Building a Customized GIS Interface using SVG

SVG Open 2008
Introduction

- **Colorado Division of Water Resources**
  - Historic legacy data from 1880’s

- **Paper maps**
  - Well locations
  - Parcels served by wells
  - Scanned documents

- **Tabular Databases**
  - Coordinate location stored for well locations
  - Diversion records
  - Other well information

- **Uses ESRI software for GIS**
  - Cost was too high – maintenance was dropped
  - High cost of training
Mapping needs

- Needed to Digitize Parcels Associated with Wells
- Simple to Use GIS Type Interface
- Needed Cost Effective Solution
- Integrate Existing Hand Drawn Paper Maps
AquaMap

- SVG web based interface
  - High quality web interface
  - SVG enabled database (PostGIS)

- Evolved over three years
  - Developed at Carto.Net
    - Andreas Neumann and others
  - UDFCD Floodplain Interface
  - AquaMap Interface
Well Attribute Display

- User can pan and to specific area
- Background reference information is displayed
  - PLSS layer for location information
  - Aerial photograph background (Tiled)
  - Other GIS layers
- Detailed Well Attribute via Mouseover
  - Permit number
  - Owner
  - Well Info (Yield, Aquifer, etc.)
Full Well Attribute Display

- User can click on a specific well
- Database returns entire attribute record
  - Owner information
  - Well Details
  - Aquifer Details
  - Dates of Well Information
- SVG Window Display
  - Automatic Scrollbars
  - Resizeable
  - Maximize, Minimize and Close Buttons
Digitizing Parcels

- Legal description is Input via Excel Spreadsheet
- Macro Loads Parcel Data into SVG Interface via HTML (embed tag)
- User Can Move Parcel to Final Position
  - Move
  - Rotate
  - Edit vertices
  - Save Parcel
Scanned Image Database

- Tool to List Wells Within an Area
  - Distance (buffer)
  - Section
  - Free Hand Digitizing
- Button to List all Wells
- Pop-up Window with Well Attributes
- Hyperlink to Scanned Document Database
Legal Location Information

- Location in Relation to Sections
  - Quarters
  - Distance to Section Sides

- Coordinates
  - X and Y coordinates (UTM)
  - Latitude and Longitude

- Compute from Map

- Input Values and Zoom in Map
Legacy Paper Maps

- Existing Paper Maps Scanned and Georectified
- Displayed in SVG interface via WMS (tiled)
- Reference Source for Quality Control
- Reference for On-Screen Digitizing
Supported Web Browsers

- **Internet Explorer 6, 7, 8**
  - Adobe SVG Plug-in
  - Mozilla ActiveX Plug-in

- **Mozilla Firefox**
  - Version 3.0

- **Opera**
  - Version 9.5

- **Safari /WebKit**
  - Nightlies
  - Image bug in 3.0.2
AquaMap

- **State of Colorado – Official Site**
  - [http://water.state.co.us/pubs/AquaMap.asp](http://water.state.co.us/pubs/AquaMap.asp)
  - Includes Users Manual

- **Leonard Rice Engineers**
  - [http://www.lrcwe-data.com/AquaMap.svg](http://www.lrcwe-data.com/AquaMap.svg)
  - Test site
  - Digitizing allowed
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