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That's a lot of Phone Books!

When you get your next phone book, chances are it'll be delivered by a route created by ADC.

Since 2002, ADC has been creating telephone book delivery routes for a client who has major telephone companies whom they deliver books for. ADC created a solution for the client called the Automated Delivery Zone Mapping and Routing (ADZMAR) system, which uses a custom application to create zone boundaries, routes, reports and maps that are used to make the distribution of phone books more streamlined and efficient.

In 2008, there were nearly **139 million** telephone books delivered across the nation using the routes created by ADC's ADZMAR division.

That translates to 132,718 routes created, with 72,417,303 records and 511 project areas. There are currently 39 states using ADZMAR routes. The largest routing project is Houston, Texas with over four million records, and the smallest routing project is Lake of the Ozark, Missouri with just 1,100 records.

In the first month of the Bell Telephone Company's existence in 1877, only six telephones were sold!



CEO'S CORNER

WHAT'S AHEAD FOR 2009?

By: Jim Ward, CEO

2009? Amazing how looking forward to a new year and new challenges has now turned into fear and a question mark behind those 4 digits. As a consulting firm reliant on clients' budgets, ADC also looks ahead to this new year with a bit of trepidation at what could be the worst recession since the Great Depression.

I personally have witnessed noticeable changes in behavior during the course of doing business the past six months; from fear to anger and in some cases desperation, greed, and an abandoning of ethics. This is troubling, and in response I have spent the last few months talking to ADC staff and even traveling to meet with customers and vendors to preach the message of staying calm and sticking to core values. For the past 13 years this philosophy has made this company strong and the people we work with enjoyable. Eventually we will come out of this economic slump and I for one will make sure ADC does it with our integrity intact.

But enough about the unknown. What I do know is that ADC is in a position to not only survive the economic challenges that lie ahead, but determined to thrive. Our primary goal is to save jobs. As a consulting firm our employees are our most valuable asset and to lose even one can be devastating. We have taken steps in applying for matching grants to provide retraining opportunities to many of our staff to learn additional skills, allowing us to be more flexible and shift workers where needed.

Our recent reorganization over the past few years has been critical for not only handling growth, but preparing us for the current challenges. Our new web administrators have enhanced our customer service and increased our capacity for an ever-growing market of new web clients. Our innovative concept of creating a team of "consultants" for our GIS consulting company has ensured that ADC stay abreast with emerging technologies, from the web to databases to enhancements in the latest GIS techniques.

"...ADC is in a position to not only survive the economic challenges that lie ahead, but determined to thrive."

I am also excited that ADC will be launching several new products and service lines in 2009, many aimed at creating efficiencies and cost-savings for our customers:

- **ADC4WEB.com** was launched this month to expand ADC into the web page design and hosting markets. While this has

The State of Geospatial Open Source Development (Part II)

By Ron Bruder, Director of GIS Technology

The first installment of this series, Part I, introduced the structure and organization of open source software development and identified the factors leading to the success or failure of those efforts. It then evaluated the development of geospatial software in a similar context, noting that given its late movement towards open source adoption, open geospatial applications generally are well-conceived, designed and written.

This installment will introduce some of the key packages that are relevant in the current environment and establish their primary contribution to the geospatial open source arena. It should be noted, however, that there is very swift activity in this field, with quality offerings being added frequently to an already long list of successful applications. That said, any such survey is by necessity exclusionary and will no doubt leave out projects that some deem relevant. The focus here will be to highlight those applications that are most accessible to the general user and have the strongest development activities.

Categorizing the available open source GIS software options for reviews presents some difficulties since some of packages serve multiple purposes. There are, for example, some applications that serve as both Desktop GIS applications as well as interactive rendering tools for geographic data delivered over the web. Nonetheless, the effort here will be to discuss these diverse applications in a way that is organized, yet succeeds in portraying the richness of such applications.

DESKTOP GIS

Overall, the Desktop space in open source GIS is extremely active and offers many potential options (See http://www.spatialserver.net/osgis/Desktopgis_overview.htm). A general characteristic of the available packages is that individual programs will be strong in one or two functional areas, but not be fully developed in other areas. Compared to the primary closed source alternative, the ESRI ArcGIS Desktop suite, any one package generally does not provide a one-to-one functional comparison. However, if users have explicitly focused needs and cost is a concern, then such open sources packages should be considered.

OpenJump

The OpenJump, or open Java Unified Mapping Platform, is a package that is used worldwide but is not widely known or applied within the United States. As the name implies, it is written in Java and has a strong, but small developer base. It has an extensive collection of spatial analysis tools and is considered strong in the vector data editing arena.

UDig

The GIS package uDig, or User-Friendly Desktop Internet GIS resides and is installed on the desktop PCs but is also branded as an 'internet' oriented system capable of consuming standard geospatial web services such as WMS or WFS. Its primary purpose is for viewing and querying geospatial data, but also has some basic analysis and editing

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Launch of InfoUSA MapSelection Interface

By Jeremy Holt, GIS Consultant

In January, ADC oversaw the launch of a new web mapping service for the leading provider of business and consumer information and marketing lists. InfoUSA provides data and database services as well as marketing solutions to nearly four million customers seeking to increase sales through direct marketing.

To provide these services, InfoUSA maintains a proprietary database of 210 million U.S. consumers and 14 million U.S. businesses, which they take the effort to verify with millions of phone calls every year. The primary product that InfoUSA sells through its custom internet commerce site is called the Sales Lead. This is essentially a potential client defined by industry, demographic and consumer expenditure indicators, among other characteristics.

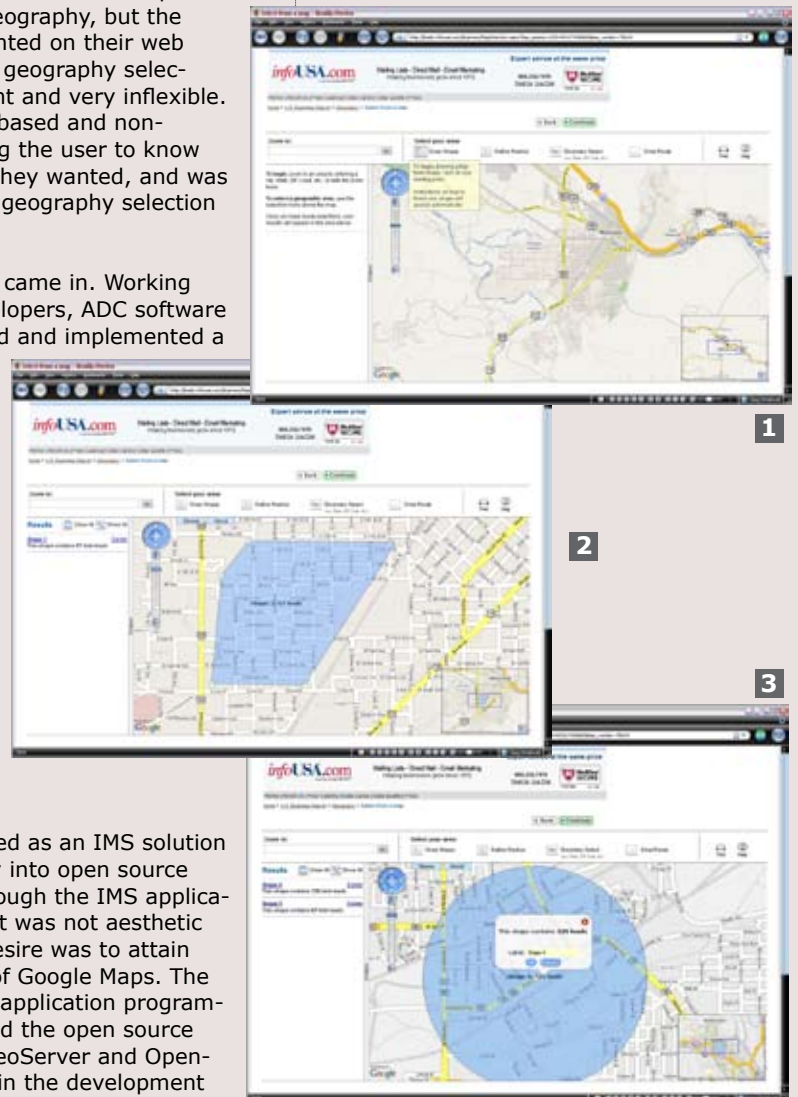
These Sales Lead lists can be scoped and selected by geography, but the methods implemented on their web commerce site for geography selection were inefficient and very inflexible. Selection was list-based and non-graphical, requiring the user to know which geography they wanted, and was limited to a single geography selection type at a time.

This is where ADC came in. Working with InfoUSA developers, ADC software engineers designed and implemented a map-based web component that provided graphical, robust methods for searching and selecting Sales Leads to purchase. This component is integrated into the existing web commerce site and utilizes both InfoUSA based and ADC hosted elements working together.

What had originated as an IMS solution has moved its way into open source technologies. Although the IMS application worked well, it was not aesthetic enough and the desire was to attain the look and feel of Google Maps. The Google Maps API (application programming interface) and the open source geospatial tools GeoServer and OpenLayers were used in the development of the web mapping component. This allowed for the data provided by InfoUSA to be integrated with Google Maps, and for ADC to apply custom selection tools and thematic mapping options.

Some of the custom selection tools include the ability to navigate nationwide and zoom as far in as street level, use a radius or predefined boundaries such as zip codes, and buffer a route to select underlying Sales Leads. But perhaps most notable is the ability to create a custom drawn geographic feature for selection. Behind the scenes, the geoprocessing tasks are handled by Geotools, an open source GIS toolkit.

The decision to use open source GIS allowed ADC software engineers to implement the required functionality while allowing InfoUSA to realize critical savings on software and licensing fees. With the release of the interactive web mapping application, InfoUSA gained a competitive edge over rivals and enhanced its share of the data list market and could potentially integrate more mapping options into its gallery of services.



1. Draw Shape Tool Instructions
2. Shape Results
3. Leads from Radius Tool

ADC Announces New Web Design/Hosting Division

In January, ADC unveiled a new web design and hosting division called ADC4WEB.com.

GIS as a technology had moved to the Internet roughly 10 years ago. Consequently, ADC made the decision to hire and train web programmers and analysts in the latest Geospatial techniques.

ADC CEO Jim Ward said the new division was spurred by wanting to fully utilize talented staff who specialize in web design, information technology, graphic arts, marketing, communications and public affairs, and as a way to give other small businesses an affordable solution for getting their message out on the web.

"ADC has flourished in recent years by developing complicated GIS applications that are served and displayed on the web," said Ward. "We wanted to use our talent to help other small businesses get their message out onto the web. ADC4WEB was a way to help others, while also helping our employees to use their

skills and hone their talents."

The new division will provide a full range of web design and hosting services – from complete new web pages to revamps of existing sites, and from simple sites to complex e-commerce sites. ADC4WEB.com will offer a basic foundation package for small businesses to use as a way to launch their businesses on the web, and to allow them to build on when they are ready. Basic packages start at \$499.

The websites will be hosted at ADC's corporate headquarters, located off Cty. Hwy. T and St. Hwy. 29. The new hosting facility has 24/7 monitoring, controlled climate, Per Mar protection, generator backup and server redundancy to ensure that there is no unplanned downtime.

To learn more about the division, visit www.adc4web.com or visit ADC's home website at www.adc4gis.com.



"Working with ADC was wonderful! It was painless and ADC staff was friendly, responsive and flexible throughout the process."
 ~ Linda Pophal, Owner/CEO

www.stratcommunications.com



"You guys hit the nail on the head with this because it's classy and professional, but also very unique and obviously has a one-of-a-kind feel."
 ~ Kate Mize, J.D.

www.mizelegal.com



"ADC's service and expertise in developing the SMARTT Network, a complex database-driven site, was top notch and we have been very happy with the results."
 ~ Erin Trowbridge, Marketing Director

www.smarttnetwork.com



"...The amount of calls I am receiving from prospects has increased (from my new website) and the number of bookings has almost doubled from what we were previously doing..."
 ~Kevin Hart, Owner/DJ

www.hartsentertainment.com



"Thanks for all your help on our website - it's awesome!"
 ~ Brent LaFave, Owner

"Everyone that we dealt with at ADC listened to our needs and ideas and responded quickly to all our correspondences. The entire process was positive and stress-free for us, and we are very satisfied with the end product."
 ~ Gail, Wendy & Dave, Check First Partners

www.elite4logistics.com



www.checkfirstinvestigations.com

TIPS FOR TECHS



Here are some favorite tips and short cuts used by our team of GIS technicians:

1. Setting the 'Sticky Move Tolerance' inside ArcMap can prevent the accidental moving of selected features when editing data. Access it from the Editing Options dialog window under the General tab. This controls how many screen pixels the mouse has to move with a feature before it is actually moved.
2. In ArcGIS 9.3, a new feature allows you to display the attribute dialog window upon creating a new feature. You can have it display for all your maps' layers, or just some. One useful layer is the parcel layer; upon creating the feature, the attribute dialog opens, allowing you to enter the PIN immediately and continue creating or editing features. Access it from the Editing Options dialog window under the Attributes tab.

The State of Geo...continued from page 2 capability. However it is built upon an extensible framework in which more advanced and focused Java plug-ins can be developed. A stellar example of this is the JGrass application which is a hydrologic modeling program based upon the uDig Framework.

QGIS

User-Friendly Desktop Internet GIS QGIS is a GIS viewing environment structured primarily for the Linux desktop, but there have been subsequent builds, particularly at the new 1.0 release, that make it compatible on Windows platforms. QGIS supports PostGIS and Shapefiles as vector data sources. QGIS uses OGR as a data import bridge, so support of all OGR formats is also available. QGIS supports DEM, ArcGrid, ERDAS, SDTS, and GeoTIFF raster formats.

SERVER GIS MapServer

Outside of some military-driven applications, MapServer is the grandfather of open source GIS software. Created in the mid-1990s by the University of Minnesota, in conjunction with NASA and the Minnesota DNR, it is a customizable engine for rendering geographic data sources into cartographic map products that can be consumed via internet browsers as standard image or other file formats.

It has the strength of supporting many input geographic data formats, from ESRI Shapefiles and ArcSDE layers, to PostGIS databases and remote service-based layers. It is written in the C programming language, but is very accessible for customization in that it has a number scripting Application Programming Interfaces (API) for industry standard languages such as Java, .NET, Perl, PHP and Python. In the early part of this decade, it was pitted directly against comparable closed source alternatives and regularly outpaced them in both rendering performance and load handling.

Early releases of MapServer were plagued with documentation gaps, configuration difficulties and cumbersome methods for cartographic map file design. Many of those issues have since been addressed, making it one of more widely used products available.

GeoServer

GeoServer is a product of The Open Planning Project written in Java and was designed

from the start as a standards-based server for distributing geographic data over the web. In short, it is intended as a neutral, yet powerful engine for exposing both open and proprietary geospatial data to the web. In regard to the standards, it follows the Open Geospatial Consortium's guidelines for its cartographic stylization mechanism (SLD) and for its array of output data service formats, such as the Web Map Server standard (WMS), the Web Feature Server standard (WFS) and the Web Coverage Service standard (WCS).

The application allows the publishing of geospatial data as maps/images (using WMS), as actual data (using WFS), and allows users to update, delete, and insert features (using the WFS-Transactional standard). It also recently offers WCS processing, which exposes the richness of raster images to capable rendering clients.

GeoServer has a rapidly growing user and developer base, and has a strong claim as the leader in the field as the base mechanism for delivering the GIS data interoperability that has been the goal of the industry for almost a decade.

OpenLayers

OpenLayers is a unique product in that it serves a very focused role in web mapping, one that had traditionally been handled by the larger data serving engines, such as MapServer and GeoServer. Specifically, it handles the rendering of the map data in web browsers. It removes the need for the backend servers to have to render the data for and the browsers, taking advantage instead of the browser's ability to interpret and render graphics on it's own through the JavaScript interpretation language.

To be more accurate, then, OpenLayers is not a server product, but rather a client-side JavaScript library that handles the visualization of the data produced by servers such as GeoServer within a browser. At its core, it was meant to take in data sent in standard geographic web formats, such as WMS or WFS, and efficiently display the contents in an interactive and rich way.

GeoWebCache

Tile caching is a method of improving the performance at which geographic data can

be rendered in GIS client software, both in the browser and in desktop applications. The premise is that instead of calling upon the backend server (i.e. MapServer/GeoServer) to generate WMS images each time a redraw is required (e.g. a map pan), the images can be cached and reused. Rather than maintaining a set haphazardly created cached images, the images are stored in an organized two-dimensional array, structured in equally sized square tiles. Grids of large tiles are used to store lower quality renditions of an image that are appropriate for viewing at small scales, say at the state or national level. Subsequent grids with smaller tiles storing smaller, higher quality images are used for large-scale viewing at more local, county, city or even street level extent.

GeoWebCache and solutions like it (e.g. TileCache) intercept the map request when new data is required (e.g. a map pan) and instead call and retrieve the appropriate image stored in the tile cache, as illustrated below. GeoWebCache was written initially to integrate with the WMS output of Geoserver,



but can also be configured to tile and serve up the output of GoogleMaps and VirtualEarth through available adapters.

While new open source GIS projects continue to spawn regularly, many of the existing projects have reached a point in their evolution where rapid enhancement and refinement are occurring, leading to high quality and robust options available to the GIS public. Standards compliance exists in many of the applications, including Desktop and Server products in this article, which has resulted in a state improved interoperability and data sharing and distribution. While available closed source GIS applications still have an appropriate place in the field, open source alternatives should be considered if they provide the necessary functionality for your project.

customer spotlight: CHIPPEWA COUNTY, WISCONSIN

ADC is proud to serve a diverse group of clients – from local municipalities to national corporations. To honor our clients, we are featuring a segment each quarter that will highlight a client, discuss how the customer has used GIS, and will include other interesting information.

In addition to being featured, the client will receive an appreciation gift from ADC. If you would like to be spotlighted, please contact Susan Marcott at Susan.Marcott@adc4gis.com.

Chippewa County Land Conservation Department (LCD)

Dan Masterpole is the County Conservationist and has been with the LCD for 26 years. Dan was instrumental in bringing GIS to the department and continues to support its use. The LCD has been an ADC client since the company's inception. In fact, the very first contract signed by ADC was with the LCD. The LCD is charged with a variety of natural resource management duties, including soil erosion, animal waste, water quality, woodlot management, nonpoint source pollution control, farmland preservation, recycling, and solid waste management.

The LCD first began using GIS in the early 90's and quickly became one of the early proponents of GIS within the state.

From PC ArcInfo through ArcView and now ArcGIS, GIS continues to provide numerous functions within the LCD. Over the years, a number of GIS applications have been developed for farm field monitoring and non-point pollution control certifica-

tion, management of nonmetallic mining permits, conservation easement management, groundwater inventory, and NR151 compliance. ADC has been a constant partner with the LCD in defining the problem and developing a solution.



Chippewa County is located in West Central Wisconsin and the county seat is in Chippewa Falls, "the gateway to the Northwoods!" Chippewa County was established in 1848 and is one of the original 28 counties that covered the Chippewa Valley. The name Chippewa is derived from the native American word Ojibwa.

The father of Chippewa County was Jean Brunet who travelled up from Prairie du Chien in 1828. Brunet was responsible for building the first dam in Chippewa Falls and in fact, the city of Cornell was originally named Brunet Falls. Over the years the white pine forests gave way to rich farmland and today there are over 2000 farms in the County.

In addition, the LCD has used GIS and the web to efficiently deliver information to the public allowing the LCD to reduce counter traffic and focus on its natural resource functions. Currently the LCD has a web mapping site devoted to surface water monitoring by local high schools, an online non-metallic mining permit tool, and a more general site which provides access to natural resource data and aerial photography.

The LCD's commitment to natural resource management and continuing support of GIS has led to a robust set of GIS tools and data, which provides the LCD staff with the ability to better manage resources. At ADC, we are proud of the relationship that has developed with the LCD and hope to provide GIS service and support far into the future.

"ADC has provided the technical services and ongoing support that has allowed us to develop GIS applications that save us time and money."

*- Dan Masterpole
County Conservationist
Chippewa County, Wisconsin.*

CEO Corner continued from page 1

been touted as a new business venture for ADC, in reality our marketing team and software engineers have been building complex web sites and portals for years.

- **Elite Extra** will be launched this year, which is a web portal designed to enhance a delivery company's customer service and dispatch capabilities.
- **RODDirect** was purchased by ADC in 2008 and is a product designed to allow public access to register of deeds' documents online. While it took us several months, we finally have reprogrammed the application to increase its speed and stability and are excited to expand this product to other counties.
- ADC will also be expanding its award-winning GIS mapping product- **WebGUIDE** – in 2009 to include both an ArcGIS Server and Open Source version.
- And lastly, ADC recently was awarded a \$5.5 million, five-year contract for the **U.S. Army Corps of Engineers Service Center** to allow us to continue our GIS services to the Federal government.

In closing, ADC is committed to "business as usual" for 2009, hoping to be a source of stability and calm in these tough times. We look forward to new opportunities, but are also committed and thankful to our loyal customers and will be working hard to help them succeed in any way we can, one GIS solution at a time.

Did you know?

Second only to Christmas, Valentine's Day brings out the card-giver in people, with an average of 1.01 billion cards purchased every year.

The ancient Egyptians recommended mixing half an onion with beer foam as a way of warding off death.

According to the Data Group, grandparents spend an average of \$82 per grandchild for a holiday gift, \$42 for a birthday gift, \$74 for a special occasion such as a graduation, and \$19 for other occasions like Easter or Valentine's Day.

ADC News Briefs

Jen DeVries was recently promoted to **Web Analyst** and will be providing customer and technical support on all of the applications hosted at ADC. Jen previously worked as a GIS technician for nearly three years.



Jen DeVries

Jen graduated from the University of Wisconsin-Eau Claire with a major in Geography.

A travel buff in her free time, Jen was deployed twice by ADC to help with Hurricane Katrina duty in Mississippi and New Orleans.

Congratulations to the Harters! **Marc Harter**, **Web Developer** and wife Hannah, were blessed with a baby boy Jan. 18. Malakai was born at 1:10 p.m., and is doing great at a little over 9 lbs, and about 22 inches. He is welcomed home by big sister Madeline.



Eau Claire Office
2985 58th Street
Eau Claire, WI 54703
p: 715.874.4397
f: 715.874.4387

Omaha Office
7101 Mercy Road, Suite 150
Omaha, NE 68106
p: 402.933.4447
f: 402.422.0299

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Please send any comments, questions, or feedback regarding our newsletter to Susan Marcott, Marketing Director, at Susan.Marcott@adc4gis.com.

1.888.WeDoGIS

www.adc4gis.com

INTRODUCING

www.adc4web.com

ADC's Mission:

- To be the recognized leader in our profession
- To deliver the best possible GIS solution to suit each client's needs
- To consistently exceed the expectations of our clients and our staff



On The Road Again...



ADC Presenting at WLIA Conference

ADC has been chosen to provide four presentations at the Wisconsin Land Information Association (WLIA) meeting on Feb. 19 and 20 at the Kalahari Resort, Wisconsin Dells, Wis., including:

RODDirect as a Source of Revenue for Counties. Presented by Ron Bruder, Director of GIS Technology

RODDirect is an application that has been implemented for county governments as they look to transition some of their traditionally 'counter-based' sales of recorded deed and other documents to web-based search and delivery mechanisms counties. This session will provide an in depth review of the application.

ArcGIS Server Improves Mapping Milwaukee Public Schools (MPS). Presented by Ron Bruder, Director of GIS Technology

Beginning in November, 2007, ADC and Geographic Marketing Advantage (GMA) collaborated to provide GIS design and implementation services to the Milwaukee Public Schools (MPS) system. The main design elements of the Geodatabase and of the ArcGIS Server mapping application will be focus of this session. ADC/GMA team

members will also share some of the lessons learned from the implementation.

A Review of Geospatial Open Source Solutions for Local Government. Presented by Levi Felling, Senior Web Programmer

Significant additions have been made in recent years to the available toolsets for distributing, displaying and integrating geographic data in online Web applications. Through these new toolsets, we are now able to distribute many organizational datasets more easily and in conjunction with, if desired, datasets maintained and stored outside of our organization. The open programming interfaces from Google (GoogleMaps) and Microsoft (VirtualEarth), as well as geospatial open source offerings like GeoServer and Openlayers, can have exciting implications for local governments concerned with budgets and ROI. This talk will demonstrate many of the latest solutions that are being employed to provide GIS data to the web with these new toolsets.

A View of Wisconsin Via the Ice Age Trail. Presented by JoAnn Parks, GIS Project Manager.

We live in Wisconsin, but have we really seen it? This is about hiking 1,000 miles

across Wisconsin on the Ice Age Trail from a geographer's perspective. Along with her friend of 20 years and her dog, Sadie, JoAnn Parks used her GIS expertise to navigate the Ice Age Trail. It started as an adventure to hike a trail, but ended as a life-changing journey across Wisconsin.

Look for ADC at WALCE Conference

ADC is pleased to announce that we will be exhibiting at the Wisconsin Assoc. of Land Conservation Employees Conference from 9 a.m. until 3 p.m., Thursday, Feb. 19 at the Rock Garden Banquet and Conference Center, Comfort Suites, Green Bay, Wis.

ADC has long been involved in WALCE issues, and is looking forward to sharing emerging GIS solutions with WALCE members.

WCCO's Annual Vendor Night

ADC will be demoing RODDirect at the Wisconsin County Constitutional Officers Assoc. from 4:30 - 7:30 p.m., Monday, March 2 at the Best Western Inn on the Park in Madison, Wis.

Hope to see you there!