



Integrated GIS Solutions

Oregon Public Health Division's Experiences

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Integrated GIS Solutions

- Purpose of this presentation
 - Describe work done within the Oregon Public Health Division on integrated GIS solutions
 - Facilitate discuss and share ideas to further integration of GIS within state health departments
- Goal for Oregon Public Health GIS
 - Develop an enterprise GIS infrastructure including hardware, software, network and database to facilitate a better use of limited resources, reduce redundant efforts and share information on public health in Oregon



Agenda

1. Overview

1. Resource Integration

2. Data Integration

3. Coordination

4. Open Discussion

Agenda


1. Overview

Overview

- Why is GIS important to public health?
 - Using GIS is a healthy people 2010 public health infrastructure goal

“Increase the proportion of all major national, State, and local health data systems that use geocoding to promote nationwide use of geographic information systems (GIS) at all levels.”
 - GIS helps public health look at questions pertaining to “where people live” and spatial associations to risk factors
 - GIS helps identify locations of critical infrastructure during public health emergencies

Goal: South Carolina Department of Health and Environmental Control




South Carolina Department of Health and Environmental Control
Promoting and protecting the health of the public and the environment

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SCDHEC GIS



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](#) [GIS Web Applications](#)

<http://www.scdhec.net/gis/default.aspx>

Goal: South Carolina Department of Health and Environmental Control

The screenshot shows the SCAN web application interface. On the left is a dark green sidebar with the DHEC logo and navigation links: SCAN HOME, ABOUT SCAN, FAQ, LINKS, CONTACT US, and INDEX. The main content area has a header with the SCAN logo and title. Below the header is a navigation bar with links: SCCCR Home, Home, Create a Table, Example, Definitions, Generate a Map, FAQ, Links, and Login. A red notice states that the page is best viewed with Internet Explorer. The main instructions guide the user through four steps to create a table, trend-line, and bar chart from South Carolina Resident data. Step One involves selecting a row variable (Year, Race, Age, Sex, Stage, Grade, Region, or Primary Cancer Type). Step Two involves selecting a column variable (Year, Race, Age, Sex, Stage, Grade, Region, or Primary Cancer Type). Step Three involves selecting year(s) of interest (1996-2005) with checkboxes for each year and an 'All Years' option. Step Four (Optional) involves specifying Race, Age, Sex, Stage, and/or Grade with dropdown menus. The dropdowns for Race and Age are currently set to 'All', and the dropdown for Sex is currently set to 'Male'.

SCAN Cancer Incidence:
Full (Research) File
S.C. Department of Health and Environmental Control

[SCCCR Home](#) | [Home](#) | [Create a Table](#) | [Example](#) | [Definitions](#) | [Generate a Map](#) | [FAQ](#) | [Links](#) | [Login](#)

NOTICE: This page is best viewed with Internet Explorer. Functionality may be limited with Netscape Navigator or other web browsers.

Follow these steps to create a table, trend-line and bar chart from South Carolina Resident data.

Step One
Select row variable (default: Year).
☒ Year ☐ Race ☐ Age ☐ Sex ☐ Stage ☐ Grade ☐ Region ☐ Primary Cancer Type

Step Two
Select column variable (default: Primary Cancer Type).
☐ Year ☐ Race ☐ Age ☐ Sex ☐ Stage ☐ Grade ☐ Region ☒ Primary Cancer Type

Step Three
Select **year(s)** of interest (default: 1996-2005).
☒ 1996 ☒ 1997 ☒ 1998 ☒ 1999 ☒ 2000 ☒ 2001 ☒ 2002 ☒ 2003 ☒ 2004 ☒ 2005 ☐ All Years

Step Four (Optional)
Specify Race, Age, Sex, Stage and/or Grade Below: (default: All Races, All Ages, All Sexes, All Grades, All Stages)

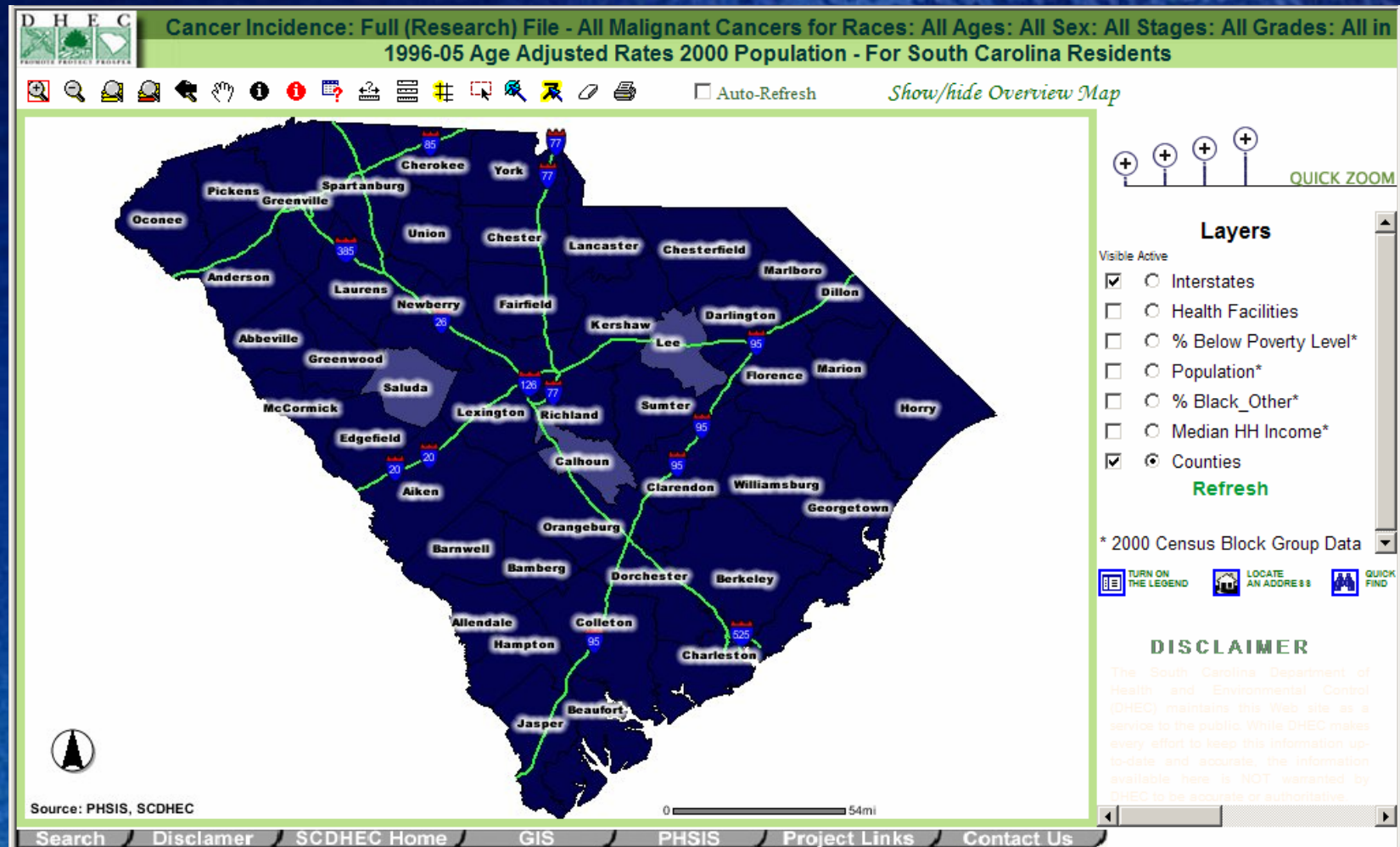
Race: All
White
Black

Age: All
0-4
5-9

Sex: All
Male
Female

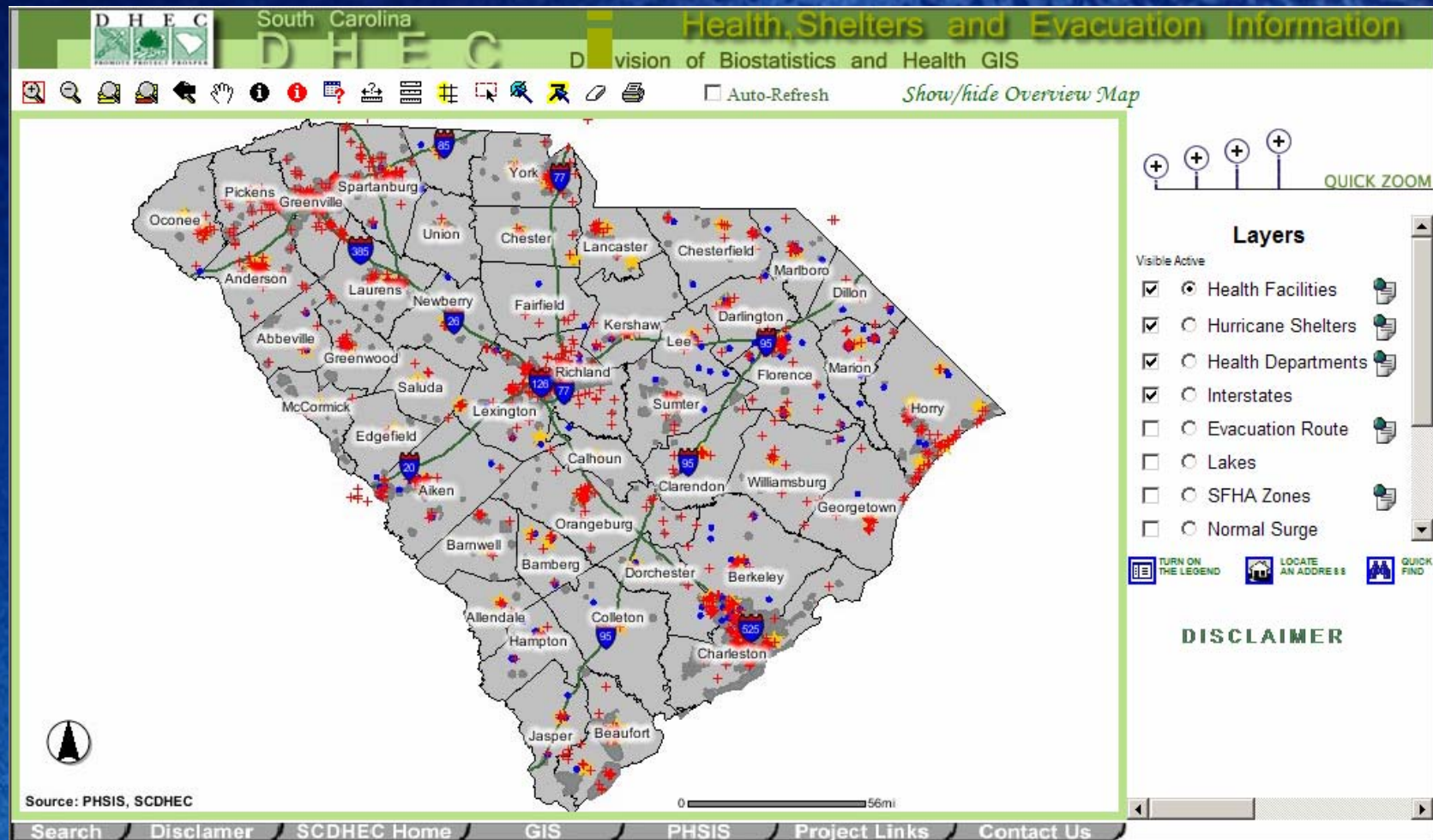
<http://www.scdhec.net/gis/default.aspx>

Goal: South Carolina Department of Health and Environmental Control





<http://www.scdhec.net/gis/default.aspx>

Goal: South Carolina Department of Health and Environmental Control



Goal: South Carolina Department of Health and Environmental Control

Address  <http://scangis.dhec.sc.gov/dhecshelters/public/Default.asp>




Protecting and Serving South Carolinians in Times of Need

FIND OPEN SHELTERS AND GET DRIVING DIRECTIONS FROM YOUR ADDRESS.
(Not all addresses can be located with this system. If your address cannot be found enter an address close to your home on a main street.)

What is your street address?

Street Address	<input type="text"/>
City	<input type="text"/>
State	<input type="text" value="SC"/>
Zip	<input type="text"/>
<input type="button" value="Find Open Shelters"/>	

Things to check before you leave !! 

Maintained by:
Division of Biostatistics and Health GIS
Public Health Statistics and Information Services
South Carolina Department of Health and Environmental Control

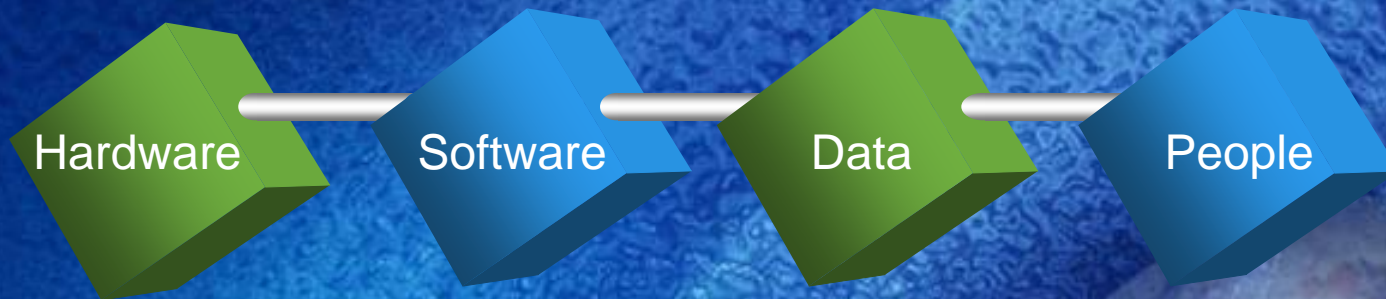


DHEC Contact Information:
Jared Shoultz,
Phone: 803-898-3668
email: shoultj@dhec.sc.gov
[Click here for American Red Cross](#)
[Contact Info](#)

Agenda

1. Resource Integration

Resource Integration

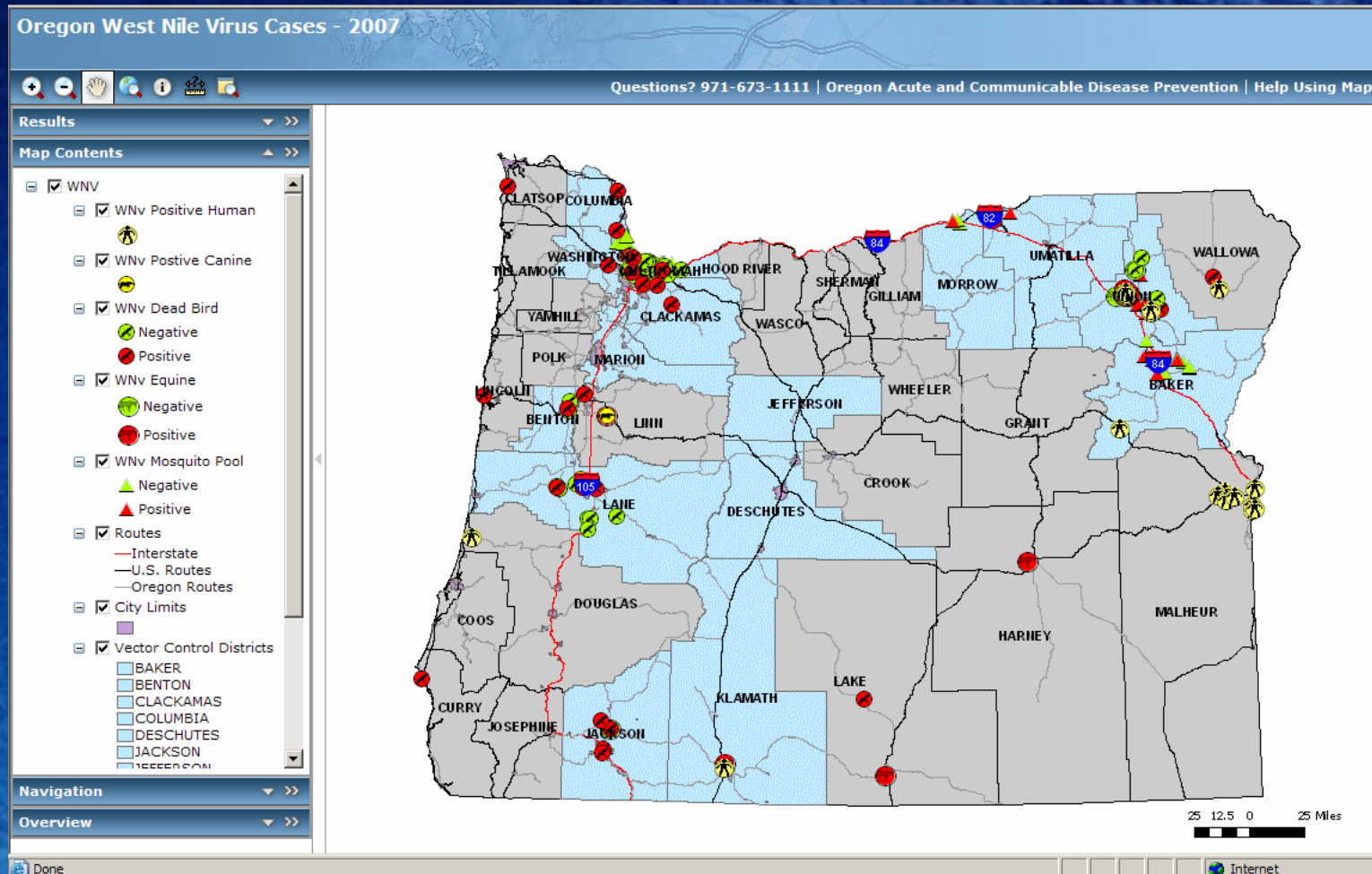


Resource Integration

- Hardware
 - Shared map printer
 - Servers at the Oregon State Data Center
- Software (Desktop)
 - Ten concurrent licenses of ArcGIS ArcView
 - One concurrent license of Map Publisher
 - Two concurrent licenses of Spatial Analyst
 - Twenty one MapMarker geocoder licenses
 - One license of GeoPDF
- Software (Enterprise)
 - License of the ESRI Developers Network (includes all available ESRI software for development use)
 - Availability of ArcServer through partnership with the Oregon Geospatial Enterprise Office

Result of Resource Integration

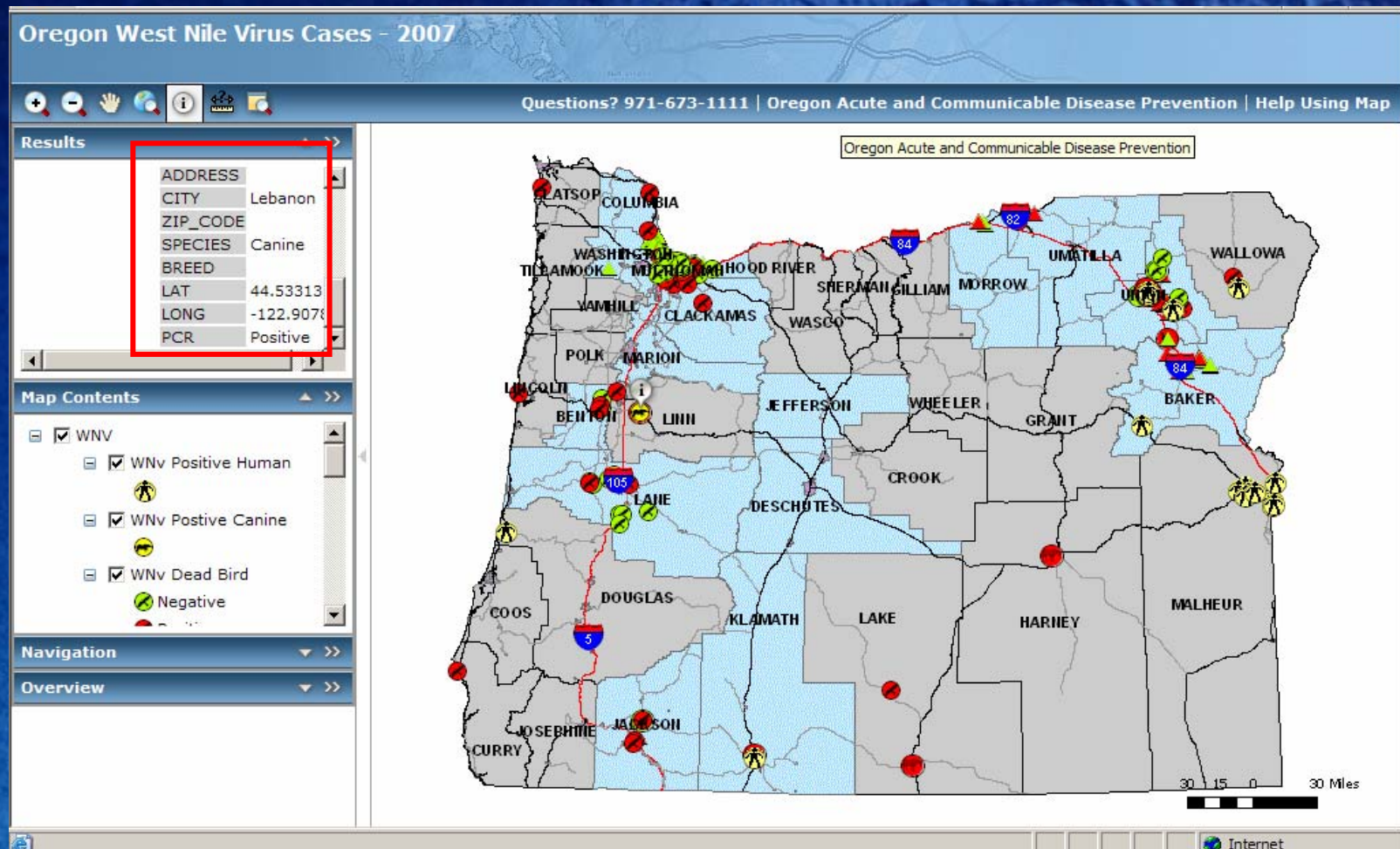
West Nile Virus 2007



<http://159.121.106.117/WNV/default.aspx>

Result of Resource Integration

West Nile Virus 2007



<http://159.121.106.117/WNV/default.aspx>

Result of Resource Integration

Shared Geocoding Service

- Collaboration between Public Health Division and Geospatial Enterprise Office
- Includes spatial data of interest to Public Health and a single and batch geocoder
- Currently in process to expanded to include the statewide NavigatOR initiative
- Secure login with public health specific data to limited users

Demonstration Shared Geocoding Service

OREGON.gov

Overview Map

Back Forward Print Clear

CLATSOP WALLOWA
TILLAMOOK UMATILLA
CLATSOP SWASCO UNION
MARION LINN
LINCOLN LANE CROOK GRANT
COOS DOUGLAS DESCHUTES
CURRY KLAMATH HARNEY MALHEUR
JOSEPHINE LAKE

Table of Contents

Service Organizer

Batch Geocode

Geocode Single Address:

Address (123 Main St, 12345)

ArcGIS Explorer

Extending NavigatOR

This content will be added later

CLATSOP COLUMBIA
WASHINGTON MULTNOMAH UMATILLA WALLOWA
TILLAMOOK HOOD RIVER SHERMAN MORROW UNION
YAMHILL CLATSOP WASCO
POLK MARION
LINCOLN BENTON LINN JEFFERSON WHEELER GRANT BAKER
LANE CROOK
DOUGLAS DESCHUTES
COOS LAKE HARNEY MALHEUR
CURRY JOSEPHINE KLAMATH

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Done Internet

<http://159.121.106.117/GEOCODE/index.aspx>

Demonstration Shared Geocoding Service

OREGON.gov

Overview Map

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Service Organizer

Batch Geocode

Geocode Single Address:
Address (123 Main St, 12345)

Geocode Result:
Address: 800 NE OREGON ST 97232
X: 759306.77
Y: 1384480.02
Source: "rlis_p"
Text: 100

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Done Internet

<http://159.121.106.117/GEOCODE/index.aspx>

Demonstration Shared Geocoding Service

OREGON.gov

Overview Map

Back Forward Print Clear

Batch Upload: Browse...

Output Format: ☒ csv ☐ Shapefile

Check progress: Enter file name in the text box below

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Service Organizer

[Batch Geocode](#)

Geocode Single Address:

Address (123 Main)

Geocode Result:

Address: 800 NE OREGON ST 97232

X: 759306.77

Y: 1384480.02

Source: "rlis_p"

Text: 100

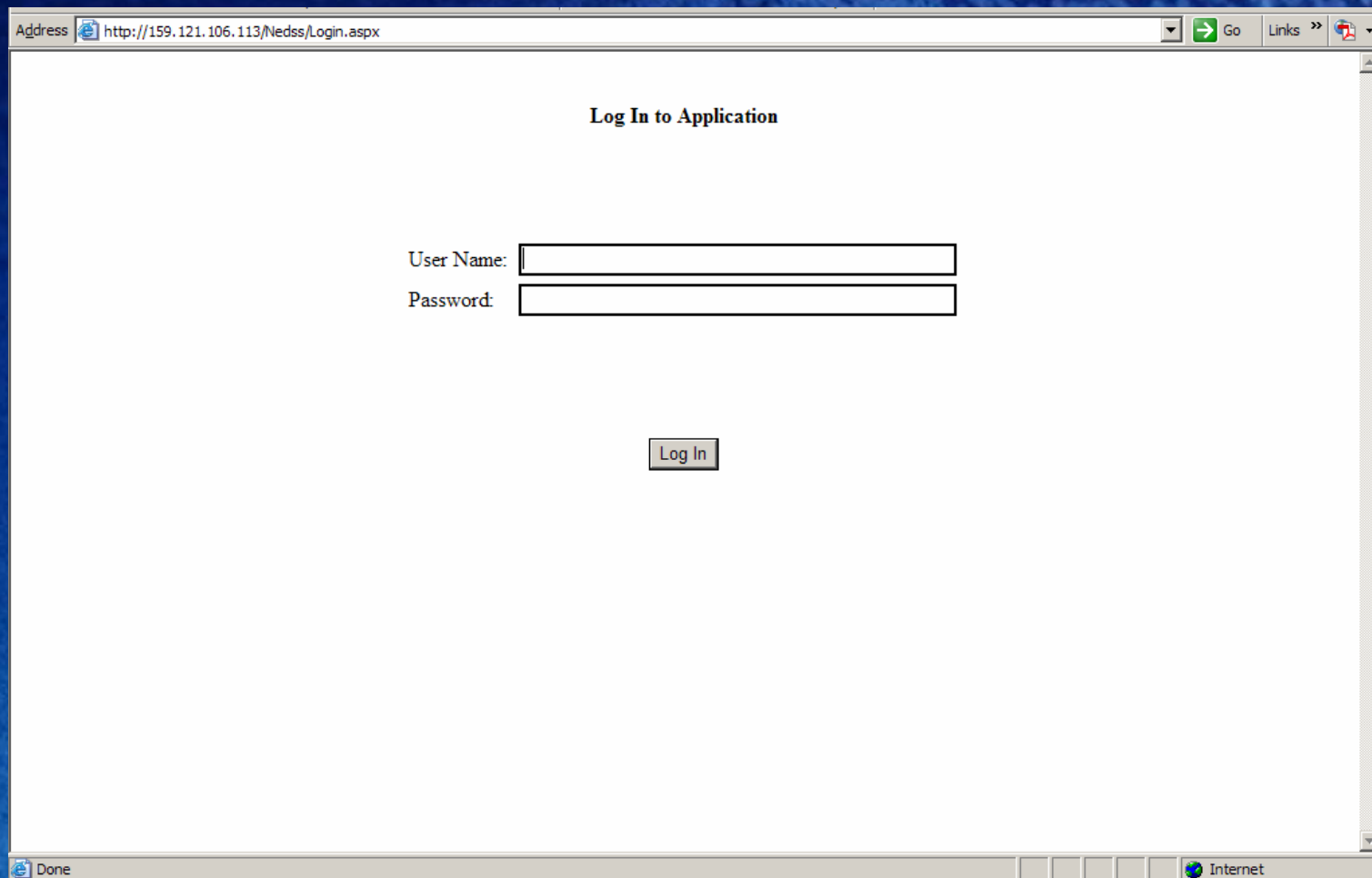
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Done Internet

<http://159.121.106.117/GEOCODE/index.aspx>

Demonstration Shared Geocoding Service





The screenshot shows a web browser window with the address bar displaying `http://159.121.106.113/Nedss/Login.aspx`. The page content is a login form titled "Log In to Application". It contains two input fields: "User Name:" and "Password:". Below these fields is a "Log In" button. The browser's status bar at the bottom shows "Done" and "Internet".

Address  `http://159.121.106.113/Nedss/Login.aspx`  Go Links >> 

Log In to Application

User Name:

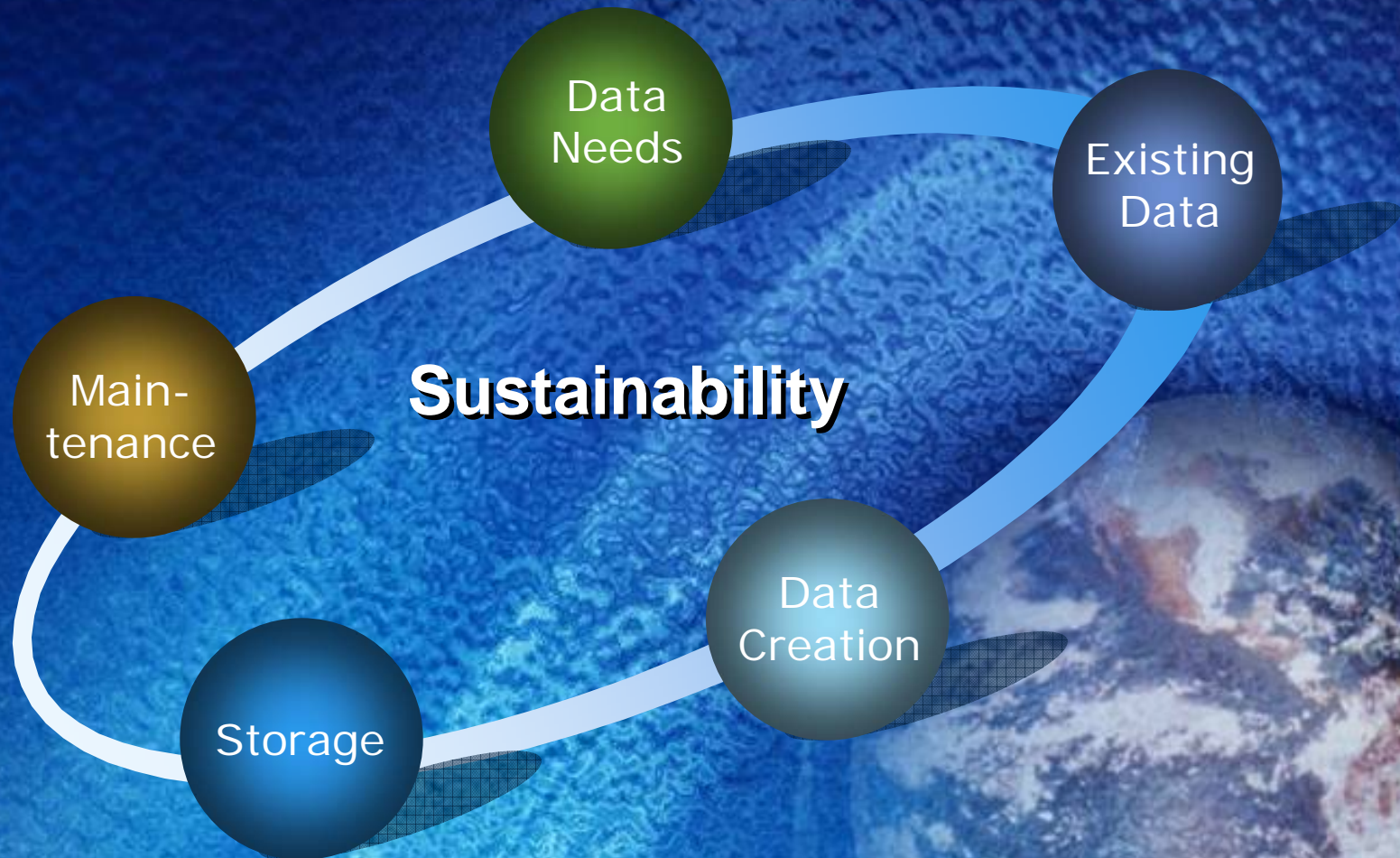
Password:

 Done  Internet

Agenda

2. Data Integration

Data Integration



Data Integration

- Internal GIS data resources
 - Located on shared directory
 - Available only to authorized users
 - Controlled editing/changes to limited staff
- Limitations
 - No timely maintenance of data
 - Gathered on an ad hoc basis
 - No new data generation except special projects
 - Maintained as individual layers and not in geodatabase

Data Integration

Internal GIS data resources



Data Integration

- Critical Facilities Database™
 - Private vendor maintained database
 - Cost shared between the Public Health Division and the Oregon National Guard
 - Currently one-time purchase
 - Allows 500 state, county and local personnel access to GIS data for public health use

Data Integration

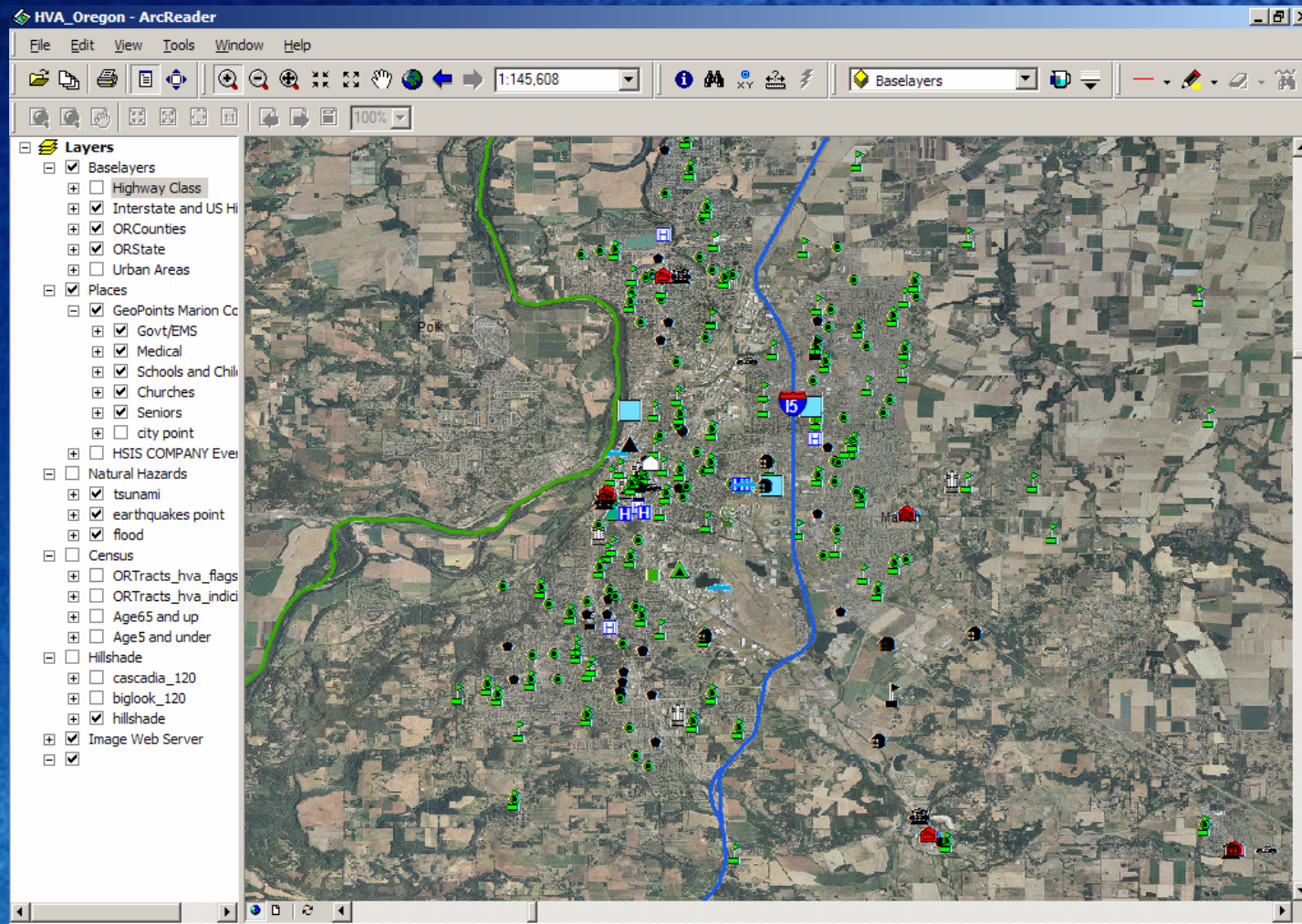
- Critical Facilities Database™ includes

Ambulance Services
Ambulatory Surgery Centers
Before/After School Programs
Child Care Centers
Churches
City Halls
Colleges & Universities
Correctional Institutions
Domestic Violence Programs/Shelters
Facilities for Disabled Children
Fire Departments
Head Start Programs
Hospitals
Nursing Homes
Police Departments

Public Health Departments
Red Cross Chapters
Residential Treatment Centers
Retirement Homes & Communities
Runaway/Homeless Youth Centers
Schools
School Districts
Senior Citizen Centers
Summer Camps
Urgent Care Centers/Walk-in Clinics

Data Integration

Image of Critical Facilities Database™



Agenda

3. Coordination

Coordination

- Public Health GIS Users Group
 - Share GIS work results and methods
 - Examples: Disparities in Medicaid asthma control and suicide/homicides
 - Provide training on methods
 - Example: “ArcGIS QuickStart Manual” available at http://www.oregon.gov/DHS/ph/epht/docs/DATA_REPORTS/UsingArcGISOregon.pdf
 - Presentation by outside organizations
 - Documenting best-practices for geocoding and use of GPS
- State of Oregon GIS Project Leaders
 - Group affiliated with the Geospatial Enterprise Office and made up of state agencies using GIS
 - Goal is to share ideas, experiences, and propose solutions to common problems in a technical forum
 - Oregon Public Health Division is a member of this forum

Agenda

4. Open Discussion

Open Discussion

- Possible discussion topics:
 - Is GIS widely used throughout public health in your state or concentrated in particular sections/projects?
 - Where does state public health have GIS capacity and where are there needs?
 - What has worked to move policies and system change forward in the use of GIS for public health?

