2005 IGIC Biennial Conference

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Concurrent Session 1

Tuesday, August 30th – 3:00 pm – 4:30 pm

Tracks

Remote Sensing
Technology Trends
Data Access & Distribution
Infrastructure

Track: Remote Sensing

Concurrent Session 1

Tuesday, August 30th 3:00 – 4:30 pm in Room 167-171

Title of Presentation: The GeoTree Project
Presented by: Dr. Ramanathan Sugumaran
Organization: University of Northern Iowa
Contact Email: sugu@uni.edu
Length of Presentation: 45 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal presentation.

Presentation Abstract

The primary goal of this project is to establish GeoInformatics Training, Research, Education, and Extension (GeoTREE) as the center for education, multi-disciplinary research, and outreach services in the geospatial technology areas for individuals from federal, state, local, and tribal government (FSLT) agencies. GeoTREE will be an interdisciplinary center and will be unique in transferring the geospatial technologies to FSLT agencies by bringing NASA scientists, academic members, and members from FSLT agencies together to integrate remote sensing data into GIS and help in improved decision-making through Decision Support Systems (DSS). The outcome from this project includes a) understand or learn the geospatial technology needs of FSLT agencies by researchers from both NASA and academic members, b) develop new geospatial tools and techniques to solve FSLT agencies day-to-day problems, and c) transfer the techniques and tools developed in this study to other communities across the country.

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Title of Presentation: Integrating Hydrologic and Environmental Data into Iowa's GIS Infrastructure
Presented by: Jim Giglierano
Organization: Iowa Department of Natural Resources; Geological Survey Bureau
Contact Email: jgiglierano@igsb.uiowa.edu
Length of Presentation: 45 minutes
Intended Audience(s): General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

The GIS community in Iowa is beginning a process to integrate various hydrologic and environmental data sets into its local and state GIS infrastructure. Much of this data is from dynamic sources, such as remote sensing satellites, weather radars, river gauging stations, but also includes output from digital models of physical processes of watersheds, land surface models, river routing, sediment delivery and others. Traditionally most GIS data is fairly static: locations, types and extents of towns and roads, streams, wetlands and lakes, land use, soils and terrain. Dynamic environmental data tries to describe the state or conditions of the water cycle, and has traditionally been within the realm of weather forecasters and climate modelers at the federal research level and universities. Many challenges exist to bringing this environmental data into the GIS world, including but not limited to finding and converting appropriate remote sensing data for local GIS uses, inability of GIS to handle 3D and temporal data sets, collecting and storing large, real-time data sets from short term Internet sites, finding appropriate physical models to use available environmental data sets and software that easily links to GIS data storage. One approach to enabling local and state GIS users to benefit from the vast environmental data holdings is to build up the state's GIS infrastructure and capacity, using local knowledge and expertise to capture data streams, convert and reprocess them into usable GIS forms and subsets, and redistribute both raw data and model output using OGC compliant services available to anyone. The Iowa Geographic Information Council is sponsoring workshops to develop the community resources necessary to begin this process of merging environmental data into the mainstream GIS infrastructure.

Track: Technology Trends

Concurrent Session 1

Tuesday, August 30th 3:00 – 4:30 pm in Room 175-179

Title of Presentation: Beyond ArcGIS 9.1
Presented by: Joe Eckmann
Organization: ESRI
Contact Email: jeckmann@esri.com
Length of Presentation: 60 minutes
Intended Audience(s): General audience
Type of Presentation: Informal presentation

Presentation Abstract
ESRI's Research and Development team has been working on ArcGIS version 9.2 for over a year and "Dakota" for almost as long. This presentation will highlight the functionality to expect in future releases of ArcGIS.

Title of Presentation: Pictometry: A Visual Information System
Presented by: Matt Sleister and Brian Beha
Organization: Pictometry International
Contact Email: matt.sleister@pictometry.com
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal presentation

Presentation Abstract:
Pictometry is a rapidly growing software company that provides visual information systems. The company's patented imaging process captures geo referenced, high-resolution oblique (at an angle – natural view) and orthogonal (straight down) digital images of counties and states. Combined with the company's interactive software solution, users can see everywhere, measure anything, and plan everything. The company has a growing customer base of over 120 counties. Major metro areas using Pictometry include Atlanta, Baltimore, Boston, Indianapolis, Los Angeles, New York City, and Philadelphia. Users include 911 dispatchers, assessors and appraisers, law enforcement, fire departments, emergency management agencies, homeland security, engineering, GIS, transportation, and planning officials

Track: Data Access & Distribution

Concurrent Session 1

Tuesday, August 30th 3:00 – 4:30 pm in Room 250-252

Title of Presentation: Caging our Raging Paper & Geospatial Assets Using GIS
Presented by: Mike Tully & Ben Sullivan
Organization: Aerial Services, Inc.
Contact Email: mtully@asi-gis.com
Length of Presentation: 45 minutes
Intended Audience(s): GIS Manager; Team Leader/First-Level Management; Upper Management/Enterprise Concerns;
Type of Presentation: Informal presentation

Presentation Abstract

Asset Management is discussed using web-based GIS services & .NET coding. This customizable system enables clients to instantly access current and historical information about physical or paper assets. Historical documentation and geospatial information about specific assets are brought together into a single user-friendly, efficient system. The complete information can then be accessed either geographically using ESRI ArcIMS or textually using ASP-coded web pages.

Paper and a variety of digital assets (documents, orthos, CAD files, videos, images, etc.) can be integrated geospatially into an amazingly easy-to-use GIS system. The system is an excellent support for GASB34 activities and can be used to greatly facilitate Homeland Security applications. For example, land section corner records, bridge inspection records & photos & SI&A forms, pavement inventories, road design drawings, architectural drawings, sign inventories, building plans & schematics, real estate photos, infrastructure documentation, and a variety of other documents can be scanned and spatially related and made instantly accessible under a mouse.

As new documentation, data about the asset or files are acquired they can easily be added to the on-line, real-time system. The file cabinets and rooms of historic documentation can be made available digitally to anyone whenever they need it. Refiling of materials is no longer necessary. Tremendous savings in staff time can be realized because the information is presented to users geospatially or by smart, efficient indexes, and staff are assured it is the most current and complete information available. All, or portions, of the system can be opened up to other work groups or the public, further leveraging valuable staff time.

Title of Presentation: GIS – ArcSDE – Is it the right environment for you?
Presented by: Mike Mohrhauser
Organization: The Schneider Corporation.
Contact Email: mmorhauser@schneidercorp.com
Length of Presentation: 45 minutes
Intended Audience(s): GIS Manager; Team Leader/First-Level Management; General Audience
Type of Presentation: Full paper presentation

Presentation Abstract

The presentation will discuss the capabilities of ArcSDE in the county, municipal and utility GIS environment to better understand if it makes sense to move to such an environment. This includes multi-user editing, disconnected editing, versioning, conflict resolution, and integration with ArcIMS and ArcGIS applications. In addition, the skill-set and hardware/software environment necessary to implement ArcSDE will also be discussed. This presentation will give participants an understanding of ArcSDE, highlight some of its capabilities and review capabilities of enterprise editing in ArcGIS 9.x.

Track: Infrastructure

Concurrent Session 1

Tuesday, August 30th 3:00 – 4:30 pm in Room 260-262

Title of Presentation: The Address Point Layer: An Inhouse Approach
Presented by: Lawrence Hartpence
Organization: Jasper County
Contact Email: Hartpence_gis@co.jasper.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager;
Type of Presentation: Informal presentation

Presentation Abstract

There are many county departments who benefit from a complete address layer. E911 benefits from such a layer to be able to pin point an address for emergency response teams. Census requests statistics of how many homes there are in the county. Many offices have databases which tie to an address. It became apparent that an address point layer would be an invaluable dataset. Though Jasper county is largely rural with a total of less than 20000 homes, the task of obtaining GPS locations for every house was overwhelming considering that this would be accomplished by Jasper County employees. We also wanted to be able to tie into the Assessor's Tax parcel database and E911's address database. All addresses are logged on one or the other of these databases (at least in theory). With these considerations, this seemed to be the most sensable approach:

1.) Extract the parcels which had a locational address and create centroid points for each of those parcels.
2.) Using aerial photography, move those points to the driveway.
3.) Compare this dataset with the E911 database and geocode the addresses from the e911 database which did not match the parcel dataset.
4.) Move those points to the driveway.
5.) Those points for which we could not find a sensable placement, we field checked and obtained a GPS location.

After the initial thrust of building an address layer the challenge is to maintain that layer. This is accomplished through communication with the other offices as well as the incorporated communities within the county.

Title of Presentation: Addressing and Utilizing E911 GIS in Harrison County
Presented by: Micah Cutler
Organization: Harrison County
Contact Email: mcutler@harrisoncountyia.org
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; General Audience
Type of Presentation: Informal presentation

Presentation Abstract
This presentation will demonstrate how Harrison County integrated their GIS layers into the E911 Communication Center mapping system. The GIS Department works closely with the E911 Coordinator to combine the network road centerline data and the geocoded address layer with supplemental GIS information. This information is used by the E911 Dispatchers during routine emergency calls. Specifics about data editing and proper addressing techniques will be discussed.

Title of Presentation: The Cedar Valley Trails 911 Project
Presented by: Barb Berquam
Organization: Black Hawk County
Contact Email: Bberquam@co.black-hawk.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; Team Leader/First-level Management; General
Type of Presentation: Full paper presentation

Presentation Abstract
The objective of the Cedar Valley Trails-911 Signs Project is the design and implementation of a comprehensive method to georeference trail locations for emergency response and asset management purposes. The Cedar Valley Trail System and the Cedar Valley Nature Trail encompass 95 miles of paved trail within Black Hawk County Iowa. This recreational trail system serves over 200,000 trail users annually. Using GIS software and local GIS data, a new map grid system was devised to communicate location to within one-tenth of one square mile. Using this scheme of two numbers, one letter, and two numbers (example 22 C 99) provides a short ID number that is meaningful on both computer and printed maps. Following approval of the grid, a new 911-sign, with "911" clearly visible, was designed and approved. Many permanent features exist along the trail today. A GPS trail survey was conducted by Iowa Northland Regional Council of Governments (Nov., 2004) to collect locations and assets of benches, shelters, signs and other trail-side features. A photograph of each feature was taken for quality control purposes. The new 911 signs, with the specific ID number for location reference, are attached to the georeferenced trail features. The 911-sign location data is integrated into the Black Hawk Consolidated Public Safety Dispatch Center's system to enable dispatchers to "see" the location on the 911 GIS computer map. Thus, the 911-Signs Project provides a practical solution to location communication in emergency situations and serves as an asset inventory of all features along this transportation corridor.

The 911-Signs Project is a multi-agency cooperative project. Project funding comes from the Cedar Trails Partnership grant and in-kind local donations.

Concurrent Session 2

Wednesday, August 31st – 8:30 am – 10:00 am

Tracks

Homeland Security
Land Records
Data Access & Distribution
Infrastructure

Track: Homeland Security

Concurrent Session 2

Wednesday, August 31st 8:30 – 10:00 am in Room 167-171

Title of Presentation: State level officals from Homeland Security offices
Participants: Jon Paoli with the Iowa Department of Homeland Security and Emergency Management; Tony Spicci, Chair of the Missouri GIS Advisory Committee; and Cindy Newsham with the Nebraska Emergency Management Agency
Contact Email: rkoch@sioux-city.org
Length of Presentation: 90 minutes
Intended Audience(s): GIS Technical; GIS Manager;
Type of Presentation: Forum / Panel Style Discussion

Presentation Abstract

State level EMA personnel from Iowa, Nebraska, and Missouri will discuss Homeland security efforts of each state. Technologies like GIS and GPS play an increasingly larger part each year; these critical new tools of Homeland Defense will be examined as used by each state. Some time will be spent for questions and answers at the end. This is prime time for networking and establishing new partnerships with other organizations in pursuit of an increased safety.

Track: Land Records

Concurrent Session 2

Wednesday, August 31st 8:30 – 10:00 am in Room 175-179

Title of Presentation: I Want to Move to the Geodatabase – How Do I Get There?
Presented by: Scott McBride
Organization: The Sidwell Company
Contact Email: smcbride@sidwellco.com
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager
Type of Presentation: Full paper presentation

Presentation Abstract

With the propagation of ESRI's ArcGIS 8 and the release of ArcGIS 9, the concept of the Geodatabase storage model continues to permeate the psyche and operational planning of local government. In addition, marketing efforts from ESRI and GIS vendors alike are making it well known in the marketplace that the Geodatabase will be the driving force in the immediate future of GIS, fueling an ever growing suspicion (and anxiety) in local government that this is something they will have to deal with, and soon. Unfortunately, many GIS users and decision makers have only a sketchy feel for what the Geodatabase is, and less about how exactly they need to proceed with such a conversion.

This session is designed to help GIS users and decision makers better understand what the Geodatabase is, what the benefits are of moving to the Geodatabase platform, and the real-world steps to actually achieving that goal. Explanation of the process will include conversion from existing CAD, Shapefile, and Coverage formats. Also included will be real-life case studies detailing the experiences of Counties that have already gone through this process, and the possible pitfalls and barriers that have been discovered and solved along the way.

Title of Presentation: Parcel Data Models
Participants: Rick Havel, Johnson County; Jason Siebrecht, Linn County; and Todd Noah, Dallas County
Contact Email: rhavel@co.johnson.ia.us
Length of Presentation: 60 minutes
Intended Audience(s): General Audience
Type of Presentation: Forum / Panel Style Discussion

Presentation Abstract

The purpose of this panel discussion is to give the audience an overview of what is involved in developing an enterprise GIS parcel database. Three separate counties will demonstrate how they created their parcel data models and control maintenance in a multi-editor environment. Significant time will be allocated for open discussion and questions.

Track: Data Access & Distribution

Concurrent Session 2

Wednesday, August 31st 8:30 – 10:00 am in Room 250-252

Title of Presentation: Seven Deadly Sins
Presented by: Andrew Harrison
Organization: The Schneider Corporation
Contact Email: aharrison@schneidercorp.com
Length of Presentation: 40 minutes
Intended Audience(s): GIS Manager; Team Leader/First-Level Management; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

Set on Gilligan's Island this session is designed to demonstrate the common connection between the guest of Gilligan's Island, GIS and the Seven Deadly Sins. This session is geared toward those that are considering, just starting, or building a GIS, but will also be enjoyable for those long time users. This is a lighter more entertaining introduction to the most important obstacles in building GIS projects. You'll learn what the Seven Deadly Sins in GIS are, why they appear, and how to avoid or overcome them. Actual GIS projects will be discussed to demonstrate some of these factors and how they were dealt with.

Title of Presentation: US Route 30 Lincoln Highway GIS Database Development
Presented by: Peter Butler
Organization: Iowa State University
Contact Email: pbutler@iastate.edu
Length of Presentation: 30 minutes
Intended Audience(s): Team Leader/First-Level Management; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

The goal of this research project, funded by the Iowa Department of Transportation, was the development of a management plan for the US Route 30-Lincoln Highway corridor through the state of Iowa. As the first east/west transcontinental highway in the United States, the Lincoln Highway was a model for progressive highway development when first assembled and constructed in the early 1900s. The resources of the corridor hold opportunity for development of interpretive programs and heritage tourism initiatives. GIS was a component of the project's development. The GIS database developed for the project, as a product for the Iowa DOT, included collection of existing corridor data from a variety of sources, and a mapping of corridor resources through field work, observation, and the use of GPS devices. The Iowa DOT database was queried to identify segments that retained historic road design characteristics. The final product was a GIS database that included both quantitative data and analysis and qualitative data and analysis. This presentation will describe the process of the development of the GIS database, and demonstrate the final product

Title of Presentation: Iowa's Historic Bridges Online
Presented by: Michelle Fields
Organization: Iowa Department of Transportation
Contact Email: michelle.fields@dot.iowa.gov
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

The Iowa Department of Transportation has an obligation to respect historic property when designing projects. The first step in this process is identifying those properties. To assist in this step, and to meet Federal guidelines, the Office of Location & Environment (OLE) teamed with a consultant to generate a digital and spatial database of historic bridges on the National Register in Iowa. Rather than letting this information gather dust on a server, a web page was created to allow users to search and view details, photos and maps about each of the 100+ bridges in Iowa

Track: Infrastructure

Concurrent Session 2

Wednesday, August 31st 8:30 – 10:00 am in Room 260-262

Title of Presentation: GIS and Subsurface Utility Engineering – the proactive solution
Presented by: Steve Morgan and Gary Lago
Organization: Snyder & Associates, Inc.
Contact Email: smorgan@snyder-associates.com
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

Snyder & Associates has taken the opportunity to utilize Subsurface Utility Engineering (SUE), GPS, and GIS technology as a proactive problem-solving solution. Traditionally, engineering firms have had minimal GIS capabilities due to the required utilization of CAD drafting techniques for typical engineering projects. Snyder & Associates, Inc. currently uses GIS on several types of projects including utility mapping, network modeling, SUE, site and facility assessments, site surveys, etc. The most significant impact that GIS has made for Snyder & Associate's clients has been SUE mapping information. SUE uses a combination of technologies and tools, including GIS, to determine the location of underground utilities, establish and record the quality level of subsurface utility information, and to manage that level of information for use in utility, roadway, and site construction. The typical SUE project is completed before construction begins. Although, there are numerous examples of construction projects without SUE information that has led to extremely expensive utility infrastructure repairs. Snyder & Associates has been successful in providing a solution to these typical construction problems by utilizing SUE techniques, as well as GPS and GIS technology to develop extensive and accurate utility mapping information before the construction phase begins. Snyder & Associates will present a recent Valley West High School project as a SUE/GIS case study. The topics will relate how GIS is utilized for a SUE project and it's capabilities in relation to the typical SUE requirements, utilization of the GPS rover information, and overall mapping and presentation deliverables.

Title of Presentation: The City of Cedar Rapids GIS Easement Project
Presented by: Derek Peck
Organization: City of Cedar Rapids
Contact Email: DerekP@cedar-rapids.org
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

Upon completion of the City of Cedar Rapids' parcel basemap, the ITGIS Department within the city accepted the challenge of creating a citywide GIS easement layer from scratch. After research on the topic to better understand the best project approach, it was quickly determined little had been done on GIS easement creation to this point. After two years of work using a trial and error approach, various obstacles and challenges were overcome leaving the ITGIS Department nearing completion of a contiguous attributed easement polygon layer. This information is being shared to help other city/county governments start on creating an easement layer.

Title of Presentation: Using GIS for Utility Locates
Presented by: Andrew Harrison and Tracy Troutner
Organization: The Schneider Corporation
Contact Email: aharrison@schneidercorp.com
Length of Presentation: 40 minutes
Intended Audience(s): GIS Manager; Team Leader/First-Level Management; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

Case Study: Hamilton Southeastern Utilities (HSE)

Recently HSE implemented a remote access base station system through the Internet. The system is a wireless data broadcast network for highly accurate, real-time GPS applications that uses a nationwide digital wireless coverage from multiple rovers to a single base station or a network of multiple base stations. The utility has combined the base station system with their GIS, a multi-level website and a utility locate application within their GIS to significantly reduce effort and costs Currently the utility estimates an annual savings of $280,000 for the utility locate application alone and a 25% reduction in the number of work orders processed annually. Through the integration of survey and GIS, HSE has developed an enterprise system providing solutions across multiple disciplines. This presentation will discuss the HSE case study as well as defining the need to do utility locates and it will talk about the processes of applications built in ArcMap. Although this case study is in Indiana, this process and end result can work for any municipal government or private utility company.

Concurrent Session 3

Wednesday, August 31st – 10:15 am – 11:45 am

Tracks

Homeland Security
Land Records
Data Access & Distribution
Environmental Health

Track: Homeland Security

Concurrent Session 3

Wednesday, August 31st 10:15 – 11:45 am in Room 167-171

Title of Presentation: GIS Applications in AgroBiosecurity
Presented by: Matthew Bechdol
Organization: ESRI
Contact Email: mbechdol@esri.com
Length of Presentation: 60 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation with Demonstration

Presentation Abstract

Agriculture is playing an increasingly important role in Homeland Security efforts. Plant and animal disease outbreaks cost the agricultural community billions of dollars, wreck havoc on agricultural trade, can potentially transfer to humans, and can disrupt the food supply. These factors make the agricultural sector increasingly vulnerable to terrorist activities.

There is a real and growing danger that these disease vectors will be used in direct and intentional attacks against the food and fiber sector and potentially against humans directly. GIS technologies are currently being implemented to mitigate both unintentional and intentional risk with the US Department of Agriculture leading the charge. It is USDA's mission to protect and promote the Food and Fiber sector but cannot succeed without partnerships with other Federal Agencies, State and Local Government, Academia, and Private Industry. The presentation will summarize the Agro-Biosecurity situation, discuss ways to leverage USDA activities, and demonstrate how GIS technologies pay a key role.

Title of Presentation: Area Ambulance
Presented by: Greg Clay
Organization: Area Ambulance
Contact Email:
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

GIS is a major ally ini providing timely emergency services. This session will show how GIS is being used for daily operations, performance management, strategic planning, and for providing public information as well as education. Computer Aided Dispatch, investigating response performance issues, call density, and using buffers to optimize unit coverage are a few areas that will be focused on. GIS has played an important role in the effectiveness and response time of Area Ambulance. The increased ability to respond to emergencies helps promote Linn and Johnson counties ability to deal with crisis.

Track: Land Records

Concurrent Session 3

Wednesday, August 31st 10:15 – 11:45 am in Room 175-179

Title of Presentation: The Parcel is Born on the Map: Real GIS & CAMA/Tax Integration
Presented by: Tom Ricker
Organization: The Sidwell Company
Contact Email: tricker@sidwellco.com
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; Team Leader/First-Level Management; Upper Management/Enterprise Concerns
Type of Presentation: Full Paper Presentation

Presentation Abstract

A parcel is created in the GIS. That same parcel number is input into an appraisal software package, and again in a tax administration application. At some later date, joins and relates are created within the GIS that tie the parcel on the map to the associated tax and appraisal data. At this point, we're frequently surprised that our "integrated" system has mismatches wherein not all mapped parcels are accounted for in the tax and appraisal data sets. So why is that? The solution is to establish integration at the point of data entry, where we can enforce business logic to ensure that data sets are consistent; create the parcel number in one place, and propagate it through the enterprise while ensuring data integrity -- let each software application create records in their own database to ensure internal data integrity, while triggering parallel events in related databases to ensure enterprise wide reliability. This session will present a plan to meet these goals.

Title of Presentation: Using GIS to Calibrate Real Estate Valuation Models to the Local Market
Presented by: Randy Ripperger
Organization: Polk County Assessor's Office
Contact Email: rip@assess.co.polk.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

GIS can be a value-added tool for an assessor. This presentation will discuss how an assessor may use GIS spatial analysis tools to adjust valuation models for locational influences.

Title of Presentation: GIS and Drainage Assessment
Presented by: Geoff Wood
Organization: The Schneider Corporation
Contact Email: gwood@schneidercorp.com
Length of Presentation: 40 minutes
Intended Audience(s): GIS Manager; Team Leader/First-Level Management; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

This session will review how GIS technology is rapidly changing the way watershed drainage assessments are determined. The focus will be on the process of identifying land owners who should be assessed for county drainage reconstruction and maintenance projects and how GIS can automate the calculations of corresponding rates. GIS allows the user to select combinations of assessment methods that could be used for calculating the fairest assessment. Applying advanced GIS processes, county surveyors and engineers can now use sophisticated tools to quickly and accurately formulate what-if scenarios to help in calculating the fairest assessment for watershed drainage

Track: Data Access & Distribution

Concurrent Session 3

Wednesday, August 31st 10:15 – 11:45 am in Room 250-252

Title of Presentation: The National Map – The Nation's Map of the Future
Presented by: Mark Coppersmith
Organization: U.S. Geological Survey
Contact Email: mcoppersmith@usgs.gov
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

The National Spatial Data Infrastructure (NSDI) is defined as the technologies, policies, standards, and people necessary to promote sharing of geospatial data throughout all levels of government, the private and non-profit sectors, and the academic community. The components necessary to help promote and develop the NSDI are The National Map, Geospatial One-Stop, and the Federal Geographic Data Committee. *The National Map* is being developed by the USGS to address the ever-evolving need for basic integrated geospatial data and maps, the Geospatial One Stop is the mechanism for data discovery and access, and the Federal Geographic Data Committee functions to provide coordination for policy and data standards. *The National Map*, which is just one component of the USGS' National Geospatial Programs Office, is designed to be a continually maintained and integrated database of basic spatial data that is current, accurate, and consistent. Creating and maintaining *The National Map* will be accomplished through partnerships and business arrangements with other organizations and agencies. This presentation will focus on the leadership role of the USGS in building the NSDI, the continuing evolution of *The National Map,* and current partnerships in Iowa.

Title of Presentation: Central GIS Data Repository Project
Presented by: Wayne Chizek; Mark Castenson; Barb Berquam; and Micah Cutler
Organization: Iowa Counties Information Technology (ICIT)
Contact Email: wchizek@co.marshall.ia.us
Length of Presentation: 60 minutes
Intended Audience(s): GIS Technical; GIS Manager; Team Leader/First-Level Management; Upper Management/Enterprise Concerns
Type of Presentation: Informal Presentation

Presentation Abstract

There is a need for local governments to rely on technology to share GIS data across governmental boundaries at multiple governmental levels. The Central GIS Data Repository Project proposes an innovative GIS data sharing initiative to facilitate storage, access, retrieval, and redistribution of GIS data among local governments, as well as to state and federal government agencies as needed. The primary use of the GIS data would be in the event of an emergency, natural disaster, or human-caused disaster and would be available for use by local EMA personnel and local PSAP centers equipped for computer-aided dispatch.

Track: Environmental Health

Concurrent Session 3

Wednesday, August 31st 10:15 – 11:45 am in Room 260-262

Title of Presentation: GIS Applications in Environmental Health
Presented by: Lisa Swanson
Organization: Black Hawk County Health Department
Contact Email: lswanson@co.black-hawk.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

Environmental Health comprises those aspects of human health, including quality of life, that are determined by interactions with physical, chemical, biological and social factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling and preventing those factors in the environment that may adversely affect the health of present and future generations. The BHC Environmental Public Health Department is a regulatory agency involved in water quality, well permitting, enforcing the Iowa Food Code through establishment inspections and licensing, disease vector prevention/surveillance, nuisance control/tracking, environmental contamination monitoring. GIS has proved to be indispensable as a powerful tool in the Health Department. Spatial data has played a major role in project communication, planning for efficiency and dispersion of resources, tracking environmental activities and effectiveness of various programs, routing staff and work load balancing, modeling underground contamination as it relates to water quality regulation and well permitting, assessing need for program funding justification.

Title of Presentation: GIS Site Suitability Modeling to Identify Potential Corn Stover Collection Sites in Northern Iowa
Presented by: Paul F. Anderson; Monica Haddad; Patrick Brown
Organization: Iowa State University
Contact Email: fridolph@iastate.edu
Length of Presentation: 30 minutes
Intended Audience(s): Team Leader/First-Level Management; Educators; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract
Iowa's energy budget can benefit from use of renewable fuels, such as corn stover, a crop residue. To explore the feasibility of using corn stover as a fuel in municipal power plants, Iowa State University joined with the Leopold Center for Sustainable Agriculture and the W.K. Kellogg Foundation to create the Value Chain Partnerships for a Sustainable Agriculture. GIS technology was used to create site suitability models to identify potential corn stover collection sites along the Iowa Northern Railway, between Cedar Rapids and Manly. Primary data variables for the 14-county study area included four environmental elements, three physical elements, and three agricultural elements. Spatial analysis included both descriptive and predictive models (suitability, capability, feasibility) and cost surfaces for social costs, environmental costs, and construction costs. Candidate sites resulting from the spatial analysis were evaluated in more detail based on their potential costs and impacts. Results of the modeling indicated that GIS technology is a useful tool in selecting potential sites, but must be followed with more detailed economic and site investigations.

Title of Presentation: HAZUS-MH
Presented by: Sue Evers and Joe Chandler
Organization: U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA) Region VII
Contact Email: sue.evers@dhs.gov
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract
Overview of use and capabilities of HAZUS-MH (HAZards United States - Multi Hazard), FEMA's Software for Estimating Potential Losses from Disasters -- HAZUS-MH uses GIS technology to combine hazard layers with national, local, and custom databases to estimate physical, economic, and social impacts before or after disasters. Geographic Information System software (GIS) provides the ability to visualize and integrate multiple data layers in any combination. GIS-technology not only enables the geographic identification of hazard-prone areas, but also establishes spatial relationships necessary for the computation of loss and damage estimates

Concurrent Session 4

Wednesday, August 31st – 1:15 pm – 2:45 pm

Tracks

Homeland Security
Technology Trends
Data Access & Distribution
Remote Sensing

Track: Homeland Security

Concurrent Session 4

Wednesday, August 31st 1:15 – 2:45 pm in Room 167-171

Title of Presentation: Using GIS to Catch the Bad Guys
Presented by: Herb Kuehne, PhD.
Organization: City of Sioux City Police Department
Contact Email: hkuehne@sioux-city.org
Length of Presentation: 30 minutes
Intended Audience(s): Team Leader/First-Level Management; Educators
Type of Presentation: Full Paper Presentation

Presentation Abstract

A demonstration and discussion of how GIS is used in daily work at the Sioux City Police Department. The presentation will include descriptions of routine tasks along with dreams for using GIS in analysis of patterned crime. Will discuss some problems in moving data from data management system to GIS as well as some more advanced techniques that others in the field are using to solve crime series.

Title of Presentation: Local County Experiences in GIS and Homeland Security
Presented by: Gary Brown, Woodbury County EMA; Barb Berquam, Black Hawk County; Lisa Swanson, Black Hawk County
Contact Email: rkoch@sioux-city.org
Length of Presentation: 60 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation and Forum/Panel Style Discussion

Presentation Abstract

Emergency management agencies across the nation play a key role in coordinating homeland security efforts, channeling U.S. Dept. of Homeland Security funding received from state to local governments, and organizing mass disaster and other training scenarios. A Federal Geographic Data Committee publication (2004) http://www.fgdc.gov/publications/homeland.html states that the characteristics of GIS make "….geographic information technologies, combined with appropriate sets of geospatial information, an invaluable tool for the handling, display, and analysis of information involved in every aspect of Homeland Security." The Black Hawk County (BHC) Iowa Emergency Management Agency GIS project demonstrates how GIS is applied to the major functions of homeland security, which are to detect and anticipate, protect and defend, and respond and recover. Over the last few years, Black Hawk County EMA, in partnership with Black Hawk County, has developed a comprehensive GIS project. Geospatial information from many sources, including high-accuracy county level data, is used for hazard mitigation planning, asset inventory, demographic visualization, chemical plume analysis, emergency vehicle dispatch and tracking, and can be applied when needed to search and rescue and damage assessment. As with any preparedness effort, the goal is that if faced with a disaster event the EMA GIS project would prove an integral tool for visualizing, managing and analyzing critical data during and after the disaster. County personnel will cover local experiences with GIS for Homeland Security and the will be some time for interaction at the end.

Track: Technology Trends

Concurrent Session 4

Wednesday, August 31st 1:15 – 2:45 pm in Room 175-179

Title of Presentation: The Road to Success with Field GPS
Presented by: Michelle Fields
Organization: Iowa Department of Transportation
Contact Email: michelle.fields@dot.iowa.gov
Length of Presentation: 30 minutes
Intended Audience(s): Team Leader/First-Level Management; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

The Water Resources Section of the Office of Location & Environment of the Iowa Department of Transportation uses GPS in the field for collecting wetland boundaries, individual plant locations and verifying plan accuracy. This presentation will discuss and demonstrate the hardware and software used by this section

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Title of Presentation: The Future of the Statewide GPS Network
Presented by: Ben Sullivan
Organization: Aerial Services, Inc.
Contact Email: bsullivan@aerialservicesinc.com
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

Please check the IGIC website for further information.

Title of Presentation: MAF/TIGER Accuracy Improvement Project
Presented by: Craig Best
Organization: U.S. Census Bureau
Contact Email: craig.duane.best@census.gov
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

In 1980's, the Census Bureau developed the Topologically Integrated Geographic Encoding and Referencing system (TIGER) to support our mapping needs for the 1990 Census. In the 1990's, we developed the Master Address File (MAF) as a complete and current list of all addresses and locations where people live or work, covering an estimated 115 million residences, as well as 60 million businesses and other structures in the U.S. The 2000's will be the decade of the MAF/TIGER Accuracy Improvement. We plan to improve the coordinate accuracy of TIGER to at least 7.6 meters CE95 for every county in the U.S.

In this session, we will discuss the methodology for MAF/TIGER Accuracy, the expansion of partnership programs, and our testing of mobile computing devices with GPS for Census 2010.

Track: Data Access & Distribution

Concurrent Session 4

Wednesday, August 31st 1:15 – 2:45 pm in Room 250-252

Title of Presentation: A Local Implementation of Web GIS to Handle Cross-Jurisdictional Areas
Presented by: Chad Olson
Organization: City of Clive
Contact Email: colson@cityofclive.com
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; Team Leader/First-Level Management; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

In December 2003, the City of Clive launched its internal ArcIMS application, known as the Clive iMap, to disseminate GIS data to all city staff. The City of Clive uses a third-party application along with ArcIMS to provide additional functionality such as adding text, drawing shapes, accessing link documents and providing links to property information on the assessor's web page. The Clive iMap is becoming a one-stop shop to access and retrieve citywide GIS data and related data by city staff. There were several "potholes" along the way. Two of the "potholes" were to merge spatial data and to merge tabular data from two counties (Polk and Dallas) with the tabular data in two different database structures. This presentation will focus on how the City of Clive merges spatial data using a customized tool in ArcCatalog, how tabular data is merged with SQL Server DTS packages and how a small city with a small staff can host an ArcIMS site and maintain the application.

Title of Presentation: Considerations and Implementation of a Typical County WebGIS
Presented by: Doug Avoles
Organization: Applied Data Consultants, Inc.
Contact Email: doug.avoles@adcr4gis.com
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

With the rising cost of desktop software, web based GIS has become a popular and cost effective method for reaching end users. Many factors should be considered in planning and implementing a GIS. Using practical examples from counties in Wisconsin, this presentation will cover many of the issues that shape the development of a web based GIS application.

Title of Presentation: Customizing ArcMap to Make GIS Users' Job Easier
Presented by: Lang Deng, PhD
Organization: Pioneer Hi-Bred International, Inc.
Contact Email: lang.deng@pioneer.com
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

Demon on using ArcObjects to create tools for Finding a parcel, finding a property owner and moving layers in TOC. Some detailed information are given on how to create such tools from scratch in ArcMap using ArcObjects

Track: Remote Sensing

Concurrent Session 4

Wednesday, August 31st 1:15 – 2:45 pm in Room 260-262

Title of Presentation: LiDAR: What is it and how do you use it?
Presented by: Michael Hawkins
Organization: Iowa Department of Natural Resources
Contact Email: Michael.hawkins@dnr.state.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract
Please check the IGIC website for further information.

Title of Presentation: LiDAR Applications in Iowa
Participants: Mark Warren, MAGIC; Pete Kollasch, Iowa Department of Natural Resources; Chris Ensminger, Iowa Department of Natural Resources; Michael Hawkins, Iowa Department of Natural Resources; Alice Welch, Iowa Department of Transportation; Cody Buhrmeister, Western Air Maps
Contact Email: gis@goldenhillsrcd.org
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Forum / Panel Style Discussion

Presentation Abstract
This panel will discuss the past, present, and future of LiDAR applications across the state of Iowa. Hear the panelists' insights into the successes and failures of this technology and what the future may hold.

Title of Presentation: Traditional Photogrammetry and LiDAR Can Work Together
Presented by: Cody Buhrmeister
Organization: Western Air Maps
Contact Email: codyb@westernair.com
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

Western Air Maps combined traditional photogrammetry and LIDAR technology as a solution to challenging target terrain during their first LIDAR project. Under contract with the US Army Corps of Engineers-Kansas City District (KCD), WAM used LIDAR scanning and conventional aerial photogrammetry to develop an accurate topographic and planimetric picture of a 4,600 acre training facility at the Fort Riley Army Base in Kansas. It was the first LIDAR project for KCD as well, and required aerial acquisition during July, with full leaf-on vegetation, to meet the planning and design schedule

With a planned expansion of Fort Riley's Digital Multi-Purpose Training Range (DMPTR) and Multi-Purpose Range Complex (MPRC), KCD required new topographic and planimetric data meeting the design accuracy requirement of 1' contours and line-of-sight visualization for range targeting systems. The facilities train Fort Riley's 24th Infantry Division (Mechanized) as well as Army and National Guard Units. The DMPTR and MPRC offer units uninterrupted weeks during the year to train. Dense July foliage could not be removed via a controlled burn because of the facility's constant training schedule. Photo acquisition had to be planned so it would not interrupt the training schedule. Team members had to stay within marked safety zones while conducting set-up survey ground work, as the site contained unexploded ordinance.

The range also contained a natural feature unique to the area; some of the last tall grass prairie in the country. According to researchers at Kansas State University, the tall grass canopy reaches over 2.5 meters in height. It is very dense, and team members expressed concern that it would produce false ground data. To compensate for the prairie, WAM designed a QA/QC program with 188 surveyed ground check points. WAM subcontracted with LandAir Mapping, Inc. to complete LIDAR data acquisition. LIDAR systems can scan through dense foliage for terrain elevation, and can be used any time of day. Little activity occurred on the training range during the night, so LIDAR data acquisition was conducted then. WAM performed a 100% QC verification internally using TerraScan software for the "bald earth" surface model LandAir produced.

Statistically 90% of elevation differences between LIDAR shots and ground control points were less than 6", a RMSE of 0.238' for the entire dataset, complying with the VMAS standard for 1' contour mapping. By isolating the 10% outliers, the RMSE drops to 0.228 feet; meeting NSSDA standards, which indicates a very good overall topographic accuracy of the dataset.

Fort Riley served as a training ground for WAM's second LIDAR project; mapping 640,000 acres in Michigan for the USACE-Detroit District. The Fort Riley project proved that traditional photogrammetry can work effectively with LIDAR data to produce solutions in dense, diverse environments.

Concurrent Session 5

Wednesday, August 31st – 3:00 pm – 4:00 pm

Tracks

Homeland Security
Technology Trends
Partnerships & Success Stories
Remote Sensing

Track: Homeland Security

Concurrent Session 5

Wednesday, August 31st 3:00 – 4:00 pm in Room 161-167

Title of Presentation: Homeland Security Grants
Participants: Paula Lemke, Cerro Gordo County; Shirley Frederiksen, Golden Hills RC&D; Brad Cutler, Golden Hills RC&D
Contact Email: plemke@co.cerro-gordo.ia.us
Length of Presentation: 60 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation; Forum/Panel-Style Discussion

Presentation Abstract

Cerro Gordo County has received 3 GIS grants pertaining to Homeland Security including emergency preparedness and response.. This presentation addresses agency needs, searching for grants that fit those needs, writing the grant, ways to increase the success for grant approval, implementation of grant funds, reporting and evaluations. We will also cover specifics of the grants - how the funding was used, partnering opportunities and worthiness of time and effort expended in the grant writing and implementation process.

PLUS! Shirley Frederiksen, Golden Hills RC&D Coordinator and Brad Cutler, Golden Hills RC&D GIS Project Specialist, will give tips and discuss essentials for successful grant writing.

Track: Technology Trends

Concurrent Session 5

Wednesday, August 31st 3:00 – 4:00 pm in Room 175-179

Title of Presentation: Using GIS to Investigate Possible Associations Between Select Herbicide Concentrations and the Incidence of Cancer in Iowa

Presented by: Rebecca Mills; Katherine Haun: Heidi Miksch; Sara Venables; Catherine Conway; Scott Sandberg; Elie DuPre; Anya Butt

Organization: Central College

Contact Email: millsr1@central.edu

Length of Presentation: 30 minutes

Intended Audience(s): Educators; General Audience

Type of Presentation: Formal Paper Presentation; Student Presentation

Presentation Abstract

Seventy-five percent of all Iowans rely on groundwater as their drinking water source. At the same time, Iowa is intensely agricultural, with an emphasis on industrial agriculture and the associated chemicals involved. During recent years, concern about environmental estrogens has raised questions about the link between agricultural chemicals and cancer incidence. We looked specifically at atrazine and metolachlor, suspected endocrine disrupters and environmental estrogens. Atrazine, belonging to the triazines group, has been detected in 78% of the water samples monitored by the U.S. Geological Survey nationwide and has been found to cause cancer in rats and have an estrogenic effect. Recently, we found that the combined effects of atrazine and metolachlor, another commonly used herbicide, significantly decreased survival in guppies and changed gender ratios, favoring females. As US standards for herbicide use are generally set through controlled experiments with a single pesticide, the reality of farmers using mixtures of pesticides has serious implications of the run-off generated from agricultural land. Using atrazine and metolachlor data measured in surface and ground water from the U.S. Geological Survey over the measurement record (1988-2004), we mapped their concentrations temporally and spatially. From the SEER Cancer registry website, the spatial occurrence and temporal incidence of varying types of cancer were mapped within a GIS for the period 1973-2002 as ten year aggregates. These data were combined and analyzed spatially to determine links of herbicide contamination in water to cancer incidence in Iowa, specifically cancers possibly linked to environmental estrogens.

Title of Presentation: Investigating Applications From Ethnically Diverse to Central College: Using GIS to Shape Recruiting Strategies
Presented by: Dr. Anya Butt; Scott Sandberg
Organization: Central College
Contact Email: butta@central.edu
Length of Presentation: 30 minutes
Intended Audience(s): Educators; General Audience
Type of Presentation: Formal Paper Presentation

Presentation Abstract

Central College is a small liberal arts college located in Pella, IA. Given that Iowa=s population is 93.4% white, attempting to sustain a diverse campus community - at a time when there is an increased need throughout the US to enhance acceptance and understanding to adequately address increasingly complex issues- is a challenge. As one of its strategic goals, Central College has committed itself to increasing its diversity population. In addition to question of how to attract such a population to a small midwestern campus, the issues of where how and to find such a population becomes crucial. In this paper, we examine past diversity trends of inquires, applications and enrollment to Central College through the creation of a GIS database. We map the current distribution of ethnic diversity throughout the Midwest's counties (including MN, MO, MI, ND, SD, KA, IL, WI) based on zip code areas, as well as the number of inquires over time from these areas, the applications these inquires yielded and the actual enrollment realized. By examining the past patterns in application and visualizing it in context with the target base, we hope to help direct recruiting strategies for the admissions office.

Track: Partnerships & Success Stories

Concurrent Session 5

Wednesday, August 31st 3:00 – 4:15 pm in Room 250-252

Title of Presentation: Registered Apprenticeship: Building a Skilled Workforce in High Growth Industries

Presented by: Tim Carson and Jan Smith
Organization: U.S. Department of Labor, Bureau of Apprenticeship & Training
Contact Email: Carson.timothy@dol.gov

Length of Presentation: 30 minutes

Intended Audience(s): Team Leader/First-Level Management; Upper Management/Enterprise Concerns; General Audience

Type of Presentation: Informal Presentation

Presentation Abstract

Registered Apprenticeship is a formalized, structured training program combining on-the-job training and related technical instruction, in which paid employees receive practical and technical training in a highly skilled occupation. Apprenticeship is industry-driven career training. Industry determines the skills that are essential to build and sustain a quality workforce. Skills, knowledge, and experience are the building blocks for success. They are also the foundation for apprenticeship training. The National Apprenticeship System has a long and successful history in addressing industry training needs. Evolving work-force requirements and continual technological advancements have presented opportunities to expand apprenticeship programs into a vast range of new and emerging occupational fields. In September of 2003, the High Growth Job Training Initiative was launched by the current administration as a strategic effort to prepare America's workforce for the new and increasing job opportunities in high growth, high demand and economically vital sectors of the American economy. This Initiative targets training and career development resources toward providing the skills required of today's workforce in meeting the demands of High Growth Industries. The Geospatial Technology Industry is at the forefront of this Initiative as an emerging high growth sector of the U.S. economy that is expected to reach more than $21 billion in revenue over the next few years. Armed with this information, the U.S. Department of Labor's Employment & Training Administration conducted an Executive Forum with industry leaders to gain further understanding of the overall critical workforce needs of the industry. The Challenge: An immediate and anticipated need to fill tens of thousands of positions in geospatial technology and related fields. The Solution: The National Apprenticeship System has been identified as a model resource in addressing such issues of career and technical training.

Title of Presentation: GIS Certification
Participants: Geoff Wood, The Schneider Corporation; Shane McDermott, Poepping, Stone, Back & Associates
Contact Email: gwood@schneidercorp.com
Length of Presentation: 45 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation; Forum/Panel-Style Discussion

Presentation Abstract
This session will provide information about the GIS Certification Institute, its program, review process, and current statistical data about the GISCI and its certified GIS professionals. Following the informal presentation portion, several certified GIS professionals (GISPs) will be on hand to discuss their personal certification process, take questions from attendees and discuss the future of GIS Certification.

Track: Remote Sensing

Concurrent Session 5

Wednesday, August 31st 3:00 – 4:15 pm in Room 260-262

Title of Presentation: Evaluating the Differences between Digital Aerial Data Capture versus Film Based Data Capture

Presented by: Randy Mayden and Chuck Cmeyla
Organization: GE Energy / MJ Harden
Contact Email: randall.mayden@ge.com

Length of Presentation: 60 minutes

Intended Audience(s): GIS Technical; GIS Manager; Tem Leader/First-Level Management; Upper Management/Enterprise Concerns; Educators; General Audience

Type of Presentation: Informal presentation

Presentation Abstract

State, County, Municipal governments and utility companies are asking the question, "Is film based aerial photography a thing of the past?" Several State and County-wide projects are mandating that land imagery be captured with a digital camera - but is it better and cost effective? This presentation will review the fundamentals of capturing aerial imagery, review the applications suited for film based photography and digital capture, and will compare the differences between film based data acquisition versus capturing land information with a digital camera. Examples of each will be available.

Concurrent Session 6

Thursday, September 1st – 8:30 am – 9:30 am

Tracks

Education
Technology Trends
Partnerships & Success Stories
Natural Resources

Track: Education

Concurrent Session 6

Thursday, September 1st 8:30 – 9:30 am in Room 167-171

Title of Presentation: Incorporating GPS and GIS Technology Into Your Classroom Curriculum
Presented by: Scott Ermer
Organization: Hawkeye Community College
Contact Email: sermer@hawkeyecollege.edu
Length of Presentation: 30 minutes
Intended Audience(s): Educators
Type of Presentation: Informal Presentation

Presentation Abstract

No matter what subject matter you teach, GPS and GIS Technology can be incorporated into your curriculum in some way, shape or form. Discover the potential scope and power of GIS and GPS in your curriculum. With our world becoming ever digital, see how to create, organize and analyze data sets, utilized critical thinking for analysis, see maps as numbers and numbers as maps. In this session we will discuss the potential for incorporating these technologies into your curriculum. One will see how this technology can be an interdisciplinary approach in your school. We will look at some low cost options for incorporating these technologies into your curriculum. The intended audience for this session is K – 12 grade instructors

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Title of Presentation: Model Program of Study: Agricultural Geospatial Technology
Presented by: Terry Brase
Organization: Kirkwood Community College
Contact Email: tbrase@kirkwood.edu
Length of Presentation: 30 minutes
Intended Audience(s): Educators
Type of Presentation: Informal Presentation

Presentation Abstract

A national consortium of agricultural community colleges have developed a model program of study that includes recommended courses in general education, science and math, and geospatial technologies. It is intended to apply to the broad definition of agriculture which includes production and management of food, fiber, and natural resources. The program of study is designed to be rigorous in its science, math and technology requirements, to meet the needs of the industry.

The program of study is still in the process of being developed, so input by educators and industry representatives on coursework and requirements are extremely valuable. This session will review the program of study, take questions and then invite comment and suggestions.

Track: Technology Trends

Concurrent Session 6

Thursday, September 1st 8:30 – 9:30 am in Room 175-179

Title of Presentation: GIS Tricks Learned by a Crime Analyst
Presented by: Herb Kuehne, Ph.D.
Organization: City of Sioux City Police Department
Contact Email: hkuehne@sioux-city.org
Length of Presentation: 30 minutes
Intended Audience(s): GIS Manager; General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

This session will begin with a description of how the Crime Analysis office prepares crime and accident data for GIS processing. The session will then demonstrate: 1) solutions to problems in adding that data to a GIS dataset, 2) solutions to problems in geocoding the data, and 3) three different results when using the "selection" features of ArcGIS. A third part of the session will raise several practical issues about ArcGIS. Possibile topics include: using the SQL function in order to load data into a dataset; the advantage of a personal geodatabase when making presentations "on the road;" and exporting tables (joined and others) for use back in Excel or another analysis tool.

Title of Presentation: Travel Demand Modeling Using Transcad
Presented by: Brian Squier
Organization: Iowa Department of Transportation
Contact Email: brian.squier@dot.iowa.gov
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

A Travel Demand Model is a transportation planning tool. The basic theory is that each trip has a reason, a production, and an attraction. Equations have been formulated from careful studies and published in national manuals on how many trips the average household generates, how many trips retail businesses attract based on number of employees, etc. These equations are used in the model. This presentation briefly reviews the theory and uses of travel demand models and then focuses on TransCAD, specifically showing its functionality in importing, manipulating and displaying model inputs. We will also look at TransCAD's networking functions, including shortest path.

Track: Partnerships & Success Stories

Concurrent Session 6

Thursday, September 1st 8:30 – 9:30 am in Room 250-252

Title of Presentation: Partnering and the Iowa DOT LRS Centerline Project
Presented by: Steve Kadolph
Organization: Iowa Department of Transportation
Contact Email: steven.kadolph@dot.iowa.gov
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; Team Leader/First-Level Management; Upper Management/Enterprise Concerns
Type of Presentation: Informal Presentation

Presentation Abstract

This presentation will be of use to county and city GIS and managerial personnel who are interested in gaining an understanding of the partnering opportunities available with the Iowa Dept. of Transportation to maintain a single roadway centerline for the State of Iowa. The goal is to provide a highly accurate centerline that will benefit all of our partners.

Information about the DOT's Linear Referencing System (LRS) architecture at a high level will be presented. The current status of the statewide roadway data collection based upon statewide aerial imagery and the partnering activities used to acquire county/city imagery at higher resolution will be discussed. In addition, the status of current partnering efforts with various counties and the Census Bureau will be provided. The presentation will be informal and questions are encouraged.

Title of Presentation: Iowa DOT GIS/Planning Partnership with Regional Planning Affiliations and Metropolitan Planning Organizations
Presented by: Milly Ortiz; Cindy Shearer; Adam Shell
Organization: Iowa Department of Transportation
Contact Email: milly.ortiz@dot.iowa.gov
Length of Presentation: 30 minutes
Intended Audience(s): GIS Manager; Team Leader/First-Level Management; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

This report is a discussion of the planning efforts being made by the Iowa Department of Transportation through the partnership with its regional planning agencies. This includes 18 Regional Planning Affiliations (RPAs) and 9 Metropolitan Planning Organizations (MPOs) throughout the state of Iowa. Emphasis will be placed on the use of Geographic Information Systems (GIS) within the state. It will include a synopsis of the role GIS has in the transportation planning process, partnerships that have been acquired between state and regional agencies, and the overall benefit such analytical tools can have in the process. Examples of our planning efforts include GIS training, development of a GIS trails map, and producing multimodal GIS transportation maps for each MPO/RPA area to be included in the first ever Profiles of Iowa MPOs and RPAs document. Ultimately, the goal is to provide the tools, training and other resources necessary to agencies within the state so they can see firsthand, the benefits that GIS provides.

Track: Natural Resources

Concurrent Session 6

Thursday, September 1st 8:30 – 9:30 am in Room 260-262

Title of Presentation: Forestry Uses of GIS
Presented by: Jeremy Cochran; Brent Olson
Organization: Iowa Department of Natural Resources, Forestry Bureau
Contact Email: jeremy.cochran@dnr.state.ia.us
Length of Presentation: 60 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

Foresters with the IA DNR Forestry Bureau have been utilizing GIS as part of their daily jobs to collect spatial data for Iowa's forest lands. Data collected includes the following: landowner's contact information, landowner's forest land objectives, species composition, acreage, tree size, invasive species, forest health issues such as insect and disease presence, management prescription, past use, harvest systems, yield, regeneration techniques, species planted and financial incentive programs.

Jeremy Cochran, District Forester will present what the district foresters of the Iowa DNR are using GIS for their landowner programs within their districts. Brent Olson, Iowa DNR Area Forester, of the Loess Hills State Forest will present materials on what the State Forest have used GIS on the forests over the last 12 years

Concurrent Session 7

Thursday, September 1st – 9:45 am – 11:15 am

Tracks

Education
Technology Trends
Data Access & Distribution
Natural Resources

Track: Education

Concurrent Session 7

Thursday, September 1st 9:45 – 11:15 am in Room 161-167

Title of Presentation: Educating Young Women on GIS
Presented by: Monica Haddad
Organization: Iowa State University, Department of Community and Regional Planning
Contact Email: haddad@iastate.edu
Length of Presentation: 30 minutes
Intended Audience(s): Educators; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract

This presentation will highlight different careers that are related to the use of Geographic Information Systems (GIS) technology. In general, young women have many questions concerning their professional future. If I know how to use GIS, what type of jobs can I apply for? Is the demand for GIS expertise increasing? What qualifications do I need to pursue a career in GIS? Knowing that GIS can be applied to a variety of fields, the presentation will focus in some of the possibilities such as urban and regional planning, environmental resources, marketing, education, and engineering. The objective of this presentation is to show that the technology can be used by young women to accomplish a variety of careers goals.

Title of Presentation: Turning Kids onto GPS and GIS: A Panel Discussion
Participants: Rog Patocka, Emmet County; Scott Ermer, Hawkeye Community College; Terry Brase, Kirkwood Community College; Jay Straker, Iowa State Extension; Charlie Fitzpatrick, ESRI.
Contact Email: gbrown@mtv.hfmgt.com
Length of Presentation: 60 minutes
Intended Audience(s): Educators, General Audience
Type of Presentation: Forum / Panel-Style Discussion

Presentation Abstract

If you know we need a work force skilled in GPS/GIS, but aren't sure how to interest students and educators in learning the skills, this is the workshop for you. We have brought together a group of GPS/GIS users, educators, employers, and community members to explore practical, grass-roots efforts that you can pursue to introduce GPS/GIS to young people of all ages. This will be a unique opportunity to share ideas, ask questions, and learn about resources that are available to help bring GPS/GIS to the forefront. Hand outs will be made available.

Track: Technology Trends

Concurrent Session 7

Thursday, September 1st 9:45 – 11:15 am in Room 175-179

Title of Presentation: Modeling Prehistoric Archaeological Site Location
Presented by: Chad A. Goings
Organization: The Office of the State Archaeologist, University of Iowa
Contact Email: chad-goings@uiowa.edu
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

The location of prehistoric archaeological sites in Iowa is not just of interest to archaeologists, but also to such professionals as engineers, planners, and developers for use in their decision-making processes. Geographic Information Systems (GIS) have proven to be a valuable tool for predicting the location of these sites. The University of Iowa Office of the State Archaeologist, with funding from the Federal Highway Administration and the Iowa Department of Transportation, is currently developing a statewide predictive model for prehistoric site location. Histograms and univariate statistical analysis are utilized to determine differences between site location and the surrounding environment using independent variables such as slope, aspect, relief, and distance to water. A stepwise multivariate logistic regression procedure eliminates unneccesary predictor variables and uses those that best explain the variablility between site presence and site absence for any given parcel of land. Models developed thus far have correctly predicted anywhere from 67-91% of test sites taken from an independent sample. It is hoped that these models will assist archaeologists in future planning for archaeological surveys and also other organizations as they deal with cultural resources in the state of Iowa.

Title of Presentation: Using GIS to Integrate Available Data on Surface Geology for Archaeological Modeling in Iowa Stream Valleys
Presented by: Joe Alan Artz; Melanie Riley; Cynthia Wambgans
Organization: The Office of the State Archaeologist, University of Iowa
Contact Email: joe-artz@uiowa.edu
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical, General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract
The Landscape Model for Archaeological Site Suitability (LANDMASS) is being developed by the University of Iowa Office of the State Archaeologist in partnership with USDA-Rural Development, with funding from the Federal Highway Administration administered by the Iowa Department of Transportation. The model leverages over 30 years of archaeological survey to determine where archaeological sites are, and are not, likely to be found in the Iowa landscape. As part of this project, LANDMASS staff have compiled a GIS that records point locations and descriptive data for nearly 5000 drill holes, outcrops, and excavations of alluvial sediments in Iowa. The data are primarily from unpublished or poorly disseminated reports on archaeological investigations excavation in Iowa, much of it obtained by geoscience specialists working as consultants to archaeologists. The database characterizes sediments in terms of lithology, weathering, and soil formation. A lithofacies approach is used to identify fluvial depositional environments. The GIS was developed as a decision support tool to be used in needs-determination and planning of archaeological surveys. The usefulness of the database can be assessed by comparison with other forms of subsurface data including NRCS soils map units, the Iowa Geological Survey's GEOSAM, and geotechnical borings done for IDOT road projects.

Title of Presentation: Mapping Principles: Making Your Map Look Good!
Presented by: Micah Cutler
Organization: Harrison County
Contact Email: mcutler@harrisoncountyia.org
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; Team Leader/First-Level Management
Type of Presentation: Informal Presentation

Presentation Abstract
Why do some maps look so professional while others just don't communicate well? This presentation will explore the basic principles of good map design and provide some tips on how to ensure that your map will be understood correctly. Text placement, map components, color, and design considerations are just a few of the areas that will be explored.

Track: Data Access & Distribution

Concurrent Session 7

Thursday, September 1st 9:45 – 11:15 am in Room 250-252

Title of Presentation: Imagery Management
Presented by: Tom Samson
Organization: Iowa Department of Transportation
Contact Email: Thomas.samson@dot.state.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical
Type of Presentation: Informal Presentation

Presentation Abstract

The Iowa Department of Transportation (IDOT) uses aerial imagery from many sources and each source with its own projection. This imagery is also used in various applications such as GeoMedia, MicroStation, and ArcGIS. A growing number of users are requesting that aerial imagery may be made available for these software applications without the task of reprojecting the images to the currently used projection for a particular application. How does the IDOT store and catalog imagery from counties, state agencies, and in-house photgrammetric projects that are being collected and created on a monthly to yearly basis? How does the IDOT meet the needs of non-technical staff that wish to use imagery for their work projects? How does the background imagery for an intranet web site get served up in an acceptable display speed?

No matter what the currently used application is, time to display single raster files within the application can be a time consuming task especially if a large number of images or tiles are displayed. How can a user get the coverage for a project without going through the slow and tedious task of calling up individual tiles with a design or GIS application?

This presentation will discuss the implementation of TerraShare and give examples on how the IDOT made use of the software to solve image distribution problems

Title of Presentation: Turning the Corner: Evolution of the I-Sites On-Line GIS Interface
Presented by: Colleen R. Eck
Organization: The Office of the State Archaeologist, University of Iowa
Contact Email: colleen-eck@uiowa.edu
Length of Presentation: 30 minutes
Intended Audience(s): GIS Manager, General Audience
Type of Presentation: Full Paper Presentation

Presentation Abstract

I-Sites is an interactive on-line database and Geographic Information System (GIS) for archaeological research in Iowa, developed by the GIS department at the University of Iowa-Office of the State Archaeologist in collaboration with the National Center for Preservation Technology and Training, the GIS facility at Iowa State University, and University of Missouri's Center for Agricultural, Resource and Environmental Systems. I-Sites was introduced to the professional community as well as the public in May of 2003. The goal of I-Sites is to make archaeological data available to all those who need or have an interest in the data in formats that are accessible with no software other than a Web browser. I-Sites disseminates information about Iowa archaeology to the public and professionals, and is among the most widely used applications of its type in North America.

I will discuss its development from initial planning to the present on-line resource. Changes for the future will respond to user feedback and reflect the needs of archaeologists as well as developers and government agencies. Over the past two years, changes and additions have been made to the interface to reflect the requests of users and the needs of professional archaeologists. In the future, I-Sites will offer more tiered access options and continued improvements to aid conservation and management efforts across the state for developers and government agencies. After two years of use, our feedback has given I-Sites renewed goals and different directions to focus on in the further development of this on-line interface.

Title of Presentation: Flash and Web Mapping
Presented by: Christopher J. Seeger
Organization: Iowa State University Extension
Contact Email: cjseeger@iastate.edu
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical
Type of Presentation: Full Paper Presentation

Presentation Abstract

When asked how to share GIS information on the Web, many GIS users would first look to ESRI's ArcIMS as a solution. While this product has become an industry standard, there are several other products that can be used to create web-based interactive maps. One of these products is Macromedia Flash. When combined with a MySQL database and a server side scripting language such as PHP or PERL, Flash can create a very powerful and dynamic map interface. The scripting language, called Actionscript, that is built into Flash is an object oriented language and when combined with the multimedia features of Flash can be used to create informative and fun Public Participation GIS experiences.

This presentation will serve as the first step for anyone interested in using Flash to display spatial data on the web. The discussion will include several case studies of existing Flash solutions and will highlight some of the building blocks such as database connectivity, panning and zooming tools, integration of OGC Web Feature Services (WFS) and linking to websites such as the Iowa Ortho Server. As interest in Web-mapping continues to grow, Flash Mapping is poised to become more popular each year.

Track: Natural Resources

Concurrent Session 7

Thursday, September 1st 9:45 – 11:15 am in Room 260-262

Title of Presentation: Accessing USDA Geodata
Presented by: Gregg Hadish
Organization: U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)
Contact Email: Gregg.Hadish@ia.usda.gov
Length of Presentation: 30 minutes
Intended Audience(s): GIS Technical; GIS Manager; General Audience
Type of Presentation: Informal Presentation

Presentation Abstract
The US Department of Agriculture provides free access to various natural resource-related GIS datasets. This presentation will explore several on-line sites for accessing soils data, imagery, and other geodata developed by the USDA-NRCS, FSA, and other agencies. Methods of accessing the data via the web and through GIS connections will be presented.

Title of Presentation: Wetlands Inventory Project
Presented by: Todd Bishop and Chris Ensminger
Organization: Iowa Department of Natural Resources
Contact Email: todd.bishop@dnr.state.ia.us
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract
Please check the IGIC website for further information.

Title of Presentation: GIS & Conservation Planning at the Nature Conservancy
Presented by: Mike Polly
Organization: The Nature Conservancy
Contact Email: mpolly@tnc.org
Length of Presentation: 30 minutes
Intended Audience(s): General Audience
Type of Presentation: Informal Presentation

Presentation Abstract
A general introduction into how TNC uses GIS (and other tools) in a number of ways for protecting Iowa's biodiversity (plants, animals, natural communities).

Presentation Abstracts

Presentation abstracts and speaker presentations may be downloaded from the IGIC website:

http://igic.gis.iastate.edu/conference/conf2005/conf-2005-program/

These presentations and abstracts will eventually be moved to the IGIC Resource Guide.

http://igic.gis.iastate.edu/resources

The 2005 IGIC Conference Committee would like to thank all presenters for volunteering their time and expertise to making this conference a success.