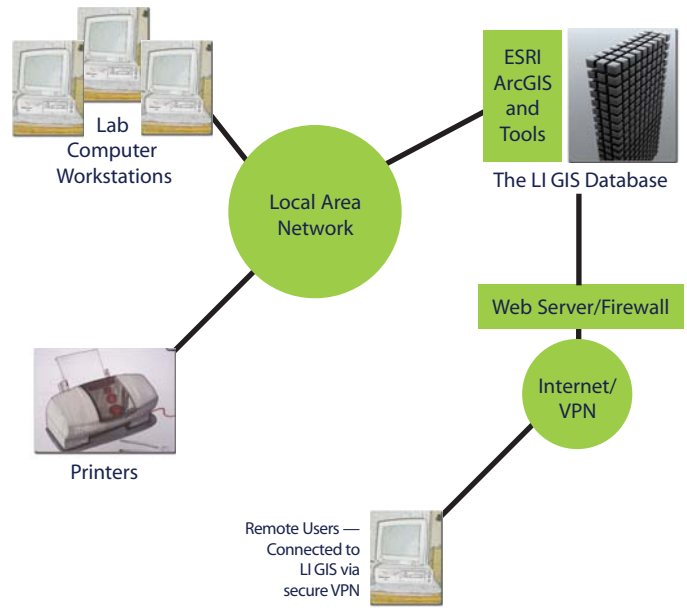


Geographic Information System for Breast Cancer Studies on Long Island

*A research resource for studies of breast cancer
and the environment on Long Island*



LI GIS Logical Diagram



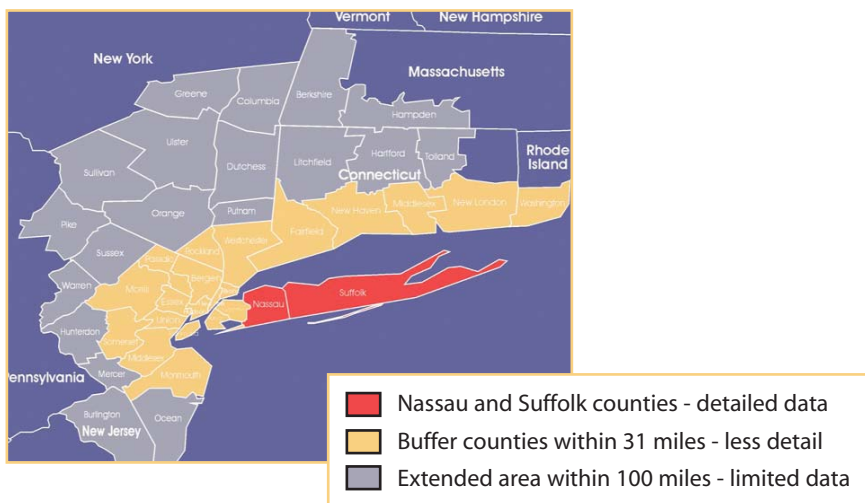
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U.S. Department of Health and Human Services.
It was developed and is maintained under a contract with
Titan Corporation, Reston, Virginia.

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Division of Cancer Control and Population Sciences
National Cancer Institute
National Institutes of Health
U.S. Department of Health and Human Services

The Geographic Information System for Breast Cancer Studies on Long Island (LI GIS) is an enterprise geographic information system combining data, ESRI ArcGIS, and statistical and spatial software and extensions. The LI GIS is designed to study the potential relationships between environmental exposures and breast cancer on Long Island. It also is available to researchers for studying other diseases.



The LI GIS warehouse contains more than 80 datasets covering:

- Topographic data
- Demographic data
- Health outcome data, including relative breast cancer incidence
- Environmental data for Nassau and Suffolk counties and, to a lesser extent, surrounding counties.

The LI GIS is one of a series of major studies and initiatives within the Long Island Breast Cancer Study Project (LIBCSP), a congressionally mandated activity to understand breast cancer incidence rates on Long Island. Researchers can apply to use the entire LI GIS and/or the LI GIS statistical software and spatial extensions. Apply online at www.healthgis-li.com.

Researcher's Toolbox:

A full suite of GIS software and extensions related to the study of breast cancer:

- ESRI ArcGIS software suite
 - ArcView & ArcInfo
 - Spatial Analysis & 3D Analyst
- Extensions for epidemiological studies
 - Case File Formatter
 - Disease Rate Calculator* (see Figure 1)
 - Areal Interpolator* (see Figure 2)
 - Cluster Analysis Tool* (using SaTScan) (see Figure 3)
 - Empirical Bayes Tool* (see Figure 4)
 - EpiAnalyst
 - S-Plus Spatial Stats
 - Geographic masking
 - SAS
- Oracle 9i
- Online User's Guide
- Additional ArcView extensions and software

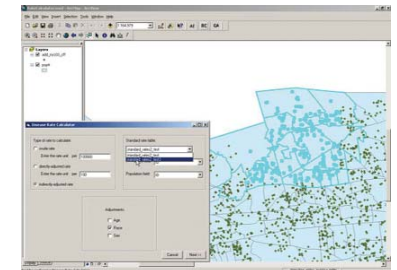


Figure 1. The Disease Rate Calculator calculates disease rates and uses simple areal interpolation to calculate the population.

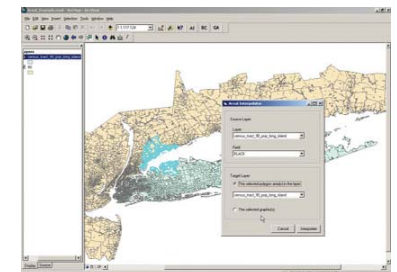


Figure 2. The Areal Interpolator uses simple areal interpolation to calculate a variable for a given area. The tool assumes the variable is distributed uniformly over the area.

*These extensions are available to download at www.healthgis-li.com.

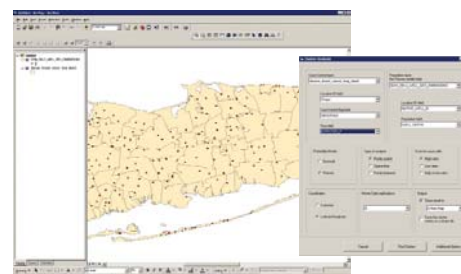


Figure 3. The Cluster Analysis Tool is an interface to a cluster analysis software application, SaTScan, developed by the National Cancer Institute (NCI).

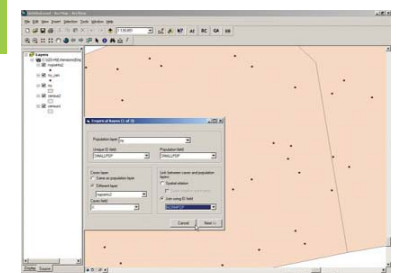


Figure 4. Empirical Bayes Tool applies the empirical Bayes method where disease rate estimates have been made for small areas and rare diseases. The tool distinguishes between variations expected in other methods and the variation that is real.