

URISA Annual Conference for GIS Professionals (GIS-PRO 2023)

Columbus, Ohio, USA
16 - 19 October 2023

Volume 1 of 2

ISBN: 979-8-3313-0708-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2023) by Urban and Regional Information Systems Association
All rights reserved.

Printed with permission by Curran Associates, Inc. (2025)

For permission requests, please contact Urban and Regional Information Systems Association
at the address below.

Urban and Regional Information Systems Association
701 Lee Street, Suite 680
Des Plaines, Illinois 60016
USA

Phone: (847) 824-6300
Fax: (847) 824-6363

www.urisa.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

GIS-Pro 2023 CONFERENCE PROCEEDINGS

Note: If a presentation is not included, permission to publish was not granted.

TUESDAY, OCTOBER 17 – DAY ONE

Open Keynote Address: Mobility Equity - Turning Urban Planning Upside Down...1

Carla Bailo

Want to Boost your GIS Career?

To Certify or Not to Certify: Has the GIS Industry Accepted Certification?...15

Tripp Corbin, GISP

Becoming a Geospatial Professional...26

Tony Spicci, GISP, CGMP

Building Your GISP Portfolio...43

Tony Spicci, GISP, CGMP

Implementation of Data Governance and Open Data

Minnesota's Twin Cities Metro's Journey toward Open Data and Standardized Regional Datasets...73

Geoffrey Maas, AICP, GISP

Web GIS Governance Implementation in Franklin County, Ohio...108

Matt Shade, GISP

The Importance of Census Geography in Equity & Social Justice

Providing a higher resolution SVI for local governments...116

Lynn Dupont, GISP

Everyone Counts: Longitudinal Census Data Made Easy...130

Todd Schuble

Equity in Central Indiana - Lessons Learned and Implications for Other Communities...142

Kevin Mickey, GISP

AI Knowledge from Above

Cloud-based Geoprocessing Workflows using Anaconda Navigator and ArcGIS Pro...151

Brooke Hatcher

Leveraging AI and Machine Learning to Expedite Remote Sensing Analysis...162

Jen Davis, CPSM; Adam Kersnowski

High-resolution Satellite Imagery to Accelerable Sustainability Goals into Action...177
Hasmitha Rayasam

Tradecraft for a Successful Geospatial Enterprise

The Five Key Components for Geospatial Success...194
Adam Carnow, AICP, GISP

Finding and Retaining the Best Geospatial Employees...205
Neal Carpenter

Interactive Discussion of the Impacts of Covid Pandemic and Remote Meeting and Support Tools on Managing Staff and User Support...216
Peter Croswell, PMP, GISP, CMS

Spatial Data Infrastructures and the Impact of Updating the National Spatial Reference System

Leveraging State, County, Municipal Partnerships in Ohio to Guide the Spatial Data Infrastructure...N/A
Thomas Fisher, AICP, GISP; Donovan Powers

Geodesy for the Geographer - Replacing NAD83...N/A
Jeff Jalbrzikowski, GISP, P.S.

The State Plane Coordinate System (SPCS) - Making Earth Flat... One Zone at a Time!...N/A
Jeff Jalbrzikowski, GISP, P.S.

GIS is Everywhere

The Many Facets of GIS in Higher Ed: Examples from Ohio State...221
Katie Phillips, MPAL; Joshua Sadvari, MGISC.; Elizabeth Whelan-Jackson; Larisa Kruger

GIS Outside of the Workplace...N/A
Joe Guzi, GISP

COVID, Career Growth, URISA and Why Being Part of a Professional Organization is Critical...232
Keri Brennan, GISP, ENP

Interactive GIS Job Web Map Powered by Publicly Available Web Scraped Data...235
Carey Johnston

Geographic Thinking for Equity and Social Justice

A Geographic Approach to Racial Equity & Social Justice...242
Clinton Johnson

Brain Maps: Neuroscience as a Roadmap to Driving Change...269
Kathryn Brewer, GISP

Equity and Social Justice. How to Use Maps as a Force for Good in Driving Social Change...276
Deepak Puri, B.S. Eng

Doing It Better

Next Gen Sketch Verification Technology...N/A
David Priest; Amy Swigart

Elementary Dear Watson: Sleuthing Out GIS Solutions Together...282
Kathryn Polk, GISP; Martin Kim, AICP, GISP

Machine Learning Approaches for Lidar Classification...292
Angie Pelkie

Leveraging Imagery

Elevating Your GIS Capabilities: Aerial Imagery Solutions for Local Governments...312
Joe Oddi

Creating a Digital Twin with UAV-Collected Data...333
Yu-Ning Liu

Using Imagery and Demographics to Address the Challenges of Rapid Urbanization...340
Chad Lopez, GISP

Panel Discussion: Practical Ethics for GIS Professionals

Practical Ethics for GIS Professionals...348
Rebecca Somers, GISP; Xan Fredericks, GISP; Kevin Mickey, GISP; David DiBiase, GISP

GIS Applications for Utilities and Public Works

Using GIS Tools to Prioritize and Manage your Lead Copper Inventory...364
Tripp Corbin, GISP

Trends in State & Local Government: Keeping Pace with Technology & Policy-Driven GIS...374
Adam Carnow, AICP, GISP

Public Works Agencies Using GIS To Transform Their Organizations & Communities...389
Adam Carnow, AICP, GISP

Spatial Modeling to Support Planning

Using GIS to Model the Present and Future Potential Habitats of Rare Endemic Plants...397
Joshua Spiers

Crisfield – Three-dimensional modeling to support Climate Resiliency Planning...N/A
John Wolf

Geospatial Process Innovations for an Active Transportation Network...410
Ashley Hitt, GISP; Jason Kaper

Using GIS to Plan Mine Land Reclamation at the Devils Bathtub...N/A
Robin Bruns

Spatial Analysis for Public Safety & Health

Review of the City of South Bend Fire Service using GIS...421
Cory Gehring, MGIS

High Injury Intersections Analysis...433
Rebecca (Bec) Leach

Using GIS for Analyzing Health Care Spatial Data in Jeddah City...443
Abdulkader Murad, Ph.D

When Natural Disasters Strike

Disaster Response through Visualization of Spatial Data: USGS Event Support Maps...459
Cynthia Rachol, CFM; Xan Fredericks, GISP

Long Term Recovery Efforts after the 2019 Memorial Day Tornado Outbreak Utilizing Regional GIS...468
Tom Harner, GISP; Milo Simpson

Intergovernmental Collaborations for Enhancing Data Driven

Capturing Closures: Upload to Uphold Roadway Safety...N/A
Kim Baillieul

Steering ODOT's Asset Management Program with Data Driven Decisions...484
Michael Weakley, GISP

Mapping Handshakes: Ohio DOT's Agreements Application...497
Amy Code

Successful Workflow Management

Modern Work Order System Solutions on a Small City Budget: How the City of Conneaut, OH migrated from white boards and post-it's to a digital work order system using its existing GIS software...504
Jake Rougeaux, GISP

Asset Information Management System (AIMS) - Bringing Everything Together...509
Tom Brenneman, GISP; Andrew Williams

Geospatial Workforce Development and Project Management

Geospatial Workforce Development and Project Management - A Hybrid Approach...525
Liz Parrish

Best Practice Standards for Citizens' Access to Spatial Records Held by Local Government

Best Practice Standards for Citizens' Access to Spatial Records Held by Local Governments (Slide Presentation)...537
Barry Wellar, C.M., GISP; Greg Babinski, GISP; Martha Wells, GISP; Peter Croswell, PMP, GISP; Steven J. Steinberg, Ph.D., MPA, GISP

Additional resources:

[Thoughts on adding geo-records to the pilot study on best practices for citizen access to public records \(Presentation Slides\)..551](#)

[Contributions by City of Ottawa Council to Best Practice Standards for Citizens' Access to Spatial Records Held by Local Governments...560](#)

GIS Role in Asset Management

From Desktop to Geospatial Gateway: Modernization of U.S. Army IMCOM...N/A

Bethaney Krzys, GISP; Kevin Baker

Developing a Statewide Road Right-of-Way Spatial Dataset for VDOT...588

Kinsey Browning, GISP, CSM; Michelle Fults, GISP

Start to Finish: A Practical Workflow for Assessing and Visualizing Asset Condition...594

Kelly Wright, MS, GISP

Geodesy for the Geographer - Replacing NAD 83...607

Jeff Jalbrzikowski

SPCS2022 - Making Earth Flat...One Zone at a Time!...623

Jeff Jalbrzikowski

GIS-Pro 2023 CONFERENCE PROCEEDINGS

WEDNESDAY, OCTOBER 18 – DAY TWO

How Technology and Research Contribute to Sustainable Communities

Measuring the Local Impact of a Non-Profit Housing Development Program...644
Mark Salling, Ph.D., GISP

A Sustainable Sustainability Guide...663
John Nolte, GISP; Hannah Walters

Modernizing and Streamlining Data and Asset Management

Streamlining Data Management and Access to Empower Collection System Condition Assessments Teams using ArcGIS Online and Innovyze InfoAsset Manager...N/A
Rachel Warren

Modernizing Asset Management in Utilities...670
Kyle Wikstrom, MGIS

Empowering North Nashville: Tackling Health Disparities through Community Mapping of Food Accessibility...677
Wansoo Im, Ph.D

Developers Do More with Automation and Customization - Session 1

Demystifying the Fuzz: Building a Flexible Fuzzy Logic Tool...705
Timothy Dolan, MGIS

Python Modules for Automatically Loading, Processing, and Integrating Data for River Morphology Systems...739
Chung-Yuan Liang

Health & Equity

Storytelling and Mapping Health for Community Action...N/A
Andrea Perez

A mixed-method study of health disparity experienced by African American older adults: Quantitative spatial measure of vulnerability and stories of "Black Pain"...754
Glennon Sweeney; Mi-Kyung Baek

Tennessee Master Plan for Aging Data Dashboard...N/A
Qian Huang

The Importance of Mentoring

The Power of Networking in the Geospatial Industry, Presented by URISA Mentoring Network...N/A
Hasmitha Rayasam; Kendal Price, GISP; Joe Guzi, GISP; Kevin Mickey, GISP; Xan Fredericks, GISP
Steven J. Steinberg, Ph.D., MPA, GISP; Brent Jones, PLS, PE; Ryan Bowe, GISP

Your resume is your first impression, make it count!

Level Up! Mid-Career Changes: Planning for Success in GIS...768

Kelly Wright, MS, GISP

The Professional Resume: Celebrating Past, Present and Future You!...777

Kelly Wright, MS, GISP

GIS for Sustainable Development, Community, and Transportation

GIS for Sustainable Development, Community and Transportation...791

Dr. Sheila Steinberg; Ahoura Zandiatashbar; Jenny Zhou

Data Foundations for Support and Automation

Building Strong Data Foundations to Support Multiple Initiatives...796

Sheila Steffenson; Melissa Alvarez; Steven Steinberg, Ph.D., MPA, GISP; Rachel R. Marquez, GISP, PMP

Simplify Your Broadband Data Workflow with Automation...N/A

Sheila Steffenson; Melissa Alvarez

Developers Do More with Automation and Customization - Session 2

ESRI Address Management Solution (ArcGIS Pro) for Next Generation 9-1-1...N/A

Robert Cochran

Spatial Metadata Management Tool...N/A

Gustavo Orozco, GISP

Tools for ESJ Part 1

Equity Layers...N/A

Nicole D. Franklin

The Office of Equity in Washington State is Using GIS technology to Promote Pro-Equity Anti-Racism...803

Nicole D. Franklin

Panel: Women in Leadership

Leading as Women in GIS...N/A

Kelsey Calvez; Sara Thompson; Samantha Dinning

What's Your Elevator Pitch?

GIS, what do we actually do?...818

John Nolte, GISP

The Importance of a Good Elevator Pitch to Describe What You Do...828

Tripp Corbin, GISP

Going Up, Going In, Going Around: Z, Indoors, and Wayfinding

Capture Solutions and Integration of Indoor Mapping in ESRI Platform...836

Tripp Corbin, GISP

Addressing 911 Challenges: RapidSOS Ready SIMmetry...842
Keith Owens

Z-axis and Indoor Maps, the Intersection of Location for Public Safety...N/A
Keri Brennan, GISP, ENP

Current Topics in Community Resilience & Sustainability

Climate and Community Resilience Committee...N/A
Teresa Townsend, AICP; Steven Steinberg, Ph.D., MPA, GISP

Data Governance Approaches and Model Index Development

Visualizing Departmental, Business, and Citizen Use of GIS...859
Wendy Peloquin, GISP

Measuring GIS Data Using the Data Functionality Index (DFI)...872
Jamie Persino, GISP

Different Perspectives

Critical Roll - Life on the Grid...N/A
Todd Tucky, GISP

Marie Kondo Your Maps...N/A
Nick Sisco, AICP, GISP

Land Tenure: Past, Present, and Future

Mapping Myaamia Landholdings Over Time: Using GIS to Help Tell a Story...885
Robbyn Abbitt, GISP

Adaptive Resource Management in Rural Areas...910
Kara E. Utter, MSES, BS

Important Issues for GIS Professionals

The Future of Our Geospatial Ecosystem: Reframing the National Spatial Data Infrastructure...915
Karla Riso

URISA Policy Advisory Committee: Get Involved...925
Michael G. O Grady, GISP; Ed Wells, GISP

Panel Discussion: Next Level Leadership: Transitioning from Minion to Manager

Sid Pandey; Trisha Brush, GISP, PMP; Ryan Hermann; Kelly Wright, MS, GISP; Sara Thompson

GIS-Pro 2023 Lightning Talks

GIS Integrated Canvassing Program...N/A
Jacob McDaniel

Making Large Large-Scale Maps...N/A
Matt Gerike, PhD, GISP

[Crime Predictions in Baltimore, MD from 2023 to 2033](#) (2023 Digital Competition Award Winner!)...N/A
Marko Zlatić

The Pomodoro Technique...937
Tim Nolan, GISP, CGCIO, LAVM

Transforming Foundational Data Production and Analysis for Better Data Governance...N/A
Rachel R. Marquez, GISP, PMP

Equity Zones in Cuyahoga County, Ohio...N/A
Daniel Meaney, GISP

Adapting to Changing Tools, Technology, and Governance

Adapting to Changing Tools, Technology...N/A
Daniela Spade; Candace (Johnston) Perry

Data Governance - A Roadmap to Managing Your Data...N/A
John Puente, GISP

Extending Broadband to Underserved Areas

Geospatial Support for Expanding Broadband Access in Ohio and Beyond...N/A
Richard Kotapish, GISP

Rural Areas Overrepresented in Unserved Areas and Underestimated in Statistics...939
Olivier Leroy, Ph.D.; Drew Rosebush

Road to Success: The Tools of the Journey

VDOT BMP history and lessons learned and Inspections of the Future Using Mobile Technology and Merging with other Mobile Applications at VDOT...947
Michelle Fults, GISP

Tracking drone usages and survey task orders statewide with Webmap and Survey123...960
Michelle Fults, GISP

Splish Splash: NSRS & River Bathymetry

Predicting River Bathymetry for Data Sparse Regions with a Generative Deep Learning Model...973
Chung-Yuan Liang

A Look Towards the Future

Future of Managed Services...984
Tyler Prah

Transforming Neighborhood Data into Insights: Adaptable Data Analysis with GIS & R...994
Mathew McKelvey; Jonathan Clarke

Geodesy for the Geographer - Vertical Datums for the Floodplain Manager...1004
Jeff Jalbrzikowski

GIS-Pro 2023 CONFERENCE PROCEEDINGS

THURSDAY, OCTOBER 19 – DAY THREE

Making & Implementing Data Models & Next Generation 9-1-1

NG9-1-1 GIS Data Model: What's Happening in v3? &
Deb Rozeboom, GISP, PMP, ENP

Toward the Multipurpose Address Repository: An Extensible Spatial Relational Model for Integrating Address, Centerline, and Boundary Data %
Ed Wells, GISP

When Plans Come Together: Transitioning Changed Relationships from Project to Maintenance and the Road Ahead)
Matt Gerike, PhD, GISP

Tools for ESJ Part 2

Using ArcGIS to Advance Pro-Equity Anti-Racism in GIS* &
Chloe Teraslinna

Advancing Equity with GIS, Data & Visualization B#5
Chloe Teraslinna

Open-Source Solutions for Expanding our Humanity with Data Stories B#5
Bonny McClain

Many Facets of Innovation

Entrepreneurship and Opportunity Recognition in GIS%++
Kyle Wikstrom, MGIS

Discover the Power of Geospatial User Experience (G-UX) and Analytics for Effective GIS Applications B#5
Rebecca Swabey, P.Eng

Adventures in Spatial: Migration to AWS and ESRI 2.0%(-)
Ryan Shearer

Open-Source Enterprise in the Cloud: Geospatial Workflows%&
Aaron Laver

Panel Discussion: Gathering of GIOs

Steven J. Steinberg, Ph.D., MPA, GISP, GIO, County of Los Angeles
Donovan Powers, GIO, State of Ohio
Kent Anness, GIO, Commonwealth of Kentucky

Value Stream Mapping

Applying Value Stream Mapping to Geospatial Data
Pravin Mathur, GISP, MIAM

Value Stream Mapping to Understand Your Culture, Processes & Collaborations
Tim Nolan, GISP, CGCIO, LAVM; Wendy Peloquin, GISP

GIS Applications for Property Appraising and Public Access

Property search and web mapping for the masses
David Priest; Amy Swigart

Developing an Innovative One-Stop Shop for Geospatial Data
Tom Brenneman, GISP; Travis Cole

Practical Application of Optimization in Property Valuation
Joseph Wehrli, MS

Modeling Water and Wetlands

Runoff Projections in the Mid-Atlantic, US using Random Forest Forecasting
Brandi Gaertner

The Spatial Analysis of Groundwater Quality Data
Kelsey Calvez

Optimizing Irregular Single-beam Bathymetry Surveys for Improved Representation of River Geometry
Chung-Yuan Liang

Keynote: A Study of Reappraisal Practices: Strategies to Address Systemic Inequities in Housing and Development

A Study of Reappraisal Practices
Glennon Sweeney, Kyle Strickland