

Central Pennsylvania GIS Day 2013

GIS: The Next Generation

Wednesday, November 20, 2013

HACC Midtown 2 Campus

1500 N. 3rd Street, Harrisburg, PA

7:00am-9:30am

Exhibitor Set-Up

8:30am-9:00am

High School Registration

9:00am-9:45am

GIS Overview for High School Students

Hosts: HACC and the Commonwealth of Pennsylvania

10:00am-10:45am

Using GIS for Growth Scenario Planning in York County, Pennsylvania

Presenters: Wade Gobrecht and Mike Pritchard, York County Planning Commission

This presentation will cover the process to create York's Envisioned Strategies 2040, a growth scenario plan for York County, PA. We will discuss how we used ArcMap and CommunityViz software to create county-wide build-outs, suitability analyses, and projections of growth in 2040.

Room 202

ArcGIS Online

Presenter: Patrick Gorgone, Esri

ArcGIS Online is a cloud-based geospatial content management system for storing and managing maps, data, and other geospatial information, built on Esri's cloud infrastructure. This session will show you how to create and share maps that can be accessed by anyone through a browser, a mobile device, ArcGIS Desktop, or a custom application.

Room:

Mobile GIS: No Pain, No Gain!

Presenter: Jonathan Greiner, Geodecisions

The mobile revolution offers many benefits to end-users of GIS technology, including the potential for accessing GIS data and applications anywhere at any time. While these benefits are substantial, they come with a “paradigm shift” in the overall process of building and deploying GIS. This transition involves technologies such as HTML5, Java Script, and Cascading Style Sheets (CSS) that are able to run on mobile devices without the need for plug-ins such as Adobe Flash Player.

This presentation focuses on the shift from desktop to mobile GIS, and on some of the decisions that need to be made along the way. We will also explore “lessons learned” from a real-world project that involved a recent transformation of GIS technology from desktop to mobile.

Room: 211

The Landsat Program: 40 Years of Satellite Coverage

Presenter: Nicole Ernst, Harrisburg Area Community College

This session will provide the history and overview of the Landsat program, the world’s longest continuously acquired collection of space-based moderate resolution and remote sensing data. The session will demonstrate how to use EarthExplorer to find and download satellite imagery for your area of interest. Also highlighted in this session will be Esri’s Change Matters and LandsatLook.

Room: 220

11:00am-11:45am

The Growing Importance of ArcGIS Online for the PA Department of Conservation and Natural Resources

Presenters: Mike Bialousz and Carrie Tropasso, DCNR

One of the earliest adopters of ArcGIS Online in PA State Government was the PA Department of Conservation and Natural Resources (DCNR). As the technology continues to evolve, DCNR is discovering more and more ways to apply it to its variety of business processes resulting in many benefits. This presentation will cover DCNR’s primary uses of ArcGIS Online, especially those that have had the biggest impact on improving efficiencies and outreach with various partners and the public. The presentation will include live demonstrations, as well as overall lessons learned, which will be beneficial to other organizations considering the implementation of this technology.

Room: 202

3D GIS: Lidar and CityEngine

Presenter: Patrick Gorgone, Esri

Room: 207

New Apps, Data, and Tools at PASDA

Presenter: Maurie Kelly and James Spayd, PASDA

This presentation will cover updated data, apps, and tools available from Pennsylvania Spatial Data Access. In particular, the PASDA staff will demonstrate the new PA Mine Map Atlas and its capabilities.

Room: 211

American Factfinder Basics

Presenter: Noemi Mendez, U.S. Census

AmericanFactfinder is an online application that provides access to detailed tables and maps for population, housing, and businesses. These tables are manipulable, downloadable, and printable. This session will feature how to use American Factfinder to download data and GIS files for your community.

Room: 220

12:00pm-12:45pm

Visit the GIS Exhibit Hall & Grab Some Lunch

Lunch Opportunities: Food Trucks

1:00pm-1:45pm

Diffusion and Spatial Distribution of Land Trusts in the United States

Presenter: Rachel Ralls, The Nature Conservancy

Land trusts have flourished in the United States over the last 50 years, with the highest concentration in northeastern and western states. This research looks at the socio-economic drivers of environmental activism to help explain the spatial distribution of land trusts in the United States. Higher education, urban population, education sector jobs, per capita income, and Democratic voters were tested through correlation and stepwise regression analysis to see if they could accurately model the spatial distribution of U.S. land trusts. This study found that there are significant correlations with these

five variables and the prevalence of land trusts in a given state. It could also be indicated that the Northeast and West have a greater environmental activism than states in the Midwest and South leading to a similar trend in land trusts numbers per state.

Room: 202

CartoCSS and Tilemill for Developing Webmaps

Presenter: Stephen Cline, Tri-County Regional Planning Commission

Learn how to create fast and beautiful webmap tiles and host them through MapBox. In an age where organizations and businesses strive for visibility and impact, our map applications need to be simple, speedy, and attractive. See local examples of how this tool is being used at Tri-County Regional Planning Commission, a multigovernmental body that serves the Capitol region. In this presentation, you will learn how to write basic CartoCSS in TileMill and quickly generate webmap tiles using Mapbox's free software. For those familiar with CSS for web design, CartoCSS is a similar way to stylize geodata and it is easy for any beginner or GIS professional to learn.

Room: 207

PennSHARE ArcGIS Online Demonstration

Presenter: Patrick Kielty

This presentation will demonstrate how PennDOT is using ArcGIS Online to share data with internal and external customers.

Room 220

Using GIS and Census Data to Analyze Demographic Data for Pastoral Planning within the Archdiocese of Philadelphia

Presenter: Tom Denton, Archdiocese of Philadelphia

ArcGIS was used to get the Census data into Archdiocesan geographies because while the data files had relateable keys, the only relation between the census data and the Archdiocesan geographies is geography. We needed a way to give each of the Archdiocesan geographies the same unique identifier as the Census data had. We created an attribute table 2000 and 2010 Census Tiger files were used. The 5 counties were merged into one shapefile that would be the complete Archdiocesan geography. Merging created a complete attribute table. In order to combine the blocks with the Archdiocesan geography, the newly merged shapefile was unioned with the Archdiocese of Philadelphia parish shapefile in order to collect the spatial data of the blocks that were complete contained within parish boundaries. This union, identified every polygon

and since the territorial parish boundary shapefile and the Tiger blocks shapefile aren't exactly the same, small slivers were made apparent and had to be removed.

Room: 218

2:00pm-2:45pm

Remote Sensing Techniques and the Identification of Sinkholes and Karst-Related Features in Pennsylvania

Presenter: Bill Kochanov, PA Geological Survey

Room: 204

PA Water Basemap and Data – A Technical Review

Presenter: Eric Jespersen and Mike Bialousz, PAMAGIC

This session will examine the current "base data", and put forward ideas for consolidating and modernizing surface water information in PA. The potential for including stormwater infrastructure in the surface water database is logical at local resolution, and data compatible with existing imagery and LiDAR is overdue. This presentation is a companion to a policy-oriented session scheduled for December, and part of PaMAGIC's current Water Data Initiative.

Room: 207

New Apps, Data, and Tools at PASDA

Presenters: Maurie Kelly and James Spayd, PASDA

This presentation will cover updated data, apps, and tools available from Pennsylvania Spatial Data Access. In particular, the PASDA staff will demonstrate the new PA Mine Map Atlas and its capabilities.

Room: 220

3:00pm-3:45pm

Game Commission Demonstration

Presenter: PA State Game Commission

Room: 202

Is it Surveying?

Hosts: Mike Kreiger, PA Society of Land Surveyors

This presentation will review pertinent sections of Act 367, the Engineer, Land Surveyor and Geologist Registration Law along with portions of testimony from a hearing before the State Board of Professional Engineers, Land Surveyors, and Geologists. The hearing regards a company that offered to and actually provided an inventory of their client's infrastructure by collecting attributes and GPS locations without the supervision of a licensed Professional Land Surveyor or Professional Engineer licensed in the Commonwealth of Pennsylvania. The results of the inventory were provided to the client in a GIS compatible format so it could be used in their newly implemented GIS mapping system. Attendees will have the opportunity to discuss whether or not this activity constitutes surveying based solely on the facts and testimony presented to the Board.

Room: 207

GIS Tools for Managing Stray Gas Incident Analysis

Presenter: Seth Pelepko, Oil & Gas Planning Program, DEP

Recent stray gas investigative work has shown that occurrences of methane encountered in Upper and Middle Devonian units has the potential to impact fresh groundwater supplies if Marcellus Shale gas wells are improperly cased and cemented. During these incidents, state regulators are primarily responsible for reviewing technical reports and other relevant information generated by operators conducting or overseeing the stray gas investigation. However, the agency occasionally must assume a more engaged and proactive role that involves independently assessing data and, in many instances, are not privy to the same suite of tools and analysis techniques commonly available to the oil and gas industry.

A case study in Pennsylvania is reviewed in order to introduce tools that are readily accessible and may be useful in certain stray gas investigations. The tools may also be valuable for operators unaccustomed to conducting such investigations. Multivariate statistical analyses, including multiple regression and R-mode factor analysis, are discussed in the context of defining background methane concentrations when no pre-drill data are available and correlating gas-well workover activities to water-well response data, respectively. Simple geochemical modeling is introduced to explore the utility of testing for geochemical indicator parameters that may potentially serve as metrics for assessing the return of an impacted aquifer to baseline conditions. Transitioning from a simple, one-dimensional time-series analysis of methane in water supplies to a 3D geologic conceptual model that considers stray gas migration pathways is also discussed. Finally, a brief tutorial showing applications within the ArcGIS environment utilized to complete the investigation is reviewed.

Room: 202

4:00pm-4:45pm

Using GIS for Archaeological Research at Camp Michaux

Presenter: Maria Bruno, Assistant Professor of Anthropology/Archaeology, Dickinson College

Room: 202

A History of Abandoned and Orphan Wells in PA and GIS Tools for Identifying Historical Oil and Gas Well Locations

Presenter: Stewart Beattie, PA DEP

In 1859, the United States' first commercial oil well was drilled in Venango County, Pennsylvania. In the 150 years subsequent to this, an unknown number of oil and gas wells have been drilled in the state. A current estimate by the Independent Petroleum Association of America places that number at approximately 325,000. Of those 325,000 wells, over 200,000 are still unaccounted for. As these wells are found and verified, they are cataloged in the Department of Environmental Protection's (DEP) Abandoned and Orphan Well database to facilitate plugging. There are currently over 8,200 wells listed in this database (2013). With so many unknown oil and gas wells scattered across Pennsylvania and the environmental threats that they pose, identification remains a vital component of DEP's Oil and Gas Program. Currently, the DEP, Office of Active and Abandoned Mine Operations is involved in many projects dealing with historic and active mine map restoration and geo-referencing. These maps, which vary in age, not only contain information on historic mine locations, but also oil and gas locations. Through collaboration between the Bureau of Mining Programs and the Bureau of Oil and Gas Planning and Program Management, potential oil and gas well locations were assembled using three mine map collections. These collections include the WPA mine map collection, KSheets collection, and the HSheets collection. From these sources, over 30,000 potential historic oil and gas well locations were derived.

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Room: 207

ArcGIS Collector Demonstration

Presenter: Harrisburg Area Community College

5:00pm-7:00pm

GIS Day Networking Mixer

Location: In the hallway in front of Room 206

Exhibitors



AeroMetric



**Chesapeake Bay
Foundation**



**County Commissioners of
Association of Pennsylvania
(CCAP)**



**County GIS Professionals
Association of Pennsylvania**



**Department of
Conservation and Natural
Resources (DCNR)**



Esri



GeoDecisions



Harrisburg Area Community College



Harrisburg University



HRG



Keystone Aerial Surveys



Michael Baker Corporation



**PA Department of
Environmental Protection
(DEP)**



PA Fish & Boat Commission



PA Game Commission



PA Office of Administration



**PA Society for Land
Surveyors**



PAMAGIC



PASDA



**Pennsylvania Historical
Museum Commission
(PHMC)**



Photoscience



**The Nature Conservancy
(TNC)**



**United States Census
Bureau**

GIS Day Planning Committee

Noel Strattan, co-chair, Pennsylvania Historical and Museum Commission
Nicole Ernst, co-chair, Harrisburg Area Community College
Stewart Beattie, Pennsylvania Department of Environmental Protection
Sarah Gettys, Pennsylvania Department of Agriculture
Douglass Thompson-Leader, Pennsylvania Liquor Control Board
Dan Egan, Pennsylvania Office of Administration
Bruce Fields, Esri
Maurie Kelly, Penn State University, PASDA
Rachel Ralls, The Nature Conservancy
Mike Settino, Pennsylvania Office of Administration
Mike Berk, Capital Area Intermediate Unit