



WISCONSIN LAND INFORMATION ASSOCIATION

30th Annual Conference – February 22-24, 2017 Chula Vista Resort, Wisconsin Dells, Wisconsin

Please join us to celebrate 30 years of WLIA at our Annual Conference in Wisconsin Dells!

The theme this year is **Generation Geospatial: From Mylar to My Phone.**

The geospatial industry has evolved and expanded over the last few decades as technology and the internet have rapidly become ubiquitous in business workflows and everyday life. Maps that were once created using mylar sheets are now completed with a few finger taps on a mobile device! WLIA has matched this progression as Wisconsin's land information systems embraced new technologies, data, and members from different backgrounds.

This year's conference will offer over 50 educational sessions, technical workshops, compelling speakers, and many opportunities to network with every generation of geospatial peers! The program also includes our annual map contest, exhibit hall, Special Interest Group meetings, Esri Hands on Learning Lab, and the WLIA Town Forum. This year's Opening Event on Wednesday night offers a dinner reception and vintage video game contest.

Although we come from diverse disciplines, professional experiences, and generations, we unite in our interest in land records modernization, LIS, GIS, and related technologies.

Since WLIA's beginnings in 1987 our membership has adapted to the increasing changes in technologies, standards, and tools in support of our mission and vision for Wisconsin land information systems. Our organization continues to keep current with updates to our website (www.wlia.org) and social media including Facebook, Twitter and LinkedIn for news, member interaction, and exchange of ideas.

I appreciate your commitment and support of WLIA. Your participation at this event and other meetings are the reason for our organization's success spanning these last 30 years. I would like to personally thank the WLIA Board members, the Annual Conference Committee members, presenters, and exhibitors for their dedication, hard work, and time given to this Association.

Sincerely,

Emily Champagne, GISP

2017 WLIA Annual Conference Chair

WLIA Annual Conference 2017 Preliminary Schedule*

February 22-24, 2017 at the Chula Vista Resort in Wisconsin Dells, WI

**This schedule is preliminary. Final Program schedule will be provided prior to the conference*

Wednesday	February 22, 2017
9:00 am	Registration
9:00 am	Esri Hands on Learning Lab (open 9:00 am – 5:00 pm)
9:30 am	Morning Workshop Session
12:30 pm	Lunch
1:30 pm	Afternoon Workshop Session
4:30 pm	Break
4:45 pm	LION Meeting
5:45 pm	Break
6:00 pm	Opening with Keynote Speaker and Dinner
6:30 pm	Social Night with Vintage Video Game Contest

Thursday	February 23, 2017
7:30 am	Breakfast with the Board
7:30 am	Registration
8:30 am	Welcome; Opening Remarks
9:00 am	Keynote Speakers
9:00 am	Esri Hands on Learning Lab (open 9:00 am – 5:00 pm)
10:30 am	Break with Exhibitors; Exhibit Hall Open
11:00 am	Morning Educational Sessions
12:00 pm	Lunch, 50/50 Raffle
12:30 pm	Town Hall Part 1; Awards; Committee Reports; Announcements
1:15 pm	Break with Exhibitors
1:30 pm	Afternoon Education Sessions
4:00 pm	Break with Exhibitors
4:30 pm	Special Interest Group Meetings (SIGs)
5:30 pm	Exhibitors Reception

Friday	February 24, 2017
6:45 am	President's Breakfast
8:00 am	Coffee and Breakfast with Exhibitors
8:30 am	Keynote Speaker; Announcements
9:00 am	Hands on Learning Lab (open 9:00 am – 12:00 pm)
9:15 am	Break with Exhibitors
9:30 am	Morning Educational Sessions
11:30 am	Silent Auction Ends
12:00 pm	Lunch
12:30 pm	Town Hall Part 2; Scholarships; Awards; Prizes; Welcome New Board
1:30 pm	WLIA New Board Meeting
1:30 pm	WLIC Meeting

Register for the Annual Conference at <https://www.wlia.org/annual-conference/registration/>

Hotel Information



Chula Vista Resort, Wisconsin Dells, WI

2501 River Road, Wisconsin Dells, WI 53965

www.chulavistaresort.com

WLIA has a block of rooms at the resort. Please see below for details:

STANDARD ROOM RATES

\$82 single or \$102 double occupancy (for government employees)

\$119 single or double (for non-government employees)

Any questions, call Chula Vista Resort at 855-388-4782

Make your reservation by Jan. 31, 2017 for best availability

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Pre-Conference Workshops

Wednesday, February 22, 2017

9:30 am to 4:30 pm. Lunch will be between 12:30 – 1:30 pm.

Workshop rates: Half day (\$75 to \$90), Full Day (\$150 to \$180). WLIA Members receive a discount.

A Step-by-Step Guide to Persuasive (yet Ethical) Map Design (3 hours)

Ian Muehlenhaus, UW-Madison, Online Professional Master's in GIS and Web Map Programming

Have you ever spent days designing a map only to be disappointed that the point, or argument you're trying to make, does not resonate with map users? You will learn how to design four different styles of persuasive maps. After learning how to create persuasive maps, you'll be taught when to use each style, and how to incorporate the styles into your everyday mapping projects. Participants will need to bring their own laptop with your favorite GIS software installed.

Parcel Fabric 101 – An Introduction to the Parcel Fabric (3 hours)

Frank Conkling, Panda Consulting

This half day workshop will let attendees learn about the fundamentals of the data model and experience the editing procedures behind ESRI's ArcGIS Parcel Editing Solution prior to actually making the commitment to convert their data. Panda Consulting will provide a sample data set of a county that has already been converted and will review the new tools and procedures for performing consolidations, splits, adjustments and inputting a subdivision. Participants will need to bring their own laptop with ArcGIS 10.2 or higher with ArcGIS for Desktop standard or advanced license installed.

Parcel Fabric 601 – Advanced Parcel Fabric (3 hours)

Frank Conkling, Panda Consulting

This half day workshop will explore the more advanced topics associated with implementing and using the ESRI ArcGIS Parcel Editing Solution. Topics include: quality control in the Parcel Fabric, Cartographic Point Management, Control Points, identifying and fixing topology errors, advanced construction techniques, associated layers, ETL Procedures, updating control points and its impact and an exploration of adjustment techniques. Participants will need to bring their own laptop with ArcGIS 10.2 or higher with ArcGIS for Desktop standard or advanced license installed.

Migrating Menominee County to the Parcel Fabric (3 hours)

Jon Hodel, Cloudpoint Geographics

This workshop would go through the details involved with converting Menominee County from a legacy CAD environment into the parcel fabric. The training will include the initial preparation, data cleanup, and fabric workflows including control points and adjustments. Participants will need to bring their own laptop with ArcGIS for Desktop 10.3 standard or advanced license installed.

Basic Python for ArcMap (3 hours)

Alison Mynsberge, City of Wisconsin Rapids

Larry Cutforth, WI Department of Agriculture, Trade and Consumer Protection

Python is an open-source scripting language that has been integrated into ArcGIS. This course will provide an introduction to basic Python syntax for field calculations and complex label expressions using conditions and basic Python methods. The goal of the course is to provide familiarity so users can begin incorporating Python into all of their GIS activities. Participants will need to bring their own laptop with ArcGIS for Desktop 10.X standard or advanced license installed.

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Creating Simple GIS Applications with Python (3 hours)

Sam Giebner and Jesse Adams, North Point Geographic Solutions

Using a stand-alone graphic user interface (GUI) allows for the development of powerful apps that can utilize a wide variety of GIS software and can be easily shared cross-platform. This workshop will teach you the basics of creating stand-alone GUI's for your Python scripts using the Tkinter native Python package. In this workshop, you will learn the necessary Python concepts for creating Tkinter GUI's, including classes and modules, as well as how to utilize the many widgets available in the Tkinter package. We will also create several simple GIS tools with the Tkinter GUI and discuss tool sharing best practices. You will leave with the skills and knowledge necessary for creating your own stand-alone Python app! Attendees will need Python V. 2.7 or higher installed on their computer.

What a Pairing - ArcGIS Collector and High Accuracy GPS Receivers (3 hours)

David Buehler, City of Marshfield

Gale Shea and Jay Riester, Seiler Instruments

Come get some hands on experience with high accuracy GPS receivers that pair with any mobile device. The City of Marshfield and Seiler Instruments are happy to present this hands-on workshop that is geared towards municipal users (anyone is welcome of course). The course will cover a wide variety of practical topics, as they relate to the use of ArcGIS Collector paired with a high accuracy GPS receiver. Participants will need to bring your own mobile device, high accuracy receiver, ArcGIS Online account, and/or laptop with ArcMap installed.

Running Your Own Cloud Server to Share Documents, Files, and Applications with Open Source Tools and a Minimal Budget (3 hours)

Brian Hall, UW- Stevens Point

This workshop will begin by comparing a few options available to you, including shared hosting, dedicated hosting, and cloud server hosting services, and discuss advantages and disadvantages of each method. We will then walk through, step-by-step, exactly what it takes to setup your own live web server in the cloud with OpenShift. By the end of the workshop it's expected that you'll be able to have your own live, publicly accessible test web page on the internet, hosted by your own cloud server – or at least be able to be informed enough to decide if this is a project you'd be willing to take on in the future. Participants will need to bring their own laptop and have full administrative access.

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The Opening

The 2017 WLIA Annual Conference will commence Wednesday evening, February 22, from 6:00-9:30 pm with "The Opening."

There will be opening remarks from the Mayor of Wisconsin Dells, Brian Landers, followed by dinner of sandwiches and easy to carry snacks including a candy/popcorn buffet. We will also offer beverages and a cash bar allowing you to get ready for a fun night of vintage video games.

Get your game on as WLIA reaches level 30!



We have a fun filled night planned as we take you through the generations of gaming! From the vintage 8-bit arcade games like Pac-Man and Donkey Kong to NES Classics of Super Mario and Excitebike there will be video games for all attendees to test (or recall) their skills.

Speakers

We are honored to have four Keynote Speakers join us at the WLIA Annual Conference this year.

Brian L. Landers

Mayor, City of Wisconsin Dells

Website – www.citywd.org

Title – Welcome to Wisconsin Dells

John Gurda

Author, Milwaukee Historian

Website – www.johngurda.com

Title – Mapping the Invisible: The Milwaukee Neighborhood Project

Erica Raleigh

Executive Director of Data Driven Detroit, L3C

Website – datadrivendetroit.org

Title – Community Change: Engaging Through Data

Heather Milton

Senior GIS Specialist, URS St Louis MO, GISCorps Member & Volunteer since 2004

Website – www.giscorps.org

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Educational Sessions

Annual Conference, February 22-24, 2017 at the Chula Vista Resort in Wisconsin Dells, WI

Track Categories*

Thursday, February 23, 11:00 am - 12:00 pm					
LIDAR	Asset Management	Mapping Applications	County	AGO	State
Thursday, February 23, 1:30 pm - 4:00 pm					
Emergency Management	Through the Years	Research & Education	Parcels & Land Records	Municipal	State & Federal
Friday, February 24, 9:30 am - 11:30 am					
Emergency Response	Agriculture & Land Use	Server & Scripts	GPS & UAS	Mobile & Web Applications	This & That

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Thursday, February 23 - Morning Sessions - 11:00 am - 12:00 pm

Track: LiDAR

Point Clouds: Examining LIDAR and Photogrammetry as Tools (30 minutes)

Matt Vinopal, Ayres Associates

The new era of mapping has brought a flood of professionals who eat, sleep, and breathe LiDAR (or more technically, point clouds). But, is LiDAR the appropriate technology – or can we use point clouds and photogrammetrically derived models? In this presentation, we discuss some of the intricacies of both a LiDAR-derived point cloud as well as a point cloud extracted by dense image matching (DIM). DIM has now become relevant in the mapping industry because of high resolution/high overlap imagery collected by UAVs. We'll share examples of both to help you evaluate which technique works best when.

LIDAR for Buffalo County - From Conception to Completion (30 minutes)

Jason Poser, Buffalo County

We will unveil the LiDAR journey that started in 2014 and is coming to completion now. You will discover how the project won support, how it was funded, and how the data was acquired and processed. We'll cover a few of the speed bumps we hit along the way. Most importantly, we will show how various county departments, along with state and federal agencies, are putting the LiDAR data to use. Some of the stories might surprise you!

Track: Asset Management

Python-Powered CAD Conversion for Facilities Inventory and Asset Management (30 minutes)

Kevin Bruhn, Milwaukee County; Lee Frederick, Milwaukee County

In support of Milwaukee County's undertaking to implement the Cityworks enterprise asset management system, the Milwaukee County Land Information Office (MCLIO) has developed and managed an in-house project to build the core dataset that will serve as the foundation for Cityworks

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work order system, based on a portfolio of 513 County buildings ranging from small park pavilions to the 1.5 million square foot Courthouse Campus. Relying heavily on Python, and drawing from both ArcGIS-based and non-ArcGIS capabilities, the MCLIO developed automated processes to convert hundreds of individual CAD floorplans to GIS data models. The approach to this project encompassed a number of goals, such as standardizing processes to ensure that editors achieve repeatable and uniform results. We will highlight these goals and provide an overview of the automated workflows used to transform CAD into intelligent GIS data.

Multi-Jurisdictional GIS & Asset Management - A Success Story for Data Sharing (30 minutes)

Cristina D. Richards, Ozaukee County; Scott Daniel, Ruckert-Mielke

By hosting local municipal data and providing the ability for each City, Village, and Town to develop online tools to manage their infrastructure assets, Ozaukee County launched a “one-of-a-kind” GIS web application for their county staff and 7 local municipalities. With instant and remote access to various geographic layers and assets – such as utilities, trees, signage, zoning, documents, inspections, etc. – county and municipal staff can respond more quickly, and with more accurate information, to inquiries by citizens or department staff. A special viewer with limited datasets is also available for public access. This presentation will review the process the county went through to gain financial and management support, and a “live” demonstration of the application and the various online tools.

Track: Mapping Applications

Having Fun with PDF Maps (30 minutes)

Andy Faust, NCWRPC; Christine Koeller, UW-Stevens Point

PDF Maps is a geospatial GeoPDF reader for your smartphone and tablet. You can interact with a referenced PDF map and view your location, record GPS tracks, and add placemarks. We will cover how you can have some fun and maybe even figure out a way to use PDF Maps at work.

50+ Open Source Geospatial Applications (30 minutes)

Bob Basques, SharedGeo

This presentation provides a lightning overview of the breadth of quality geospatial open source applications, which are available for the full range of geospatial use cases, including storage, publishing, viewing, analysis and manipulation of data.

The presentation is based upon documentation from OSGeo-Live, which is a self-contained DVD, USB thumb drive and Virtual Machine, based on Ubuntu. It includes over 50 of the best geospatial, open source applications, pre-configured with data, project overviews and quick-starts, translated into multiple languages. It is an excellent tool for demonstrating GeoSpatial Open Source, using in tutorials and workshops, or providing to potential new users. It provides pre-configured applications for a range of geospatial use cases, including storage, publishing, viewing, analysis and manipulation of data. It also contains sample datasets and documentation.

This presentation is very useful for anyone wishing to gain a high-level understanding of the breadth of geospatial open source available.

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Track: County

LIO 101: Running a Successful Land Information Office (60 minutes)

Eric Damkot, Washington County, Peter Herreid, DOA

This session is intended for newly appointed LIOs, experienced LIOs who are curious about how other counties run their program, and other association members who are interested in learning more about the WLIP. The session will begin with an introduction by Peter Herreid describing requirements of the WLIP including land records modernization plans, land information councils, grants, reporting, parcel and TBD benchmarks, etc... Peter's overview will be followed by a panel of LIOs covering lessons learned, keys to success and audience questions.

Track: AGO

Using ArcGIS Online for Field Inspections (60 minutes)

Jon Schwichtenberg, GRAEF

This session will discuss the concept, configuration, use and processing, for using ArcGIS Online for several unique types of field inspections. Will cover inspections of grounds, utilities, buildings, and structural entities. It will include some project information on unique uses of online GIS for structural deficiency inspections of architectural entities.

We will describe the process for loading the data, using the applications in the field and processing the data after completion.

Track: State

Statewide Data Collection with WISE-Decade (60 minutes)

Tony Van Der Wielen, LTSB

The WISE-Decade platform was built to facilitate the collection of county municipal and political boundaries on a semi-annual basis. The collection of data has expanded to parcels and school districts (through DIR/SCO and the WLIP). This presentation will focus on the current data-sets that have been collected and potential calls of data in the future. We will also talk about and demonstrate new software in WISE-Decade and will also take feedback on how to make the platform better.

Thursday, February 23 - Afternoon Sessions - 1:30 pm - 4:00 pm

Track: Emergency Management

GIS – The Critical Link to NG911 (60 minutes)

Paul Logan, WIPSCOM (WI-APCO & WI-NENA)

For more than 40 years, the 911 system has been serving the needs of the public in emergencies. Now it's time to move this 40 year old system to the next level.

Next Generation 911 (aka NG911) will enhance the system to create a faster, more flexible, resilient, and scalable system that allows 911 to keep up with communication technology used by the public.

Put simply, NG911 is an Internet Protocol (IP)-based system that allows digital information (e.g., voice,

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photos, videos, text messages) to flow seamlessly from the public, through the 911 network, and on to emergency responders.

While the technology to implement NG911 systems is available now, the transition to NG911 involves much more than just new computers. Implementing NG911 will include activities of many people, including GIS professionals, who will coordinate efforts to plan and deploy a continually evolving system of hardware, software, standards, policies, protocols, and training.

All the technology in the world doesn't matter if calls can't be routed to the correct Public Safety Answering Point (PSAP), or if ambulances, fire trucks and police cars can't be routed to the location of an emergency.

2007 Tornado Response (30 minutes)

Adam Derringer, Ayres Associates; Paul Crocker, Menominee Tribal Enterprises

Abstract pending.

USNG: Four Letters That Could Save Your Community Millions (60 minutes)

Steve Swazee, SharedGeo

US National Grid (USNG) is the national standard for communicating location during an emergency response. Per the October 2015 FEMA Directive 092-5, FEMA now requires its use by all federal responders, and encourages local jurisdictions to do the same.

This presentation will address USNG basics and show examples of maps, applications, mobile apps, and other resources that support its implementation as the "language of location" for both disaster and everyday operations. In addition, counties in Minnesota, Iowa and Wisconsin have begun using USNG for trail system maps, signs, and emergency location reporting; a development tentatively endorsed by the Wisconsin Trails Council in April 2015.

Come learn about this increasingly important geo-location standard and walk away with everything you'll need to help bring USNG to your community including access to a magnetic declination diagram web service that greatly speeds up map production.

Track: Through the Years

An Automated Mapping Demonstration Project for the Town of Randall, Kenosha County – 1985 (30 minutes)

Don Dittmar, Waukesha County

In 1980, the National Academy Press published *Need for A Multipurpose Cadastre*. Now, 5 years later in 1985, and Southeastern Wisconsin Regional Planning Commission (SEWRPC) has completed a pilot project to demonstrate how a land information system could be created based on the model set forth in that report. I will discuss the findings, methods, new advances in technologies and work process used in the SEWRPC pilot. I will also present some of the possible uses these new technologies, including polygon overlay, may have in the future

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Engaging with Historical Geospatial Data to Address Coastal Management Issues in Wisconsin (30 minutes)

Howard Veregin, State Cartographer's Office

UW-Madison's Forest Landscape Ecology Lab and State Cartographer's Office have recently been awarded a grant from the Wisconsin Coastal Management Program to develop a historic coastal geospatial database and portal focusing on the Wisconsin Land Economic Inventory (WLEI). The WLEI, also known as the Bordner Survey, was a comprehensive mapping program of most Wisconsin counties in the 1930s. The survey mapped over 100 classes of information at every quarter-mile, including forest type, agricultural use, wetlands, and a host of natural and cultural features.

The project has two main goals. The first is to complete digitization of the Bordner maps for Wisconsin's coastal counties to create a true GIS database. At present the only digital representation of these maps is a set of scanned images. The second goal of the project is to develop a coastal geoportal to facilitate distribution and use of the digitized data. The portal will provide discovery and retrieval of data, and will support visualization and mapping to accommodate the needs of a broad set of users. The project involves outreach to the coastal planning and management community in the state to help identify and prioritize options for map composition and display. This presentation will summarize the work accomplished to date on this project. Co-author: David Mladenoff, UW-Madison

Wisconsin Geographic Names Council: Naming Our State's Geographic Features (30 minutes)

David Winston, WI Dept. of Natural Resources

The Wisconsin Geographic Names Council (WGNC) is an intra-agency council that plays an important role in establishing the official state name of features such as lakes, rivers, islands and other geographic features in the state. Established originally as the Wisconsin Geographic Board and modeled after the U.S. Board on Geographic Names, the Council meets annually to review requests to name previously unnamed features or the change the name or spelling of an established name.

This session will provide an educational overview of the Wisconsin Geographic Names Council and will include: a brief history of geographic names, a detailed explanation of the procedure and policies for geographic naming, real examples of naming requests, and a crash course in using the Geographic Names Information System (GNIS) to look up official names across the country.

GIS Through the Generations (60 minutes)

Panel Discussion led by Sarah Kemp, Applied Population Lab, UW-Madison; Donna Genzmer, UW-Milwaukee; Doug Miskowiak, UW-Stevens Point; Brittney Markle, UW-Madison

Technology has been rapidly changing over the last 30 years. One significant place where this is unmistakable is in the world of geospatial technologies. This presentation will provide an overview of the how the field has changed through the lens of the generations involved in the technology. Following a broader synopsis of the generational changes, a panel discussion of GIS professionals from the different generations will share their unique perspectives and discuss the technical changes they have witnessed in their careers.

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Track: Research & Education

Integrating Maps of All Scales into User-Friendly Applications (30 minutes)

John Czaplewski, UW-Madison, Macrostrat Lab

The Macrostrat Lab in the Department of Geoscience at the University of Wisconsin - Madison is undertaking an effort to collate, homogenize, visualize, and analyze all bedrock geology maps, regardless of scale, from around the world within a single database. While the creation of this type of synthetic data product is riddled with challenges, it can lead to novel ways of understanding surficial geology, as well allowing for the creation of tools such as Rockd that blend digital education, public outreach, and scientific field research. This talk will discuss the issues associated with finding and aggregating heterogeneous data, how a sensible map is created from it, and the types of services it can enable.

Research, Fieldwork, and Technology: Using All Three for Archaeological Studies (30 minutes)

Felipe Avila, Wisconsin Historical Society

This presentation will discuss the hazards of over reliance on any one of the following; research, fieldwork, or technology in archaeological studies. By recognizing the limits of these three main drivers, and using a combination of all three, researchers at the Wisconsin State Historical Society are better able to map, locate, and protect Wisconsin's cultural heritage.

Legend Lake, A Bathymetric Analysis (30 minutes)

Casey Trickle, UW-Stevens Point

Legend Lake, of Menominee County, is a system of lake basins with regulatory influent and effluent dams. Utilizing depth data acquired from an outside agency and coupled with manually digitized shorelines, 3D models were generated and contour lines derived for a finalized bathymetric map. These numerical data were then processed to calculate volumes within the system. A historical map of the system was georeferenced and compared to our final product to display any disparities between the two time periods.

Comparing Tax Revenue Over Time and Residential Revenue Generation of Parcels in Portage County (30 minutes)

Yoon Bin Bae, UW-Stevens Point

Parcel tax revenue pays for public goods and services such as police protection, fire protection, education, transportation infrastructure, parks, libraries, and more. Studies show that the per capita cost of these goods and services increases as population density decreases, leading to costlier rural suburbs when compared to denser urban areas. A review of tax parcel revenue per acre generated in Portage County over time (2001, 2007, and 2015) in 3-D, provides a spatial perspective to countywide trends. Parcels in the City of Stevens Point are then compared by alderman districts to determine where tax revenues per acre have increased or decreased over time. Parcel revenues per acre generated by single-family homes are also compared by alderman district to determine if differences exist between Stevens Point's city center and more rural areas using one-way ANOVA ($\alpha = 0.05$). Preliminary results indicate a shift in total revenue share between alderman districts over time (2001, 2007, and 2015) in 11 different districts, shows different tax revenue trends by public goods and services. The average revenue of single-family homes on a per acre basis is expected change based on location and availability of public goods and services.

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Wisconsin Pond and Raceway Aquaculture Site Suitability Model (30 minutes)

Christine Koeller, UW-Stevens Point

In 2011, Wisconsin aquaculture contributed over \$21 million to the economy and provided over 400 jobs. Despite successes, many new aquaculture sites fail as businesses. A weighted-overlay site suitability model was developed for WI to assist in selecting ideal locations for new pond and raceway fish farms based on water quality, soil and physical factors. Geostatistical methods for creating water quality grids from point data will be discussed along with raster grid analysis overlay techniques

Track: Parcels & Land Records

Racine County: A Unique Approach to Land Records Transformation (60 minutes)

Tyson Fettes, Racine County

In 2015, Racine County, WI's Register of Deeds and Land Information offices joined forces to embark on a GIS transformation that would advance their land records capabilities further than they could have ever imagined.

Discover how the County went "from zero to 100" in just a year, using modern Esri location technology and creative collaboration to build a system that is delivering dramatically increased efficiency, superior output, high quality public service, mobile-first solutions, and integration with other business systems. Follow Racine's journey to self-sufficiency as it reclaims control over its data to get information to those who need it, when they need it.

Learn about the processes and technologies in place at Racine, and discover how the County's unique approach was a driving force in its success.

"Splitting" the Mapping Duties between Real Property and GIS with ESRI's Parcel Drafter (30 minutes)

Michael Vander Sanden, Washington County

In Washington County, there has always been some redundancy in mapping parcel splits and combinations between the Real Property Lister's Office and GIS. Wanting to quality control a legal description for accuracy and closure, the Lister's Office would often map out a legal description using COGO tools using desktop GIS software. Once verified, the legal was remapped by GIS to update the parcel fabric database.

In September 2016, ESRI released a new configurable application built upon ArcGIS Online and Web AppBuilder called Parcel Drafter. The Lister's Office can now use Parcel Drafter to conduct its QC while saving the entered COGO values to be reused by GIS within the parcel fabric. This has reduced redundant data entry while allowing the Real Property Lister's Office to gain some additional control to how a legal description is interpreted and added to the database.

This presentation will go through the steps to configure and deploy the parcel drafter application on your web server as well as the mapping workflow from the online application and into the parcel fabric.

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Web GIS and the Parcel Fabric - Benefits and Efficiencies (30 minutes)

Tyler Prael, GISinc; Frank Conkling, Panda Consulting

This presentation will review the benefits of the Esri Parcel Editing Solution (aka the Parcel Fabric) including the fundamentals of how the data model works, efficiencies afforded with the solution, transitioning the mapping staff for the solution, options and efficiencies of the initial operating configuration (IOC) for your web deployment and publications.

Tracking Water Quality and Farmland Preservation (30 minutes)

Blaine Hackett, RESPEC

County Conservation Departments mission are to preserve, protect, and enhance the county's natural resources. As part of this mission Counties are using a variety of methods to track information about several programs which in one way or another impact lake and stream water quality: Best Management Practices (BMP), Conservation and Nutrient Management, NR151, NR135 (Non-Metallic Mining), Boat Landings / AIS locations, Dams Inspections/Maintenance and Water Quality Sampling and Farmland Preservation.

In this session, we will show Counties using a web-based task tracking and data management studio with simple GIS-based maps, searching/edit capabilities, reporting options and mobile field data collection for a unified/consistent way to manage these programs more efficiently.

Track: Municipal

Brainstorming Web Mapping Applications for Municipalities (30 minutes)

Greg Schauer, City of Waukesha

More municipalities are creating web mapping applications than ever before. With it easier to create new applications and with costs also down, many cities are able to create a wider array of applications – from property viewers to park finders to crime mapping and more. Let's talk about what kinds of applications municipalities are developing for the web, and let's brainstorm some ideas for you'd like to see your municipality deploy.

ArcGIS WebApp Builder migration at the City of West Allis (30 minutes)

Pat Walker, City of West Allis

Abstract Pending...

Public Records Consideration for Geographic Digital Data (30 minutes)

Anne Bensky, Wisconsin DOJ

Public Records Considerations for Geographic Digital Data is a high-level overview of the public records law as it relates to geographic digital data, and large data files. You will learn what records must be disclosed under the law, the time-frame for responding to requests, and the manner in which you may need to make the digital files available. You will also learn what information must be withheld or redacted before disclosure. Finally, you will learn examples of how the State of Wisconsin agencies comply with requests for geographic digital data, and be connected to public records resources for future reference.

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Redrawing a Zoning Map from a New Perspective (30 minutes)

Jeff Nau and Adam Dorn, City of Oshkosh

On January 1, 2017, a new Zoning Ordinance and map takes effect, which more closely reflect the Oshkosh community. Our presentation will describe the methods used to draw new zoning boundaries with very different zoning classifications. This can be a delicate balance in a community founded in the 1850's which has a wide variety of housing stock and land use. We will also cover how these changes were communicated with the public and how we plan to track zoning more effectively after this update.

Use GIS to Leverage your Park and recreation Assets Internally and Externally (30 minutes)

Raine Gardner, P.E., MSA Professional Services; Amber Converse, MSA Professional Services

Turn your park and recreation plan into a dynamic document through the use of ArcGIS Online to map your community's park and recreation facilities. This form of asset management allows you to easily display your facilities in a web-based format. Then staff can visualize which parks are ADA compliant, the location/details of proposed facilities, master plans, existing/proposed trail routes, etc.

Then this same data can be filtered of sensitive information and be shown to the public as a web-based Story Map. An ArcGIS Story Map can guide users through the community, highlight recreational opportunities, and see what other facilities are nearby. The Story Map format typically contains a location map, facility data and information, photos and links to other websites so that users can get more information. Both locals and tourists can then quickly find parks, trails, facilities and learn more about the community through this user-friendly application.

Track: State & Federal

Wisconsin Height Modernization Program and WISCORS Network Updates (30 minutes)

Jacob Rockweiler, Wisconsin Department of Transportation

Recent Wisconsin Height Modernization Program and WISCORS Network updates will be discussed.

Wrapping up the Wisland 2 Land Cover Mapping Project (30 minutes)

Jim Lacy, WI State Cartographer's Office

The Wisland 2 land cover project was a collaborative effort of the Wisconsin Department of Natural Resources, University of Wisconsin-Madison, and the Wisconsin State Cartographer's Office conducted between the fall of 2013 and August 2016. The goal of the project was to develop a detailed land cover database for the state of Wisconsin, and replace the outdated land cover data developed by the Wisconsin DNR in the mid-1990's. In this presentation, I will discuss the final results, classification accuracies, how to obtain the data, and "lessons learned."

WisDOT Uses ArcGIS Online to Track Traffic Counts (30 minutes)

Scott Kiley, MSA Professional Services; Tyler Halverson, WisDOT

MSA Professional Services and the Wisconsin Department of Transportation (WisDOT) Traffic Team will share their experience implementing ArcGIS Online to support tracking traffic counter placements and status. In previous years, MSA used its own ArcGIS Online site to track traffic counts contracted with the WisDOT. A web-app was shared with WisDOT staff so they could follow the status. WisDOT was so pleased with its effectiveness that they wanted to implement something for themselves to use for all their contracted staff.

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MSA set up an ArcGIS Online site, created groups and configured apps for its own staff, WisDOT staff and the other two consultant teams to track the placement of traffic counters. Staff tracked the placement of traffic counters in the field using the Collector for ArcGIS app. It allowed all users to see the same operational view of work to be done, work in progress, and completed work. It also allowed WisDOT to gain more valuable information about the traffic counter placement itself. The presentation will discuss the lessons learned in properly creating groups and sharing content across ArcGIS Online organizations and supporting Collector among many users with different mobile devices.

USGS National Map Highlights (30 minutes)

Ron Wencil, USGS

The USGS National Geospatial Program continues to improve topographic information through a variety of updated products and services. The National Map (nationalmap.gov) supports data access and viewing, digital and print versions of topographic maps, and spatial data services. New products and services will be discussed, along with other recent developments.

The presentation will highlight recently revised US Topo maps and data for Wisconsin. The 3D Elevation Program (3DEP) Broad Agency Announcement will be discussed with updates on LIDAR projects and user requirements. The presentation will also highlight results from a recent Hydrography Requirements and Benefits Study conducted by USGS. References will be provided for these and other USGS programs.

Enterprise Geocoding System Selection and Implementation (30-45 minutes)

Andy Swartz, State of Wisconsin Dept. of Health Services

We will discuss the need for and selection of a cloud-based geocoding API and data service for the enterprise to perform address validation, standardization, and geocoding functions for web forms, various applications, and batch processes. The project drivers, risks, opportunities, and outcomes will be covered. A wide variety of vendors were considered and weighed against the business needs of the DHS enterprise as well as key partners. The system architecture and key project phases will be shared. Finally, we will outline how this enterprise geocoding system fits into the overall agency strategy for desktop GIS and business analytics.

Friday, February 24 - Morning Sessions - 9:30 am - 11:30 am

Track: Emergency Response

The Role of GIS in Bayfield County's Flood and Windstorm Events (30 minutes)

Pam Roberts and Carmen Novak, Bayfield County

In July 2016, Bayfield County experienced two separate storms which caused many road closures due to the extensive flooding, washouts, and tree blow-downs. Interactive web maps and alternative route maps were created and distributed by the Bayfield County Land Records Department to help the public navigate through the myriad of road closures. In the first week, the interactive map averaged 11,000 views per day (in a county of only 15,000 people), showcasing the importance of such a map. Bayfield County also worked with neighboring entities and the state to include information and photos from nearby affected counties. This presentation will showcase the storm events, building of the interactive web map, and the process of collecting and sharing information.

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July 2016 Flood and Windstorm Events Response (30 minutes)

Adam Derringer, Ayres Associates

Ayres Associates shares their perspectives on this flood event.

GIS in Emergency Response: 2016 and Beyond (30-45 minutes)

Colleen Hermans, Wisconsin Emergency Management

The summer of 2016 saw two Federally Declared Emergencies in Wisconsin. We will look at the GIS response to both of those incidents, lessons learned and the future plans Wisconsin Emergency Management has for GIS during and after a disaster.

Track: Agriculture & Land Use

Putting the Where into Nutrient Management (60 minutes)

James Beaudoin, UW-Madison Soil Science

SnapMaps is an interactive mapping site that assists farmers, consultants, and agronomist with creating fertilizer and manure nutrient application plans (nutrient management plans) that meet Wisconsin standards. SnapMaps can be used with the nutrient management planning software SnapPlus to automatically identify restricted and not restricted areas for manure or fertilizer spreading along with soil types and other relevant data for a particular farms fields. It can also be used as a standalone website to view statewide application restriction area map layers. In the past, users had to determine on their own the restrictions, soils, etc. for their farm fields. SnapMaps automates these processes and passes the information back to SnapPlus desktop for inclusion in nutrient management decisions. This not only reduces the time needed for creating plans but also improves the accuracy of the data being collected.

Erosion Vulnerability Index of Agricultural Lands at the Parcel Level (30 minutes)

Douglas Miskowiak, UW-Stevens Point

Annually, 12-billion gallons of water flow from the Upper Couderay River Watershed to Lac Courte Oreilles (LCO), including pollutants. Excessive phosphorous affects oxygen availability to LCO's unique two-story fishery. UW-Stevens Point employed GIS to model erosion vulnerability from agricultural lands. Vulnerability was indexed at the parcel level to facilitate a well-informed dialogue between agricultural producers and conservationists for implementation of best management practices.

Spatial Connections Between Parcelization and the Process of Land Use Change (30 minutes)

Tim Kennedy, UW-Stevens Point

Researchers have long been interested in the events and processes that lead to land-use change. Despite this interest, little research has demonstrated a direct spatial connection between human decision-making and land-use change at the landowner level. In the United States, parcelization, the subdivision of larger landholdings into smaller landholdings, reflects land use decision making at the landowner level. Most studies connect parcelization to the resulting landscape configuration and not the process of land-use change. For this study, GIS compatible historic parcels (1953-2007) and land use features (1938-2005) were digitally reconstructed. Parcels that subdivided were spatially compared to land-use change from an agricultural/forested state to a developed state. The results demonstrate a statistically significant spatial link between parcelization and land-use change to a residential developed state in the study area. Understanding that parcelization is part of the antecedent process of land-use change is critical to our future sustainability of natural resources.

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Track: Servers & Scripts

Simple is Better. An Intro to Event - Driven Server less Architecture on AWS (60 minutes)

Mark Korver, Amazon Web Services

The network is the computer, especially when the data is already in the Cloud. This will be a demo session to show how, without concern for the particulars of servers and storage, you can use small amounts of code to run big geospatial batch jobs.

Parting the Clouds on Cloud Computing (30 minutes)

Paul Wickman, RESPEC Consulting and Services

These days most people have heard the term, "cloud computing" but what is it really? What isn't it? This talk will provide a friendly overview of cloud computing and the variety of GIS-related services that have sprung up around it. We'll also touch on the Internet of Things and how cloud computing has enabled the "IoT" to significantly emerge in just the last several years.

Creating Standalone Data Processing Applications with Python and Tkinter: What You Need to Know (But Were Afraid to Ask) (30 minutes)

Sam Giebner, North Point Geographic Solutions

Creating standalone data processing applications with Python and Tkinter allows for the development of powerful apps that can utilize a wide variety of GIS software that can easily be shared cross-platform. In this presentation, we will cover several benefits to creating a standalone data processing application, we will take a look at a few recent examples, and we will discuss available resources for creating your own standalone data processing application!

Track: GPS & UAS

What a Pairing - ArcGIS Collector and High Accuracy GPS Receivers (two-part session) (60 minutes)

Gale Shea, Seiler Instrument; David Buehler, City of Marshfield

Part 1 - Case Study - City of Marshfield GNSS field data collection using Collector and Trimble R2 receivers.

Part 2 - A bit more in-depth discussion of the high accuracy set-up: nuances, hiccups, glitches and lessons learned.

Overview of a real-world user experience with ESRI's Collector and high accuracy external GNSS receivers. The City of Marshfield and Seiler Instruments will showcase a Case Study of the city's practical issues when first tackling the new mobile app workflows for high accuracy in a municipal setting (all users are welcome, of course.) This will be an abbreviated version of the detailed topics covered in a half-day pre-conference workshop on Wednesday.

Case Study: The City initially used tree and sign inventory activities to learn the primary steps involved in these application workflows. Then City wastewater systems, which require the higher accuracy results, came next for a full-blown project. The ease of training and deployment to the field is a highlighted success. Overview of devices, accuracy, metadata and correction sources will be covered. Part two; for those who want a bit more specifics on the steps involved; will discuss the real-life lessons learned and things to prepare for if your program is looking to implement this type technology.

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Assessing Accuracy Concerns of UAS Collected Imagery (30 minutes)

Scott Nesbit, UW-Eau Claire

Unmanned Aerial System (UAS) derived imagery has become a vital tool within the Geospatial industry. UAS imagery has the ability to be collected at both a higher spatial and temporal resolution when compared to previous aerial imagery methods. Collection methods, processing, platforms, sensors, and GPS units used during the collection of the imagery influence data accuracy. Therefore, what forms of subsequent analysis which can be done using Geographic Information System and Remote Sensing software vary based on accuracy requirements and collection methods used. This research highlights known issues in the collection and processing of UAS collected data.

Practical Applications for UAS for Engineering and Survey (30 minutes)

Jason Krueger, Ayres Associates

Given all the hype about UAS technology, it is critical to take a pragmatic and practical approach to its integration into professional applications. We will examine how UAS is being used for site and structural observation and for topographic mapping. To demonstrate diverse examples, we will look at how imagery from UAS is being used by surveyors to observe and report on construction progress at sites for a transmission company and how engineers are using topographic derivatives to perform volumetric analysis for landfills.

Track: Mobile & Web Applications

Esri JavaScript API: Taking it to the Next Level (30 minutes)

Jesse Adams, North Point Geographic Solutions

Whether you have already used the Esri JavaScript API (JS API) to create rich interactive web maps, or you are just getting into web mapping application development, this presentation will provide a variety of information to help spark ideas for your next web mapping project. We will discuss using task runner frameworks and User Interface (UI) tools with the JS API, along with ways to help automate your development tasks and take your web mapping applications to the next level.

Adaptive Management Web Application for City of Oconomowoc (30 minutes)

Chris Berryman, Ruckert-Mielke; Mark Van Weelden

The City of Oconomowoc is using a Wisconsin DNR developed program called Adaptive Management to achieve phosphorus compliance at their Wastewater Treatment Facility. The overall goal is to meet phosphorus water quality criteria in the Oconomowoc River Watershed through the implementation of nonpoint source reductions, such as storm water and agricultural best management practices. This approach is more economical than upgrading the wastewater treatment facility to treat phosphorus at a higher level; however, the Oconomowoc Watershed Protection Program (OWPP) requires a high level of organization to track the location and details of management measures installed throughout the watershed. To help the City accomplish this, Ruckert & Mielke, Inc. developed a web application using Geocortex Essentials. This application provides a means for OWPP staff to create and maintain data about management measures installed throughout the watershed. The features of this web application will provide a clearer picture of nutrient levels in the watershed and allow the OWPP to measure progress towards their goal.

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Diverse Mobile Data Collection and Editing Application for ArcGIS Collector (30 minutes)

Stephen Schmidt, Symbiont

In the last few years ArcGIS Collector has become the go to tool for mobile GIS data collection and editing. Collector provides users with a direct connection to their GIS data in the field. Through this connection, the user can collect and update GIS information on mobile device. In addition to GIS data editing and collection, photos and videos can be captured and attached to map features in the users GIS database. One of the most attractive details about Collector is the fact that it works with your ArcGIS data without purchasing additional software. Collector also works on almost all mobile devices, including IOS, Android and windows. Users are able to easily design advanced forms for interacting with their data often resulting in improved data quality and organization.

ArcGIS Collector has a wide variety of applications. Municipalities use Collector for utility system maintenance and asset management. Example uses include sewer lining cleaning progress, manhole inspections, hydrant flushing, and sign inventories. Collector is very effective when used for damage assessment post natural disasters such as tornados. Very rapidly, the user is able to mark, and assign damage levels to homes, or other objectives. Collector is useful in coordinating workforces. A manager can track in real-time the progress of their staff in the field, and make decisions on next steps based on the progress displayed in the map. Using Collector in concert with Workforce for ArcGIS represents a powerful way to coordinate the office with the field.

Survey 123 Basics (30-45 minutes)

Andy Faust, NCWRPC

Survey123 is a new simple form-centric data gathering solution from ESRI. Survey123 uses XLSForm. XLSForm is a form standard created to help simplify the authoring of forms in Excel. XLSForm is then converted to an XForm, a popular open form standard that allows you to author a form with complex functionality like skip logic in a consistent way across a number of web and mobile data collection platforms. Survey123 Connect works with XLSForms to let you preview your XLSForm files as you author or edit them. Survey 123 Connect publishes your forms into ArcGIS Online and creates a feature services based on your forms specification for data collection.

This presentation will show you the basic of creating a simple form and how to publish the form to ArcGIS Online for data collection.

Track: This & That

Vector Tiles - Emergent Technology for Web Mapping (30 minutes)

Levi Felling, Applied Data Consultants

The vector tile format is the first exciting thing to happen in web mapping since... ever. Google Maps launched in 2005 and made online "slippy" maps the norm; since then all web maps have consisted of pre-rendered map tile images stitched together in the browser. Vector tiles breaks this pattern and open up many new and exciting possibilities. In this talk we will explore the vector tile format, learn about tools used to create vector tile caches, and show off features that are now possible using this technology.

#ESRI, Mapbox GL JS, MBTiles, Tippecanoe, PostGIS, NodeJS

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DragonEye an Automated Vehicle Location Tool (30 minutes)

Bob Basques, SharedGeo

DragonEye has many potential applications for tracking and location monitoring. This presentation will demonstrate the capabilities of the DragonEye suite as applied to the management of Airport asset surface movements and tracking. We'll step through the capabilities of the DragonEye tool set and discuss its implementation and integration options with other systems.

DragonEye is a state of the art Vehicle and Asset tracking software suite. Some of its capabilities include the ability to store and retrieve the history, and replay the movement of any asset being tracked at any point in time, filter the tracking viewer based on fleet groupings, assign restricted areas for movement and track whether assets are in or out of virtually fenced areas.

The system can be used with dedicated hardware in a vehicle as well as for tracking Cell phone locations within the same interface. It's display capabilities work in a desktop environment as well as on a smartphone or tablet display with auto-configuration based on screen size.

Road Mapping and Data Collection (30 minutes)

Magdalena Jaworska, Delmore Consulting, LLC

Abstract Pending...

Wisconsin UAS Advisory Board (30 minutes)

Panel discussion led by Nick Musson, WUAB President

Abstract Pending...

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