Integrated GIS Solutions

Oregon Public Health Division's Experiences

Rodney Garland, June Bancroft and Mandy Green

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

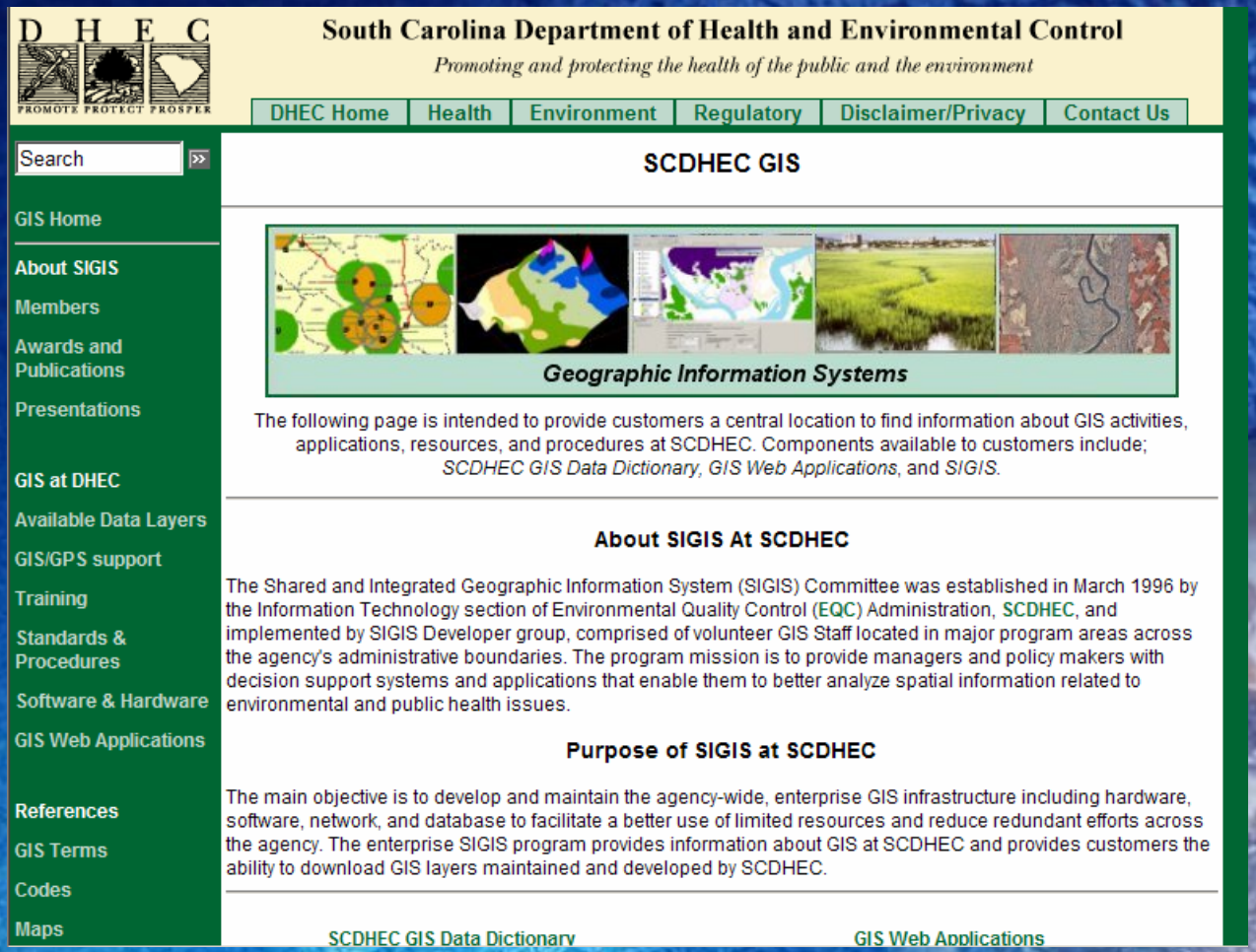
1. Overview

Overview

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

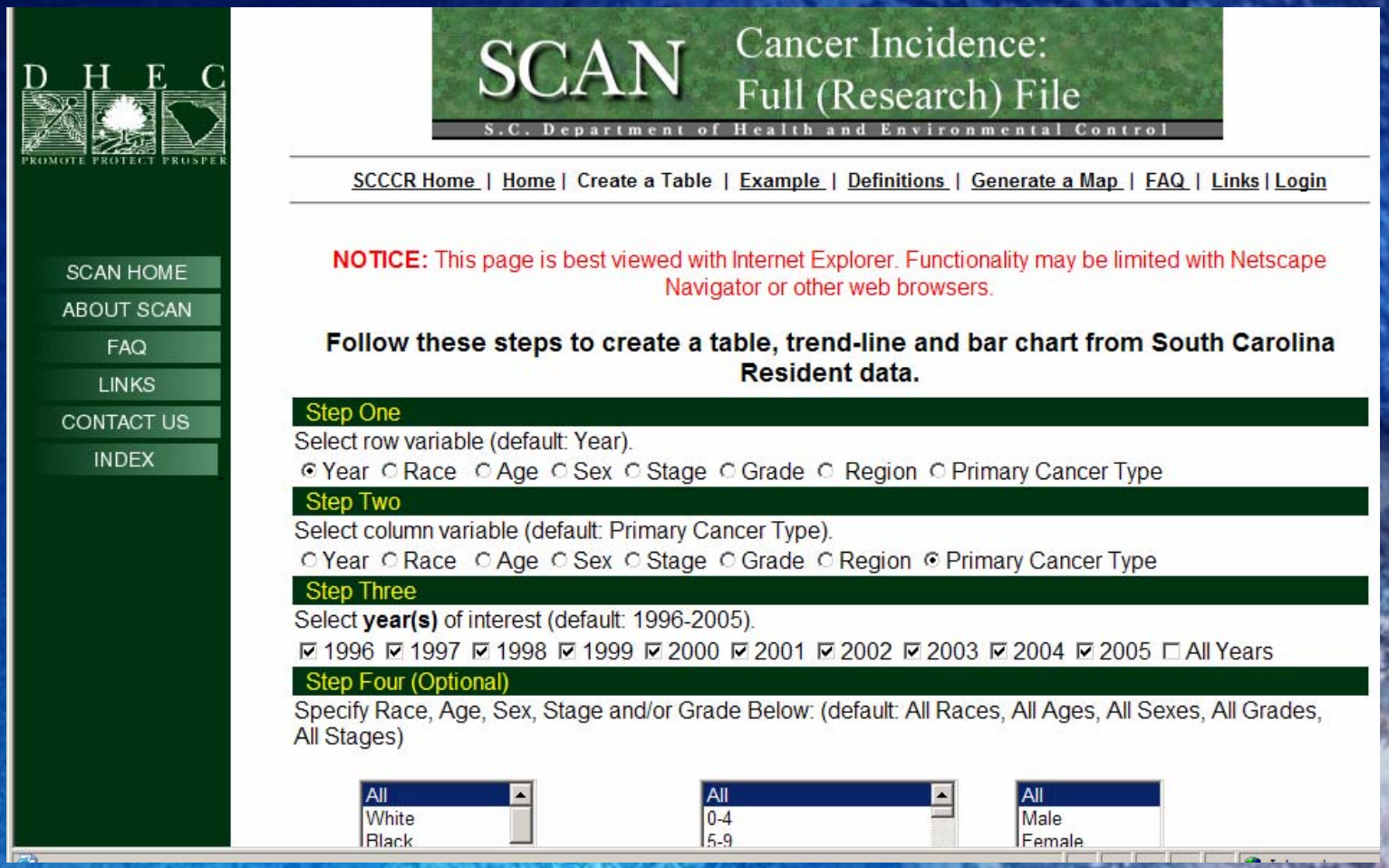
    "Increase the proportion of all major national, State, and local health data systems that use geocoding to promote nationwide use of geographic information systems (GIS) at all levels."
  - GIS helps public health look at questions pertaining to "where people live" and spatial associations to risk factors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

Goal: South Carolina Department of Health and Environmental Control



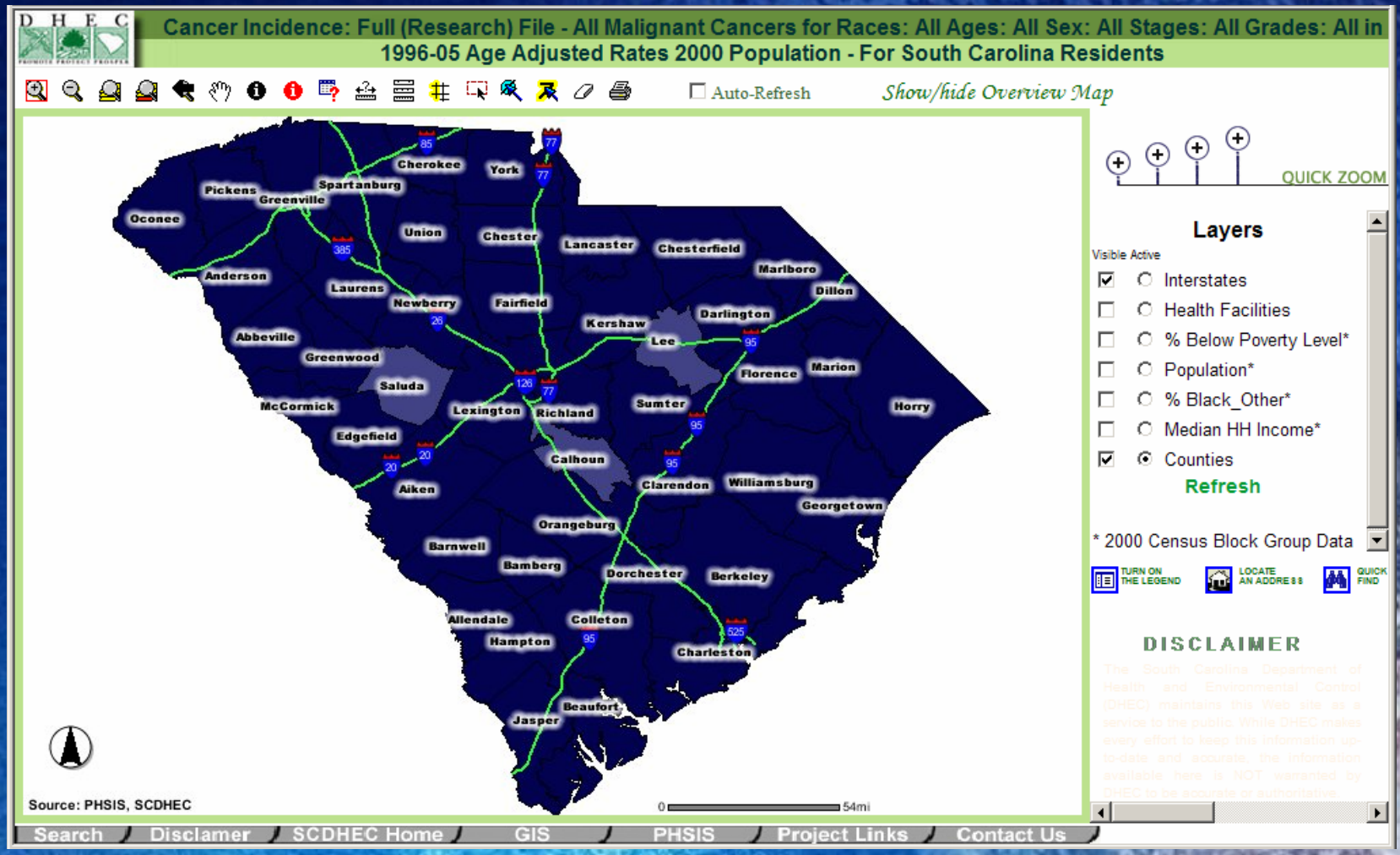
http://www.scdhec.net/gis/default.aspx

Goal: South Carolina Department of Health and Environmental Control



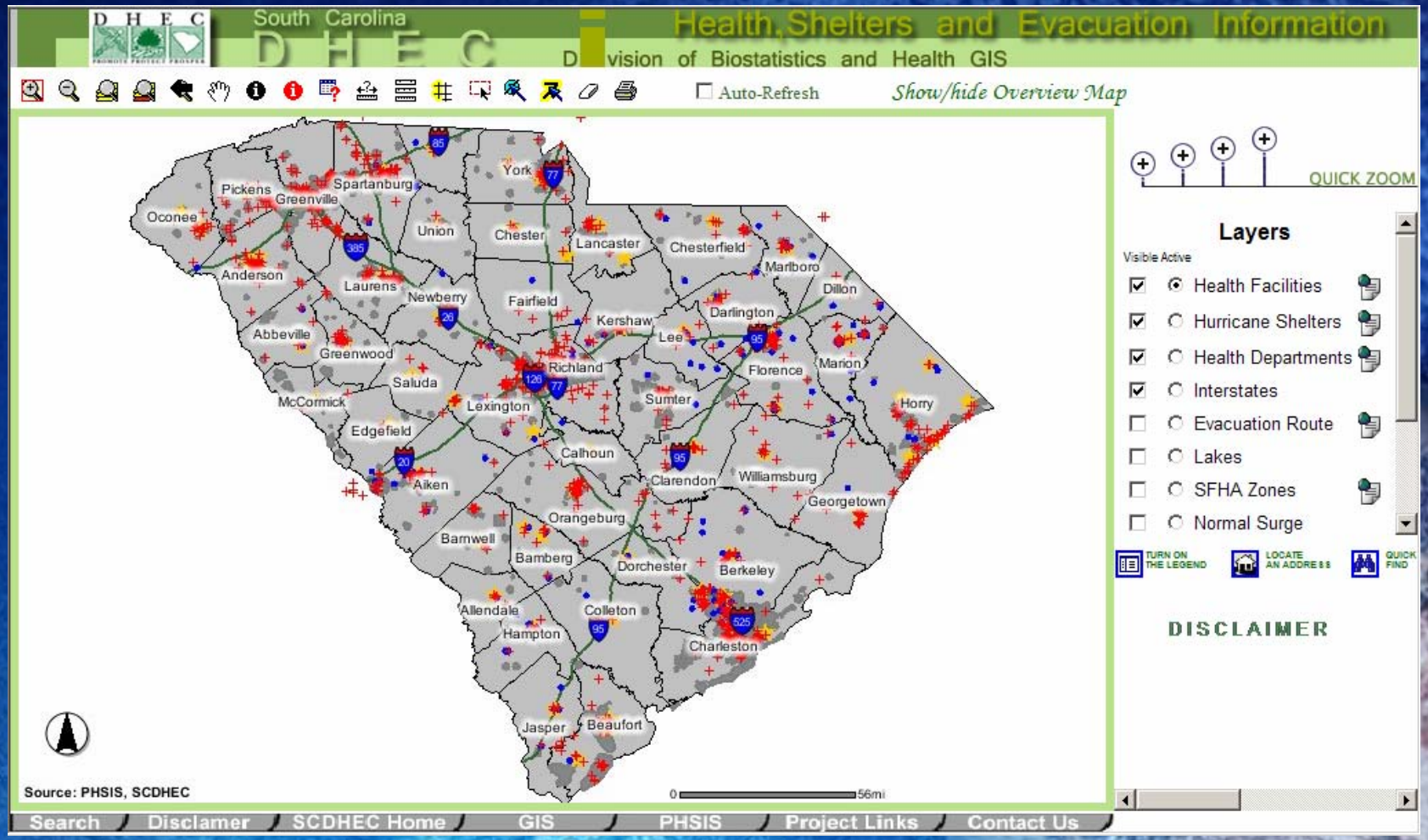
http://www.scdhec.net/gis/default.aspx

Goal: South Carolina Department of Health and Environmental Control



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

South Carolina Hurricane Shelter Status

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	
City	
State	SC
Zip	
	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

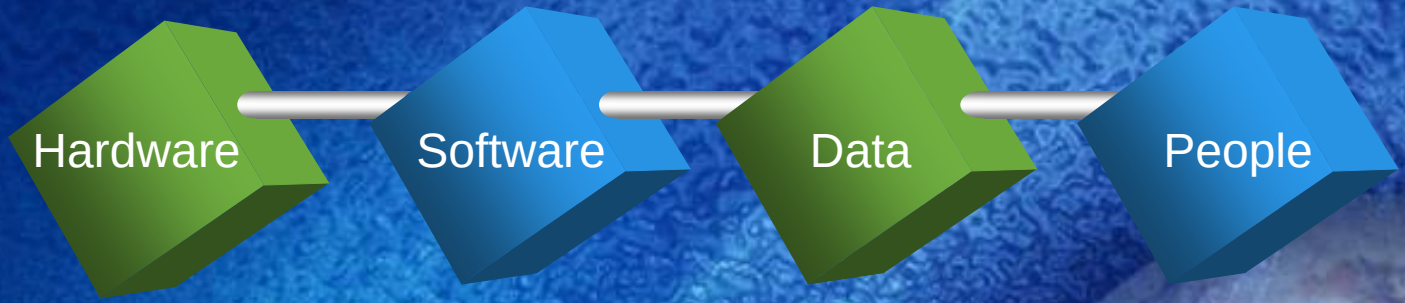
D H E C
PROMOTE PROTECT PROSPER

DHEC Contact Information:
Jared Shoultz,
Phone: 803-898-3668
email: shoultjj@dhec.sc.gov
Click here for American Red Cross Contact Info

Agenda

1. Resource Integration

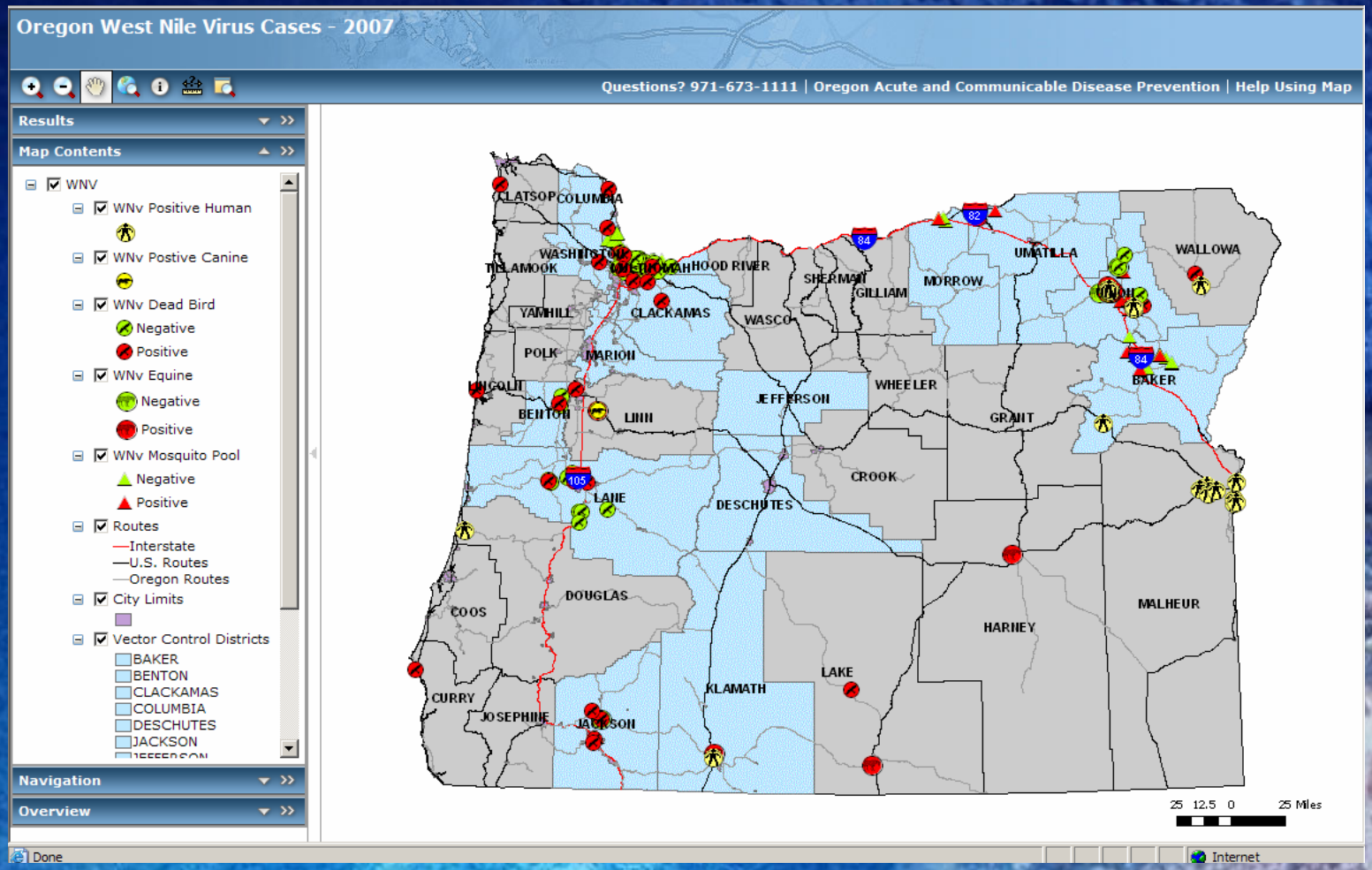
Resource Integration



Resource Integration

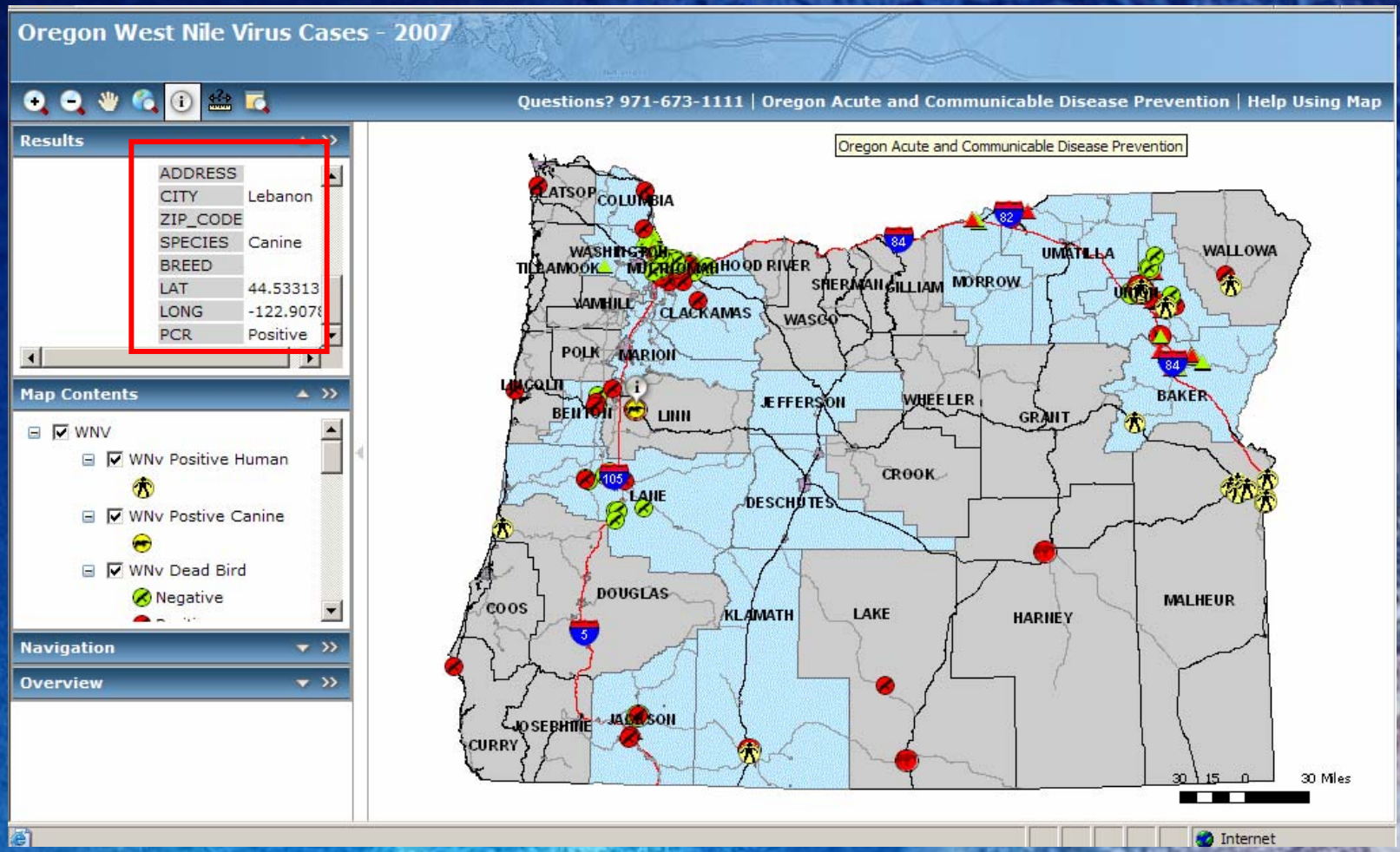
- Hardware
  - Shared map printer
  - Servers at the Oregon State Data Center
- Software (Desktop)
  - Ten concurrent licenses of ArcGIS ArcView
    - One concurrent license of Map Publisher
    - Two concurrent licenses of Spatial Analyst
  - Twenty one MapMarker geocoder licenses
  - One license of 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

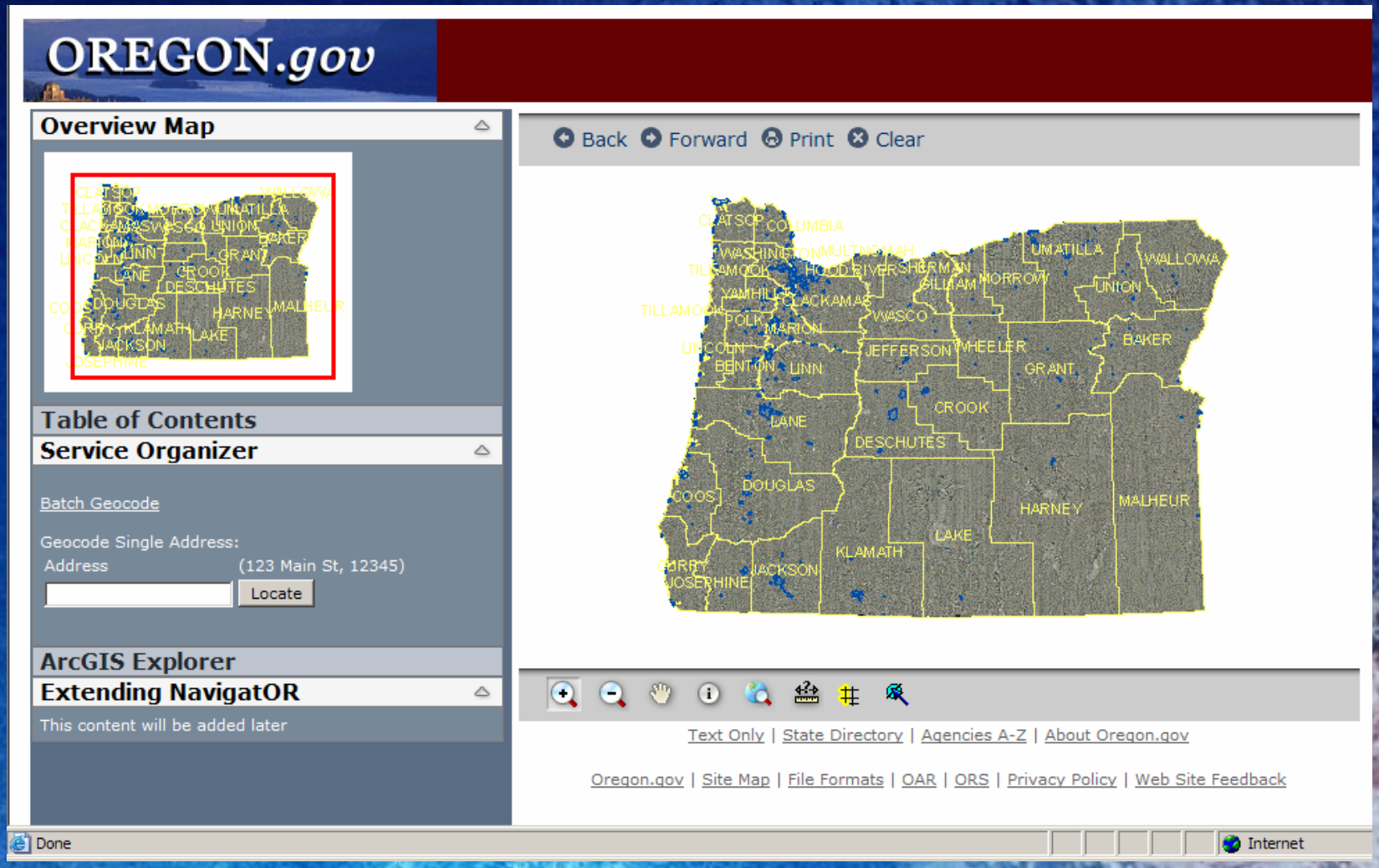


http://159.121.106.117/WNV/default.aspx

Result of Resource Integration Shared Geocoding Service

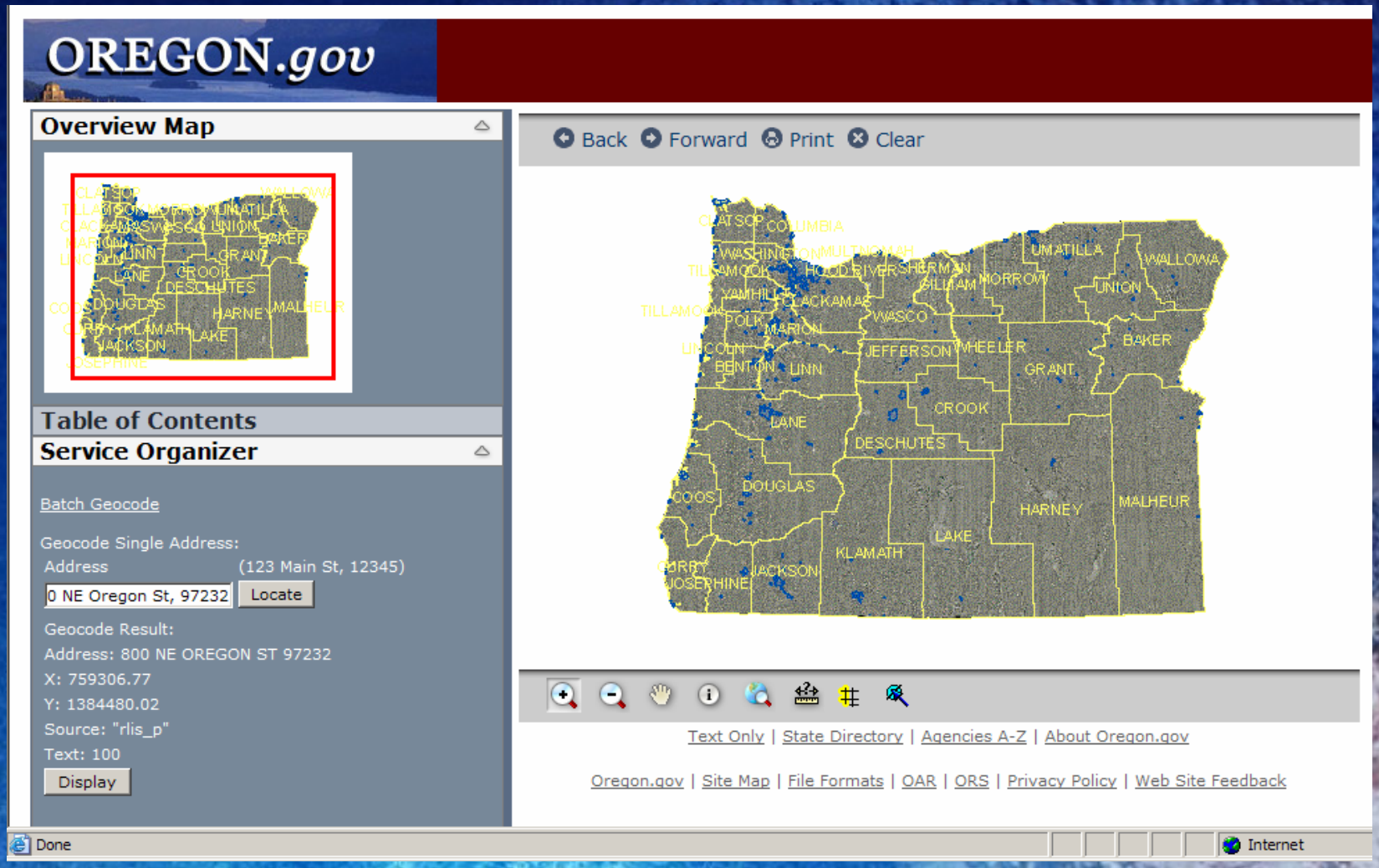
- Collaboration between Public Health Division and Geospatial Enterprise Office
- Includes spatial data of interest to Pubic Health and a single and batch geocoder
- Currently in process to expanded to include the statewide NavigatOR initiative
- Secure login with public health specific data to limited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

Demonstration
Shared Geocoding Service



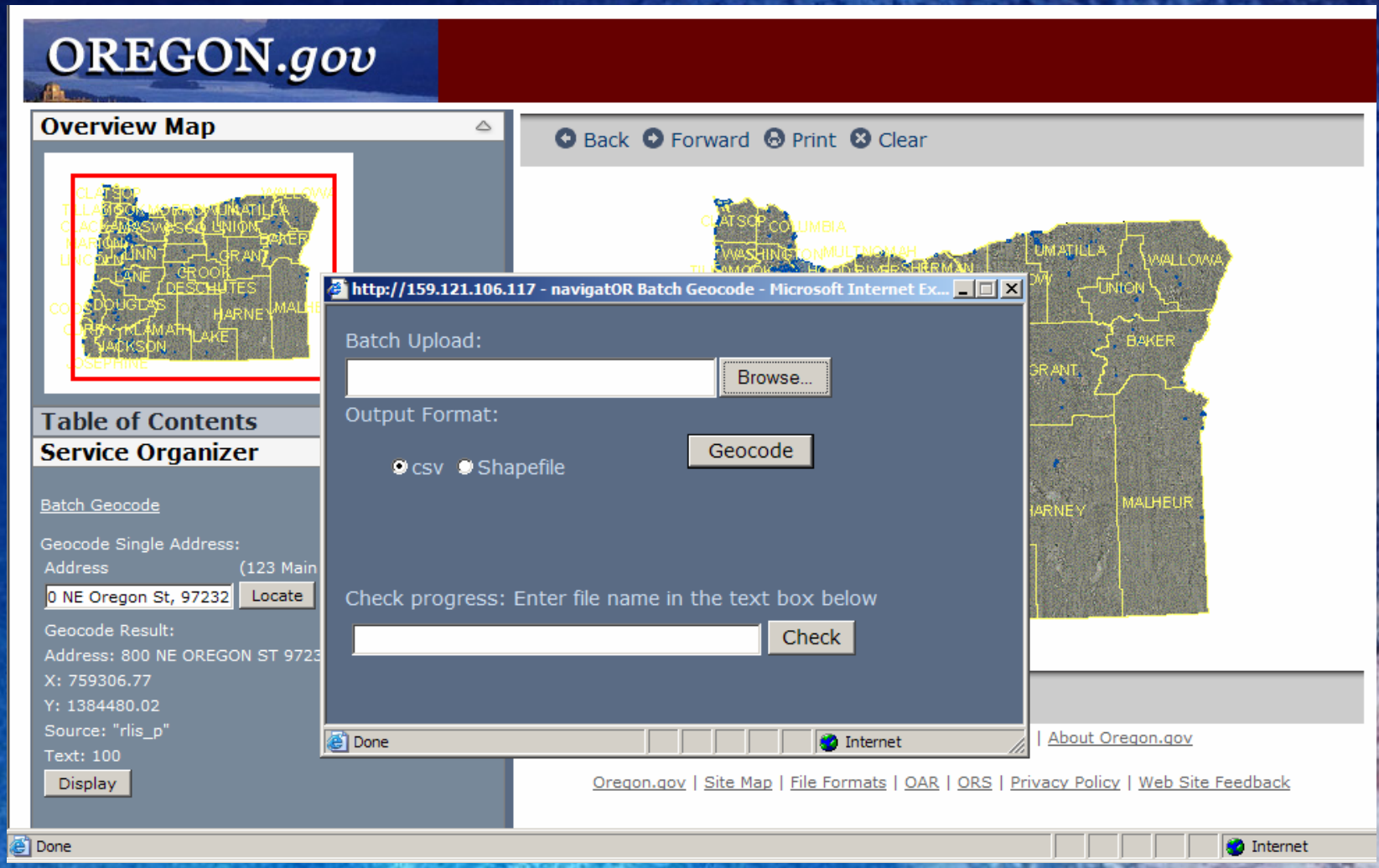
http://159.121.106.117/GEOCODE/index.aspx

Demonstration
Shared Geocoding Service



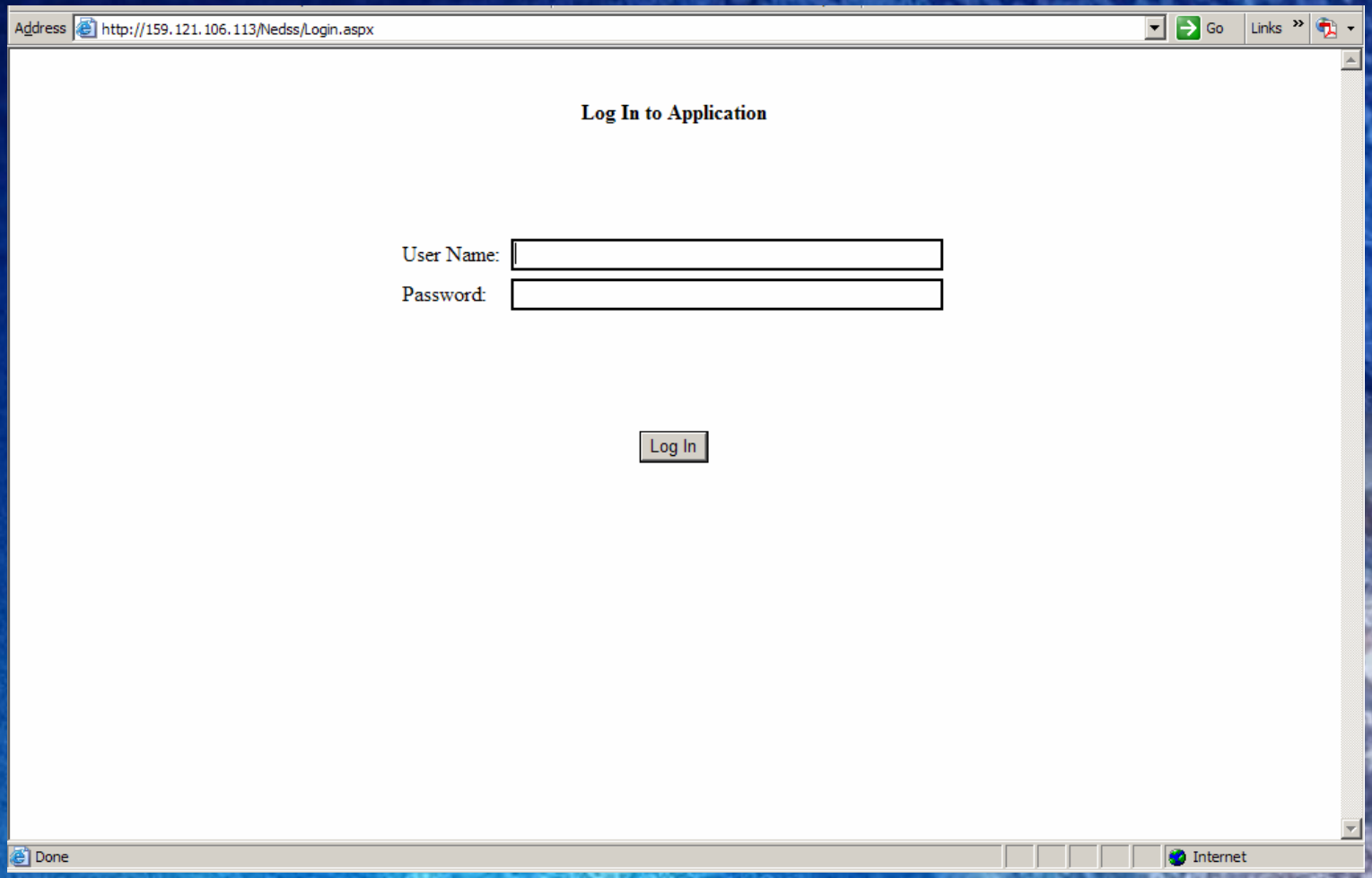
http://159.121.106.117/GEOCODE/index.aspx

Demonstration
Shared Geocoding Service



http://159.121.106.117/GEOCODE/index.aspx

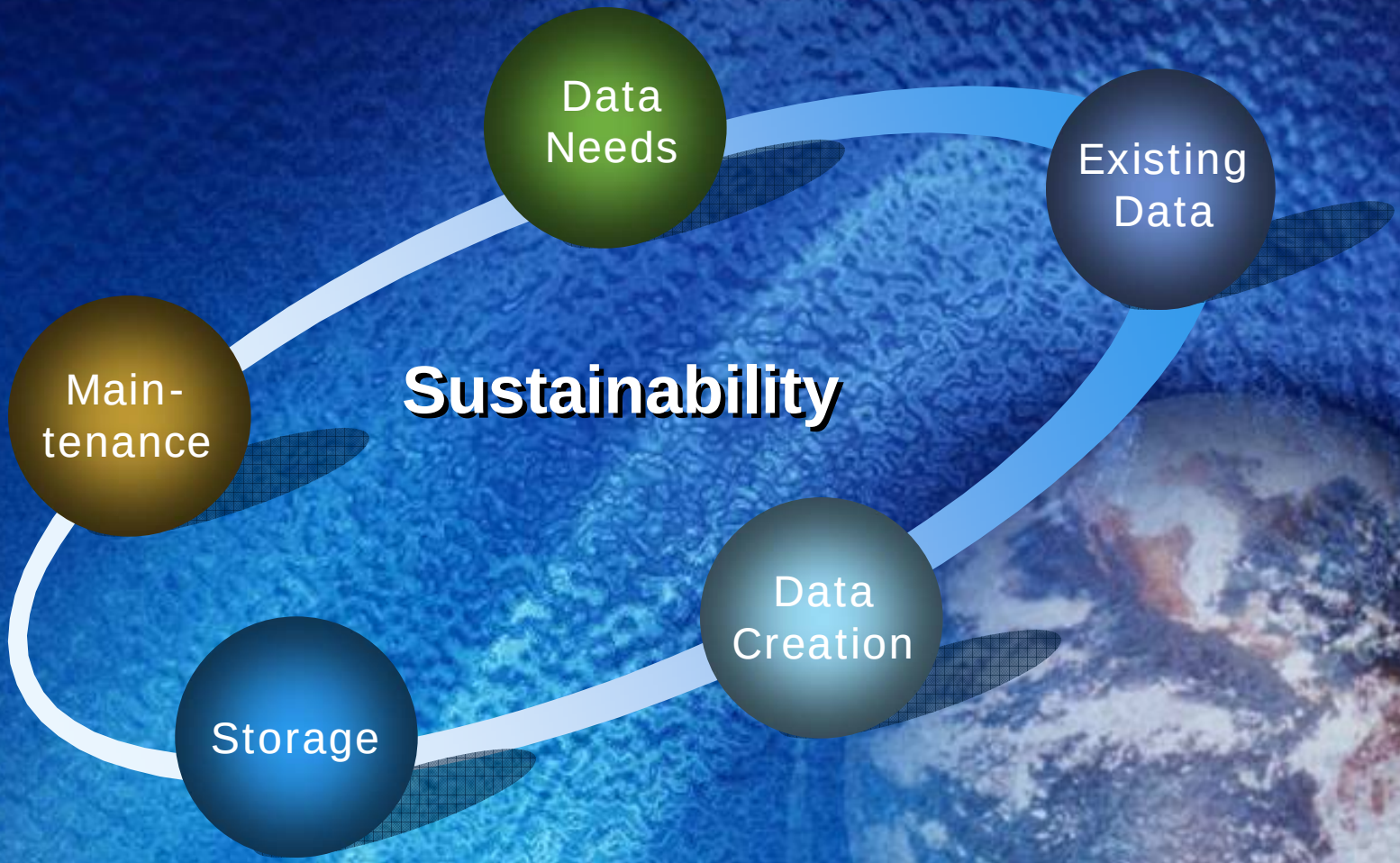
Demonstration
Shared Geocoding Service



Agenda

2. Data Integration

Data Integration

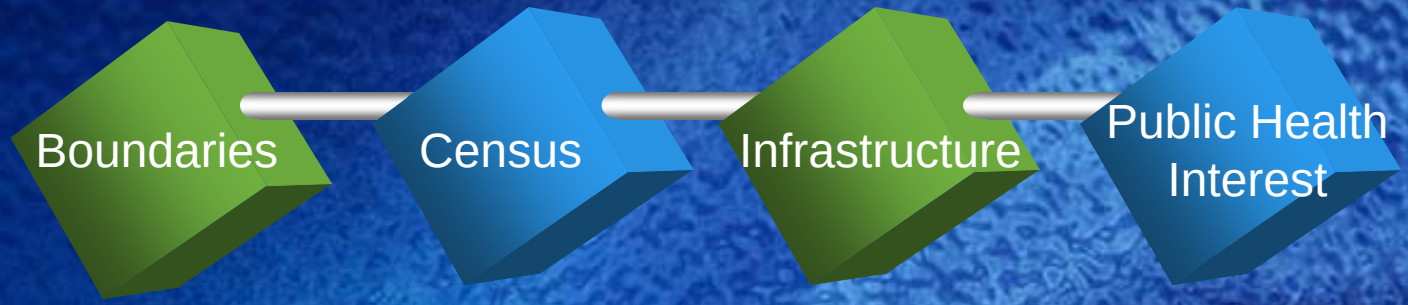


Data Integration

- 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



- Census
- City
- Drinking Water
- Health Districts
- Land Use
- Political
- Urban Growth
- Watershed

- Education
- Ethnicity
- Income
- Poverty
- Race
- Sex
- ..additional available on demand

- City Points
- Dams
- Highways
- Post Offices
- Railroads
- Rivers
- Roads
- Water Bodies

- Cemeteries
- Child Care
- Clinics
- Cold Storage
- Dialysis
- Health Events
- Hospitals
- Nursing Homes
- Labs
- Schools

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

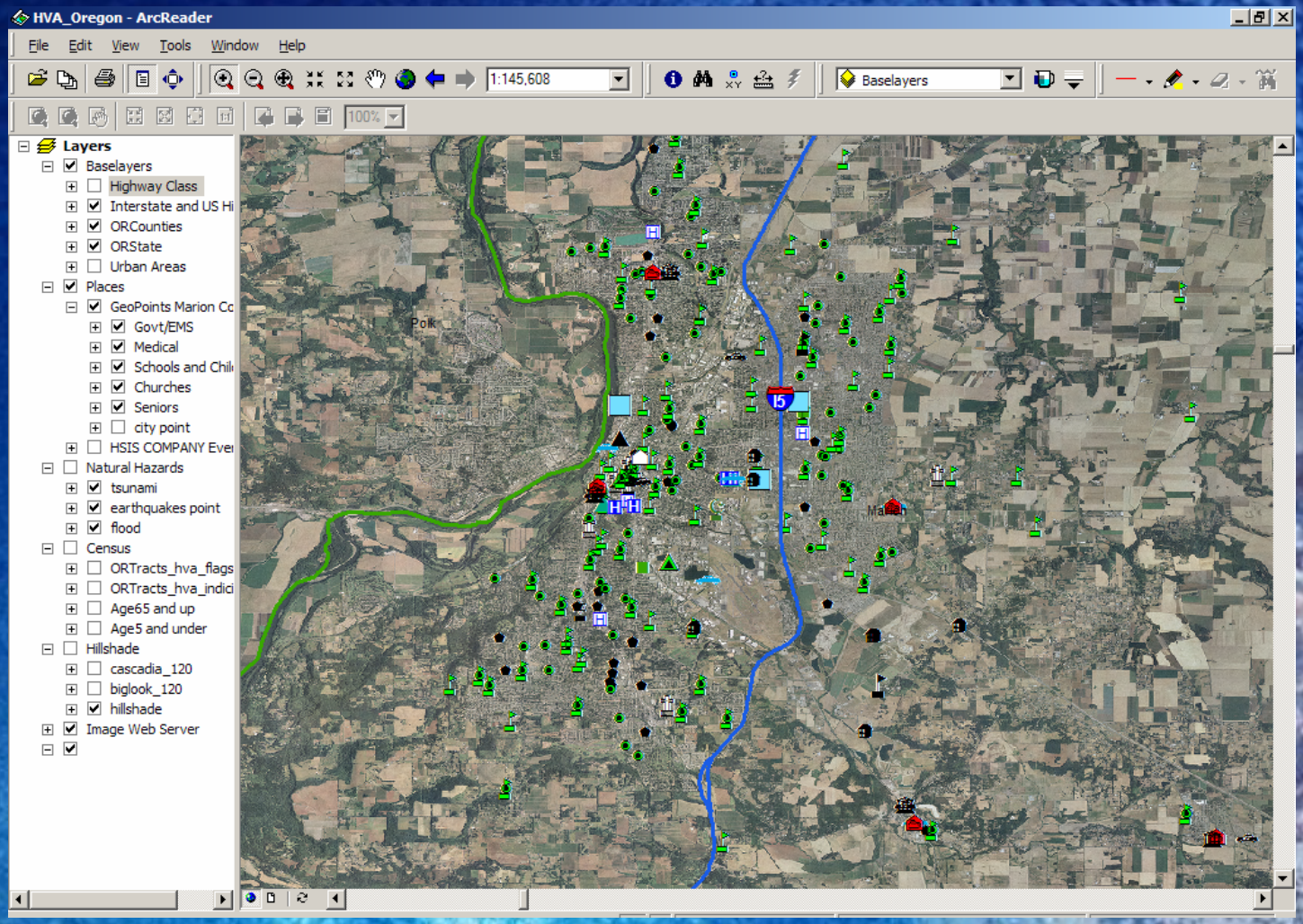
- Critical Facilities Database™ includes

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

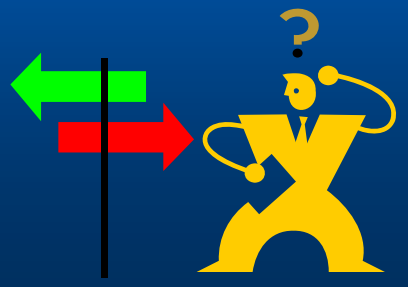
3. Coordination

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?