

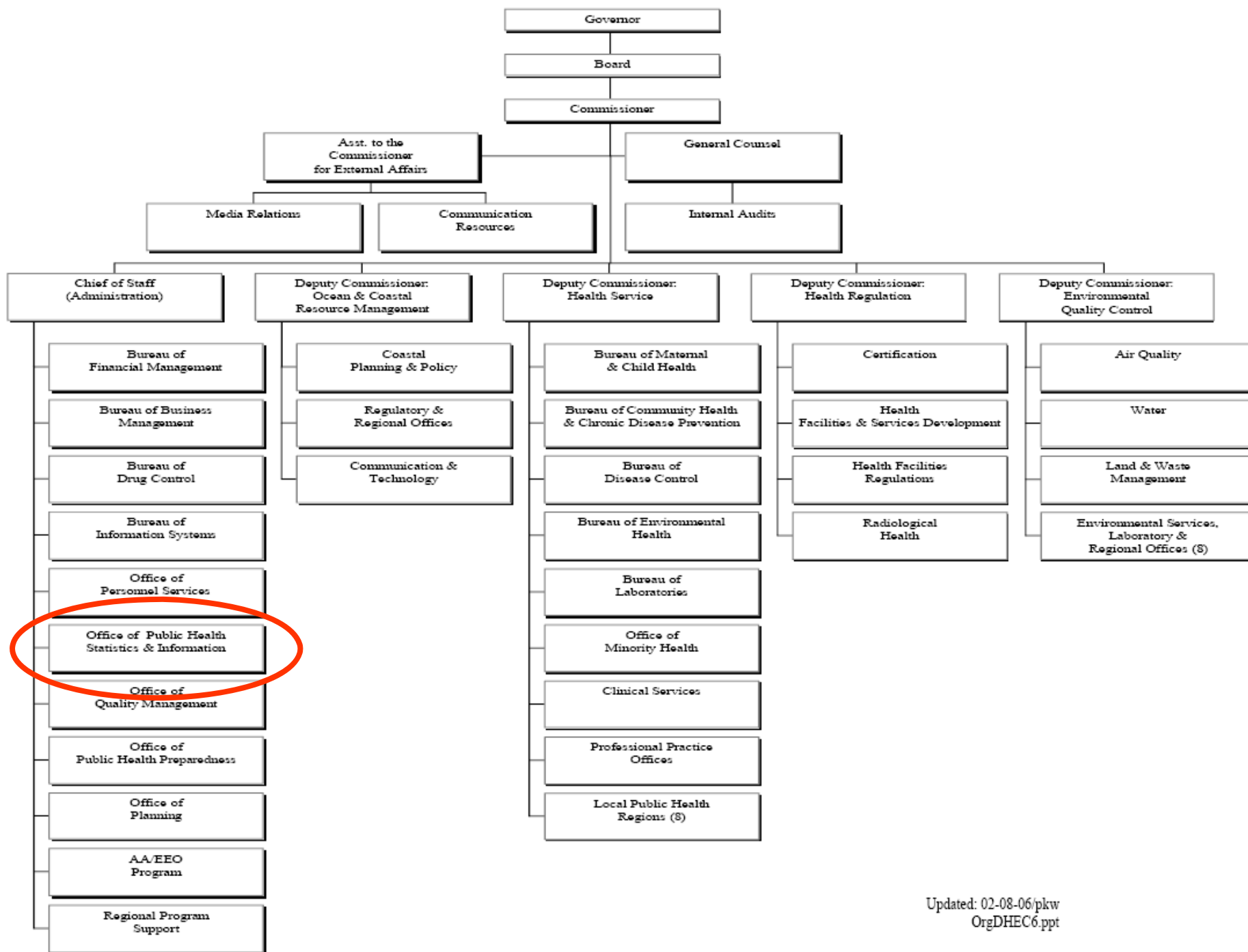


Server-based GIS and Spatial Leveraging of Public Health Data

Paper Presentation at International Health GIS Conference



Jared Shoultz, Director
Division of Public Health Informatics
Public Health Statistics and Information Services



Environmental Program Mandates & Geographic Information Systems



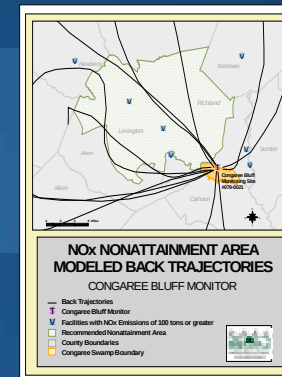
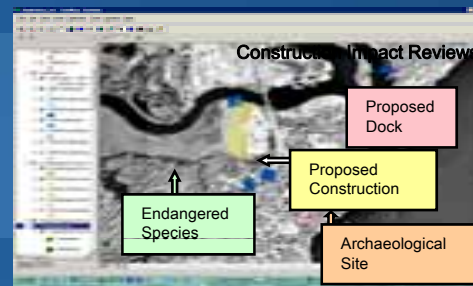
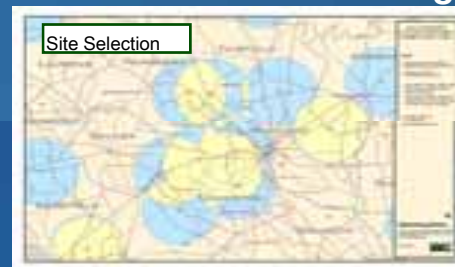
- CERCLA (*Superfund*) & RCRA
- Brownfields
- MS4's
- Federal Facilities Agreements
- Solid Waste Permitting
- Emergency Response
- Underground Storage Tanks
- Agricultural Farm Permitting
- Sludge Applications
- Hydrogeomorphic Analyses
- Fish Advisories
- Water Quality Monitoring Strategy
- Water Use Program
- 208 Service Areas
- 319 Mandates
- 305b Reports
- Reliability Classifications
- TMDL Development
- Watershed Strategies
- Watershed Delineations
- Shellfish Sanitary Surveys
- Beach Monitoring Activities
- Source Water Protection Program
- 401 Certification Reviews
- 303(d) Impaired Waters List
- Well Head Protection Areas
- Uranium/Radium Monitoring
- GIS Data Clearing House

Contaminant Assessment



Protection

Permitting



Modeling

GIS software modeling capabilities are used to evaluate the relationship of petroleum products and ground waters. The software is also used for modeling air emission trajectories to determine non-attainment boundaries.

Author: Dr. Jeanie Eidson

Health Program Mandates & Geographic Information Systems

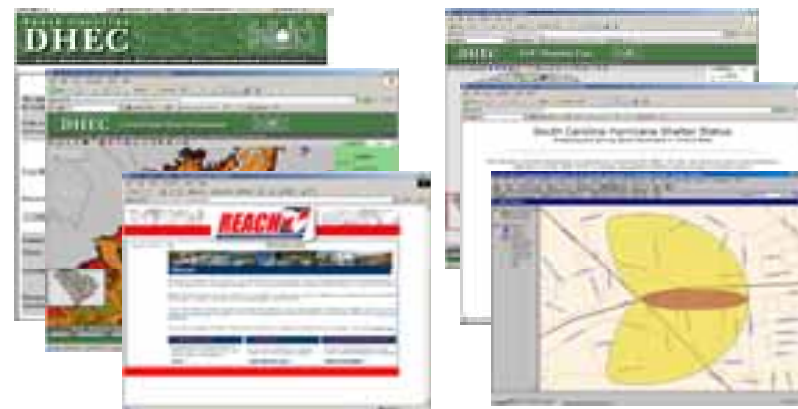


- Shelters, Facilities, & Evacuation
- Community/Cultural Information
- Directions and Address Locations
- DHEC Facilities Locations
- Aerial and Space Images
- Maps on Demand
- EOC Drills Secured Site
- Emergency Sheltering Application
- SC Mapping Applications-Web Portal
- SC Community Assessment Network
 - Birth Certificate Data
 - Death Certificate Data
 - Population Data
 - Pregnancy
 - Mother's Health and Lifestyle
 - Infant and Child Health
 - Infant Mortality
 - Cancer Incidence
 - Childhood Lead Poisoning
 - Fetal Deaths
 - Live Birth / Infant Death
 - Minority Health Initiative Database
 - PRAMS
- ArcGIS Server (Geocoding / Analysis)
- REACHSC – Geographic Notification
- Critical Data Sheets Application
- Disaster Modeling
- Vital Records Statistical Information Integration System (VRSIIS)

Information Dissemination via Public Map Services and Health Applications & Analysis



Emergency Response GIS Applications



Awards / Publications





South Carolina Department of Health and Environmental Control

Promoting and protecting the health of the public and the environment

[DHEC Home](#)[Health](#)[Environment](#)[Regulatory](#)[Disclaimer/Privacy](#)[Contact Us](#)

SCDHEC GIS

[GIS Home](#)[About SIGIS](#)[Members](#)[Awards and Publications](#)[Presentations](#)[GIS at DHEC](#)[Available Data Layers](#)[GIS/GPS support](#)[Training](#)[Standards & Procedures](#)[Software & Hardware](#)[GIS Web Applications](#)[References](#)[GIS Terms](#)[Codes](#)[Maps](#)[GIS & Related links](#)

Geographic Information Systems

The following page is intended to provide customers a central location to find information about GIS activities, applications, resources, and procedures at SCDHEC. Components available to customers include, *SCDHEC GIS Data Dictionary*, *GIS Web Applications*, and *SIGIS*.

About SIGIS At SCDHEC

The Shared and Integrated Geographic Information System (SIGIS) Committee was established in March 1996 by the Information Technology section of Environmental Quality Control (**EQC**) Administration, **SCDHEC**, and implemented by SIGIS Developer group, comprised of volunteer GIS Staff located in major program areas across the agency's administrative boundaries. The program mission is to provide managers and policy makers with decision support systems and applications that enable them to better analyze spatial information related to environmental and public health issues.

Purpose of SIGIS at SCDHEC

The main objective is to develop and maintain the agency-wide, enterprise GIS infrastructure including hardware, software, network, and database to facilitate a better use of limited resources and reduce redundant efforts across the agency. The enterprise SIGIS program provides information about GIS at SCDHEC and provides customers the ability to download GIS layers maintained and developed by SCDHEC.

SCDHEC GIS Data Dictionary

- Available GIS Layers at SCDHEC
- Metadata

GIS Web Applications

- Links to available GIS web applications
- Directions on how to use web applications

For more information contact Jeannie Eidson

Stages of Evolution to Enterprise GIS



Stage 1: Data Generation QA/QC

Stage 2: Standardization

Stage 3: Automation of Routine Tasks

Stage 4: Increased Information Dissemination and Awareness of Spatial Capabilities (New Spatial Integration, Analysis, Visualization, and Reporting Tools embedded into systems)

Stage 5: Specialization of Staff

Stage 6: Customization of Systems – Web Services & Service Oriented Architectures

Stage 7: In-depth Spatial Analysis of Data

Stage 8: “Ubiquitous” GIS

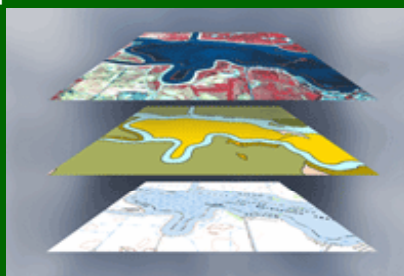


GIS Organizational Structure, Resources, & Data



GIS COMPONENTS

- People "Embedded"
 - Varied Areas of Expertise
 - Program Specific Knowledge
 - Program Specific Methods
- Data
- Procedures
- Software
- Hardware
- Info Distribution / Implementation



Expertise

Structured
data

Organization

Hard-/Software



User Levels / GIS Software Components



GIS DEVELOPERS – *(Analyses, Editing, & Querying Spatial Data – Application Development – Custom Maps)*

ArcGIS Server (Network & Spatial Analyst Ext.), ArcGIS Desktop9.x (ArcInfo & ArcEditor) and Extensions (3D Analyst, Spatial Analyst, Geostatistical Analysis, Publisher, StreetMap, ArcPress, ArcScan, MrSID Encoder, SAS Bridge), ERDAS, DMAP, SaTScan™, CrimeStat, Google Earth, HAZUS, CATS-JACE, etc.

MODERATE END USERS - *(Editing & Querying Spatial Data – Custom Maps)*
ArcView 9.x (VBA / ArcObjects) / ArcView 3.x (Avenue), ArcGIS Server

LIGHT OR INTERNET/INTRANET USERS- *(Spatial Queries Only – Template Maps)*

ArcExplorer / ArcReader, ArcIMS & Route Server, ArcGIS Server, GIS Enabled Web Apps, EpiMap, Google Earth

MOBILE GIS SOFTWARE

ArcPad / App. Builder *(Field Data Collection)*, ArcReader

DBMS (Database Management Systems)

SDE Spatial Database Engine



Thin Client Deployment:

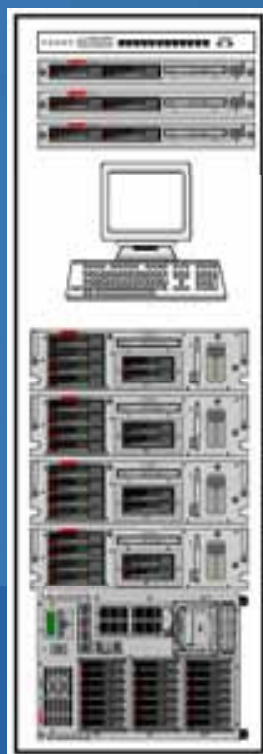
<http://dhecnet/apps>



GIS Developers & High End Users -
 ArcGIS Desktop 9x and Extensions (~270 Accounts)

Moderate End Users -
 ArcGIS Server – Web Apps & Web Services

Light End Users – Internet Map Services, Web Apps
 & Services



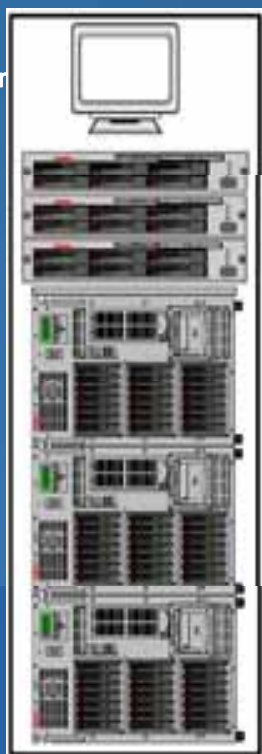
Test Server

ArcGIS 9x

AV 9x

AV 3x

AV 3x



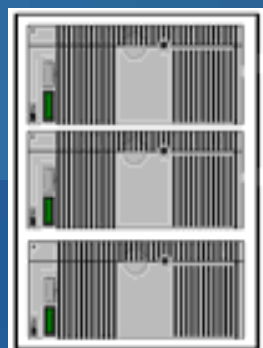
ArcGIS 9x

GIS DATA
SERVER

AV 9x

AV 9x

ArcGIS
Server



ArcIMS
Intranet
SQL

ArcIMS
Internet
SQL

ArcSDE
SQL

From 62 Licenses
 deployed to 62 People
 (Thick Client)
 to
 62 Licenses
 deployed to 273 People
 (Thin Client)



Welcome to Citrix MetaFrame

Please log in

- To log in to the application portal, type your user name, password, and domain name in the boxes at left.
- Click the Log In button to log in.

If you do not know your login information, please contact the Help Desk at ESRIHELP@dhec.sc.gov or 800-3760.

Citrix NFuse Classic Message Center

The NFuse Classic Message Center displays any informational or error messages that may occur.

If you do not have the Citrix ICA Client (ActiveX) for 32-bit Windows installed on your system, you must install the ICA Client to launch the applications.

Select the icon below to install the ICA Client.

Citrix ICA Web Client for 32-bit Windows

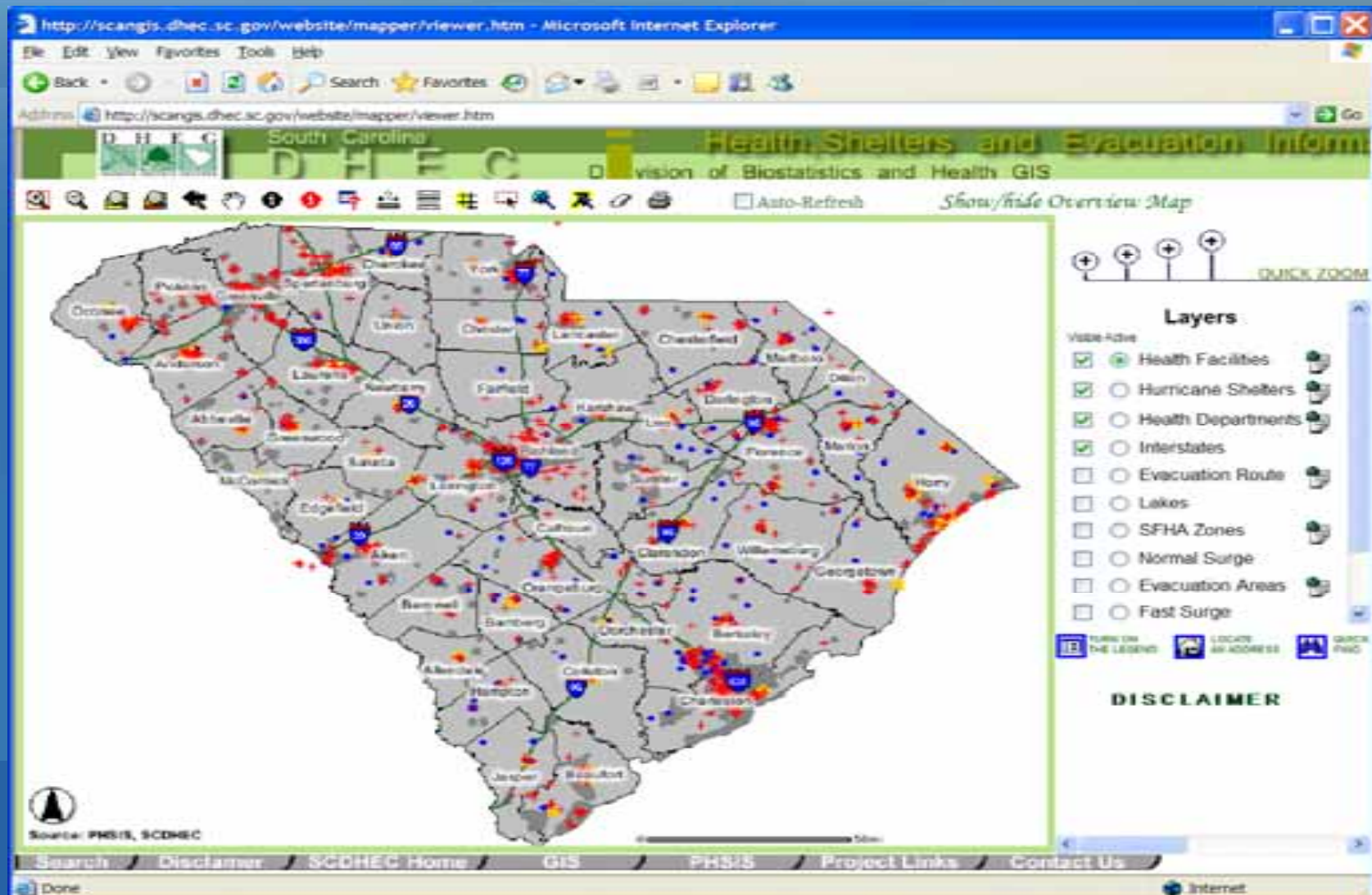


Existing "Thick" Client

- PHSIS - 6 ArcGIS Concurrent
- OPHP – 5-10 ArcGIS Concurrent/Single Use
- Mobile Users
- ArcPad & ArcReader



Hybrid GIS Layer Example – Health Facilities





Internal Server Based GIS Services & Applications

Current Geocoding Components



Intranet Based Composite Geocoder Service

- State E911 Centerline File
- ArcGIS Server
- ArcGIS Server StreetMap Extension
- Compaq Proliant DL 380 Web Server
- Windows 2003 Advanced Server
- IIS 7.0
- SOAP Compliant / Industry Standard XML Web Services (WSDL File)

Current AVR Components

- ArcGIS Server Spatial Analyst Extension
- ArcGIS Server Network Analyst Extension



DATA RETURNED THROUGH ARCGIS SERVER COMPOSITE GEOCODER



Address Related Fields

- X Coord
- Y Coord
- Latitude
- Longitude
- Side of Street
- Standardized Address

Additional Fields

- Error Message
- Extended Error Message
- Match Score
- Match Status
- Geocode Method
- Geocode Tier
- Spatial Reference XY
- Spatial Reference LL

Data Input

```
<s:element minOccurs="0" maxOccurs="1" name="StreetAddress" type="s:string" />  
<s:element minOccurs="0" maxOccurs="1" name="City" type="s:string" />  
<s:element minOccurs="0" maxOccurs="1" name="State" type="s:string" />  
<s:element minOccurs="0" maxOccurs="1" name="ZipCode" type="s:string" />
```



Address  http://biogissrvr/webgeocoder/webform1.aspx

Google 

Go 



Bookmarks 



576 blocked 



Check 



AutoLink 



AutoFill 



Send to 



Y! 



Search Web

Upgrade your Toolbar Now 



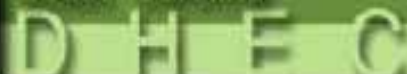
Mail 



Help 



South Carolina



Online GeoCoder

Division of Public Health Informatics, PHSIS

Notes

1. Use only excel file to geocode
2. The excel table must have 5 columns named as Name,Address,City,State and Zip.
3. Use 'Sheet1' as your Worksheet
4. The output will be an excel table in your browser with X,Y and Lat,Long columns added to it. Several other columns will be added after the geocode process is complete. [Click here for a description of these columns.](#)
5. Save the output as an excel file in your hard disk.

Problem or suggestion:

Mehdi Khan, 803-898-3644, khanmm@dhc.sc.gov

Browse...

Geocode

http://biogissrvr/webgeocoder/webform1.aspx

Go Bookmarks 576 blocked

Search Web Upgrade your Toolbar Now Mail

South Carolina
DHEC Online GeoCoder
Division of Public Health

Notes:

only excel file to geocode
excel table must have 5 columns named as Name,Address,City,State and Zip.
'Sheet1' as your Worksheet
output will be an excel table in your browser with X,Y and Lat,Long columns added
when the process is complete. Click here for a description of these columns.
to download the output as an excel file in your hard disk.

Problem or suggestion:
Mehdi Khan, 803-898-3644, khannmm@dhec.sc.gov

Choose file

Look in: TEMP

Recent Desktop My Documents My Computer My Network Places

dhc_imsapp3.jpg
dhc_imsapp4.jpg
DryClean.mxd
dunsam.chi
dun
dup
duplicateRestaurant.dbf.xml
esri_housing.pdf
exceltest1.xls
exceltest.xls
flextoolbar.zip
fulltext.JPG
fulltext_2.JPG
funeralCountygen.dbf
funeralCountygen.OBJECTID.atx

Filename: C:\TEMP\DryClean.mxd
Type: ArcMap Map Document File

exceltest.xls

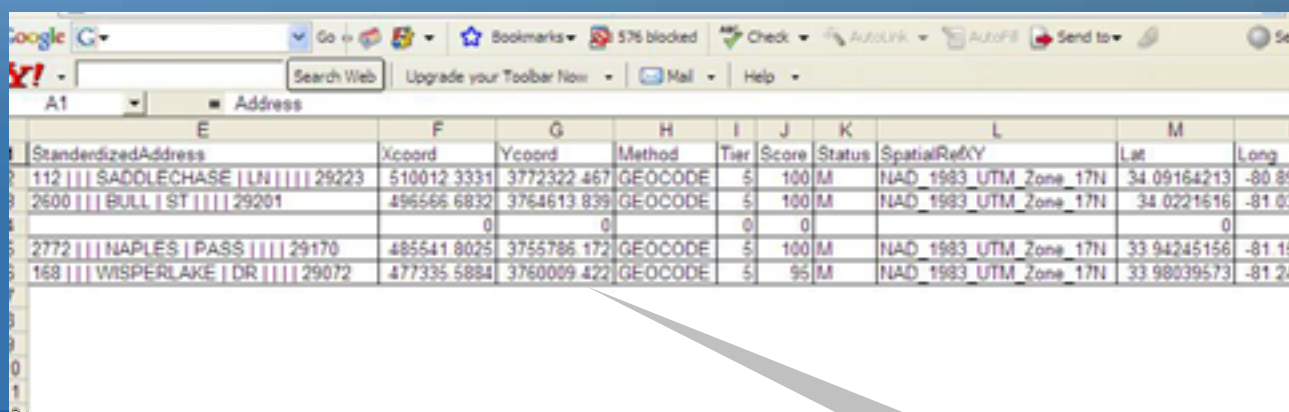
Files (*.*)

C:\TEMP\exceltest.xls

Geocode

Uploading
address file

Composite Geocoding Service

A screenshot of a web browser window displaying a table of geocoding results. The browser's address bar shows a search for "x!". The table has columns for StandardizedAddress, Xcoord, Ycoord, Method, Tier, Score, Status, SpatialRef, Lat, and Long. A callout arrow points from the table to the "Final Output" bubble.

StandardizedAddress	Xcoord	Ycoord	Method	Tier	Score	Status	SpatialRef	Lat	Long
112 SADDLECHASE LN 29223	510012 3331	3772322 467	GEOCODE	5	100	M	NAD 1983 UTM Zone 17N	34 09164213	-80 89
2600 BULL ST 29201	496566 6832	3764613 839	GEOCODE	5	100	M	NAD 1983 UTM Zone 17N	34 0221616	-81 03
	0	0						0	
2772 NAPLES PASS 29170	485541 8025	3755786 172	GEOCODE	5	100	M	NAD 1983 UTM Zone 17N	33 94245156	-81 15
168 WISPERLAKE DR 29072	477335 5884	3760009 422	GEOCODE	5	95	M	NAD 1983 UTM Zone 17N	33 98039573	-81 24

Industry Standard Web Service

- Accessible at the application level
- Accessible via Intranet Upload
- Incorporated SIGIS Methods and Tiers
- Output in Geographic and UTM Zone 17N NAD 83
- Excellent tool to leverage expertise and years of experience (Services Oriented Architecture)

Final
Output



VRSIIS (EBC & EDR): Real-time geocoding of births and deaths



http://biogissrvr/carpoolmain.htm



South Carolina

D H E C

Agency-Wide CARPOOL APPLICATION

Shared and Integrated GIS (SIGIS)



[Home](#) || [Add an Address](#) || [View Addresses](#)

(Initial page load times may vary, please be patient)



This page has been developed with the intent to help DHEC employees carpool with their fellow workers by providing them with a method to visually determine which workers live in close proximity to one another.

Please note that the application is Intranet based and can only be accessed from DHEC's internal network.

**Participation in the DHEC Carpool program is voluntary and done at your own risk.
All information entered by participants is viewable on the DHEC intranet.**



STEP 1: Select Disease Type

Influenza



STEP 2: Select Date Range

< January 2007 >						
S	M	T	W	T	F	S
21	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10

TO

< September 2007 >						
S	M	T	W	T	F	S
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6

Date Column: Illness Onset Date

☒ Include Records with No Date

STEP 4: Select Demographics of Interest

Race:

- ☒ All
- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Other Pacific Islander
- ☐ Hispanic or Latino
- ☐ Other
- ☐ Unknown

Age Range:

- ☒ All
- ☐ 0 to 4
- ☐ 5 to 9
- ☐ 10 to 14
- ☐ 15 to 19
- ☐ 20 to 24
- ☐ 25 to 29
- ☐ 30 to 34
- ☐ 35 to 39
- ☐ 40 to 44
- ☐ 45 to 49
- ☐ 50 to 54
- ☐ 55 to 59
- ☐ 60 to 64
- ☐ 65 to 69
- ☐ 70 to 74
- ☐ 75 to 79
- ☐ 80 to 84
- ☐ 85+

Sex:

- ☒ All
- ☐ Male
- ☐ Female
- ☐ Unknown

STEP 3: Select Location of Interest

☐ Zip Code

- All
- 29001
- 29003
- 29006
- 29009
- 29010
- 29014
- 29015
- 29016

OR

☒ County

- All
- Abbeville
- Aiken
- Allendale
- Anderson
- Bamberg
- Barnwell
- Beaufort
- Bekeley

STEP 5: Define Result Constraint Parameters

Geocode Tier: <= B

Case Status:

- All
- Confirmed
- Not a Case
- Probable
- Suspect
- Unknown

Execute

134 record(s) in result set.

[View Record\(s\)](#) [View Map](#)

[Export to KML](#)

NEDSS/CHESS GIS Integration



https://biogisrvr.dhec.sc.gov - RecordViewer - Windows Internet Explorer provided by DHEC Network Services

D H E C **SCAN CHESS MAPPING**
S.C. Department of Health and Environmental Control

[\[View Selected Records on Map\]](#)

Results for the following query: Influenza (DICODE_TIER == 8 AND (ILLNESS_ONSET_DT between 1/1/2007 and 9/30/2007) OR ILLNESS_ONSET_DT is NULL)

	Date	Address	Ric Code	County	DIC Tier	Race	Sex	Age	Case Status	Longitude	Latitude
☒	####		20600	Anderson County	5	White	F	66	Confirmed	34.5	-82.04
☒	####		20455	Charleston County	5	Unknown	M	4	Confirmed	32.62	-80.14
☒	####		20640	Greenwood County	9	White	F	04	Confirmed	34.25	-82.15
☒	####		20002-5481	Beaufort County	9				Not a Case	32.34	-80.7
☒	####		20410	Charleston County	5	Black or African American	F	40	Not a Case	32.06	-80.04
☒	####		20601	Pickens County	5	White	F	56	Confirmed	34.60	-82.01
☒	####		20512	Marlboro County	5		M	00	Confirmed	34.63	-79.7
☒	####		20560	Darlington County	5		M	46	Confirmed	34.63	-80.13
☒	#### 20635		20635	Greenville County	9		F	92	Confirmed	35.07	-82.51
☒	####		20161	Florence County	5	Unknown	F	30	Confirmed	34.13	-79.95
☒	####		20506	Florence County	7	Black or African American	M	71	Confirmed	34.10	-79.74
☒	#### CHAR		20406	Charleston County	5	Black or African American	F	92	Confirmed	32.96	-80.03
☒	####			Greenville County	9		F	00	Confirmed	34.00	-82.36
☒	#### 20110		20110	Orangeburg County	8	Black or African American	F	72	Confirmed	33.56	-80.91
☒	####		20651	Greenville County	5		F	5	Confirmed	34.83	-82.22
☒	####		20223	Richland County	5	Black or African American	M	50	Confirmed	34.13	-80.9
☒	####			Abbeville							

Internet

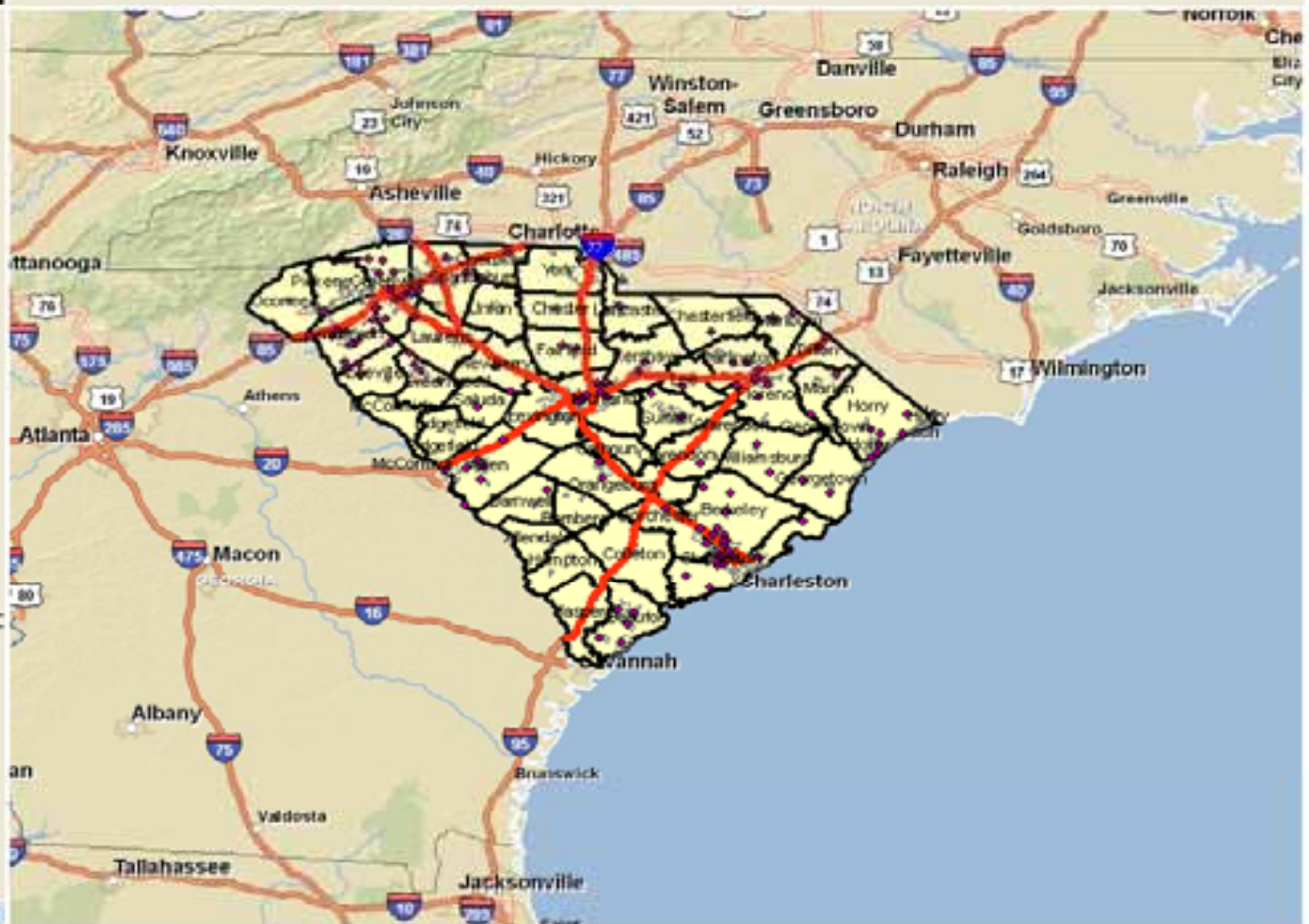




Zoom In Zoom Out Pan Full Extent Identify

Operations: Density Analysis Calculate Clear Results

- ☒ Layers
 - ☒ CHESS Cases
 - School/Institution
 - ▲ Retail
 - Market
 - ☒ Interstates
 - ☒ Roads
 - ☒ Urban Areas
 - ☒ Counties
 - ☐ Food Services
 - ☐ Blocks
 - 0 - 41
 - 42 - 163
 - 164 - 468
 - 469 - 1231
 - 1232 - 5860
 - ☒ State
 - ☒ StreetMap
 - ☐ Imagery
 - USA 1m Imagery Metac



Identify Results





Zoom In



Zoom Out



Pan



Full Extent



Identify

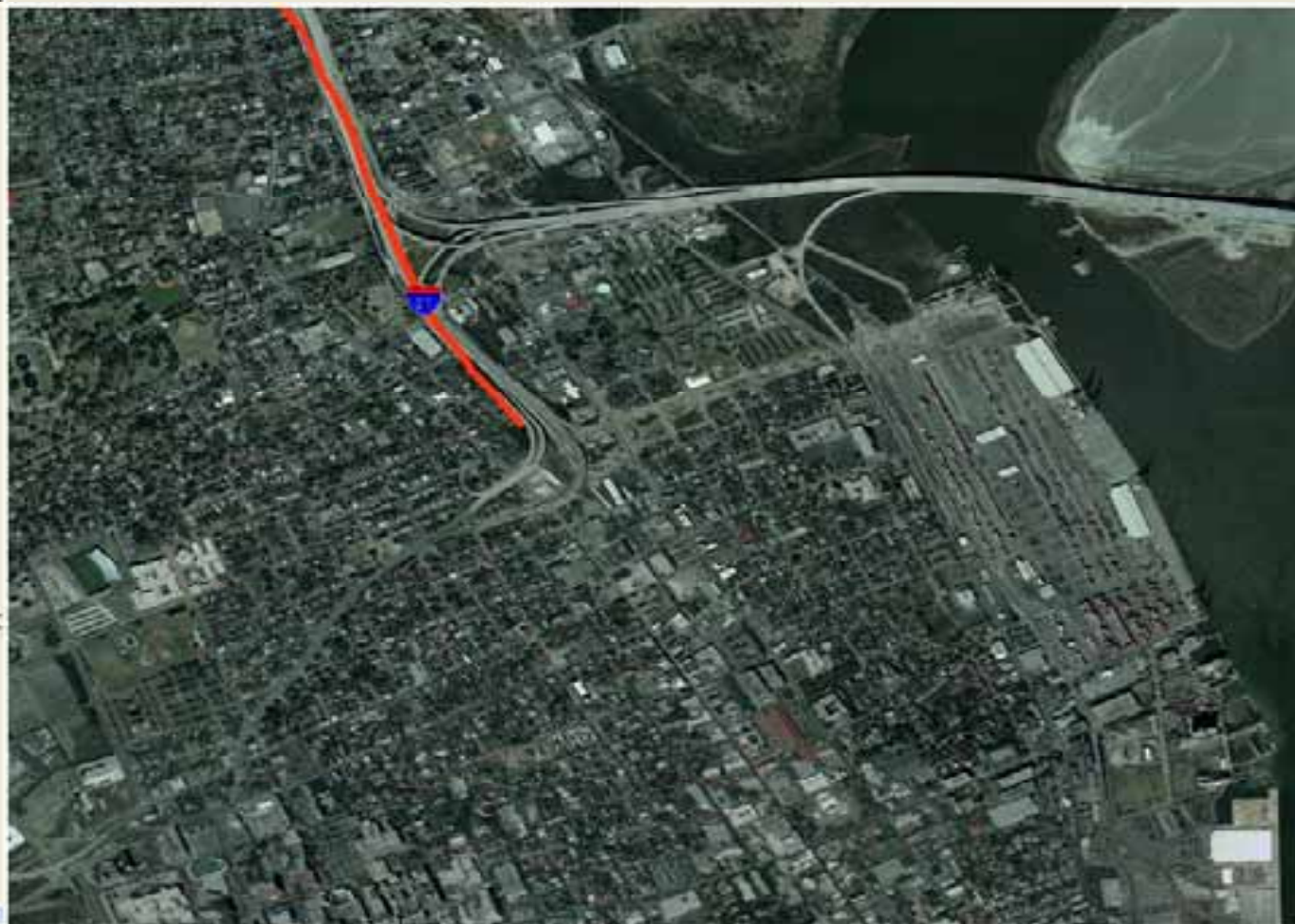
Operations:

Density Analysis

Calculate

Clear Results

- ☒ Layers
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Identify Results





Zoom In Zoom Out Pan Full Extent Identify

Operation:

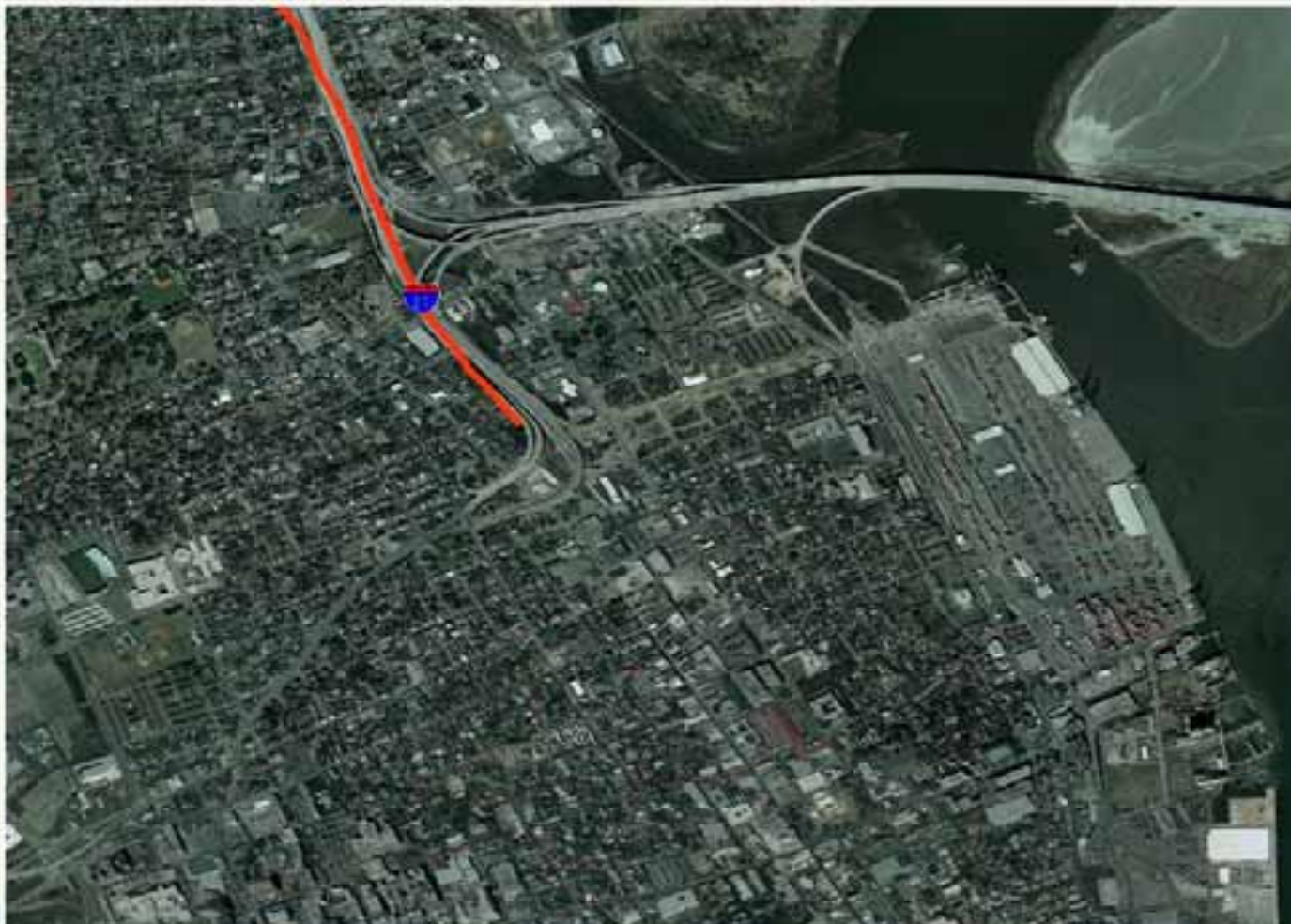
Density Analysis

Calculate

Clear Results

Layers

- ☐ CHES Cases
- ☒ Interstates
- ☐ Roads
- ☐ Urban Areas
- ☐ Counties
- ☐ Food Services
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 - StreetMap
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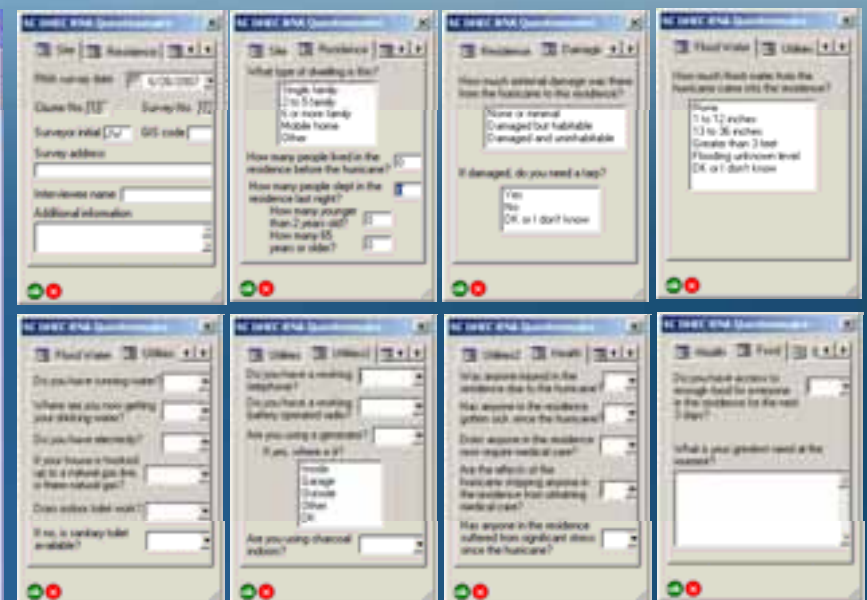
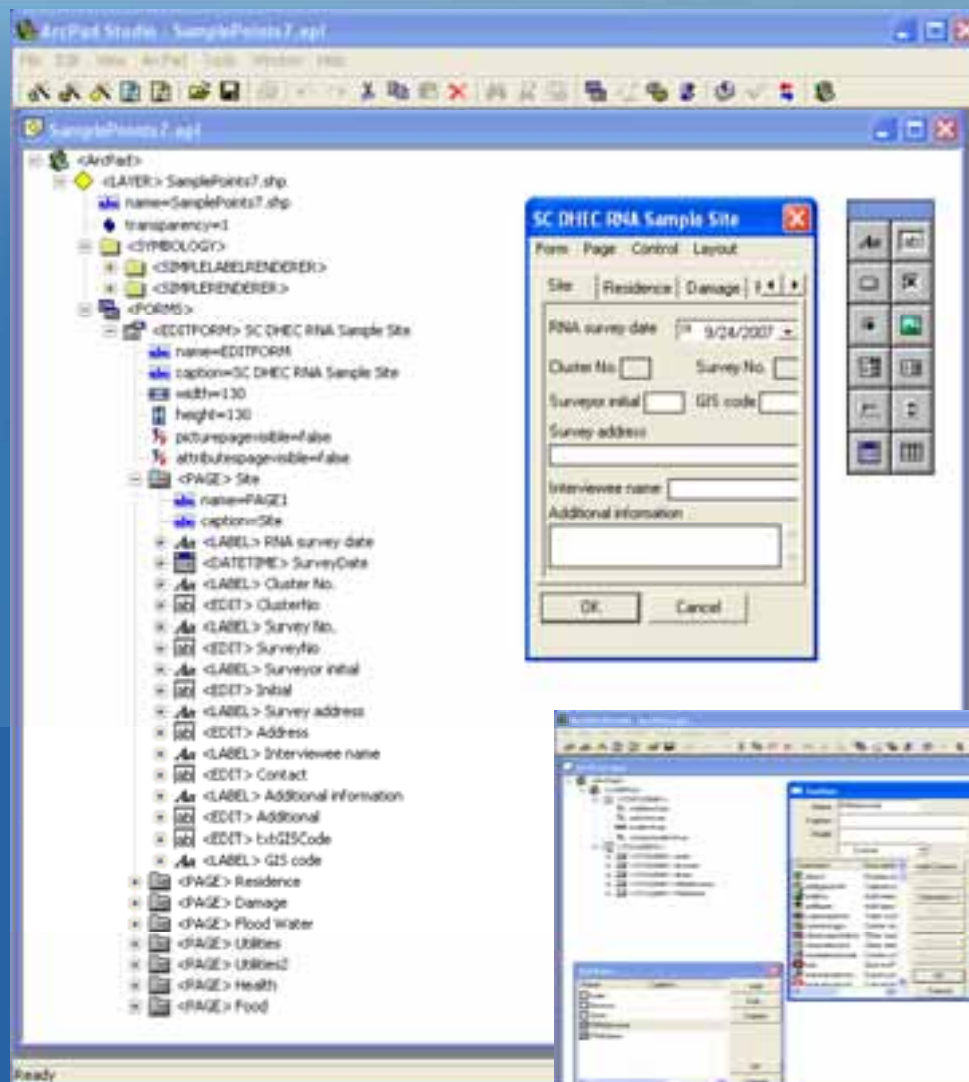
Identify Results



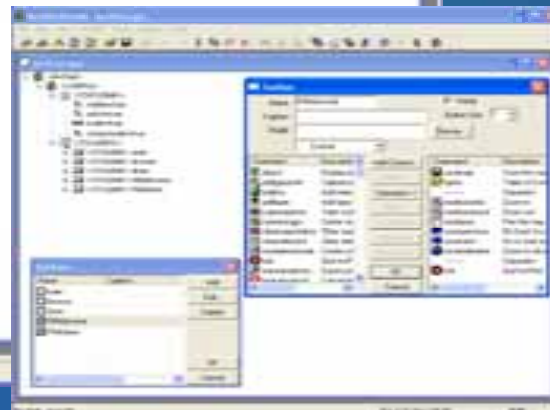


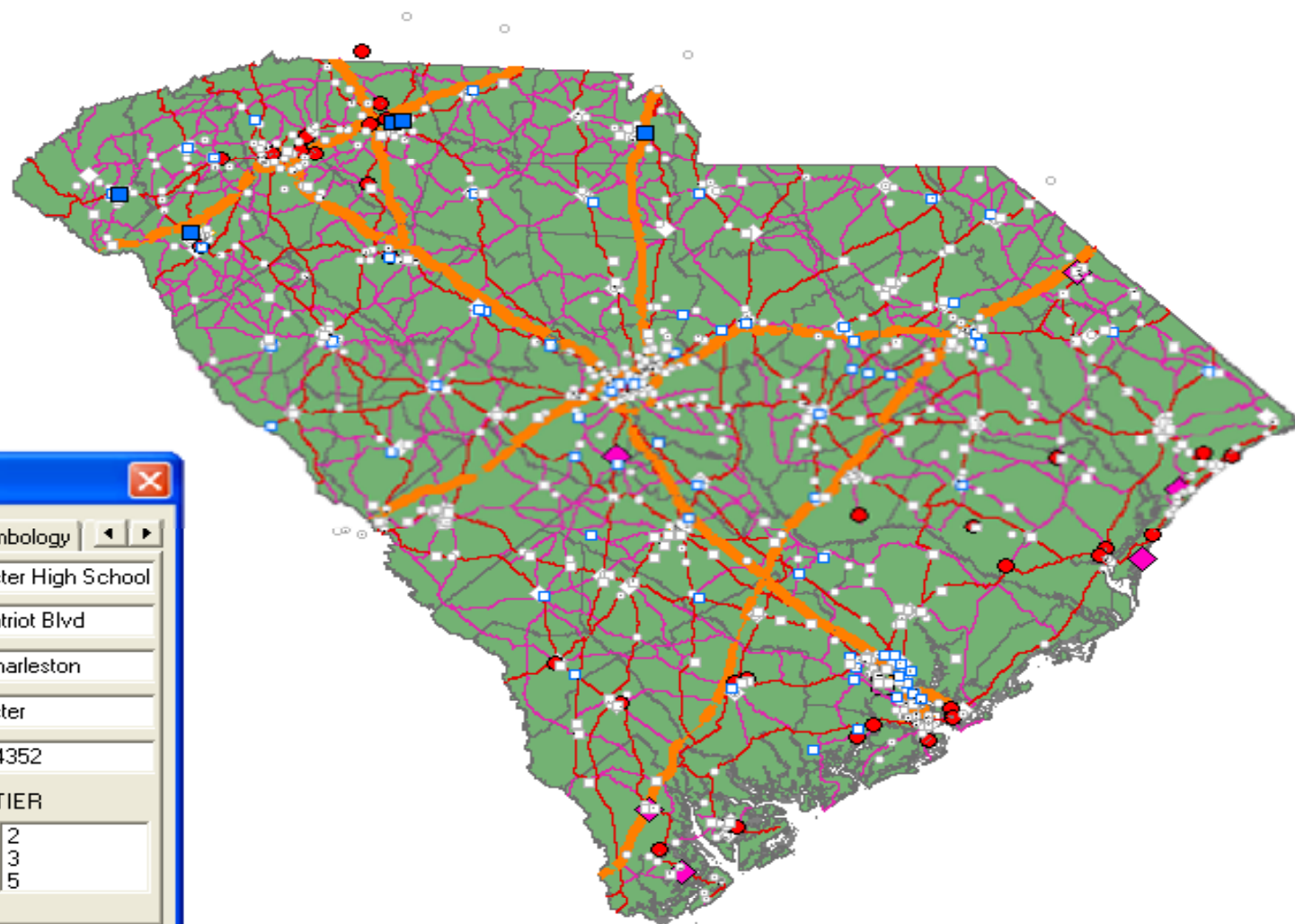
Mobile GIS and Field Data Collection

Rapid Needs Assessment



SC customized application based on World Health Organization two-phase sampling method & Mobile GIS work, training, and technical support provided by Mr. Steve Ramsey and the NC Public Health Regional Surveillance Team 5





Hurricane Shelter

Page 1 Symbology

NAME Dorchester High School

ADDRESS 8500 Patriot Blvd

CITY North Charleston

COUNTY Dorchester

PHONE 8437604352

METHOD TIER

GPS1

2

Geocode

3

5

ok

20 mi

235114.2 3938616.7 m

1:2640011 V

SCDHEC Emergency Response Map Project

Primary Sites

- Nuclear Power Station
- Hazardous Gas
- Surface Water Intake
- Public Water Supply Plant
- Air Cond. Storage Tank

Other Areas of Interest

- Health Facility (Hospitals)
- Health Dept. Clinic
- Fire Station
- Hurricane Shelter
- National Guard Facility
- Civilian Airlift Team
- Civilian Basic Team
- EOC District Office

Regulated/Permitted Sites

- CERCLA Site
- PLUCL Site
- TSD Facility
- Inc. Waste Generator
- Rad. Waste Generator
- Infectious Waste Gen.
- Air Regulated Facility
- Leaking UST
- UST
- Dry Clean Location
- Gen. & Demo. LP
- SW Incinerator
- Tire Disposal Site
- Industrial SWLP
- MSW Transfer Station
- MSWLF
- SW Processing Facility
- Composting Facility
- Private Yard
- MSWIS Site

Monitoring Sites

- Shoreline Mon. Station
- Endangered Species
- Agricultural Facility
- Water Quality Mon. Stat.
- Air Monitoring Station

Scale: 1:425,000 (NGT01)
Date: 6/24/04
Source: SCDHEC, GIS & DNR

Note: On the map border, gray hatch marks are placed every 1 minute of Longitude and Latitude while red hatch marks are placed every 10 minutes of Longitude and Latitude.

Cultural Sites

- Daycare Facility
- Private School
- Public School
- College
- Radio Station
- Shopping Center
- Church
- Funeral Home

Transportation

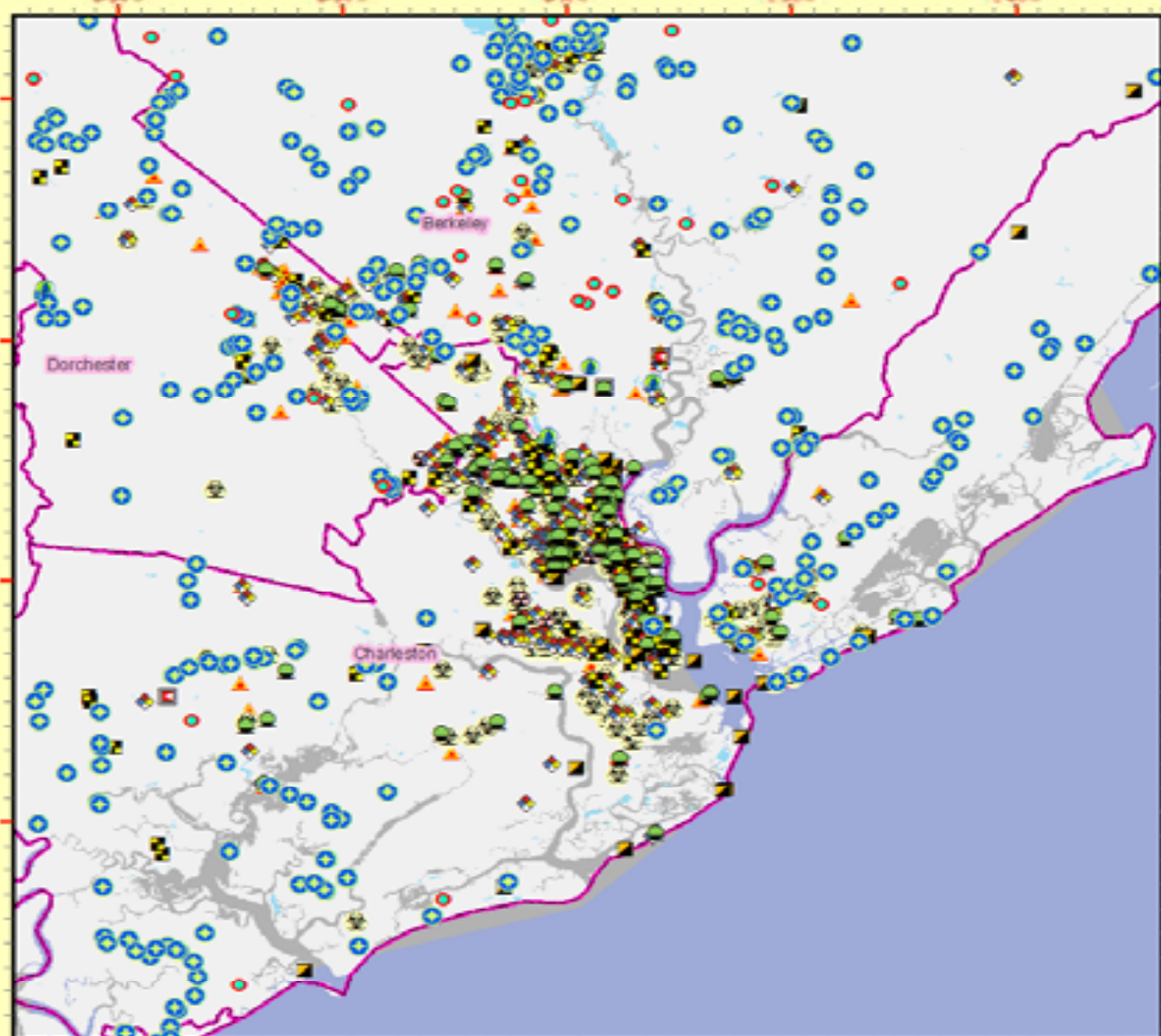
- Helipad
- Airport
- Marina
- Boat Ramp
- Mass. Trans. Terminal
- Bus Terminal
- Trucking Center
- Airport Station
- Port Boundary
- Hurricane Evac. Route
- Interstate Hwy.
- United States Hwy.
- State Hwy.
- Local Roads
- Railroad Tracks

Utilities

- Water Line 6" or >
- Sewer Line 6" or >
- Water Treat. Facility
- Pipelines
- Potentials

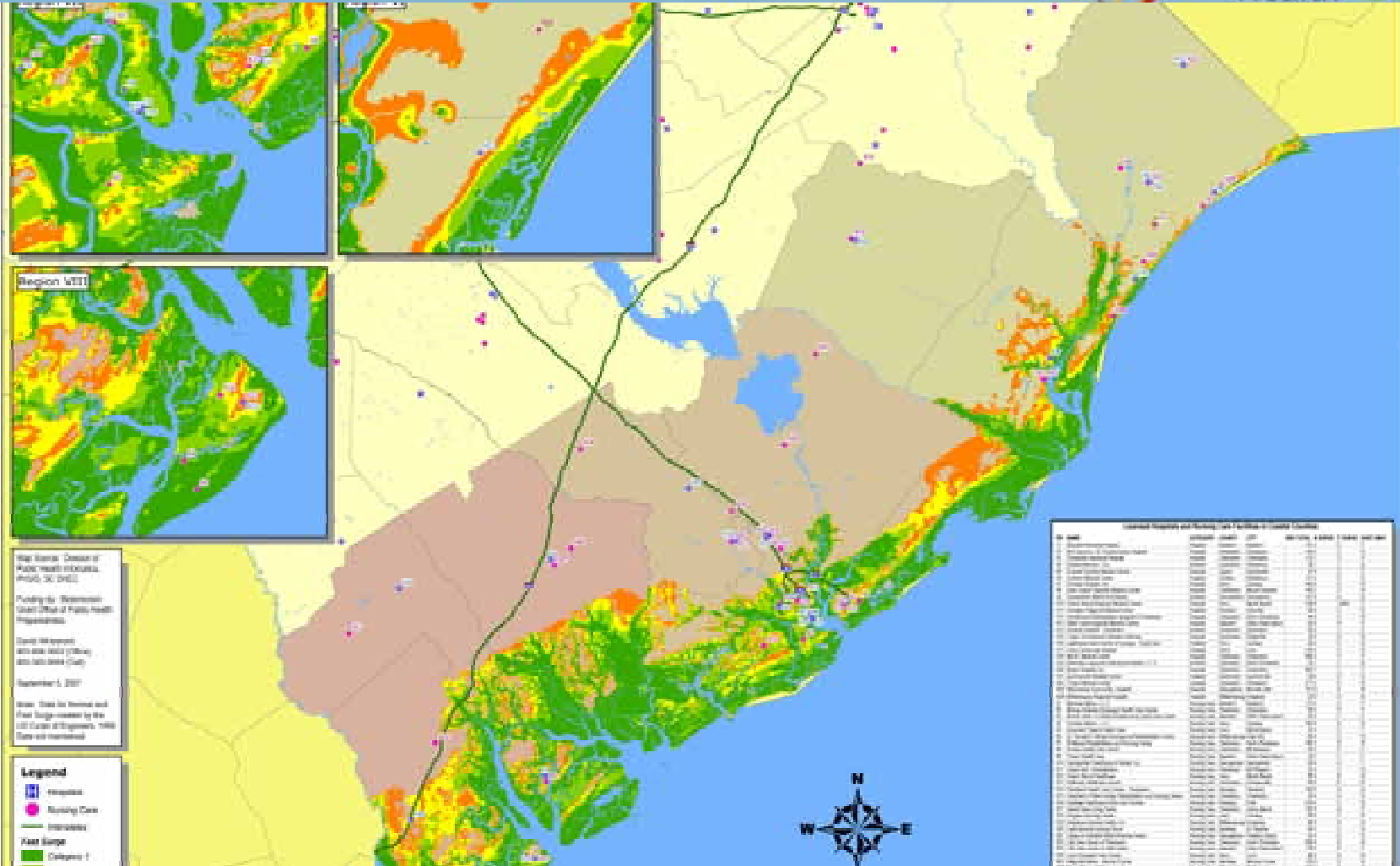
Base Layers

- USGS Quad Boundary
- Map Book Grid Boundary
- County Boundary
- City Boundary
- Lake/Open Water
- Archaeological Sites
- Red Designated Land
- State Protected Land
- Private Protected Land
- SKS Boundary
- Dist. 7a from H&C
- Dist. 10 from Surge
- Dist. 20 from Surge
- Dist. 30 from Surge
- Dist. 40 from Surge
- Dist. 50 from Surge





Disaster Planning, Emergency Response, Facilities Management, & Spatial Statistical Analysis

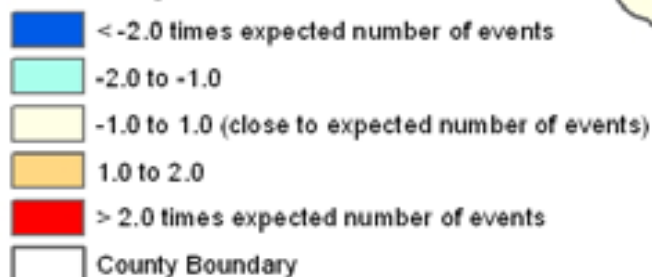




Hot Spot Analysis of SC Violent Death Reporting System Occurent Death Data per Population using Place of Injury Occurence by County Subdivision in South Carolina 2004

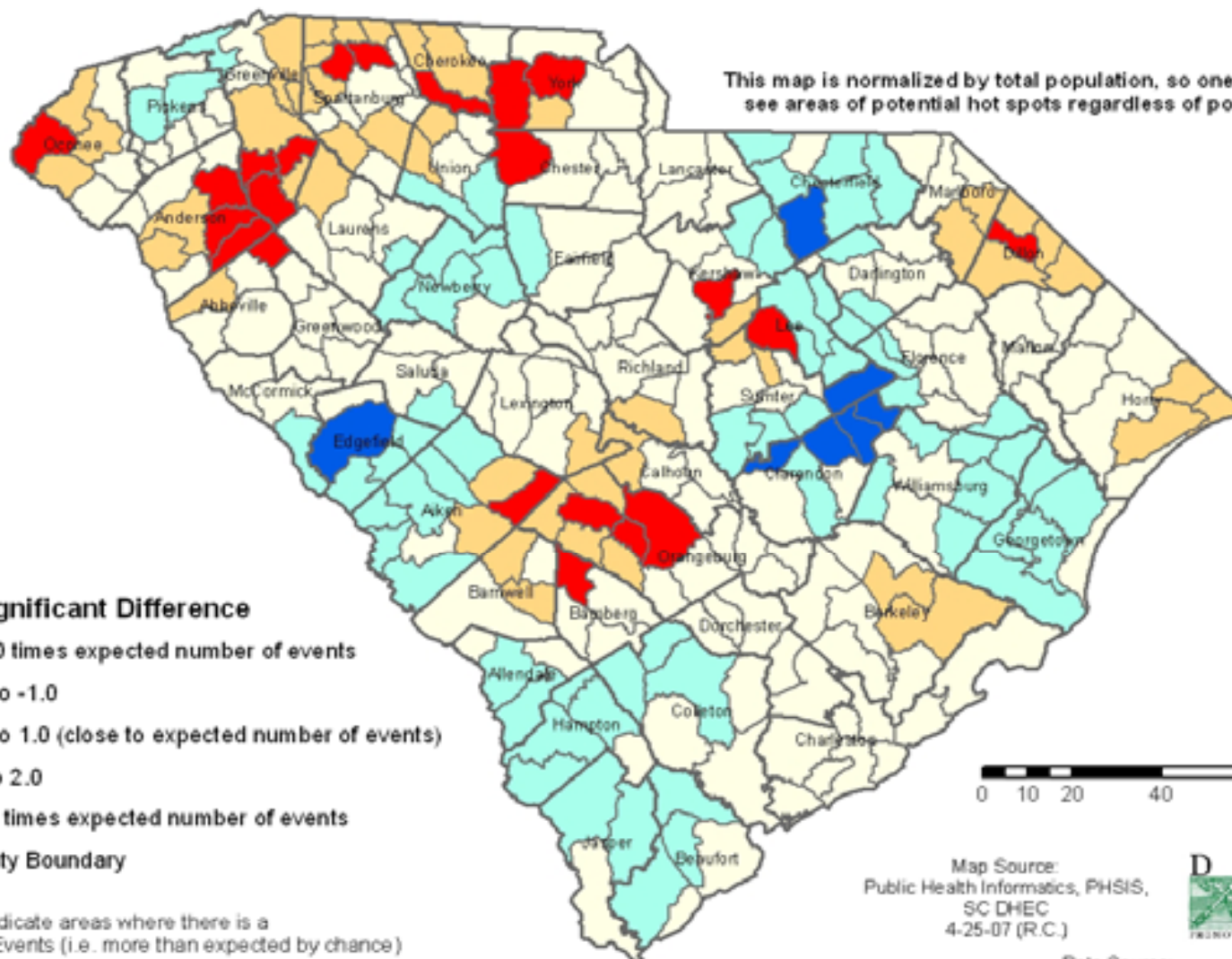
This map is normalized by total population, so one would expect to see areas of potential hot spots regardless of population density.

Size of Significant Difference



Red Zones indicate areas where there is a "hot spot" of Events (i.e. more than expected by chance)

Dark Blue Zones indicate areas where there is a "cold spot" of Events (i.e. less than expected by chance)



0 10 20 40 60 80 Miles



Map Source:
Public Health Informatics, PHSIS,
SC DHEC
4-25-07 (R.C.)



Data Source:
South Carolina Violent Death Reporting System (SCVDRS) 2004,
US Census Bureau, Census 2000

Cluster Analysis Using Events of Interest in South Carolina from 1999 - 2003 using SaTScan™

SaTScan™ was used to conduct a cluster analysis over space and time. Adjustment for age was made based on age groups 0-21, 22-34, 35-44, 45-54, 55-64, and 65+. The Poisson statistical model was used for analysis, and a maximum cluster size of 50% of the at risk population was used.

All other SaTScan™ parameters used in this analysis were the default values.



SaTScan™ is a trademark of Martin Kulldorf. The SaTScan™ software was developed under the joint auspices of (i) Martin Kulldorf, (ii) the National Cancer Institute, and (iii) Farzad Mostashari of the New York City Department of Health and Mental Hygiene.

P-Values of Significant Clusters

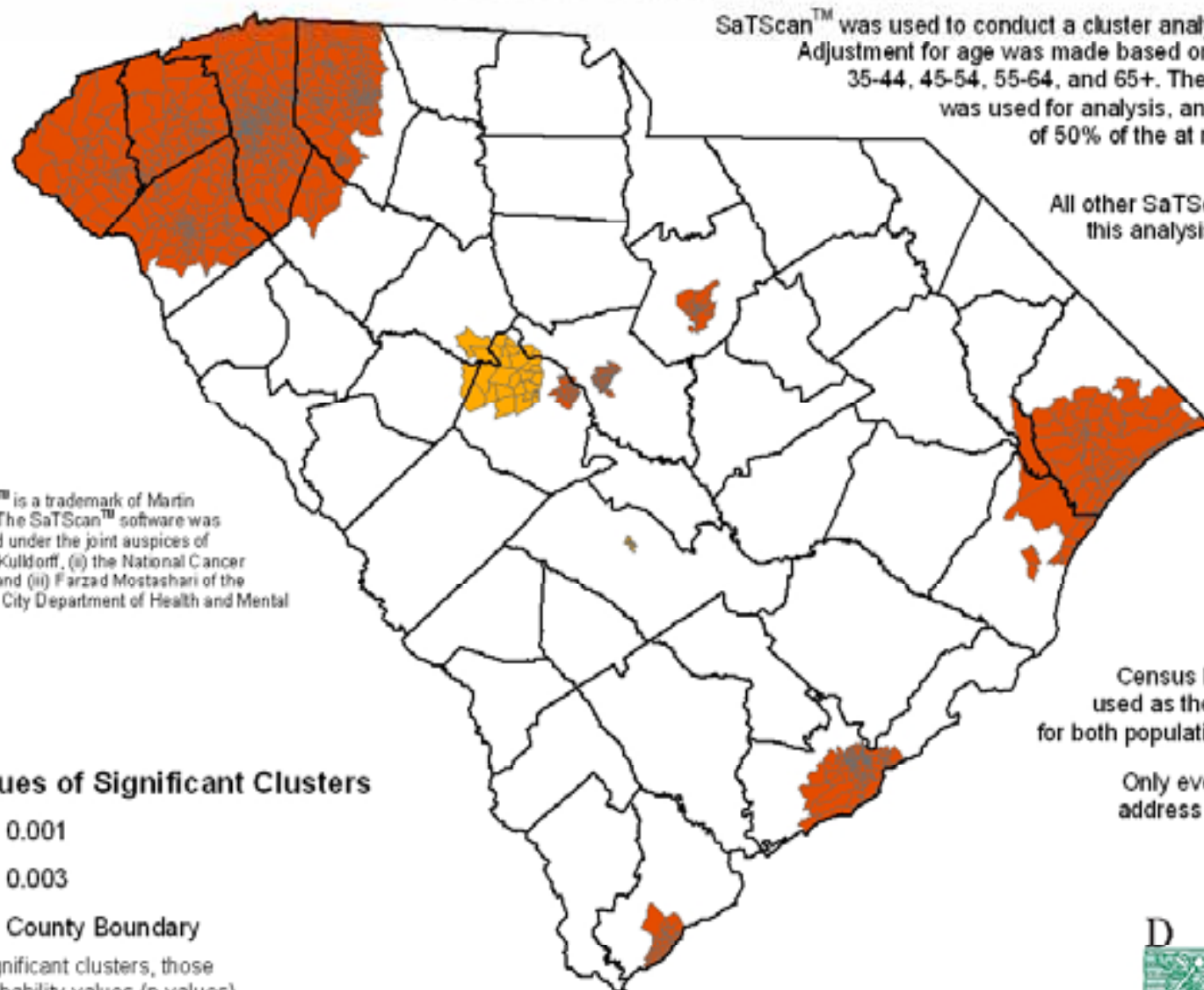
0.001

0.003

County Boundary

Only significant clusters, those with probability values (p-values) less than or equal to 0.05, were reported.

0 12.5 25 50 75 100 Miles



Census block groups were used as the unit of aggregation for both population and events of interest.

Only events with an exact address match were used.

Map Source:
Public Health Informatics, PHSIS, SC DHEC
3-21-07 (R.C.)



[Full Research Paper at *arXiv.org*: *https://arxiv.org/pdf/1706.08912v1.pdf*](#)



Routine Daily Map Requests

Age-adjusted Mortality Rates for Breast Cancer by County in DHEC Region 4, 2004*



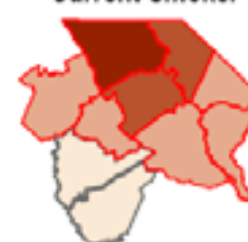
Mortality Rate per 100,000 (SC State Rate)



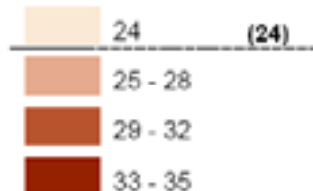
* Mortality rates were direct age-adjusted using the 2000 standard population weights.

Prevalence of Risk Factors by County, 2004

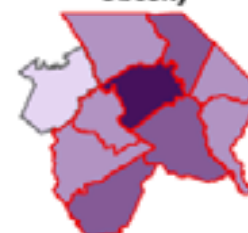
Current Smoker



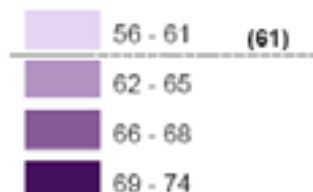
Prevalence % (SC State %)



Obesity



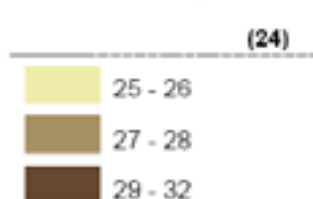
Prevalence % (SC State %)



Sedentary Lifestyle



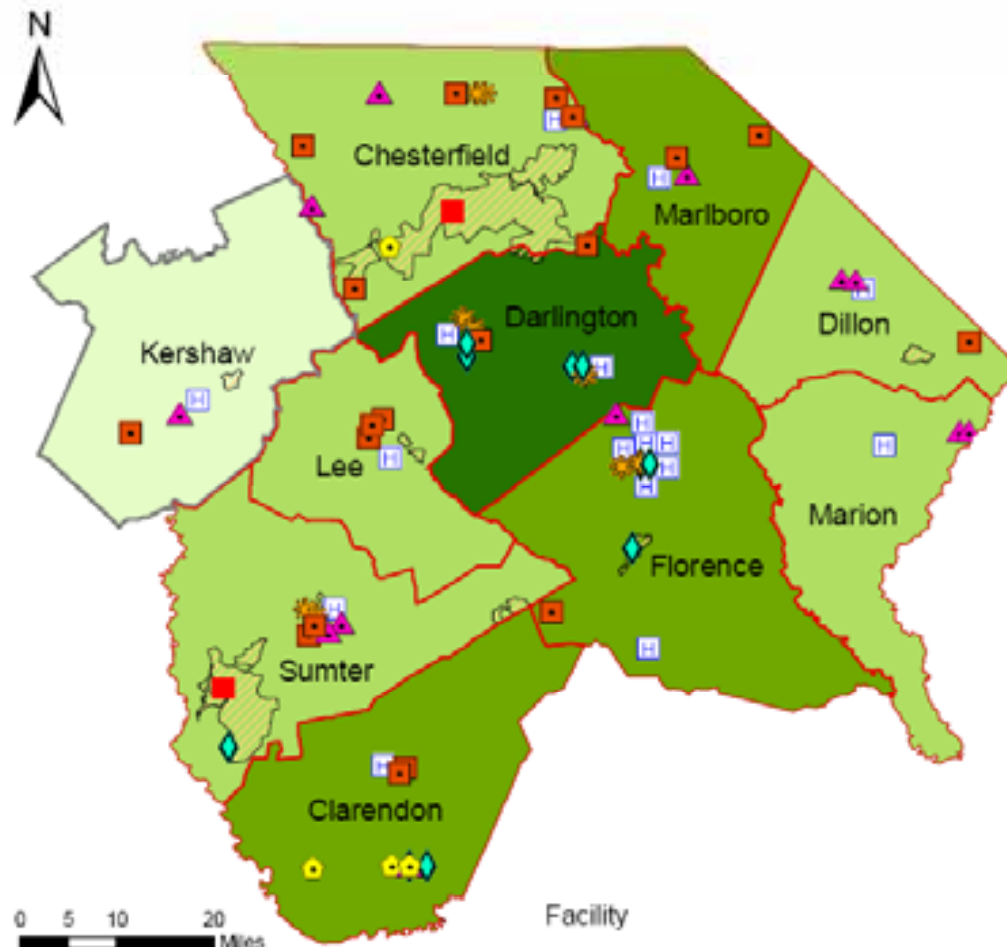
Prevalence % (SC State %)



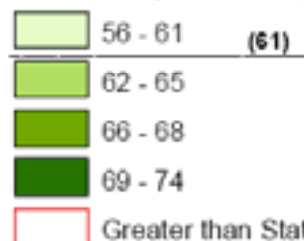
Greater than State Rate

Data Source: Behavioral Risk Factors Surveillance System (BRFSS)
Map Source: Division of Public Health Informatics, PHSIS, SCDHEC
10/3/06 (I.S., R.C.)

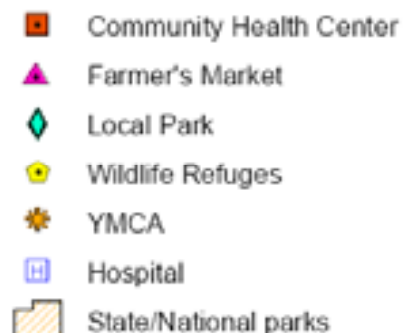
Percent Prevalence of Obesity by County in DHEC Region 4, 2004



% Overweight/Obese (SC State %)

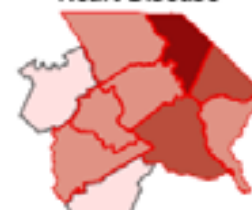


Facility

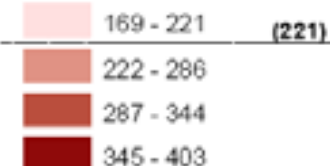


Age Adjusted Mortality Rates by County, 2004* (SC Cause Specific Mortality Rate)

Heart Disease



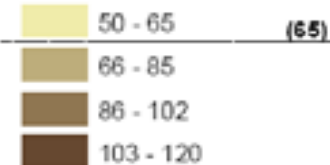
Death Rate per 100,000



Stroke



Death Rate per 100,000



Diabetes



Death Rate per 100,000



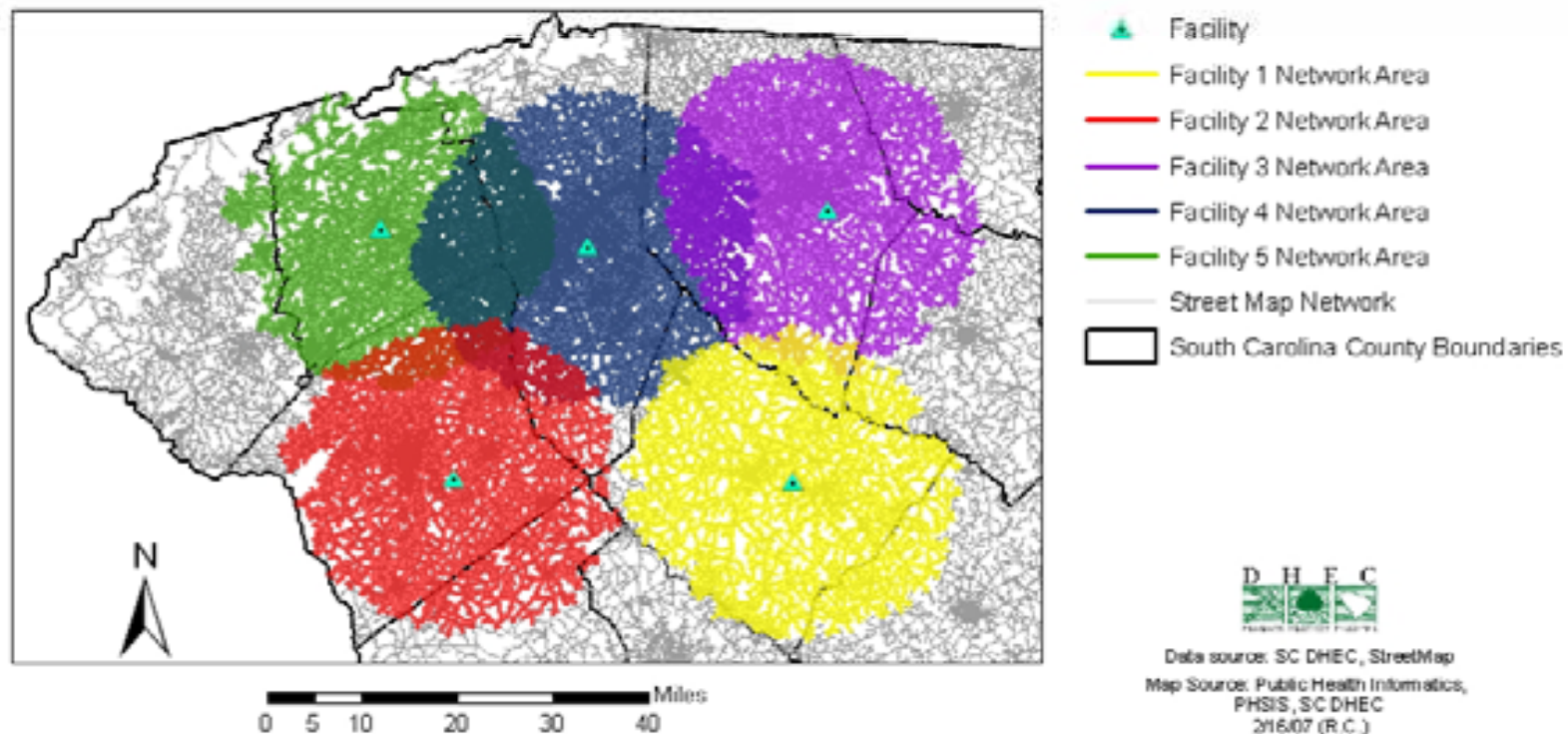
Greater than State Rate

* Mortality rates were direct age-adjusted using the 2000 standard population weights.

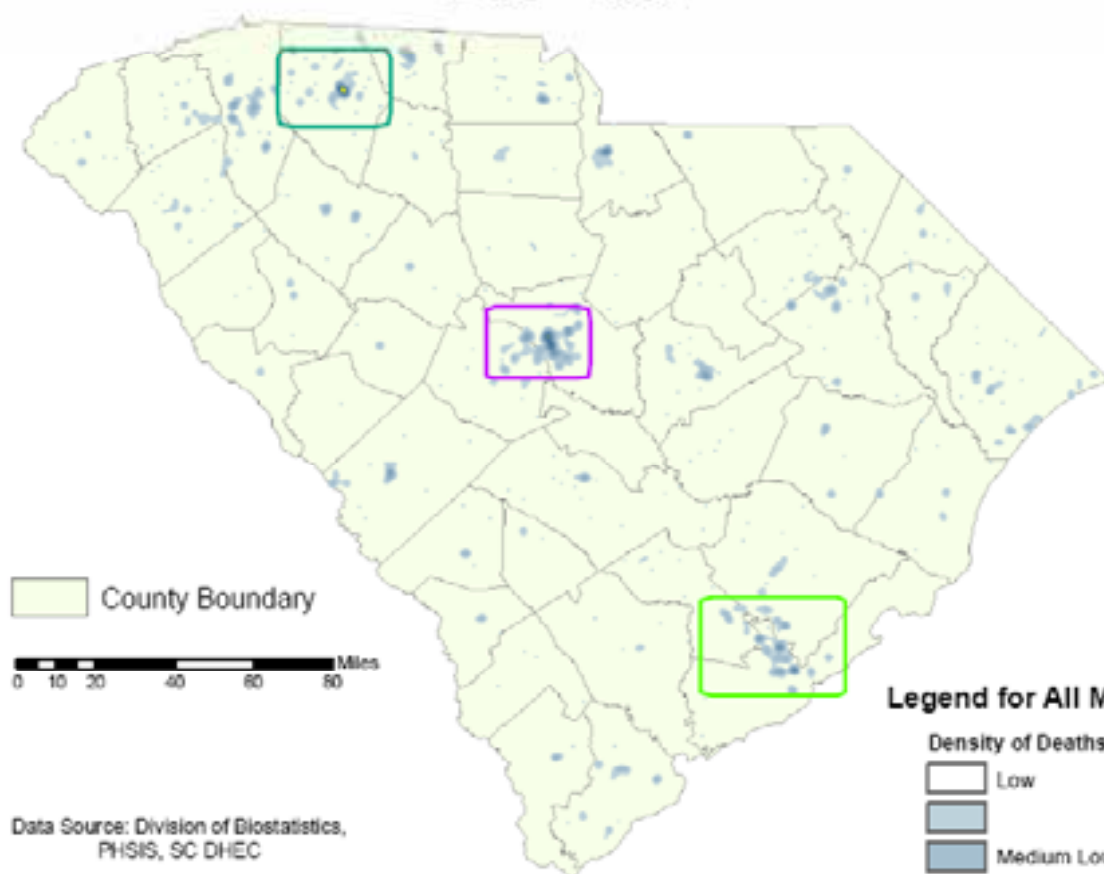


Data Source:
Behavioral Risk Factors Surveillance System (BRFSS)
Map Source:
Division of Public Health Informatics, PHSIS, SCDHEC
09/29/06 (I.S., R.C.)

Twenty Mile Network Area for Five Facilities in Upstate South Carolina



Density of Postneonatal Deaths in South Carolina 2000 - 2004



Data Source: Division of Biostatistics,
PHSIS, SC DHEC

Only Postneonatal deaths that were geocoded to a street address were used.
Deaths geocoded to a ZIP or County centroid were not used

Postneonatal Death is defined as the death of an infant from 28 days old
to 364 days old.

Density grid is composed of 100-meter cells.
Cell values for the density grid were calculated
by adding the number of events in a two-mile
search radius and dividing it by the search area,
with the points closer to the center weighing
more heavily than those closer to the edge.



Map Source: Division of Public Health Informatics,
PHSIS, SC DHEC
9-17-07 (R.C.)

Legend for All Maps

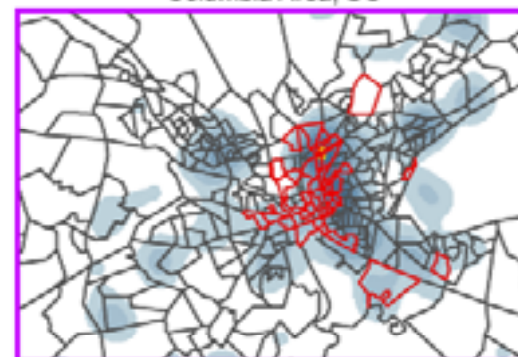


Detailed View of Areas with Higher Densities of Postneonatal Death
with Block Group Boundaries Classified by Poverty Level

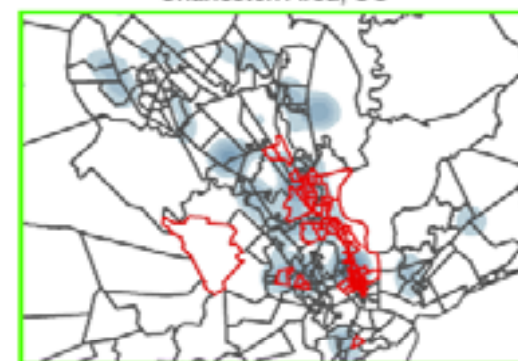
Spartanburg Area, SC



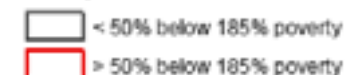
Columbia Area, SC



Charleston Area, SC



Percent Population Below 185% Poverty





Embedded GIS In Public Health Applications



South Carolina Community Assessment Network (SCAN)



WEBSITE STATISTICS

Since Deployment

- "Hits"
 - 19,716,469

- Visitors
 - 1,275,923

Year to Date

- "Hits"
 - 4,602,169

- Visitors
 - 373,703





South Carolina

Cerebrovascular disease for White, All Ethnicities, Male, All Ages in 2004 per 100,000
(Adjusted Rates: 2000 Population - South Carolina Death Data - ICD10)

Show/hide Overview Map



Layers

Visible Active

- ☐ 2002 Senate Election Districts
- ☐ 2002 House Election Districts
- ☒ Health Facilities
- ☒ SC Roads
- ☒ Interstates
- ☒ City Boundaries

Refresh



The South Carolina Department of Health and Environmental Control (DHEC) maintains this Web site as a service to the public. While DHEC makes every effort to keep this information up-to-date and accurate, the information available here is NOT warranted by DHEC to be accurate or authoritative.



SCAN Community Profile

S.C. Department of Health and Environmental Control

[Introduction](#)
[Table/Map](#)
[Example](#)
[Definitions](#)
[Links](#)
[SCAN HOME](#)
[ABOUT SCAN](#)
[FAQ](#)
[LINKS](#)
[CONTACT US](#)
[INDEX](#)

South Carolina Community Profile Module

Welcome to the South Carolina Community Profile Module. The purpose of this interactive module is to present statistics of health and well-being indicators in a user-friendly format, combining tables, graphs and maps in a way that allows the user to select different geographic areas, demographic characteristics and preferred output format. Included in the profiles are indicators from a wide spectrum of health characteristics or outcomes such as infant and mother's health, morbidity, mortality and risk factors, etc.

This module is developed by Division of Biostatistics in co-operation with Division of Informatics of Public Health Statistics and Information Services of DHEC. It pools the public health statistics from various sources such as Vital Records and Behavioral Risk Factor Surveillance System (BRFSS) to a central location and presents the summarized statistics seamlessly. The Community Profile Module is designed to inform service providers, planners, policy makers and the general public about health issues at a local and state level. The objectives of this module are to:

- Provide a comprehensive yet detailed summary of health and health determinants in geographic regions (Counties/DHEC Regions) across South Carolina
- Make local health information accessible to a wide audience in a timely and interactive manner
- Draw attention to health inequalities and highlight both geographical and temporal trend

This module provides various statistics such as crude rate, age-adjusted rate, 95% confidence interval, ranking and comparison to the state average as well as information about Health People 2010 objectives (HP2010) and Leading Health Indicators. Trend-lines, bar charts and interactive maps can be generated as graphical presentations of the user requested statistics to provide other methods to visually analyze the information.

A few "shortcuts" links are presented below to allow the users to generate four different pre-defined queries that look at typical public health questions and demonstrate the various different SCAN output options. The results are presented at the DHEC Region level. (Note: Links below generate complex statistics and will take longer to generate than a standard SCAN query.)

Newborn characteristics	Including birth, birth weight, preterm birth, infant death information for year 1999-2004
Maternal health	Including mother's education, smoking status during pregnancy, marital status, prenatal care information 1999-2004
Cancer mortality	Including breast, colorectal, lung, prostate and total cancer mortality information 1999-2004
Leading Health Indicators	All the available Leading Health Indicator objectives in the module 2004

In order to make customized output based on different selections, user will need to use the main input page. User can click the "Table/Map" tab at the top of the table or follow this link: [Table/Map input page](#)

An example page (Example tab) is provided with step-by-step examples to help users get familiar with this module. A definition page (Definitions tab) is provided to

Output: table, graph and map

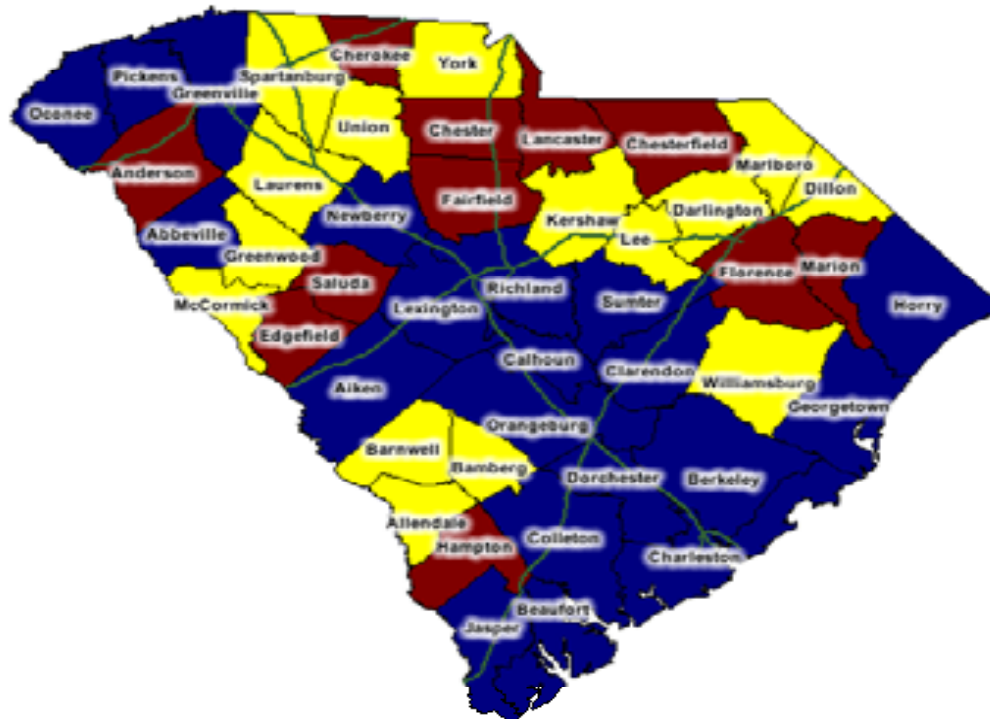


Row Variable: Coronary heart disease death Output: Comparison to HP 2010 Target

[Create Table](#)

Indicator	Rate Multiplier Description	Year	Age	Sex	Race	Ethnicity
Coronary heart disease death	per 100,000 Population	1999-2004	All	All	All	All

Coronary heart disease death HP 2010 Comparison -- Age-Adj. Rates



- ☒ SC Community Profile
 - ☐ 2002 Senate Election Districts
 - ☐ 2002 House Election Districts
 - ☒ Health Facilities
 - ☒ SC Roads
 - ☒ Interstates
 - ☒ City Boundaries
 - ☒ HP 2010 Comparison
 - ☐ No Data Available
 - ☒ Significantly Lower
 - ☒ Not Significantly Different
 - ☒ Significantly Higher

Geo Areas:

[Users / Management](#)
[Open Shelters](#)
[Ready Shelters](#)
[Closed Shelters](#)
[Reports](#)

Shelter Status Key

 Open
 Ready
 Closed

Login Information

Current User: David
User Level: SCDHEC-4
Login Time: 12:36:42 PM

[Logout](#)

Select by County:

OR

Search By Name:

The list of potential
shelters will be shown
here after you select a
county and click the
"Submit"
button above.

Newberry High School

3413 Main St

Newberry, SC 29108-4139

Conglomerate: Western

[Facility Information](#) [Staff/Volunteer Information](#)

Shelter Status: C

Shelter Type: Reserve ARC

☐ Security Available/Present☐ Counselor Available/Present

Maximum Capacity

1197

[Evacuee Information](#)Department of Social ServicesCurrent No. in Shelter:

DSS Percent Filled: 0%

DSS Shelter Contact: Phone: Fax: Estimated Evacuees with Pets:

Comments:

American Red CrossCurrent No. in Shelter:

ARC Percent Filled: 0%

ARC Shelter Contact: Phone: Fax: No. Meals Served:

This shelter was last updated Aug 29 2007 11:52AM by whorwood

**Reach SC**

South Carolina's Emergency Notification System

Advanced Tools >



Layers

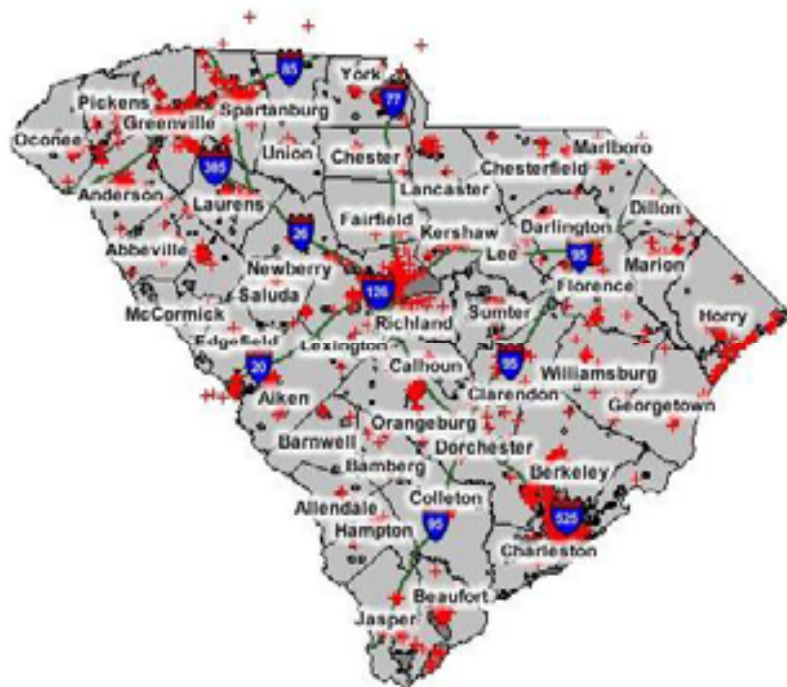
Legend

Layers

Visible Active

- ☒ stan
- ☒ Health Facilities
- ☒ Hospitals_Callout
- ☐ Restaurant
- ☐ Health Department
- ☐ Funeral Homes
- ☐ US Post Office
- ☐ Staff Information
- ☒ SC Roads
- ☒ Interstates
- ☒ City Boundaries
- ☒ Counties

Refresh Map



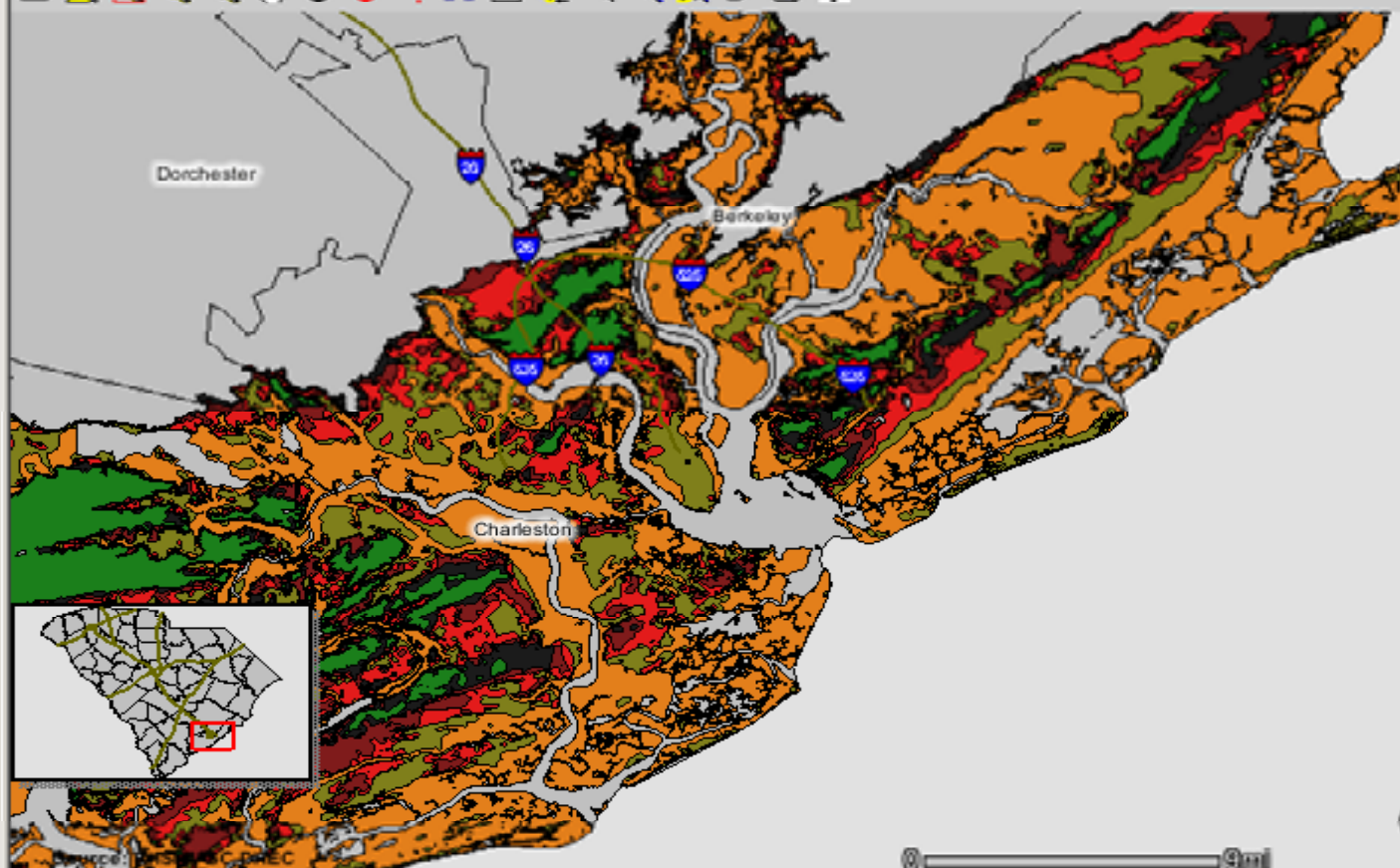
0 107 Miles

South Carolina
DHEC

Critical Data Sheet Information



S.C. Department of Health and Environmental Control



Layers Legend

Legend

- Critical Data Sheet Facilities
- Interstates
- Normal Surge
- Not Inundated
- Category 1
- Category 2
- Category 3
- Category 4
- Category 5
- County

Legend

S.C. Department of Health and Environmental Control

[Search](#) [Disclaimer](#) [SCDHEC Home](#) [GIS](#) [PHSIS](#) [Project Links](#) [Contact Us](#)

Web Based Application URLs



South Carolina Community Assessment Network (SCAN)
<http://www.scdhec.gov/scan> or <http://scangis.dhec.sc.gov/scan>

REACHSC (Reverse 911 / Health Alert Network) <http://www.reachsc.com/>

DHEC Emergency Hurricane Sheltering System
<http://scangis.dhec.sc.gov/dhecshelters>

DHEC GIS Download Server / SIGIS (Internet Version)
<http://www.scdhec.gov/eqc/gis/>

Critical Data Sheets Application
<http://scangis.dhec.sc.gov/cdatasheet/login.aspx>

Acknowledgements



- Earl Hunter – Commissioner of Health
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 - Shae Sutton PhD – Director
 - Yang Wang, Fushon Zhang, Daniella Nitchavia – Mary Glover, Calandra McLeod
- Past PHSIS Staff and Program Area Contacts
- Special Thanks to Murray “Buddy” Hudson, Ishwari Sivagnanam, Angela Kneece

