



WEBMAPPING

*A Case Study of Watershed
Locator Using MySQL/PHP*

WHAT IS WEBMAPPING?

*Viewing geographic information over the
internet, including the presentation of general
purpose maps to display locations and
geographic backdrops*

-Wikipedia



OBJECTIVES

- Address Location
- Watershed Identification
- Routing
- Google Earth



CONCEPTS

- Geocoding
- Spatially enabled Databases
- API Usage



TOOLS

- **Client-side technologies:** *HTML, JavaScript, Ajax, Xml*
- **Server-side technologies:** *PHP*
- **Database technology:** *MySQL/PostGIS*



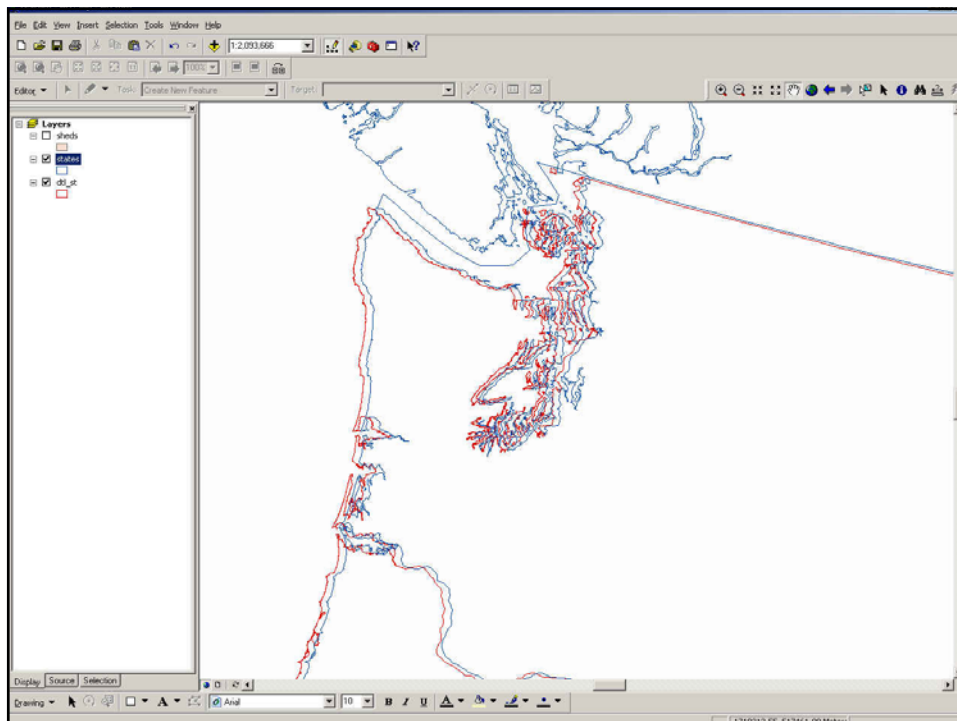
DATA

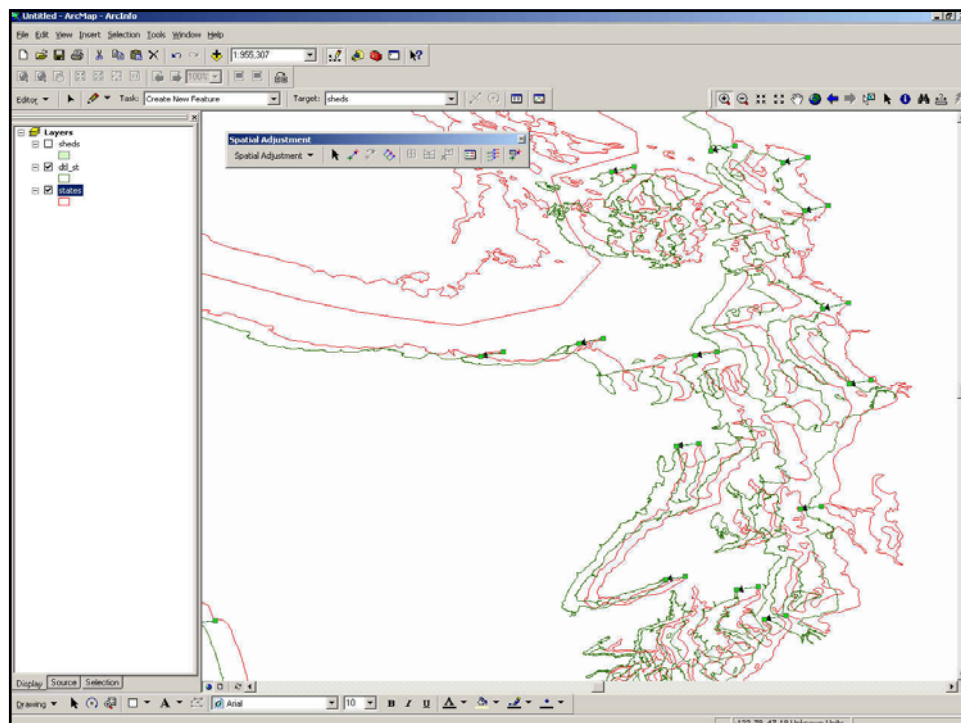
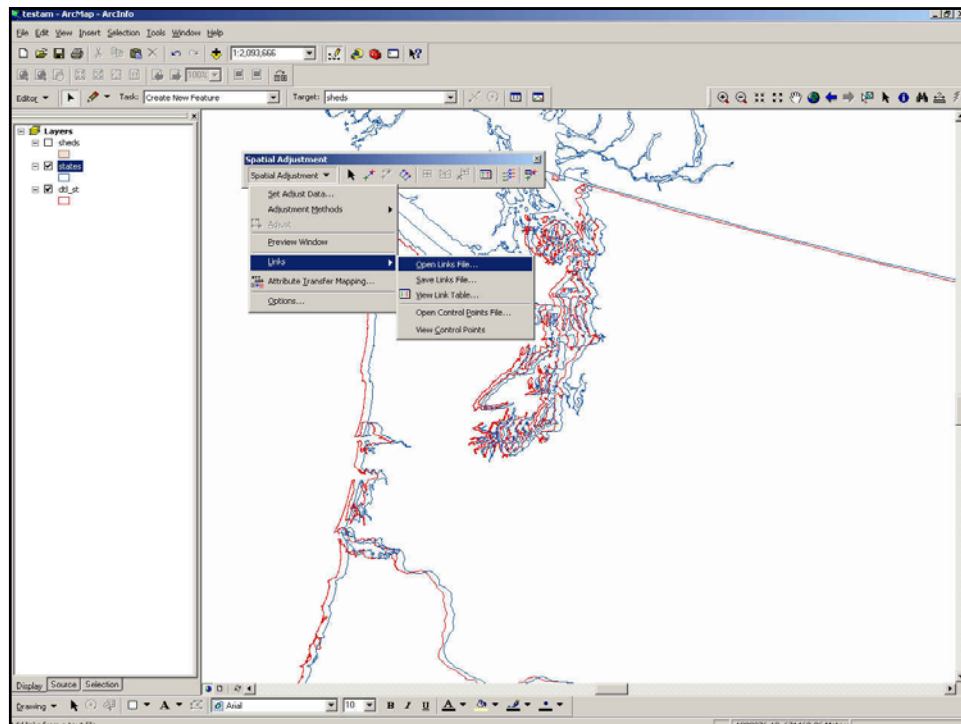
- **Source:** www.Inforain.org
- **Geographic Extent:** Pacific Northwest
- **Metadata:**
 - Longitude_of_Central_Meridian: -100
 - Latitude_of_Projection_Center: 45
 - Semi-major_Axis: 6370997.00000
 - False_Easting: 0.00000
 - False_Northing: 0.00000
 - Geodetic Model
 - Horizontal_Datum_Name:
 - Ellipsoid_Name: Clarke 1866
 - Semi-major_Axis: 6,378,206.4
 - Denominator_of_Flattening: 294.98

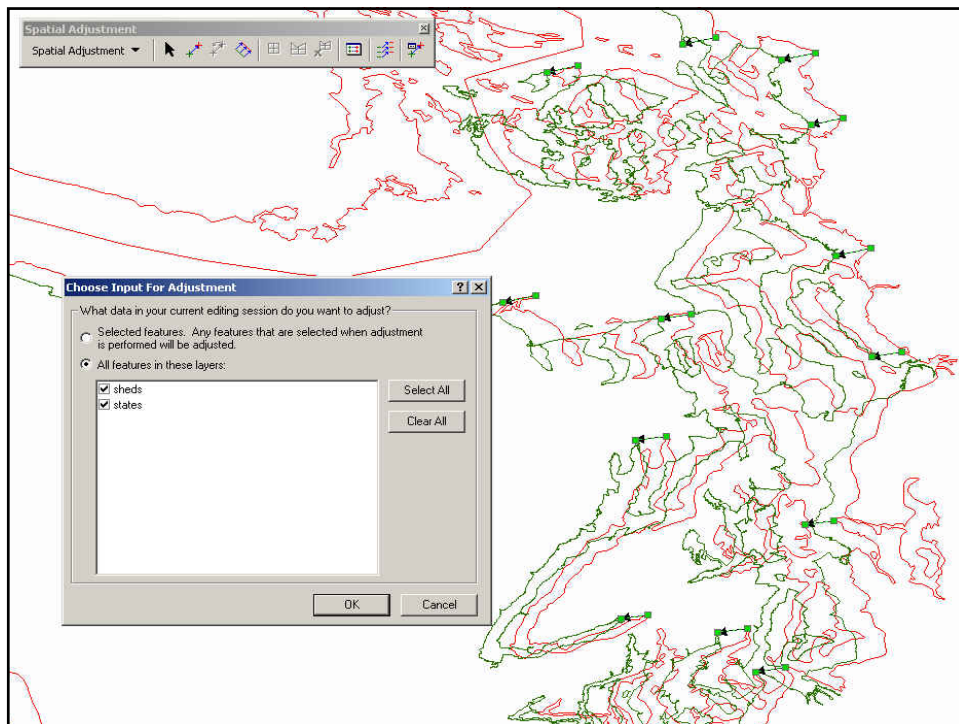


PROJECTING THE SHAPEFILE

- Lambert Azimuthal Coordinate system
- -100/45 as Projection center
- Spatial Adjustments
- Transformation
- Exported as WGS84







MySQL/PHP MODULE

- Shapefile – CSV (FME Software)
- MySQL table (Primary_key, Poly_db_id), Poly_point_x Poly_point_y)
- PHP/MySQL Application determines the points in Polygon using pointinpoly algorithm

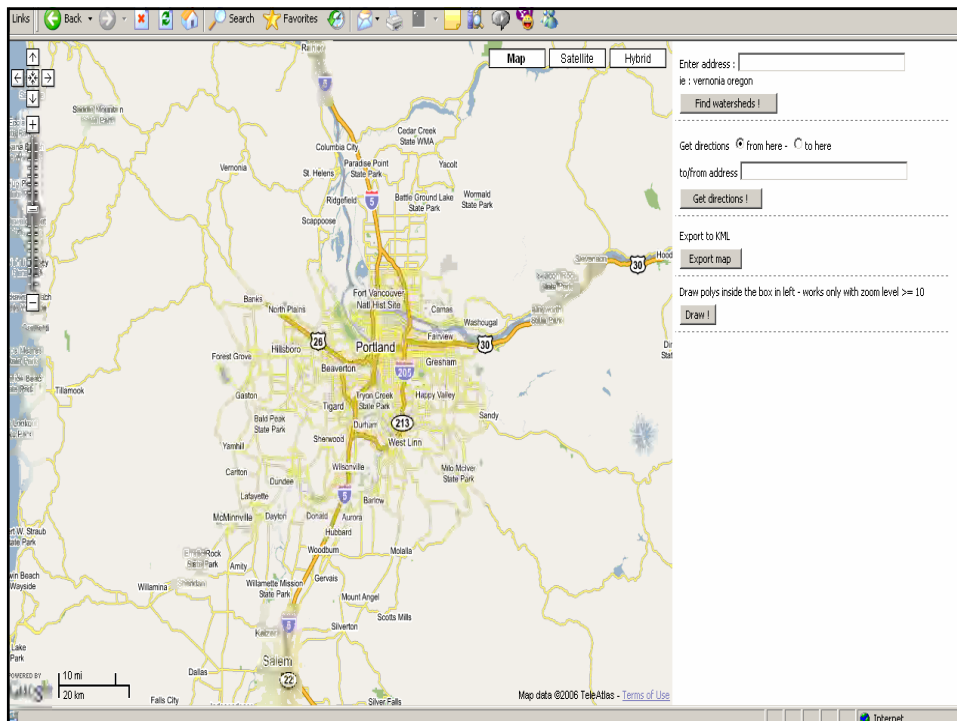


GOOGLE API and KML

➤ <http://www.google.com/apis/maps/>

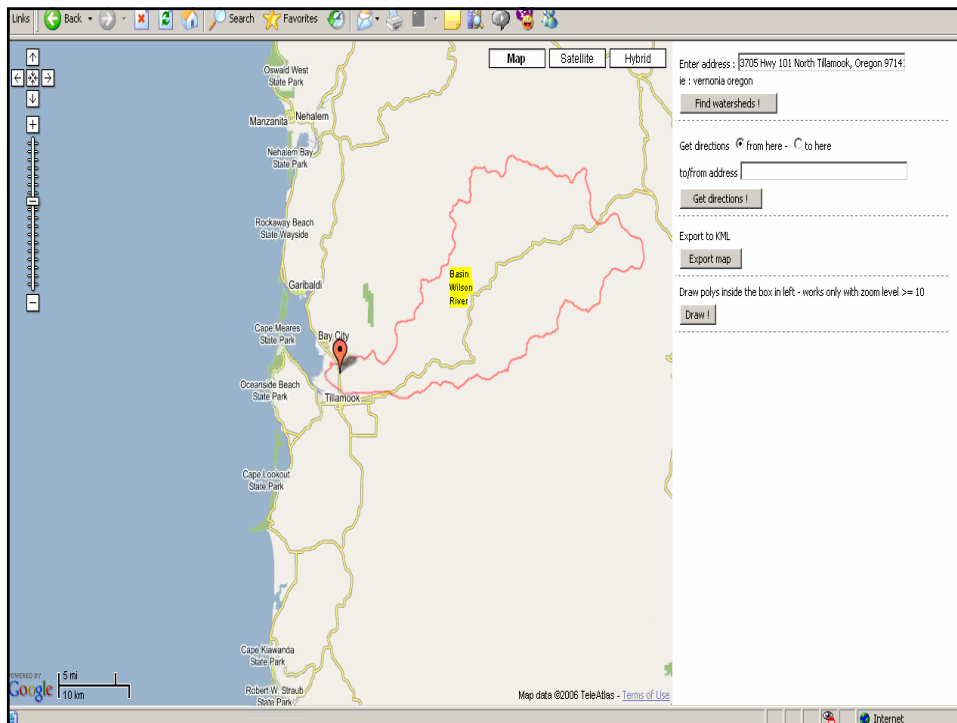
➤ An application program interface, a set of routes, protocols, and tools for building software applications. A good API makes it easier to develop a program by providing all the building blocks. A programmer puts the blocks together
- Wikipedia

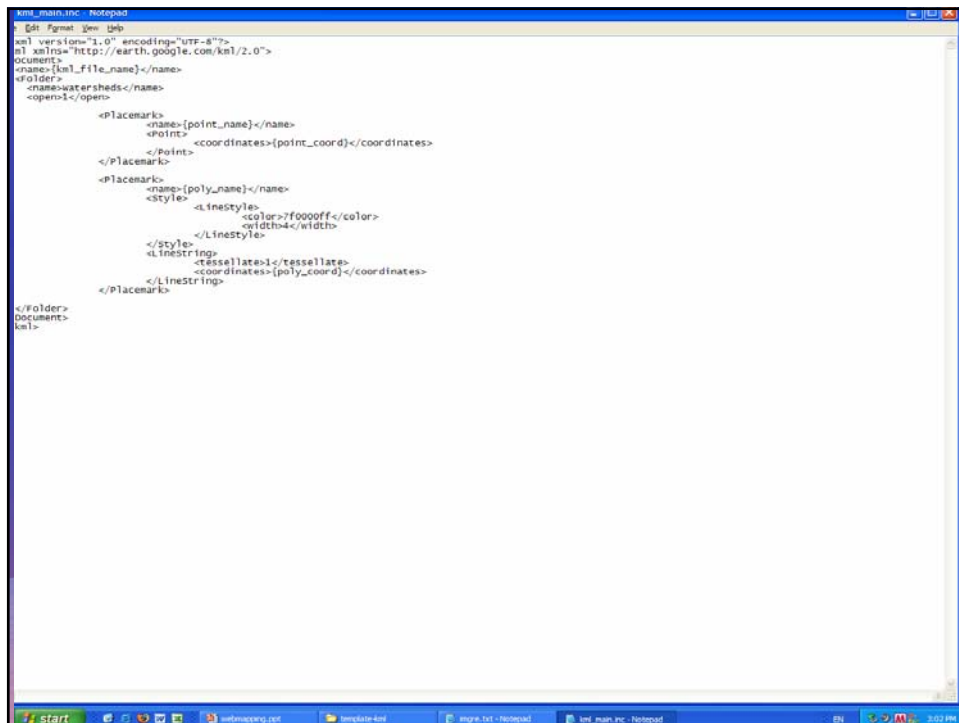
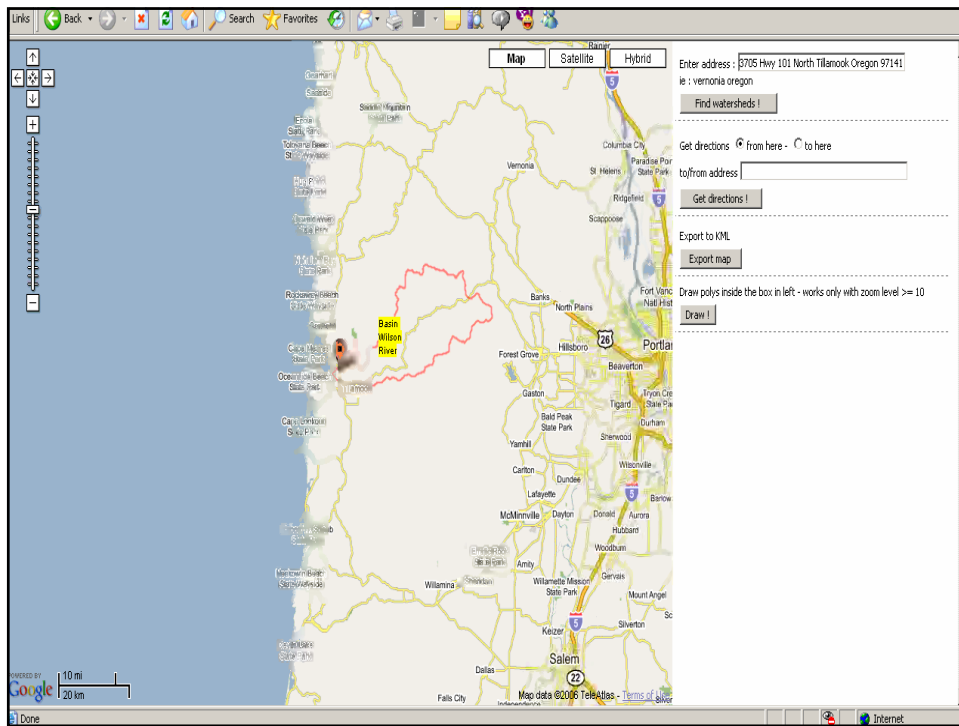
➤ <http://earth.google.com/kml/>



GEOCODING

- Google API fetches the coordinates of the input address using geocoding properties inbuilt in it
- The geocoder returns a point object that have x, y coordinates
- Using x, y points, php builds an AJAX request
- The SQL wrapper selects all sheds that contain the point





Shortcomings

- Missing Watershed Names
- Only > 5000 ha
- Missing Projection

Caveat

Please do not use InnoDB tables instead of MyISAM tables for spatial data, It will crash the server (It really did)



OTHER APPLICATIONS

- JRC Tsunami Propagation Model
- An interface to collections of scientific field data
- Mapping local resources on corporate intranet
- Media Monitoring for within government agencies
- Engine for collaborative city annotation
- Mapping Photoblogging travels
- Mapping social networks and bloggers



Future is Bright

- Ubiquitous use in the Flash Player and with RSS feeds.
- Highly configurable look and feel.
- Can use images for marking annotations.
- Annotations updated in the background, live.
- Accepts input for Collaborative Cartography.
- Connects annotations for GPS track routes



Acknowledgements

<http://www.google.com/apis/maps/>

<http://earth.google.com/kml/>

<http://www.phpbuilder.com/>

www.inforain.org

www.esri.com

www.sourceforge.net

Many more.....



THANK YOU



QUESTIONS PLEASE!