify the means and strategies to achieve the commitments and measure outcomes to help ensure that Agency resources reach disproportionately burdened communities, including disproportionately burdened minority and/or low-income communities.

The eight national environmental justice priorities include: **Air**- Reduce Asthma Attacks; Reduce Exposure to Air Toxics; **Enforcement and Compliance**- Ensure Compliance; **Toxics**- Reduced Incidence of Elevated Blood Lead Levels; **Water**- Fish and Shellfish Safe to Eat; Water Safe to Drink; **Land Preservation and Restoration**- Revitalization of Brownfields and Contaminated Sites; **Cross-Cutting**- Collaborative Problem-Solving.

The national environmental justice priorities will create an Agency-wide focus on issues, such as reduction of asthma attacks, that are relevant nationwide and which environmental justice advocates and others have identified as critical environmental justice issues. However, I also encourage the National Program Managers and the Regions to identify additional priorities that address opportunities beyond those identified above.

I also ask for your continued support and commitment to consider environmental justice in every aspect of our work to the greatest extent practicable and permitted by law. This includes: 1. Developing and conducting EPA's programs, policies, and activities that substantially affect human health and the environment to ensure the fair treatment of all people, including minority and/or low-income populations; 2. Ensuring fair and equitable enforcement of protective environmental laws for all people, including minority and/or low-income populations; 3. Ensuring greater public participation in the Agency's development and implementation of environmental regulations and policies; and 4. Improving research and data collection for Agency programs relating to the health and environment of all people, including minority and/or low-income populations.

EPA will continue to implement its programs and activities to ensure that they do not adversely affect populations with critical environmental and public health issues, including minority and low-income communities. The Office of Environmental Justice and the Environmental Justice Coordinators in each headquarters program office and region are available to assist you. OEJ's Director, Barry E. Hill, can be reached at (202) 564-2515. Thank you all for your attention to this important environmental and health issue. Together, we can all do our part to ensure that everyone has a safe and healthy environment in which to live, learn, work, and play. [http://www.epa.gov/compliance/resources/policies/ej/admin-ej-commit-letter-110305.pdf]

Federal Geographic Data Committee (FGDC)

[The Federal Geographic Data Committee (FGDC) is an interagency committee, organized in 1990 under OMB Circular A-16, which promotes the coordinated use, sharing, and

dissemination of geospatial data on a national basis. The FGDC is composed of representatives from seventeen Cabinet level and independent federal agencies. The FGDC coordinates the development of the National Spatial Data Infrastructure (NSDI). The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data. The 19 federal agencies that make up the FGDC, including HHS, are developing the NSDI in cooperation with organizations from state, local and tribal governments, the academic community, and the private sector. See http://www.fgdc.gov]

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2006 Grant Opportunities
National Spatial Data Infrastructure
Cooperative Agreements Program

The National Geospatial Programs Office (NGPO) of the US Geological Survey announces the 2006 NSDI Cooperative Agreements Program (CAP). **The CAP grant provides seed funds to assist organizations in implementing the components of the National Spatial Data Infrastructure (NSDI)**. Eligible activities include participating in the NSDI Clearinghouse Network, Geospatial One-Stop portal, National Map collaborative programs, web service interoperability, geospatial organizational collaboration, metadata documentation and harvesting, and framework theme standards. The 2006 categories include: Metadata Training and Outreach; Framework Client Development; Fifty-States Initiative; Canadian-US SDI Development; and Geographic Information Integration and Analysis. **The CAP is open to all U.S. organizations.**

2004 NSDI
Cooperative Agreements Program (CAP)
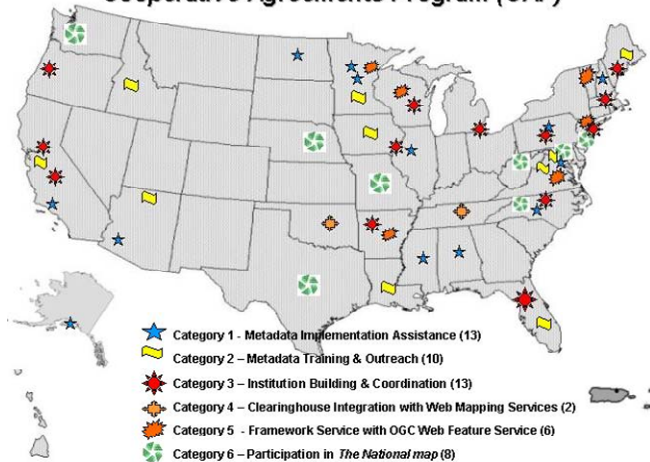
The Federal Geographic Data Committee (FGDC) sponsors the CAP to promote the technologies, standards,

best practices and organizational collaboration vital to data integration, partnerships for data investment and speedy delivery of geospatial products to support government. The FGDC consists of 19 Federal agencies in collaboration with State, local and Tribal governments, academic, non-profit and the private organizations. In 2006, approximately 24 projects will be awarded. This opportunity closes February 1, 2006. [Application information, funding categories and materials describing the CAP program and past year's projects can be accessed on-line at www.fgdc.gov or www.grants.gov; For more information on the CAP contact David Painter at (703) 648- 5513 or email dpainter@fgdc.gov]

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FGDC Geospatial Grant Guidance to
Federal Agencies

The purpose of this document is to offer guidance to Federal agency program managers seeking to modify their grant program announcements to ensure Federal grant dollars are wisely invested when grantees collect, maintain, distribute, use or preserve geospatial data during grant project execution. **This guidance to Agencies also acts as an outline for the actions needed to be in compliance with OMB passback on geospatial grant related activities associated with Geospatial One-Stop and Grants.gov.**

Established by Executive Order 12906, the National Spatial Data Infrastructure (NSDI) promotes the sharing of geospatial data throughout all levels of government, the private and non-profit sectors, and the academic community. It provides a national vision for geographic information that includes processes and standards needed to facilitate data sharing, a distributed network of technology, and cross-organizational partnerships. **There are six basic building blocks of the NSDI: metadata, clearinghouse, standards, framework geospatial data, and partnerships. NSDI implementation benefits are: reduced duplication of effort; improved data quality; reduced costs related to geographic information; geographic data made more accessible; increased benefits of using available data; and, increased data availability.**

Federal agencies recognize the value of incorporating digital geographic information resources into their business operations and many are actively doing so. In fact, some agencies have established or are expanding grant programs to fund geospatial assets at State and local levels. Federal grant programs that

provide funding for geographic information resources have the opportunity as well as a responsibility to support the NSDI by requiring grant projects be in compliance with applicable geographic information standards developed and endorsed by standard setting bodies including the FGDC, the American National Standards Institute (ANSI) and the International Standards Organization (ISO). Agencies are strongly urged to also require that grants specify compliance with the Open Geospatial Consortium (OGC) with regard to hosting data and related catalogs on the Internet to facilitate standards-based data and information exchange. [Issued December 16, 2005; See full report at: http://www.fgdc.gov]

Recent Government Accountability Office (GAO) Reports, 2005
[See: http://www.gao.gov]

Web Site(s) of Interest This Edition

http://www.brookings.edu/metro/pubs/200512_katrinaindex.htm
Katrina Index: Tracking Variables of Post-Katrina Reconstruction, The Brookings Institution. Three months since Hurricane Katrina it remains difficult to ascertain what progress has been made in rebuilding New Orleans and its region. Using a wide array of about 50 economic and social indicators, the Metropolitan Policy Program has compiled the first in a series of monthly snapshots of economic and both short term and long term reconstruction trends, finding that the area remains mired in a state of emergency still.

http://www.socialmedicine.org **Social Medicine Portal**. Developed by faculty members of the Department of Family and Social Medicine of the Albert Einstein College of Medicine, the goal in creating this site is to link together the diverse international community of people working in social medicine and health activism. Social medicine (social environment in which medicine operates) looks at these interactions in a systematic way and seeks to understand how health, disease and social conditions are interrelated.

http://www.muslimmentalhealth.com **The Journal of Muslim Mental Health**. This journal intends to identify the mental health care needs of Muslims. Establishing a peer reviewed and refereed academic journal will encourage research in this field and provide a forum for the development of culturally sensitive psychometric scales, faith-based psychotherapy techniques, outcome studies on mental health interventions in Muslim populations, etc. The journal is provided by Muslim Mental Health Incorporated in conjunction with New York University's Center for Global Health.

http://geog.hku.hk/gislab/Seminars/Seminars_html.htm Site of the **GIS Laboratory, Department of Geography, University of Hong Kong**. The Department and the GIS Laboratory have undertaken research on environmental assessment, disease mapping, transport analysis, and demographic studies using the approach of geographic modelling. They comprise a GIS laboratory and a team of GIS researchers experienced in spatial modelling. The Laboratory features a wide variety of state-of-the-art hardware and software for geodata processing and geostatistical analysis.

http://www.geography.wisc.edu/~harrower/dissertation/files/Europe41_AIDS.html Assistant Professor Mark Harrower, Department of Geography, University of Wisconsin, has a tool for time-series visualization of AIDS cases. He calls this technique, **visual benchmarking**, that allows the map user to dynamically display multiple time periods simultaneously in order to better understand geographic change and cope with visual complexity. More information can be found on his homepage at site http://www.geography.wisc.edu/~harrower.

http://epp.rtpi.org.uk/diary **Spatial Planning and Health**. The Royal Town Planning Institute (RTPI) announces a one-day conference, February 16, 2006, in Birmingham, England, that will play an important role in facilitating the involvement of health agencies in the plan making process and in improving the effectiveness of statutory impact assessments. The Network has been set up by the RTPI to provide a clear and effective voice for all its members with an interest in Environmental Planning and Protection. Over the coming year the RTPI Environmental Planning and Protection Network will be campaigning and working with other environment professionals on issues of topicality including: Strategic Environmental Assessments; Sustainability Appraisals; Climate Change; Environmental Capacity; and, Health and Social Impact Assessments.

http://www.preventioninstitute.org **Prevention Institute** is a non-profit national center dedicated to improving

community health and well-being by building momentum for effective primary prevention. Primary prevention means taking action to build resilience and to prevent problems before they occur. The Institute's work is characterized by a strong commitment to community

participation and promotion of equitable health outcomes among all social and economic groups. Since its founding in 1997, the organization has focused on injury and violence prevention, traffic safety, health disparities, nutrition and physical activity, and youth development.

Final Thoughts

Remember When? Human Lead Absorption- Texas, *MMWR* 1973;22:405-7 (**December 8, 1973**): (Excerpts) In December 1971, the City-County Health Department in El Paso, Texas, discovered that an ore smelter in El Paso was discharging large quantities of lead and other metallic wastes into the air. Between 1969 and 1971, this smelter had released 1,116 tons of lead, 560 tons of zinc, 12 tons of cadmium, and 1.2 tons of arsenic into the atmosphere through its stacks. It may be estimated from this prevalence survey, using 1970 U.S. Census data, that at least 2,700 persons 1-19 years of age in El Paso had blood lead levels greater than or equal to 40 uG% at the time of the survey. These results indicate that the problem of undue lead absorption affects persons across all of south and west El Paso to a distance of at least 4 miles from the smelter. Lead emitted by the smelter and deposited in soil and dust would appear to be the major source of the lead absorbed by humans; the accumulation in the soil and dust of emitted lead is facilitated by several features of the local environment, particularly the aridity, the sheltering effect of the high mountains, and the frequent thermal inversions. Ingestion of lead-based paint may account for

LEAD SURFACE SOIL LEVELS
EL PASO, TEXAS, AND DONA ANA COUNTY, NEW MEX
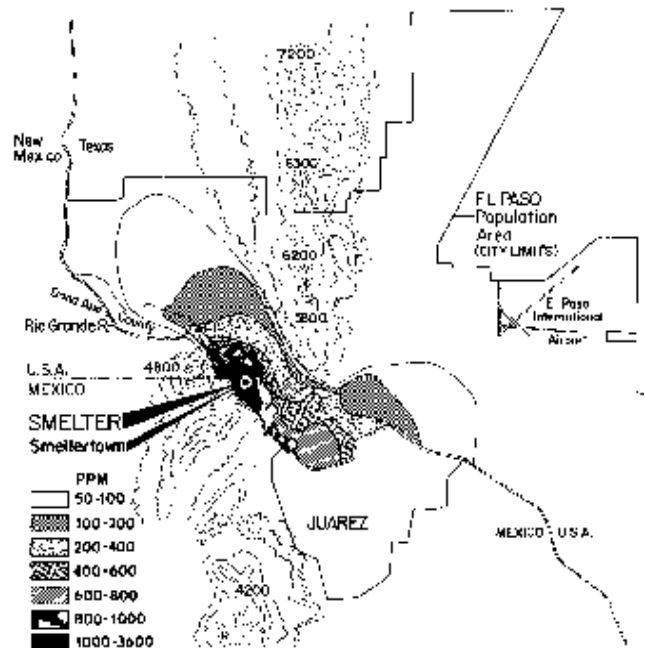
a small fraction of cases of undue absorption (at most 1/3) in the youngest children. Careful neurologic and psychologic studies of persons in El Paso with blood lead levels greater than or equal to 40 uG% have been conducted and are being compared with results of similar studies in a matched group with lower lead levels. This story will make it possible to ascertain objectively whether any persons are suffering subtle but possibly permanent neurologic or psychologic sequelae from prolonged lead absorption.

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APPENDIX: MAPPING HEALTH INEQUALITIES
[Eleventh in Collaborative Series: See also May, July, September, November 2004, January, March, May,
July, September and November 2005 editions]

Children Living in Severely Distressed Neighborhoods and Poor Housing

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Poverty rates for children are higher than any other age group[1] and children living in poor neighborhoods are likely to be adversely affected by both the conditions of the neighborhood and the physical condition of the their home. Therefore we consider here both the exposure of children to distressed neighborhood conditions and to the condition of the housing structures in which they live.

Distressed Neighborhoods
Since poverty is geographically concentrated, children living in families below the poverty level are likely also to be living in neighborhoods with high poverty rates. As a result they are not only deprived due to their own family's poverty but are also exposed to an environment of deprivation and distress in the neighborhoods where they spend most of their time. Their friends, neighbors, and classmates are likely to be from low income households with diminished expectations for educational and occupational achievement.

It is recognized that the social condition of the neighborhood is an important determinant in residential satisfaction and stresses that are associated with where one lives.[2] In a report by O'Hare and Mather, the Annie E. Casey Foundation and the Population Reference Bureau reported in 2003 that:

> Between 1990 and 2000, there was a decrease in the number of children living in high poverty neighborhoods, but the picture provided by the decrease in poverty levels alone is incomplete and potentially misleading. Using a more comprehensive measure of neighborhood quality, we found that the number of children living in severely distressed neighborhoods increased significantly between 1990 and 2000.[3]

Their study found that despite the booming economy of the 1990s, the number of children living in severely distressed neighborhoods increased from 4.7 million in 1990 to 5.6 million in 2000 (an 18 percent change). The number of adults living in such neighborhoods also increased, from 10.4 million to 12.5 million (20 percent increase) during the 1990s.[4]

And racial disparities are pronounced. Of the 5.6 million children growing up in severely distressed neighborhoods, 55 percent were Black and 29 percent were Hispanic. Over a quarter of all Black children (28 percent) and more than one in 10 Hispanic children (13 percent) lived in severely distressed neighborhoods, compared with 1 percent of non-Hispanic White children. The increase in children living in severely distressed neighborhoods during the 1990s is a cause for concern because neighborhoods influence many health and safety outcomes for children. The high concentration of Black and Hispanic children in disadvantaged neighborhoods indicates that a significant segment of our most vulnerable children are not likely to get the kinds of support they need to thrive.

We replicated the O'Hare and Mather methodology for Cuyahoga County and the specific neighborhoods and their municipalities that are affected by this condition.[5] The map of severely distressed census tracts shows the neighborhood concentrations of these types of census tracts.

One-third of Cuyahoga County's children lived in severely distressed neighborhoods; 28 percent of youths ages 6 to 17 lived in these neighborhoods. Almost two-thirds of both African American (64 percent) and Hispanic (65 percent)

youths were in such neighborhoods. We found that three municipalities in Cuyahoga County had neighborhoods classified as severely distressed– Cleveland, East Cleveland, and Highland Hills.[6]

Severely Distressed Neighborhoods
Cuyahoga County, Ohio, 2000 (map below)

Statistical Planning Areas (SPAs) are neighborhoods grouped by census tract

Source: U.S. Census 2000
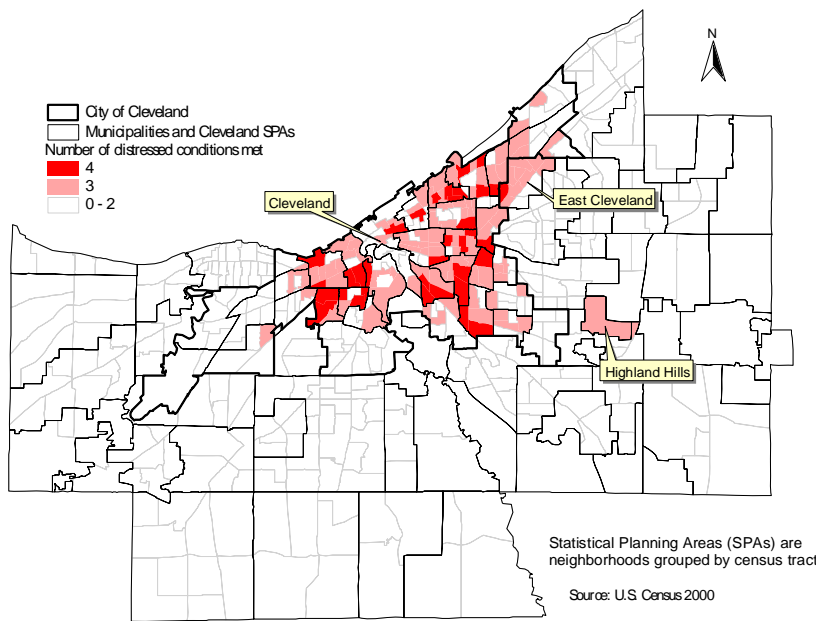
More than half (56 percent) of all Cleveland youths lived in severely distressed neighborhoods in 2000. These youths were disproportionately African American and Hispanic. Approximately two-thirds of these minorities were in severely distressed Cleveland neighborhoods, compared to a third (35 percent) of White youths. Younger children were also more exposed to these conditions than older children or the general population.
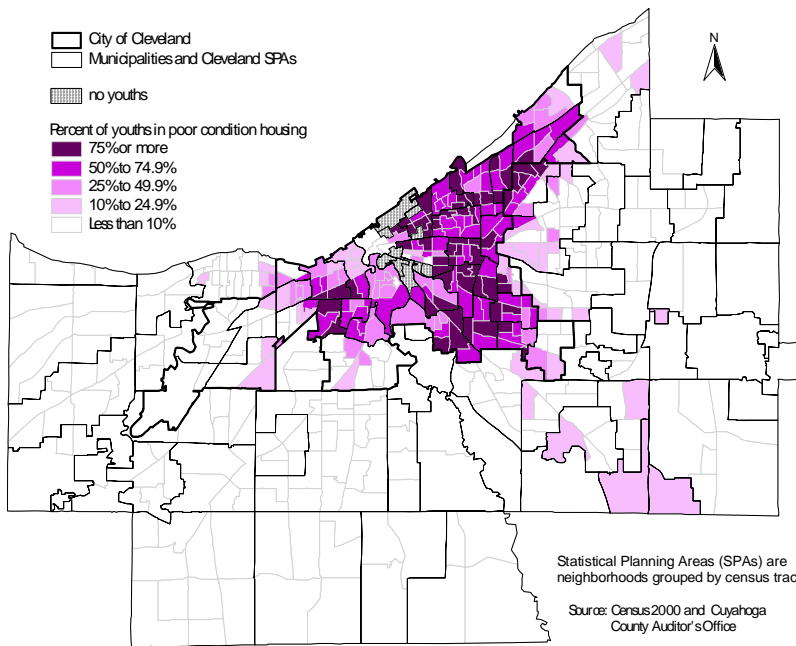
Housing Condition
While blighted neighborhoods pose a gamut of potential physical and psychological problems, the home itself may be even a more important environment for quality of life and the development and maturation of youths. Children that live in poor-to-unsound-condition housing may suffer from health and safety problems. Such conditions include structural defects and may be associated with the presence of lead or asbestos, as well as rodent infestations.

For this study the proportion of youths ages 6 to 17 living in fair-to-poor housing is estimated based on the proportion of residential housing units rated by the Cuyahoga County Auditor as in fair, poor, very poor, and unsound condition in each census tract. We refer to this as "poor condition" housing. Other condition categories range from average to excellent.[7] Estimates for the youth-age categories are based on census tract population and the proportion of housing units in poor condition.

We found that youths were disproportionately living in fair-to-unsound housing in 2000. While approximately 16 percent of the county's housing units were in poor condition and 18 percent of the general population was housed in them, an estimated 25 percent of youths (59,140) lived in those units. Younger children were even more concentrated in poor housing – 30 percent of those ages six to nine (24,720). This is likely due to younger families generally having lower incomes and living in poorer housing.

Cleveland's youths were even more deprived of living in average-to-good quality housing than the rest of Cuyahoga County. While 42 percent of the housing units were in poor-condition, an estimated 54 percent of the youths lived in that housing. Younger children, ages six to nine, were most often living in poor housing – 61 percent versus approximately 50 percent for the older youth cohorts.

Mostly east-side neighborhoods of the City of Cleveland had 75 percent or more of their youths living in poor-condition housing.[8] In contrast, three far-west-side Cleveland neighborhoods had lower rates than the suburban average.

Youths Living in Poor-Condition Housing
Cuyahoga County, Ohio, 2000 (map left)

Though much less disproportionately than in the City of Cleveland, youths in the suburbs also had higher rates of living in poor-condition housing than the general population – 6.9 percent versus 5.6 percent, respectively. One suburban municipality, East Cleveland, which is adjacent to the City of Cleveland, had an exceedingly high rate of youths living in poor-condition housing (74.2 percent). Like Cleveland, the suburbs' younger cohorts had the highest percentages of children living in the poorer-condition housing of the community. Again, this is likely due to the lower incomes and limited housing choices among younger families. In the case of the inner-ring, or transitional,[9] suburbs, it may also reflect recent in-migration of younger and larger families at or near the poverty level that are less able to afford the community's better housing.

Percent African-American Population
Cuyahoga County, Ohio, 2000 (map below)
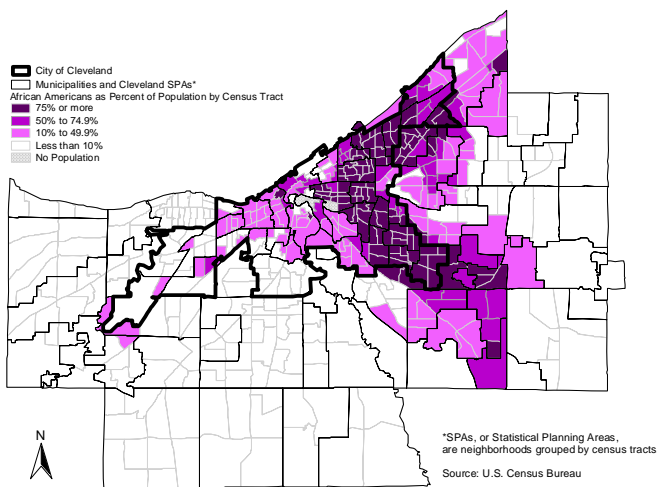
Indeed, the transitional suburbs have more housing and a higher percentage of housing in the poor-condition categories than the remaining suburbs. As was found elsewhere, a disproportionate percentage of younger youths lived in poor condition housing. The remaining (non-transitional) suburbs had some, but little, difference in housing conditions among their youths. Yet even in the communities with the lowest overall rates, more than 100 youths in each community were estimated to be living in poor-condition housing in 2000. All together, more than 10,000 youths lived in poor-condition housing in the suburbs in 2000.

Children in Poor Housing in Distressed Neighborhoods

As the first two maps illustrate, there is much overlap in the geographic distribution of these two indicators of the conditions in which children live. In fact, in the 131 census tracts that were classified as distressed neighborhoods almost half (49 percent) of the children were estimated to be also living in poor housing, versus 8 percent of children in the 370 census tracts that were not classified as distressed neighborhoods. Another way to look at the degree overlap of these two conditions is that two-thirds (67 percent) of all the youth that were estimated to be living in poor housing also lived in distressed census tracts.

Clearly, a very large segment of the county's children are not only experiencing family poverty, but also facing a double jeopardy – where their lives are set in an environment in which the distressed condition of their neighborhood is coupled with poor conditions in their own housing.

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[1] The Census reports that the poverty rate for children (persons under 18) was 18.1% in 2004, while the overall poverty rate for all ages was 13.1%.

[2] See Alan Speare, Sidney Goldstein, and William Frey, *Residential Mobility, Migration, and Metropolitan Change*, Ballinger Publishing Company, Cambridge, Massachusetts, 1975.

[3] "The Growing Number of Kids in Severely Distressed Neighborhoods: Evidence from the 2000 Census," by William O'Hare and Mark Mather, Annie E. Casey Foundation and the Population Reference Bureau, revised October 2003.

[4] The O'Hare and Mather study defined severely distressed neighborhoods as census tracts with at least three of the four following characteristics:

      1. High poverty rate (27.4 percent or more);
      2. High percentage of female-headed families (37.1 percent or more);
      3. High percentage of high school dropouts (23.0 percent or more); and
      4. High percentage of working-age males not in the labor force (34.0 percent or more).

[5] We caution the reader that, similar to other estimation methodologies, the use of the O'Hare and Mather methodology inevitably counts some persons as living in severely distressed neighborhoods when some portions of the qualifying census tracts may have significantly better conditions than the tract as a whole. And, concerning counts of children in these neighborhoods, it is also true that some children live in census tracts that do not qualify as severely distressed though some local environments in them may be distressed. The use of census tracts to represent neighborhoods is noted in: C Croner, T Lenahan, M Salling, G Weiner, and C Kippes, "Use of Geographic Information Systems (GIS) to Reveal Inordinate Public Health Burden in Cleveland's African American Neighborhoods," American Public Health Association, 133rd Annual Meeting, Philadelphia PA, December 13, 2005.

[6] One census tract includes all of Highland Hills and a small portion of Warrensville Heights that included 129 persons in the 2000 Census.

[7] Approximately 15 percent of these properties were in the fair, poor, very poor, and unsound categories combined, another 63 percent were average, and 22 percent were in good-to-excellent in condition.

[8] Neighborhoods in Cleveland are commonly defined locally as the thirty-six Statistical Planning Areas (SPAs), which are combinations of contiguous census tracts (of which there are 224 in the 2000 census).

[9] We separate the suburbs of the county into two types – the older, inner-ring suburbs, which we call "transitional suburbs," and the remaining suburbs.