

MAPPING PEOPLE IN NEED

THE WA STATE OFFICE OF
CIVIL LEGAL AID
WEB GIS

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TERRA GIS
TERRESTRIAL ENVIRONMENT REGIONAL ANALYSIS

Seattle



The Washington State Office of Civil Legal Aid *Geographical Information System*

■ **About this Presentation**

- Example of an OS GIS implementation at the State level

■ **Overview of OCLA GIS**

- History and Goals

■ **Functionalities, Data and User Support**

- Main Functionalities and Data
- Help Resources: User Guide and Support

■ **Technical Framework**

- PostGIS, MapServer, and Mapbender



About this Presentation

- Example of an OS GIS implementation at the State level
- How this GIS implementation helps OCLA and Alliance of Equal Justice in their daily work

■ History

- Build as an upgrade to the Access to Justice Board/Washington Bar Association system
- Initial systems was built in 2006 for use in the development of the ATJ State Plan

• Goals

- Establish capacity to capture, regularly update and spatially represent and analyze client demographic and client service capacity data
- Build efficiencies in the daily work of the Alliance Member Organizations
- Strategic planning of resources of demand and supply of civil legal aid

User Organizations

- Columbia Legal Services
- Northwest Justice Project
- Northwest Immigrant Rights Project
- Legal Foundation of Washington
- Team Child
- Washington State Bar Association
- Access to Justice Board
- Office of Civil Legal Aid

More than 110 data layers...

- Demographic data (Census 2000 and update 2006)
 - % in poverty
 - % in poverty by ethnicity
 - age groups

- Providers of Civil Legal Aid Resources
 - WSBA members and density
 - Alliance office locations and staff numbers (FTE's Full time employee equivalents)
 - Aggregation of data by County and Planning Region


User and Technical Support

- User Guide/Manual
- Technical Installation Guide
- Hands on classroom and online training
- Group of Power users "GISRP"
(GIS responsible person) in each of the main
Alliance Member organizations
- Server hosting and maintenance contract

■ Technical Framework

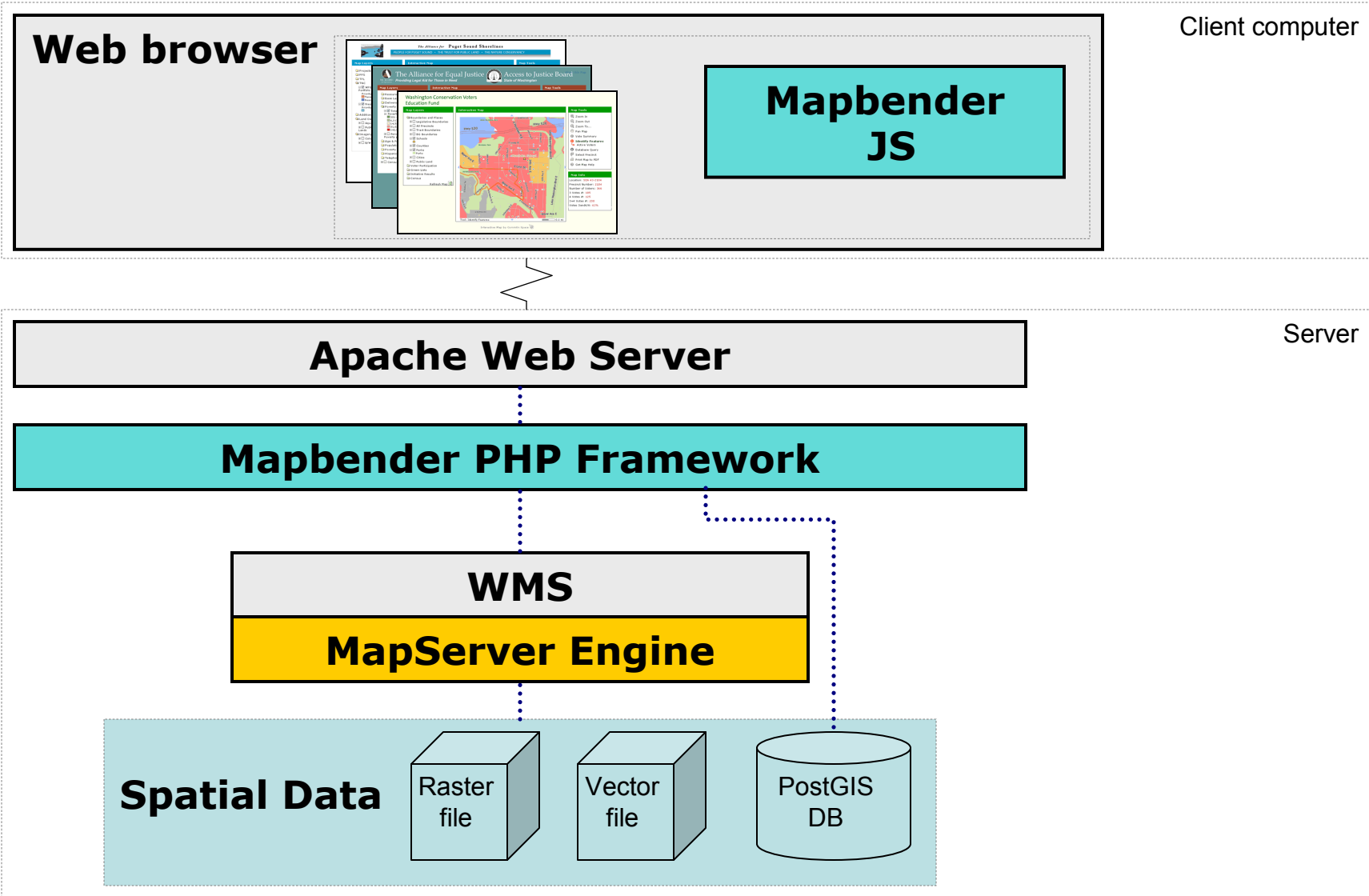
■ Server running Apache on HostGIS Linux

■ PostGIS database  PostgreSQL 

■ MapServer (University of Minnesota)
Map rendering Engine  **MapServer**
open source web mapping

■ **Mapbender** Web mapping framework

Schematic View OCLA Web GIS



■ Map rendering Engine **MapServer** open source web mapping

Originally developed at the University of Minnesota (UMN), short “MapServer”

- one of the most mature open source projects
- written in C

Main Focus

- rendering spatial data
- development environment for spatially-enabled internet applications

Map output

- CGI mapserv (Linux) and mapserv.exe (windows)
- MapScript API available for Python, PHP, Perl, and Java
- Map/Layer configuration text file .map

Formats

- In: PostGIS, Oracle Spatial ArcSDE, WMS, GDAL and OGR formats
- Out: GIF, JPG, PNG, all GDAL formats, WFS and WMS



PostGIS – Spatial Database

- PostGIS is an extension for PostgreSQL
- adds support for geographic objects to PostgreSQL
- enables PostgreSQL server to be used as a backend spatial database for GIS
- Spatial operations and analysis simply mean running a (spatial) SQL query in the database
- Similar functions as SDE and much more

■ Web Mapping Framework **Mapbender**

Comprehensive Client - Server framework

- implemented in PHP, JavaScript and XML
- Management Database MySQL or PostgreSQL/PostGIS

Functionality

- displaying, navigating, editing and querying spatial data and maps
- map services authorization services (OWS proxy functionality)
- management interfaces for user, group and service administration
- Management of Web Map services and Web Feature services
- User interface configuration and tool stored in data base

Input

- Web Map services and Web Feature services (WMS,WFS)

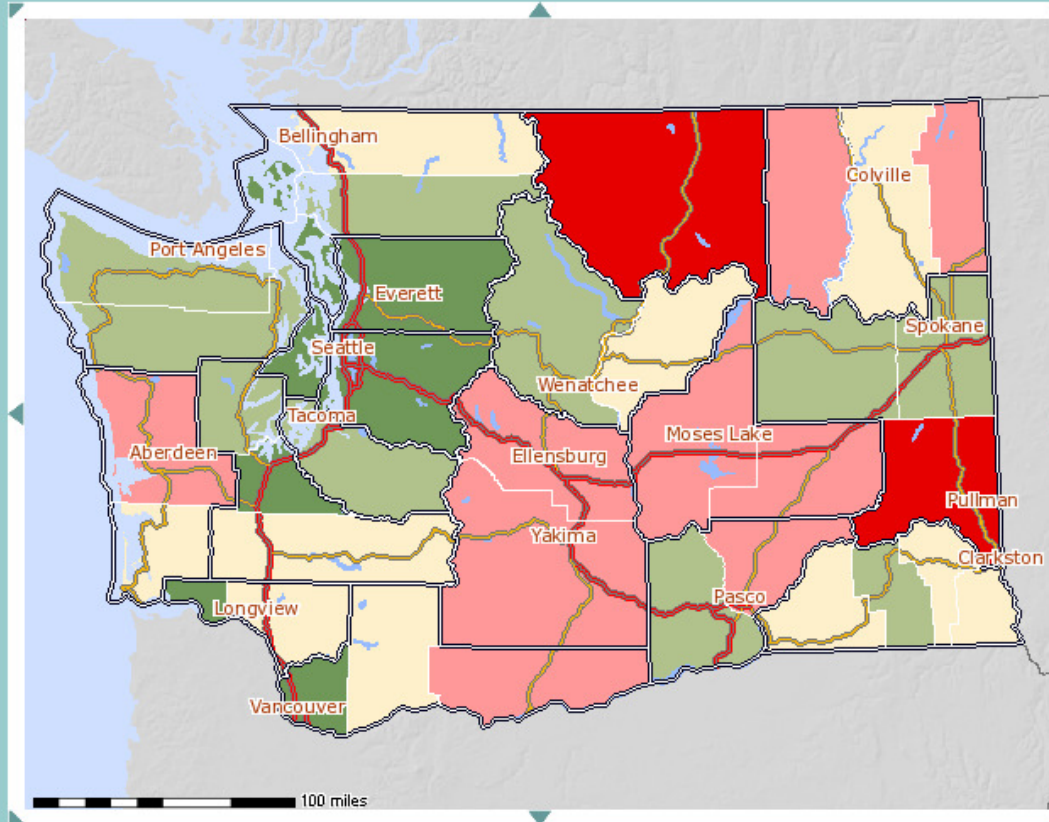
State Overview % People in poverty/County



The Washington State Office of Civil Legal Aid
Geographical Information System

Map Layers

- Background
- Other Info
- Comparative Demographics
- Census 2000 Tracts
- Census 2000 Counties
- Census 2006 Counties
- Query
- Base Layers
- Boundaries
- Client Service Resources



Cities

■ Incorporated Cities

% Poverty per County 2000

- Up to 10.0%
- 10.1 - 13.0%
- 13.1 - 16.0%
- 16.1 - 20.0%
- More than 20.0%

Query

■ Query Results

Delivery Regions

■ Delivery Region (2007)

Counties

■ County Boundaries

Create printable file

Credits

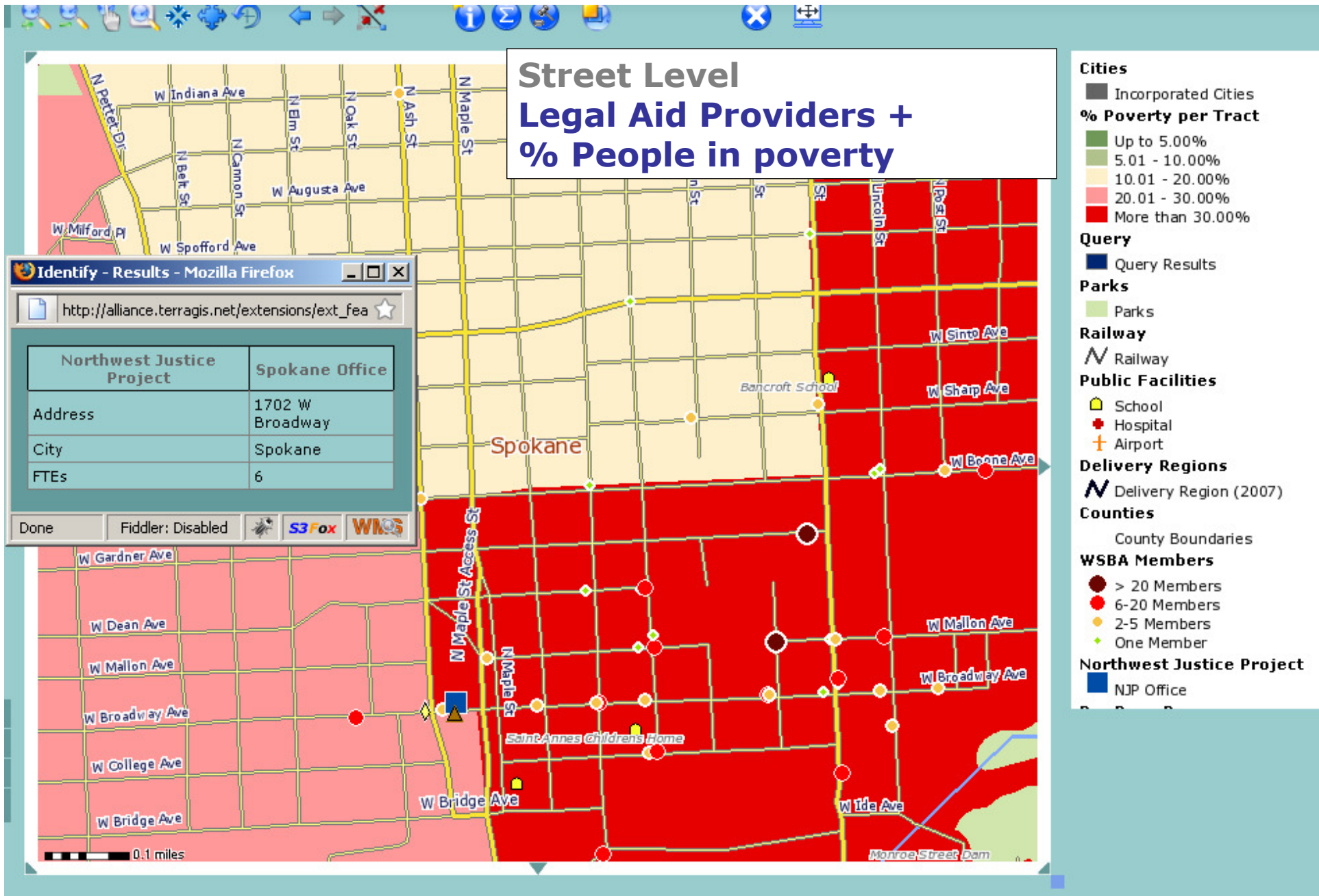
Overview Map

Help

Mapping People in Need



TERRA GIS
TERRESTRIAL ENVIRONMENT REGIONAL ANALYSIS



Query Builder (ExtJS based)

Query and Report Tool

Arrange Window ▾ run query show map reset filters remove Tab export results

Run your query using the selections in the query builder

Query Builder

Find: Counties ▾

Data Set: basic ▾

Field: % at 100% of poverty ▾

is: greater than ▾

Value: 19

Name	County id	Population -- Census 2000	Population -- Census 2006	Number at 100% of poverty	% at 100% of poverty
Okanogan	5	38965	38688	8311	21.34
Ferry	3	7257	7305	1368	19.04
Kittitas	21	31521	33668	6122	19.64
Whitman	24	35132	35026	9027	25.59
Yakima	27	220069	226028	43070	19.67
Franklin	30	49826	61725	9280	19.21

Page 1 of 1

Display of Query results on the Map

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Map Layers

- Background
 - States
 - Topography
 - Counties
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 - Census 2000 Tracts
 - Census 2000 Counties
 - Census 2006 Counties
 - Query
- Base Layers
 - Cities
 - Parks
 - Uninhabited Areas
 - Indian Reservations
 - Rivers and Streams
 - Lakes
 - Roads
 - Railway
 - Public Facilities
- Boundaries
 - Delivery Regions
 - Congressional Districts

Legend

- Cities**
 - Incorporated Cities
- Query**
 - Query Results
- Delivery Regions**
 - Delivery Region (2007)
- Counties**
 - County Boundaries

Query and Report Tool

run query show map reset filters remove Tab export results

Query Builder

Find: Counties
Data Set: basic
Field: % at 100% of poverty
is: greater than
Value: 19

Name	County id	Population -- Census 2000	Population -- Census 2006	Number at 100% of poverty	% at 100% of poverty	% Age 65 and up	% Age up in po
Okanogan	5	38965	38688	8311	21.34	14.08	10.1
Ferry	3	7257	7305	1368	19.04	12.66	10.2
Kittitas	21	31521	33668	6122	19.64	11.64	7.96

Page 1 of 1