

Connecticut GIS User-to-User Network Meeting Summary
September 20, 2002
Metropolitan District Commission Training Center, Hartford, Connecticut

Welcome and Committee Reports

Barbara MacFarland of the Metropolitan District Commission (MDC) called the meeting to order at 9:00 a.m. She welcomed everyone present to the meeting. She was glad to see a good turnout. After her welcome, she requested the following committee reports:

- **Program Committee:** MacFarland of MDC reported that the committee plans to change its name to Coordination Committee to better reflect its role in handling the logistics of the quarterly meetings and network events.
- **Training Committee:** No Report.
- **Issues and Membership Committee:** No Report.
- **Parcel GIS Data Standards Committee:** Steve Anderson of Applied Geographics stated that the committee is seeking a new chairperson and will become more active in the near future.
- **GIS Day Committee:** Alan Sylvestre of Connecticut Department of Labor stated that the committee is finishing the preparations for the event. Sylvestre strongly encouraged everyone to provide maps to the committee for display in the Connecticut Legislative Office Building during the month of November. Maps can be dropped-off at the MDC Headquarters. Sylvestre also said that on November 20, volunteers would give presentations and staff booths as part of GIS Day.
- **Communications Committee:** Sandy Prisloe of University of Connecticut Cooperative Extension System encouraged municipal representatives to fill out the municipal GIS survey if they have not done so already. He also stated that CT GIS List Serve would continue to serve as the primary means of announcing the GIS User-to-User Network meetings and events. He encouraged everyone to let others know about the list serve and municipal GIS survey.

Enterprise Wide Technical Architecture

Amjad Mahmood of the Department of Information Technology (DOIT) gave a brief presentation about the Enterprise Wide Technical Architecture (EWTA). The EWTA initiative is creating standards, policies, and guidelines for implementing information technology in the State of Connecticut. One of the subcommittees focuses on GIS. This subcommittee established ESRI's ArcGIS as strategic preferred GIS software and Intergraph's GeoMedia as acceptable strategic GIS software. For more information about EWTA, visit <http://www.doit.state.ct.us/policy/domain/index.htm>.

Visualizing Data Beyond Its Boundaries

Gary Archambault of the Connecticut Department of Public Health (DPH) gave a presentation entitled "Visualizing Data Beyond Its Boundaries." In 1854, Dr. John Snow pioneered the study of the relationship of geography and disease when he used maps to identify the cause of a

cholera outbreak in London. This use of maps evolved and became more refined, especially with the development of computerized GIS. DPH began to embrace this technology when it worked together with Connecticut Department of Environmental Protection (DEP) to produce an indoor radon potential map. This map is referred to often because radon is considered the second leading cause of lung cancer and many buildings are required by law to have radon remediation systems. DPH continued to adopt the technology while evaluating possible relationships between clusters of cancer patients and superfund sites in Southington and Stratford. Ellen Cromley, a geography professor at the University of Connecticut, was instrumental in numerous GIS projects for DPH. Currently, DPH uses GIS for West Nile Virus surveillance and for the Women, Infant, and Children program.

Archambault went through a portion of the presentation geared towards public health workers new to GIS technology. He discussed proper use of technology and limitations of data. He explained that displaying cases as points often violates confidentiality laws. He complained that health data often does not include variables to control for sex, race, age, and other characteristics. For example, the tumor registry is a very valuable resource, but it does not indicate if a case involved a tobacco smoker or not. He also warned about incomplete data. For example, some towns do not have mosquito trap sites, which may cause some to misinterpret maps illustrating the presence of West Nile Virus in the State. He also discussed misinterpretation of information due to scale and resolution.

Archambault then discussed two approaches for mapping health data without associating it with geopolitical boundaries. He stated that disease does not recognize political boundaries and felt that there are better ways to represent disease than aggregating data to political areas or Census geography. For example, he often uses Distance Mapping and Analysis Program (DMAP) developed by Gerard Rushton. DMAP works with GIS software to analyze case data using overlapping circles. He showed several maps using this technique including a map illustrating cumulative exposure rate of multiple waste sites and a series of maps showing female bladder cancer comparative morbidity figure maps from 1968 to 1996. The maps had a very smooth appearance compared to thematic maps using Census geography.

The second technique was one he developed and called Census Referent Population Methodology or "Make Big." In a very computer resource intensive methodology, Archambault disaggregated Census Block data so that every person has his or her own record. Then he geocoded the entire phone book for the State of Connecticut. Finally, he randomly assigned addresses to the disaggregated Census data located in the same Census Block. Multiple iterations confirmed that the results were reliable on small-scale maps, but slightly inconsistent on large-scale maps.

Archambault used these approaches to examine the relationship between Radon potential with lung cancer, but preliminary observations showed no relationship. In fact, the maps suggest that lung cancer was high along the I-91 corridor. He did not study the matter any further.

Archambault concluded his presentation by restating the various ways DPH applies GIS technology. DPH uses GIS to illustrate and analyze environmental epidemiology, infectious

disease, statewide health studies, demographic trends, childhood immunization, and program assessment.

Source Water Assessment Program

After a fifteen minute break, Tyler Kleykamp gave a presentation about the Connecticut Source Water Assessment Program (SWAP). This federally funded program evaluates the susceptibility of all active public drinking water supplies to contamination. The program consists of the following phases: (1) water source delineation, (2) contamination source inventory, (3) susceptibility analysis, and (4) public distribution of results. Water sources include reservoirs, community wells, and private wells that provide water to clients. The DPH estimates that between 3000 and 4000 water sources meet the SWAP criteria. The contamination source inventory includes any facility that handles state regulated chemical, gas stations, photo labs, waste sites, underground storage tanks, and highways. The contamination source is rated a score of susceptibility based upon historical contamination release points, risk of contaminants, geology, topography, and land use/land coverage (LULC). The susceptibility analysis utilizes a quantitative approach to rate the risk of contamination for every water source. After the susceptibility analysis, the SWAP team distributes a preliminary report to state agencies, utilities, and municipalities for their review. After the review process, the final report is released. Once the initial report is complete, the State may establish a regular update schedule or may form a statewide Safe Drinking Water Information System. DPH is still completing the water source delineation.

After the presentation, a brief discussion followed. Kleykamp explained that non-point source pollution is taken into consideration with the LULC data. The LULC data was summarized into four categories and rated based upon the classification's contamination risk. For more information about SWAP, please visit <http://www.dph.state.ct.us/BRS/WSS/swap.htm>.

Final Announcements and Adjournment

Before the meeting adjourned, John Guskowski of the Capital Region Council of Governments (CRCOG) made another appeal to attendees to give the GIS Committee maps to display in the legislative office for GIS Day events.

Barbara MacFarland thanked the presenters and attendees for coming to the event.

The meeting adjourned at 11:45 a.m.

Summary prepared on September 24, 2002 by

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