

Web Mapping Applications

(An Overview of Two Approaches)



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Presented To:
Southeast MN Users Group

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Overview

- Who is Houston Engineering
- What is Web Mapping
- Two Approaches
- Open Source Software with GeoMOOSE
- Commercial Software with GeoPRIME
- Questions



Houston Engineering

- Traditional Engineering Firm
 - (100 staff across 5 offices)
 - Civil Engineering, Water Resources, Surveying, Environmental, GIS
 - www.houstoneng.com
- GIS and Web Mapping Services
 - Specialize in both Open Source solutions, ESRI software and Autodesk software
 - Developing web applications for 10 years



Defining Web Mapping

- aka – Internet GIS, web GIS, distributed GIS
- Wikipedia (http://en.wikipedia.org/wiki/Web_mapping)
- Neogeography (<http://en.wikipedia.org/wiki/Neogeography>)
- Static maps to mashups to full web apps
- Many software solutions
- Technology is constantly evolving

**All accomplish getting maps or data to targeted audience over the Web*

Defining Web Mapping

- Defining the Web Application
 - Determine Goals and Objectives
 - Determine Audience
 - Determine Functionality
 - Determine Software Constraints
 - Determine Budget Constraints
 - Determine Organizational Experience/Knowledge

** Software Requirements Specification (SRS) and Design Document*



Defining Web Mapping

- Static Maps
 - HTML Image Maps, PDF, etc.
- Mashups
 - Google, Virtual Earth, OpenLayers, ESRI JavaScript API
- Full Web Applications
 - ESRI ArcGIS Server/ArcIMS, UMN MapServer, GeoServer, MapGuide
- Services
 - OGC Services (WMS, WFS, WCS), KML, GeoRSS



Two Approaches

- Open Source web mapping
 - GeoMOOSE
 - Cost effective, no licensing
 - Very flexible for custom applications
 - Out of the box template
- Commercial Software web mapping
 - GeoPRIME
 - Great publishing tools
 - Out of the box template for Flex and JavaScript
 - Modern look and feel with flexibility

** Both technology approaches could accomplish the same thing!*



What is GeoMOOSE?



- Open Source web mapping template
- Started from an FGDC grant, turned into open source project
- Designed to let novice GIS users publish web maps
- (<http://www.geomoose.org/moose/>)
 - Primarily developed for MapServer
 - Written in JavaScript, CSS, HTML, XML and PHP
 - Service oriented architecture

What is GeoMOOSE?



- Leverages other open source projects
 - MapServer, OpenLayers and PostGIS
- Project has grown in the past 2 years
- No licensing, just need configuration
- Out of the box template
- Many implementations of GeoMOOSE
 - http://www.geomoose.org/moose/index.php?option=com_weblinks&catid=19&Itemid=27

What is GeoMOOSE?



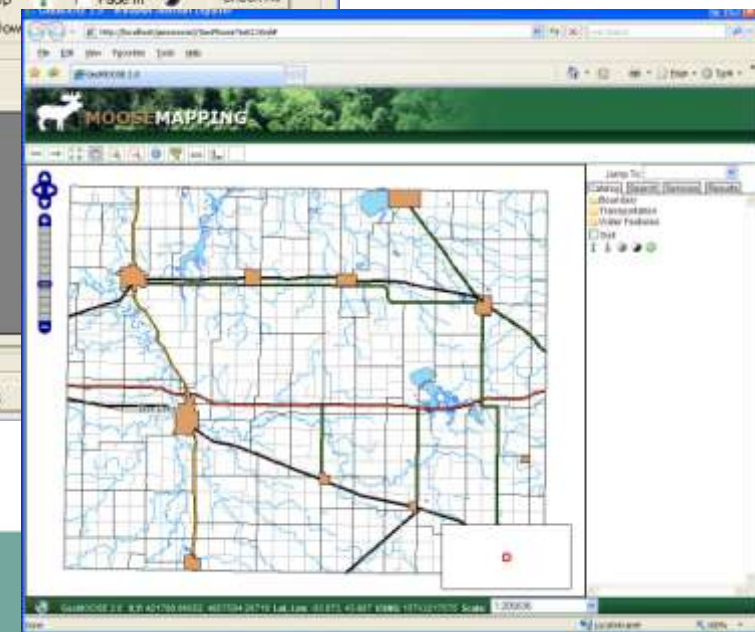
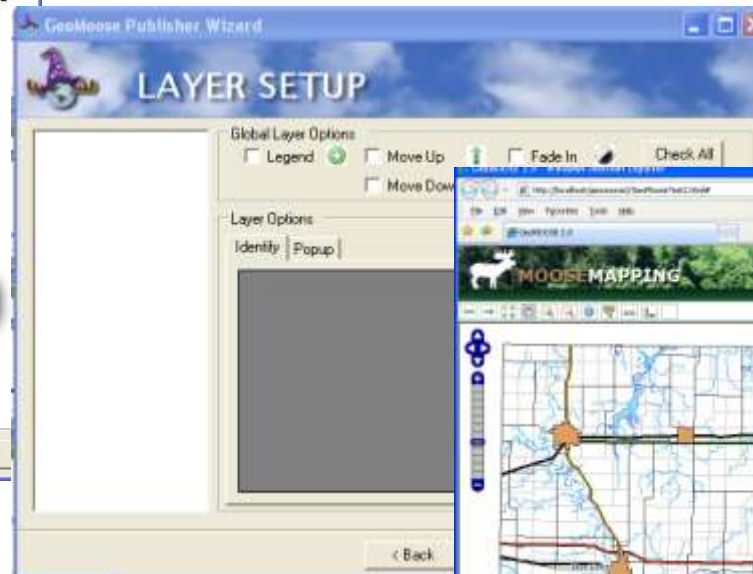
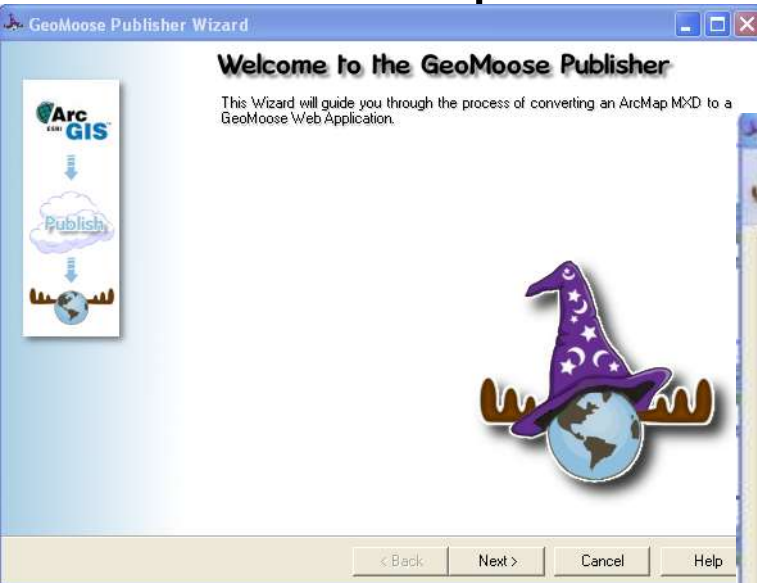
- Versions 1.6 versus 2.0
- Configuration Files
- Functionality:
 - Navigation tools, itemquery, identify, select, buffer, mailing labels, printing, feature editor, popup service, measure, graphic markup tools
- Flexible for adding custom features and other services

What's New with GM 2?

- Performance enhancements
 - CSS sprites
 - Smaller JS code
- Use of OpenLayers (www.openlayers.org)
- New configuration files
- Feature editor using PostGIS
- Popup service
- Define your own tabs and projections

GeoMOOSE 2 Publisher

- GeoMOOSE 2 Publisher
 - ArcMap 9.x extension



Demo



- GeoMOOSE 1.6 Demo
 - Rock County, MN – Internal application

The screenshot displays the Rock County, MN -- GIS web application. The header includes a map thumbnail, a building image, the title "Rock County, MN -- GIS", and navigation links for "Home", "Contact", and the date "Wednesday, July 08, 2009". Below the header is a "Property Search" and "Rock County Homepage" section with a toolbar containing various GIS tools like pan, zoom, and measure. The main map area shows a grid of 12 townships labeled in yellow: Rose Dell, Denver, Battle Plain, Springwater, Mound, Vienna, Beaver Creek, Luverne, Magnolia, Martin, Clinton, and Kanaranzi. A scale bar at the bottom left indicates distances from 0 to 16800 meters. On the right side, there is a "Zoom to:" dropdown menu and a "Map Layers" panel. The "Map Layers" panel lists several categories with checkboxes and visibility icons: County Data (Addresses, Feedlots, Bridges, Septic Permits, Field Boundaries), Land Records (Sections, Parcel Labels, Parcels), Transportation (Roads), Administrative (Cities/Townships), Hydrography (Lakes/Streams), and Background (2000 Aerial Photos). A small inset map in the bottom right corner shows the county's location within a larger grid. The footer displays the coordinates "Rock County, MN X,Y: 707898.09,4861160.02 Lat, Long: 43.8742,-96.4124", a scale of "Scale 1: 291,752", and the text "Go! Moose Powered".

Demo



- GeoMOOSE 2.0 [Rice Creek WD Permit Editor](#)

RICE CREEK WATERSHED DISTRICT

Download Permits Download R-Files

Create Permit Create R File Search Address Search Permits Search Reviews

Jump To:

Layers Information

- Permits
 - ☒ All Permits
 - ☐ 2009 Permits
 - ☐ 2008 Permits
 - ☐ Historical Permits
- Review Files
 - ☐ All Review Files
 - ☐ 2009 Review Files
 - ☐ 2008 Review Files
 - ☐ Historical Review Files
- Basemap Layers
 - ☒ RCWD Boundary
 - ☐ Rule Boundaries
 - ☒ County City Bnd
 - ☒ Roads
 - ☒ Parcels
 - ☒ TLG Landmarks
- Hydrography
 - ☒ Streams
 - ☒ Lakes
 - ☒ Ditches
 - ☐ National Wetlands Inventory
 - ☐ FEMA Floodplains
 - ☐ Protected Waters Inventory
- Backgrounds
 - ☐ USGS Quads

Date Recieved: 2006-08-07
Purpose: Ditch Maintenance-note the existence of ditch of the enclosed 10/30/1959 photo and new location that was established sometime prior to the 2006 pond and ditch cleaning
[- Edit Permit 06-091](#)
[- Delete Permit 06-091](#)

GeoMOOSE 2.0 X,Y: 490442.62625, 4998667.85537 Lat, Lon: -93.122, 45.141 USNG: 15TVK9044298667

GeoMOOSE 2 Roadmap

- Likely driven by funding and interest of developers/contributors
- GM 2.2
 - Graphic markup tools
 - Geocoder service, Bird's eye service
 - Query Builder service
 - Reference map
 - More documentation, update website
 - Support for Google and tilecache layers



GeoMOOSE Information



- GeoMOOSE website:
 - www.geomoose.org
- GeoMOOSE 2 Software Download:
 - <http://sourceforge.net/projects/geomoose/>
- GeoMOOSE 2 Documentation
 - <http://www.geomoose.org/geomoose2/docs/>
- Mailing list
 - http://sourceforge.net/mail/?group_id=160935
- GeoMOOSE Training Class
 - Late July/Early August in Marshall, MN at SW MN State University

What is GeoPRIME?

- Commercial Solution
- GeoPRIME (Public Records Information Management Engine)
- Low Cost tool for ArcGIS Server
- Provides user friendly interface
- Extendable Solution for publishing; Flex or JavaScript API applications
- Developed by GeoDecisions
- Houston Engineering is an authorized re-seller, implementer and can customize GeoPRIME



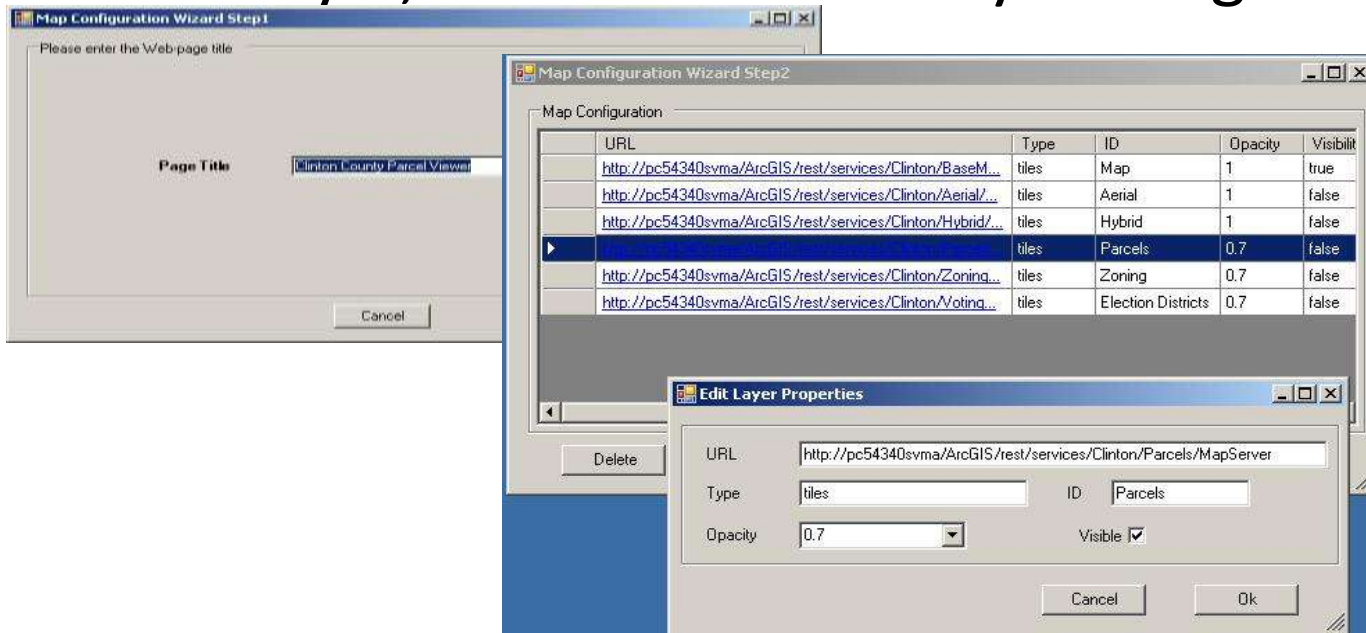
What is GeoPRIME?

- Stems from first project with Carver County TRIP application (www.gocarvergo.org)
 - Used ArcGIS Server 9.3 and JavaScript API
 - One of the first application developed and promoted by ESRI (seminars and ArcNews)
- Out of the box user interface
- Administrator console
- Leverages ArcGIS server REST API
- Publish to Flex or JavaScript APIs



What is GeoPRIME?

- GeoPRIME Administrator Console
 - Wizard publisher tool
 - Layer, Search and Identify Management



Demo

- [Clinton County](#)



Demo

- [Hanover County](#)

Hanover County GIS Portal - Windows Internet Explorer

http://cache.hanovercountygis.org/s3.amazonaws.com/HanoverClient.html

File Edit View Favorites Tools Help

Hanover County GIS Portal

Search Layers Identify Overview Print Map Aerial

Results

Parcel Election School Assessment

GPIN	Subdivision	Owner	Acres
8714-76-6228	Aspen Hill Farms	STEVENS, ROBERT T & J	0.862
8714-76-5529	Aspen Hill Farms	KRAFT, KENNETH A & CO	1.188
8714-76-6595	Aspen Hill Farms	FERRELL, NANCY A	0.612
8714-76-4271	Aspen Hill Farms	REDFORD, BRUCE D & E	0.949
8714-76-2259	Aspen Hill Farms	FLEET, CHARLES M & CO	0.832

Search

Parcels Address Roads

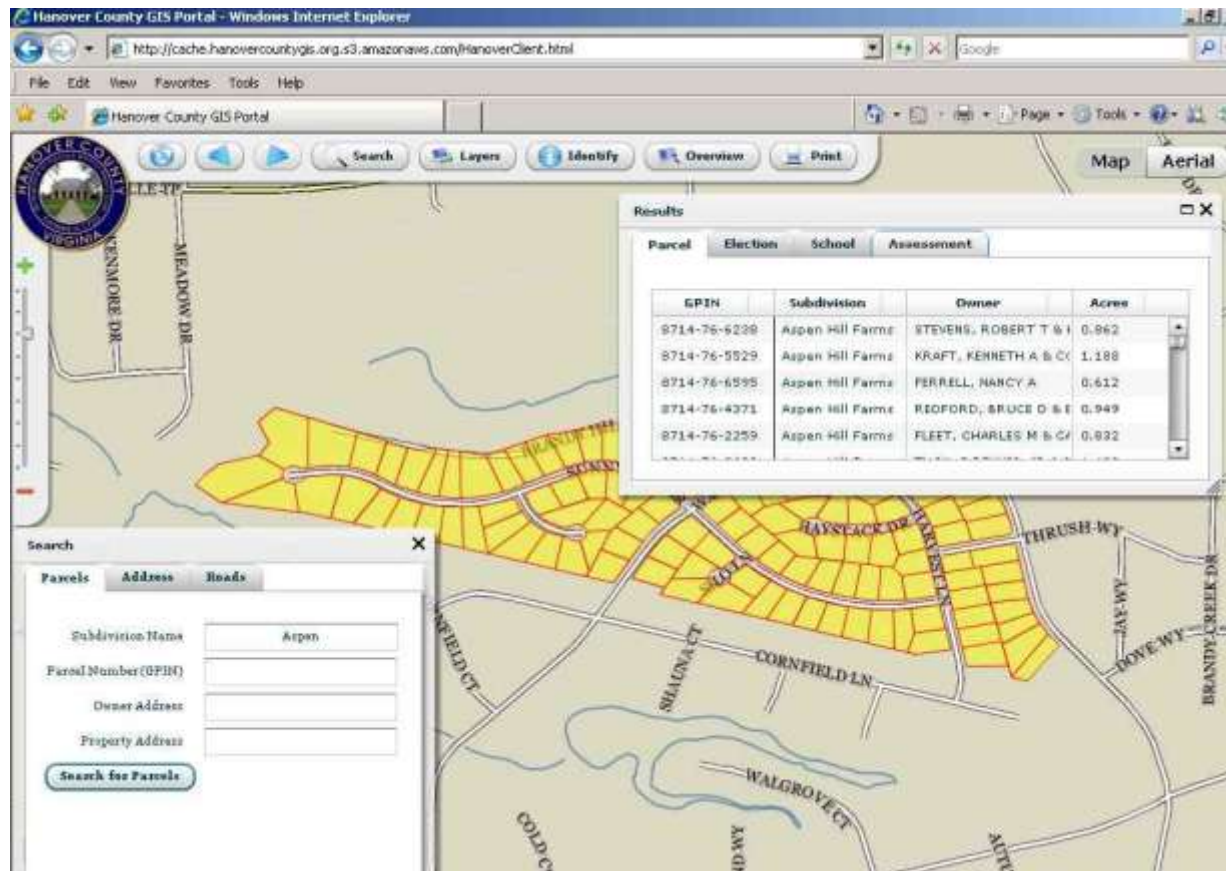
Subdivision Name: Aspen

Parcel Number (GPIN):

Owner Address:

Property Address:

Search for Parcels



GeoPRIME Roadmap

- Buffer Tools, Markup tools
- Driven by Client feedback
- Custom tools available to clients with paid maintenance
- Customize using Flex or JavaScript
- Possible Silverlight support



GeoPRIME and ArcGIS Server Information

- GeoPRIME (www.geodecisions.com/geoprime)
- ArcGIS Server resource center
(<http://resources.esri.com/arcgisserver/>)
- ArcGIS Server Services
(<http://resources.esri.com/arcgisserver/index.cfm?fa=services>)
- ArcGIS Server SDKs (Flex, JavaScript, Silverlight)
(<http://resources.esri.com/arcgisserver/index.cfm?fa=applications>)



Take Away

- Remind yourself of the principle concepts of web mapping
- Don't make your web application everything to everyone
- Plan your requirements/constraints first
- Evaluate options
- GeoMOOSE is flexible and no cost software licensing solution
- GeoPRIME is great for organizations wanting to disseminate information with the ArcGIS Server APIs for Flex/JavaScript
- Houston Engineering is here if you need help.

GeoMOOSE and GeoPRIME

“TWO APPROACHES, TWO GREAT PRODUCTS!”

Quality Work and Client Satisfaction

[illegible]

HEI Web Mapping Services:

- *Development*
- *Hosting*
- *Training*