

News From and For the Washington GIS Community

THE SUMMIT

WAURISA President’s Message

By: Stephen Beimborn, WAURISA President

I have long been fascinated with the idea that major disruptions can have positive effects. An example is the phenomenon where traffic patterns are optimized after a highway or transit line is temporarily removed from service. People are forced out of their normal routines and, out of necessity, explore alternative routes to travel. Once the constraint is lifted, and their lives get back to normal, many realize their newly discovered route is actually better. In the short term, the disruption seemed inconvenient, or worse, but in the end, it had a positive effect.

With that in mind, when I sat down to write this column, my intent was to write about the need for WAURISA to seize the opportunity presented by the massive disruption of COVID-19 to find not just different ways to serve the GIS community, but better ways.

After several months of isolation, many people in our state are

emerging tentatively, eager to interact with others face-to-face, wander without a care, and seek out mindless entertainment, such as a football game or a show. The way things used to be, right?

Not for all of us. For too long, the chains of servitude, the bars of prison, and the weight of poverty have restrained some segments of our society to a degree unimaginable to the rest of us. Wandering without a care? That could get you questioned by the neighbors, who might call the authorities, at which point things could escalate. For some, it’s best to stay close to home. For Black Americans, things that I would never think twice about doing, like slapping



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Attend WAURISA’s Annual Membership meeting July 8, 2020!

By: WAURISA Board of Directors

Normally held during our annual conference, this year’s membership meeting is now virtual. You will have a chance to win one of several door prizes while you learn about chapter updates!

Learn about:

- Board election results
- Dick Thomas Student Competition results
- Summit “Person-of-the-Year” Award
- Committee updates and opportunities to get more involved
- Much more!

Join Zoom Meeting:

<https://us02web.zoom.us/j/82017400087>

(President's Column; continued from page 1)

on my running shoes for a jog through a leafy neighborhood that I could never afford to live in, packing up the tents and the kids for a camping trip, or throwing on a hoodie for a walk to the mini-mart for a candy bar, can be risky endeavors.

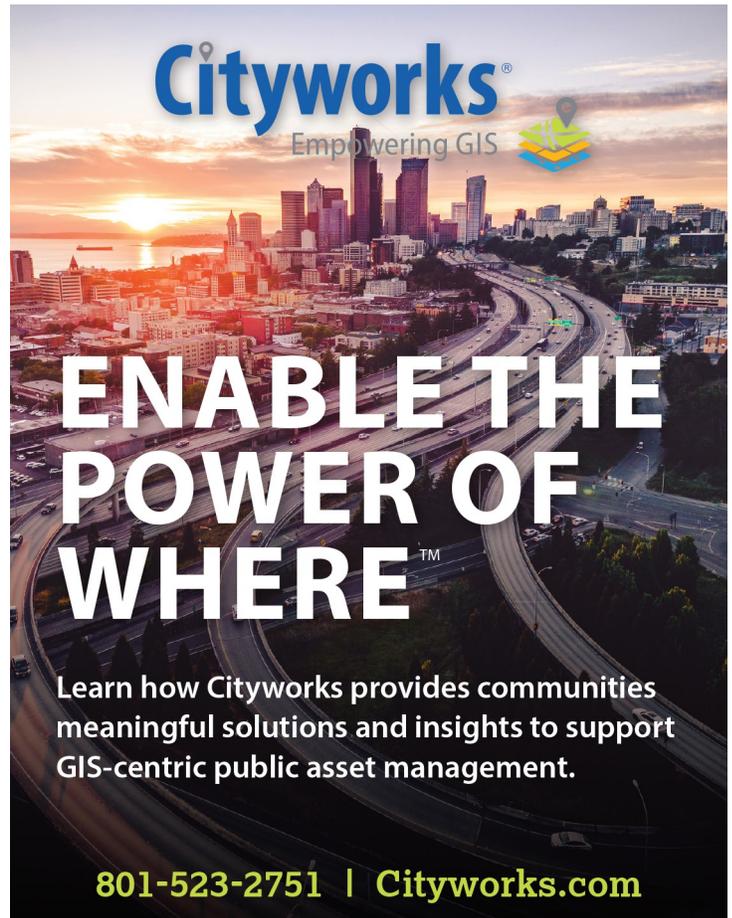
For those of us who have been privileged to live freely and to wander aimlessly on a whim, even to unfamiliar places, the restrictions of the past few months have been maddening. The need to cancel our annual conference was heartbreaking and the path forward is unclear, but the minds of our many dedicated and creative volunteers have been whirring and they have offered dozens of ideas. I have every confidence we can find a path forward to not just get us back on track, but raise us to new heights.

But there is plenty of time to explore those ideas. At the moment, there are far more weighty issues being debated on our streets, in the media, and around kitchen tables. Yes, the corona virus has taken many of our loved ones, restricted our actions and our options, and completely disrupted our routines. But consider this: Black Americans are not constrained by random events. They have been restrained by a system that propels people like me forward and holds them back. It is long past time that we stop pretending that these constraints are out of our control. This is not an accident of history but an intentional system of repression. These restraints can and must be removed if we are to realize the promise of our grand experiment in democracy.

I leave you with the thought that Black Lives Matter and ask that you reflect on what we can do, as GIS professionals and as Americans who love their country, to atone for four hundred years of repression. Like those commuters who search for a path around an obstruction, the alternative solutions we find will benefit us all.

Do you have an idea for a worthwhile article, but you don't want to be in charge of writing it? Let us know and we'll investigate it—we have willing writers that can turn your lead into a great story for the newsletter!

Contact us at summit@waurisa.org



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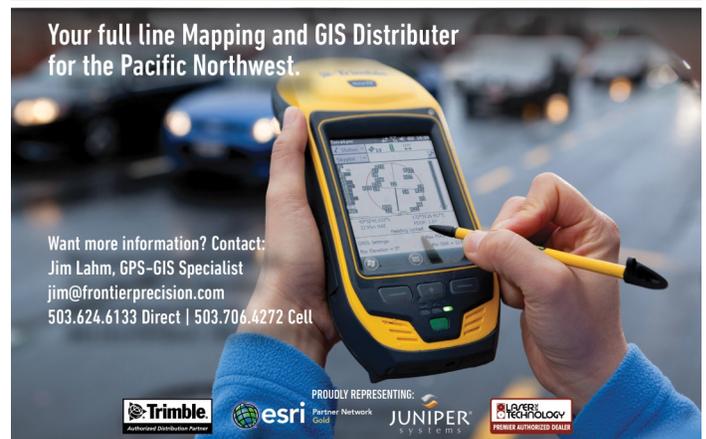
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Results from WAURISA's Board of Directors Vote

By: WAURISA Board of Directors

Each year WAURISA elects one-half of their WAURISA Board members at its annual conference in May. Due to Covid-19 we were unable to hold this year's WAURISA Board Election at the conference; however, WAURISA in accordance with its by-laws is required to hold its annual election. Voting was open to all WAURISA members. To accommodate voting, WAURISA extended all memberships through June 30th, 2020 (hint, hint—it's time to [renew your membership](#)).

Listed below are the winners of the election, along with their biographies. These board members have been elected to a two year term (2020-2022). They join current board members Stephen Beimborn, Mike McGuire, Christina Chelf, Ian Von Essen, Maria Sevier, and David Wallace.

WAURISA TREASURER



Tami Faulkner Bio

Tami Faulkner supervises the Thurston GeoData Center. Her background as a Senior IT and GIS Project Manager allows her to provide guidance from both a GIS perspective as well as a traditional IT application development point of view. Tami has been on the WAURISA Board for three years and participated in the annual conferences since 2002. Tami began working in GIS while serving as the GIS Project Manager in charge of the Washington Transportation Framework for GIS (WA-Trans). Tami received the American Association of State Highway and Transportation Officials (AASHTO) President's Award for work she and her team did on WA-Trans. This national award recognizes "exemplary service to the States furthering transportation". The WA-Trans project also received recognition for 'Best Practices' from the U.S. Geological Survey (USGS). Prior to that she was a Senior Project Manager for the Washington State Department of Transportation's IT division, managing other project managers and very large projects. Tami has been with Thurston County for almost 11 years and was with the State for 13 years previously. She is formerly from the State of Montana. While there, she was a Senior Programmer Analyst for the Montana Department of Revenue. Tami has a BA in Speech Communication from Montana State University and completed all required coursework towards an MS in Computer Science at Montana State University. Tami enjoys reading, good music, fun with friends, dancing, weight lifting and travel in her spare time.

WAURISA Board Position #1



Jason Eklund Bio

I have been the GIS Coordinator for Kittitas County over the last 14 years where he manages the enterprise GIS data and software for all departments. He earned a B.S. in Natural Resource Management with a minor in Spatial Information Systems Management from Colorado State University. With 22 years of professional experience in GIS, Jason's passion is workflow automation through application development and enterprise GIS integrations with other systems. In 2015 ESRI awarded Kittitas County with the Special Achievement in GIS for their use and incorporation of ESRI's Local Government solutions and in 2017 won first place at the ESRI User Conference Apps Fair for an application built using the Esri Runtime SDK for .NET. Jason is actively involved in the Washington Government GIS Leaders (WGGL) group, a sub-committee of WAURISA where he currently serves as a board member, and enjoys giving an annual presentation to local schools on GIS Day.

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Esri 2020 Virtual User Conference

Esri's User Conference is virtual and free this year! The plenary sessions are open for everyone to watch, although you will need to [register](#) using an Esri Account. If you do not have one, you can [create an Esri Account](#) for free.

If you'd also like to watch on-demand technical and user sessions, participate in Live Q&A technical workshops, special interest group meetings and more, you'll need to be an existing Esri customer with current maintenance - anyone from your organization can attend at no charge.

Questions? Contact your Esri Account Manager or email confregis@esri.com.



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<https://www.urisa.org/education-events/urisa-gis-leadership-academy/>

Leadership

Washington State Student Online Mapping Competition Results

By: Katie Heim, City of Arlington, WA

Each year, Esri hosts the ArcGIS Online Competition for high school and middle school students in the United States. The purpose of the competition is for students to analyze, interpret and present data via an ArcGIS web app or story map. Each state is encouraged to participate, and each state receives 10 equal prizes of \$100 that are received by the 5 best high school entries and the 5 best middle school entries. The winning entries are then submitted into selection for Esri's national competition.

For the second year in a row, Washington students participated in the State's Esri mapping competition. For 2020, 6 high schools and 1 middle school participated in the State-wide competition. The story maps submitted included subjects ranging from orcas in the Puget Sound to the impact on schools by the COVID-19 epidemic. The following lists the schools, story map and their placement in the State competition.

Middle School entry:

- [Southern Resident Killer Whale Endangerment](#) – First Place (Oasis K-12, Orcas Island School District)

High school entries:

- [The Demise of a Regional Icon](#) – First Place (Tesla Stem High School)
- [Habitat Wonders of Washington State](#) – Second Place (Stahl Junior High)
- [Northern Spotted Owls and Their Habitats](#) – Third Place (Stahl Junior High)
- [Zoonotic Diseases](#) – Fourth Place (Tesla Stem High School)
- [Permitted Pollution and Water with Pollution](#) – Fifth Place (Stahl Junior High)
- [Schools in Washington and COVID-19](#) – runner up (Tesla Stem High School)

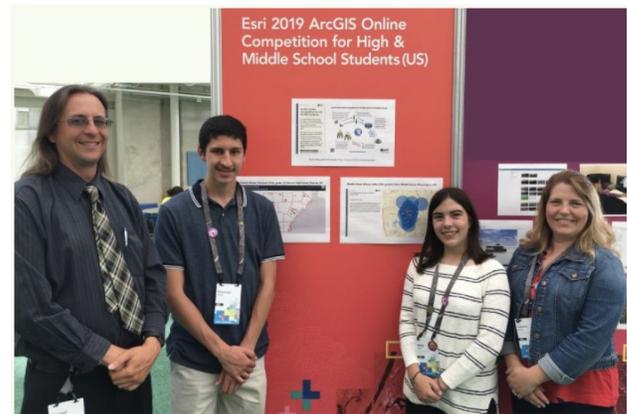
Because of COVID-19, the national competition will not be held this year. Instead, Esri is recognizing all the participants who worked to overcome lost connectivity, lack of devices, limited guidance and the chance for fieldwork. Overall, 500 schools submitted entries from 29 states. But with the challenges of the pan-

dem and new competition guidelines, Esri decided to highlight the award winners to encourage students to continue their geographic exploration.

Visit [2020 competition](#) to view this year's results.

The Washington State Competition Team made up of GIS professionals from a variety of agencies would like to thank all the schools and students who participated this year despite the challenges that they had to face. We understand this year was challenging and we applaud those who tackled the extra work. And we look forward to next year's set of story maps!

Learn More: [Washington State ArcGIS Online Competition](#)



2019 MS and HS winners and teachers at ESRI conference.

Share Your Story in The Summit Newsletter

The Summit Newsletter team is looking for people who can share their experiences using GIS to help with Covid-19 related and/or general public health and public safety applications for an upcoming article. If you have a project you'd like to share, please let us know!

summit@waurisa.org.

**Deadline for Issue 54
August 17, 2020**

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WAURISA Board Position #4



Heather Glock Bio

Heather Glock, is an Account Manager with the Esri Olympia regional office. Heather has over 20 years of experience working in the geospatial field, focusing on city and county government. She truly enjoys working with her customers to streamline and improve operations using GIS as a framework and process for measuring, analyzing, planning, understanding and decision-making.

Heather earned a Master of Public Administration degree in 2018 from The Evergreen State College. She received Washington URISA’s Summit Award in 2018.

Heather has been involved with Washington URISA since 2005 and has served on the board in various capacities including board president. Heather currently serves as the Washington URISA Summit Newsletter editor. In her free time, Heather enjoys raising her teenage daughter, reading on a wide variety of topics, gardening, and just thinking and wondering about stuff.

WAURISA Board Position #5

Gregory Lund Bio



Gregory Lund, is an Assistant Teaching Professor (Full Time Lecturer) at the University of Washington Tacoma (UWT). Gregory has over twenty years of teaching experience, 10 of which have been in the field of GIS. Gregory earned a Masters of GIS at the University of Washington Seattle, a GIS Certificate from the University of Washington Tacoma and a Bachelors/Masters of Science degree in Education from the State University of New York (Brockport). Gregory teaches seven GIS Courses per year and is the Advisor for the Student GIS Society, encouraging students to become involved with WAURISA. Gregory was also involved with the Esri Middle/High School Story Map competition for the past two years.

WAURISA Board Position #6

Taylor Dixon Bio



Taylor Dixon, is a Senior GIS Analyst for Seattle Public Utilities. While completing his GIS degree at the University of Washington, he interned for the City of Bothell. After graduating, he immediately took a job with Seattle Public Utilities and has been there for the last 8 years. Taylor works mostly with Drainage and Wastewater utility data, and works on a variety of projects for the utility. He has volunteered for a handful of organizations both in and outside the City of Seattle, and has even volunteered his GIS skills for politicians and sports blogs in his spare time. When he’s not watching Husky sports, he’s probably playing soccer, reading books, writing music, playing video games, or staring at mountains.

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Washington Women In GIS & Technology Update

By: *Tonya Kauhi, Port of Tacoma*

It has been a crazy start to 2020 but the Washington Women in GIS & Technology (WWGT) meetup group is still going strong and taking it one meeting at a time. In April, we held our very first virtual social hour and had great turnout. We shared recipes for [Quarantini cocktails](#) (or if you prefer [Quarantini mocktails](#)), we shared a fun video ([Family Lock Down Boogie](#)), we shared some amazing work around the pandemic response [City of Tacoma's COVID-19 Response Tools](#) (contact Adriana Abramovich for more information) and the [Crisis Map](#) and [Re-Discover WA](#) app from Washington Homegrown (contact Jennifer Hackett for more information) and we shared some photos and videos of our home offices and away from home offices (here is a [video](#) of Kirsty Burt's coworking space). We also had a trivia contest on what else, you guessed it, geography. Congratulations to Nathalia Roberts, a first-time meeting attendee, who won our Trivia contest and a \$20 Amazon gift card.

Member Check-in:

We wanted to check in with our members and see how they are doing during the COVID-19 stay at home order. Recently we asked our members to answer the following questions since the stay at home order has taken effect. The top 3 responses to each question are included below.

What has been your biggest challenge?

- Staying mentally healthy, missing friends/family, feeling isolated and/or burnt out
- Staying focused on work while dealing with home distractions
- Uncertainty about the future and yes, some members have been laid off or furloughed

What has been your biggest benefit?

- Spending more time with family and pets
- No commuting
- Saving money (for example on clothes, gas and eating out)

Have you learned a new skill since you have been staying home more (does not have to be GIS/technology-related)?

- Completed technology training (MOOCs, SQL, Tableau, Operations Dashboard, Photoshop, Python, MS Skype/Teams, SharePoint)
- Learned how to cook, master yard care, crochet, do a headstand and swim in open water
- Learned how to relax and focus on self-care



Kickin' it lockdown style



Kirsty Burt swimming in the 53-degree Lake Washington (since pools are closed)

Poster 2020:

For the last three years, in addition to our regular meetings and socials, our group usually creates a poster to submit to state and international GIS conferences. Our intent was to continue this tradition this year regardless of the stay at home order. While we started

(Continued on page 11)

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Alongside citizens of Florida and the nation, URISA¹ members watched the unfolding situation concerning the Department of Health's COVID-19 Dashboard that had been lauded in an April 20, 2020 online article² by Esri, creator of the GIS software used to build the dashboard, and by Dr. Deborah Birx, White House Coronavirus Response Coordinator, in an April 19, 2020 CBS Face the Nation interview³. Dr. Birx specifically mentioned that she was "... trying to really drive Americans to a website [Florida COVID-19 Dashboard] that I think is really quite extraordinary." Dr. Birx further stated that the dashboard provided the "... kind of knowledge and power we need to put into the hands of [the] American people so that they can see where the virus is, where the cases are and make decisions."

According to published reports in the media, it was shortly after this recognition that troublesome changes to the dashboard were requested by state officials. Specifically, it was reported⁴ that Rebekah Jones, creator of the dashboard and a GIS Professional (GISP)⁵, was asked to make a series of changes that diminished its accuracy and obscured some data. While voicing her objections to the initial change requests before complying, Ms. Jones ultimately refused additional changes that would have included false data.

While all the facts have yet to be made public, we are concerned that the actions taken potentially put the public at risk and prevented a certified GIS professional from following the Code of Ethics⁶ that guides all GIS professionals working in government, non-profit and private sector positions.

The URISA Code of Ethics⁷ is identical to the one that GISPs agree to when they earn their certification. The GIS Code of Ethics is similar to those of other professional and scientific ethics codes. The Code guides GIS professionals as they make decisions on collection, analysis, and presentation of data, whether through reports, maps or online systems.

The GIS Code of Ethics first states to "Do the Best Work Possible" by being objective and using due care. It says to practice with integrity and not to be unduly swayed by the demands of others. Provide full, clear and accurate information. Be aware of consequences both good and bad. Finally, strive to do what is right, not just what is legal.

The GIS Code of Ethics says to make data and findings widely available, striving for broad citizen involvement, and to speak out about emerging issues. GIS professionals should also call attention to the unprofessional work of others. Finally, GIS professionals are required to deliver quality work and have a professional relationship with those they work for and with, which may involve accepting the decisions of employers and clients, unless they are illegal or unethical. They are honest in representations and strive to resolve differences. GIS professionals work respectfully and capably with others in GIS and other disciplines. The GIS Code of Ethics includes more, but this is the heart of the ethical standards that URISA members and all GISPs follow. While endeavoring to follow these guidelines, situations may arise that make choosing the right course to follow difficult, and the GIS professional may need to emphasize some guidelines over others. What is important is to strive to do the right thing. The situation in Florida has highlighted this dilemma. Published reports demonstrate that Ms. Jones was under extreme pressure to ignore her Code of Ethics. URISA will always support its members and all GISPs who follow the GIS Code of Ethics which in this case were indeed being followed.

Approved by the URISA Board of Directors on June 19, 2020

¹ The Urban and Regional Information Systems Association (URISA) is a 53 year old nonprofit association that provides education and training, a vibrant and connected community, advocacy for geospatial challenges and issues, and essential resources for GIS professionals throughout their careers. <https://www.urisa.org/>

² Geraghty, Este MD, MS, MPH, GISP and Ryan Lanclos COVID-19: *Dedicated Scientist in Florida Made Quick Moves to Map the Disease*; <https://www.esri.com/about/newsroom/blog/scientist-maps-florida-covid19-cases/> (Accessed June 2020)

³ CBS Face the Nation April 19, 2020 Transcript; <https://www.cbsnews.com/news/full-transcript-of-face-the-nation-on-april-19-2020/> (Accessed June 2020)

⁴ Florida scientist was fired for 'refusing to manipulate' COVID-19 data, she said, May 19, 2020, Florida Today <https://www.floridatoday.com/story/news/2020/05/19/florida-scientist-refused-manipulate-covid-19-data-and-fired/5219137002/>; Florida COVID-19 dashboard manager raises red flags about accuracy of state data after being fired, May 19, 2020, WFLA News Channel 8 <https://www.wfla.com/news/florida/floridas-coronavirus-data-questioned-after-removal-of-woman-whodesigned-dashboard/> (Accessed June 2020)

⁵ GIS Certification Institute of which URISA is a founding member; <https://www.gisci.org/> (Accessed June 2020)

⁶ Ibid. A GIS Code of Ethics, <https://www.gisci.org/Ethics/CodeofEthics.aspx> (Accessed June 2020)

⁷ URISA International, GIS Code of Ethics, <https://www.urisa.org/about-us/gis-code-of-ethics/> (Accessed June 2020)

strong and had an exciting and challenging poster topic (Human Trafficking), after our sixth virtual working session, we decided to postpone completing the poster until next year. Most members were feeling overwhelmed by the additional work and all the changes in their home and work lives. Above all want to ensure that we are challenged and excited by our work and we will complete the poster next year.

During the social hour we also asked members some interactive questions where they could see responses in real time. Here is the word cloud created during the social hour from member feedback in response to the question “Using one word, list one thing that keeps you going everyday”. I hope you find your **one thing** today and every day. **Remember we are in this together, stay well, stay connected and reach out if you need anything.**



Next Meeting:

Our June 17th meeting was a discussion on **Mindset, Attitude and Approach to Life** led by a special guest speaker, **Rebecca Del Pozo**. **Rebecca** is a Realtor, investor, speaker, trainer, and author for Keller Williams Realty. **Rebecca** helped us delve into the mindset, attitude and strategies of high achievers who thrive and see how we can set our mindset on success.

The WWGT group was created for women working in GIS and technology to meet, network, brainstorm and learn from one another. The group includes GIS students and professionals across all skills levels and disciplines. We meet monthly around Puget Sound (and now virtually) to network and share ideas, industry information, experience, and advice. The group is open to join, and we welcome new faces.

To view upcoming WWGT events refer to our website: wawomeningis.com or email Tonya Kauhi at wawomeningis@gmail.com

Introducing Amber Case: A Future WAURISA Event Keynote Speaker

By: Kirsty Burt, 2020 Washington GIS Conference Coordinator

I originally wrote this introduction when Amber Case agreed to be our 2020 WA GIS Conference Keynote Speaker. As we all know, a lot has changed since then, but I'm de-



lighted that Amber has offered to share her work in **Designing Calm Technology** at a future WAURISA Event.

Amber Case studies the interaction between humans and computers and how our relationship with information is changing the way cultures think, act, and understand their worlds. How can you design technology that becomes a part of a user's

life and not a distraction from it? Calm Technology is a method for smoothly capturing a user's attention only when necessary, while calmly remaining in the background most of the time. She describes the future of the Internet of Things as "driven by Calm Technology – elegant, humane, unobtrusive."

Amber spent much of the last year on a worldwide speaking tour, including stops in Chile, Spain, and Japan. Some of you have never had the good fortune to see Amber Case speak in person. Others, like me, may remember her spellbinding performances at the Esri Partner Conference and Dev Summit. Kris Krug, a SXSW Advisory Board Member, described Amber as "a digital philosopher of the bad-ass variety; she's a digital native from the future. She's come back to help us figure out how to think."

In going back over Amber's career of the last 10 years, I've become newly aware of Calm Technology and what a difference it makes in my everyday life. Lately, my awareness has been heightened by the Calm Technology in cars and trucks. I travel a lot and rent cars frequently; the new cars have many wonderful features intended to assist me as I drive. For example, when a car is in my blind spot an unobtrusive yellow light pops up to stop me from changing lanes at the wrong moment. There is no sound,

just a small light on my side mirror. Very calm. Last week I discovered a new feature that was so annoying and intrusive that I had to stop the car, get out the manual, and figure out how to turn it off - immediately. A very loud buzzer, combined with a vibrating steering wheel, activated every time I supposedly moved outside my driving lane. Unfortunately, that meant a jolting reminder at every off-ramp, every on-ramp, and any slight sideways movement on a winding, two-lane country road. It was the antithesis of Calm Technology. I recently saw an ad for the 2020 Chevy Silverado with the [Invisible Trailer](#) feature. When you look in the rearview mirror, the trailer "disappears" to reveal the road behind you. A trailer-hauling friend described it as a "computer wrapped around a truck" but it's also a very cool example of Calm Technology.

Calm Technology is something that has been part of Amber's view of the future for many years. It started with childhood dreams of creating wormholes for time travel and a realization during college that "technology doesn't just get adopted because it works. It gets adopted because people use it and it's made for humans." It led her to study anthropology with a focus on the human elements of technology design. In her 2010 TED Talk "[We are all Cyborgs Now](#)", she presented the idea that mobile phones have made us all cyborgs, carrying wormholes in our pockets. We can "stand on one side of the world, whisper something, and be heard on the other." Calm Technology was already on her mind when she concluded that "machines are helping us to be more human, helping us to connect with each other. The most successful technology gets out of the way and helps us live our lives." In 2010, she was named one of Fast Company's [Most Influential Women in Technology](#), and in 2012, a [National Geographic Emerging Explorer](#).

Amber's path converged with GIS when she co-founded the location-based software company, Geoloqi. This landed her on [Inc. Magazine's 30 under 30](#) list in 2012. Geoloqi was acquired by Esri and she served as the Director of Esri's R&D Center in Portland, OR until 2015. Geoloqi's innovations in persistent location awareness are integrated into Esri's platform, most visibly in the Geotripper feature that allows an application to send messages in

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The 2020 Census in the Time of COVID-19

How the Pandemic Has Affected the Complete Count Committees Work in Washington

By: Katie Heim, City of Arlington, WA

As 2019 wrapped up, the Complete Count Committees (CCCs) were feverishly, no pun intended, putting together the final touches on various Census events that would educate and encourage people to complete their Census surveys. The CCCs, whose goal is to get everyone counted in Washington, were attempting to coordinate their events with the Census Bureau's March mailings. Many of these events were to be in-person training sessions and personal assistance with the surveys with the bulk of the events wrapped up by May.

[U.S. Complete Count Committee Map](#)

In early 2019, the CCCs were formed in all 50 States with additional Complete Count Committees organized by counties, nonprofits and local governments within the States. The CCCs are not government organizations but are composed of stakeholders that include various levels of governments, tribes, non-profits, faith-based organizations and libraries. I chair the Arlington CCC and we disseminate locally the information coming from the Snohomish County CCC and the State CCC. The purpose these CCCs serve is to ensure that the 2020 political climate and Census technology change will not discourage people from participating. At stake is both state and federal representation and billions of dollars in funding for schools, roads, public safety, home and business loans and health care.

[OFM Funding PDF on WA State Program obligations](#)

Well, we all know the phrase, "the best-laid plans of mice and men often go awry." COVID-19 not only wrecked all the CCCs plans for the onset of outreach but also required a new approach to our outreach. The silver lining of the "Stay at Home" order was that everyone had time to fill out their Census survey. To date the Washington response has nearly met the 2010 Census final response. In 2010, Washington State household response rate was 67.2%. As of May 19th of 2020, Washington State is at 65.0%. And the 65% response in Washington is beating the national rate of 59.6%!

[Census Response Rate map](#)

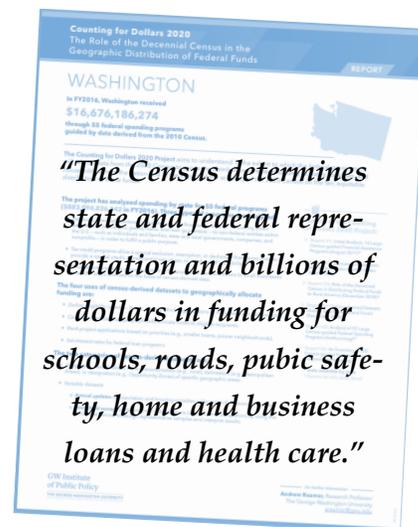
The response rate only tells one side of the story - those who have responded. The CCCs want to educate and assist those who have not responded. The response rate map provides a visual to help CCCs focus outreach in those Census tracts that have lower rates than surrounding tracts. In addition to the response rate map, the Census Bureau also published the Type of Enumeration map viewer (TEA Viewer). This map shows how the Census Bureau is collecting the Census surveys. The majority of American households got the mailers in March and of those, most have responded. The pale yellow areas are a different type of enumeration, called "Update Leave."

[Type of Enumeration Viewer](#)

The Update Leave areas include rural areas with post office boxes or homes without an official street address. Census Bureau was planning to hire enumerators (Census employees trained to assist people in filling out their survey) who would visit Update Leave areas in person starting in March. Since COVID-19, the Update Leave areas are not counted with the field work just ramping up now.

CCCs are focusing on educating those in "Update Leave" areas about the process as well as continuing to encourage those who got a mailer or letter to respond. In Snohomish County, the Sno-Isle Library system has been crucial in getting the word out about the Census via their webpage and providing free wi-fi for patrons. The library closures have not affected the wi-fi service and patrons are using the service while in the library parking lots. Some restaurants and food banks in Snohomish County have also assisted the CCCs by handing out flyers with their meals and groceries. In early May, over one hundred Census banners measuring 30 feet in length were hung around Snohomish County. The CCCs have extensively used social media for Census messaging, along with traditional messaging mediums such as radio ads and Census editorials in many newspapers.

You can easily be part of this effort and ensure Washington State has the best response rate to date. If you haven't filled out your Census survey, do it now. The online version is absolutely the easiest one yet. Then challenge 10 households you know to fill out their survey. Like a virus, encouragement helps spread the word but unlike COVID-19, the Census is critical in bringing money and political representation to our State.



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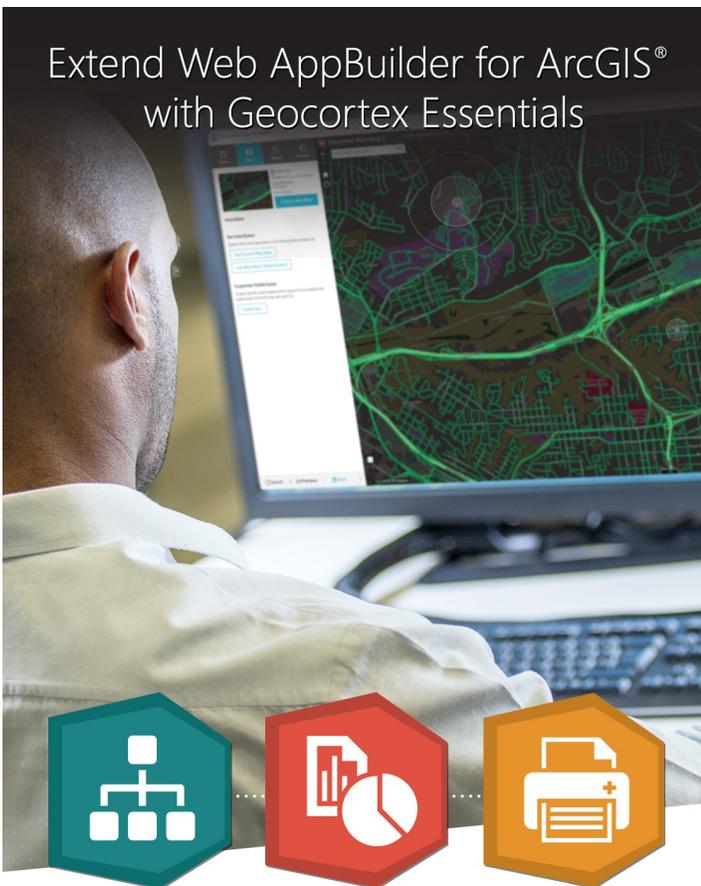
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Using a low-cost asset inventory GPS solution with Esri Field Apps, ArcGIS Online and Trimble's Catalyst/DA1

By: Eric Sack/GISP, Senior GIS Project Manager, FLO Analytics

Affordable, high-accuracy GPS data collection has become a GIS industry standard. Esri and Trimble field tools are a great example of why high-accuracy field data collection is a smart investment for municipalities. Gone are the days of expensive hardware/software costs and siloed workflows that took specialized staff way too much time to set-up/train staff on hard-to-use tools/post-process (fingers crossed your correction files would work...and were available before your deadline approached!). Lots of file management (quirky add-ins and less than perfect workflows) and opportunities for the project/data to go sideways... often at the cost/blame of the GIS analyst stewarding the workflow. The new reality is hosted services, access to real-time Virtual Reference Station (VRS) correction services and SaaS apps that make collection, form configuration, administration and GNSS metadata capture a breeze.

FLO Analytics is working with the City of Yelm, Washington to update stormwater assets using Esri field apps, ArcGIS Online and Trimble's Catalyst/DA1 high-accuracy GPS solution. Configuring ArcGIS Collector and Catalyst to work together is simple if you follow best practices and recommended steps from Esri and Trimble. One thing to consider is any datum transformation that needs to occur when viewing your source data. The City of Yelm's data did not introduce any datum shifts but if it had started in HARN (*NAD 1983 HARN StatePlane Washington South FIPS 4602 Feet*) and viewed/consumed in Collector (uses *WGS 1984 Web Mercator Auxiliary Sphere*), and using a VRS correction service (*NAD 1983 [2011] StatePlane Washington South FIPS 4602 US Feet*) for real-time correction I would have had to account for this datum shift. This requires a 3-part transformation to go from source to map to service to enable collection and viewing of your features accurately in the Collector and corrected by Catalyst without introducing the shift (using this datum transformation, *WGS_1984_(ITRF00)_To_NAD_1983 + NAD_1983_HARN_To_WGS_1984_3*).

To the right is a screenshot showing ArcGIS Collector's GPS status when using Catalyst. GNSS metadata fields were added to feature class using the ArcGIS Pro tool, "Add GNSS Metadata Fields." The Trimble Mobile Manager screenshot shows an RTK fixed position using the Catalyst on-demand precision service. This is done to confirm connection to the service and show accuracy levels. The inset with highlighted fix type and accuracy values is from Collector showing the external connection to the DA1 receiver.

The screenshot displays the 'Status' screen in ArcGIS Collector. The main screen shows the following information:

- GNSS status**
- Position status: RTK Fixed
- Location
- Latitude:
- Longitude:
- Altitude
- Ellipsoidal height (HAE): 63.6 ft
- Orthometric height (MSL): 134.72 ft
- Horizontal precision (RMS): 0.08 ft
- Vertical precision (RMS): 0.12 ft
- GNSS correction status: 2 sec; 692 bytes/second
- GNSS output: NAD83 (2011); 2010.00; EPSG1116
- Geoid Model: EGM96 (Global)

An inset window titled 'Catalyst' shows the following details:

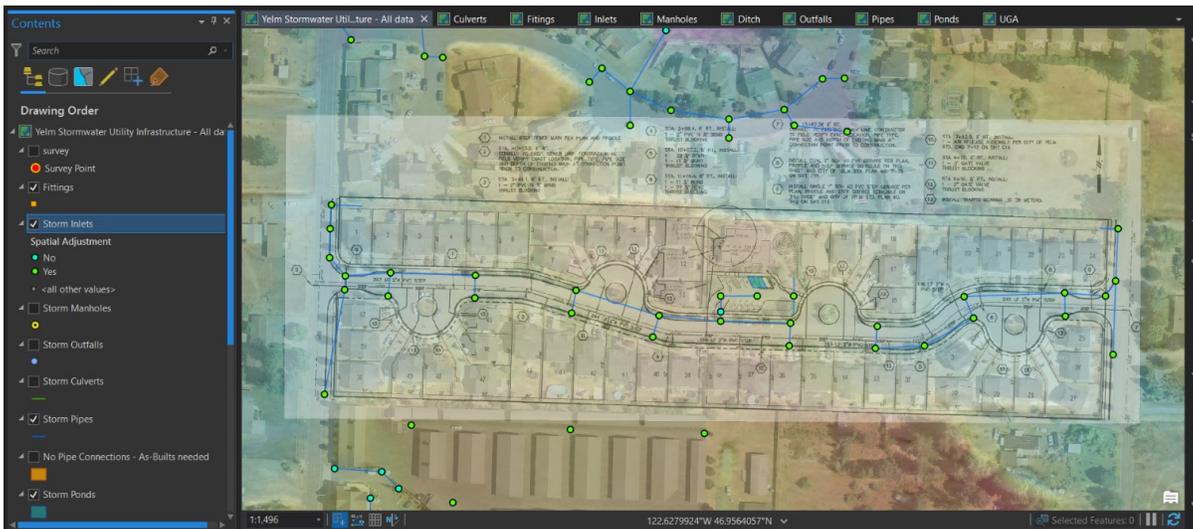
- Fix time: Updated just now
- Horizontal accuracy (RMS): 0.8 in
- Vertical accuracy (RMS): 1 in
- Fix type: RTK fixed
- Station ID: --
- Correction age: 2 seconds
- Satellites (Used/Visible): 8/18
- Location profile: Collector Catalyst Transform
- Bytes received: 79932

(Continued on page 17)

ESRIGNSS_RECEIVER	Receiver Name	Text	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ESRIGNSS_H_RMS	Horizontal Accuracy (m)	Double	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric
ESRIGNSS_V_RMS	Vertical Accuracy (m)	Double	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric
ESRIGNSS_LATITUDE	Latitude	Double	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric
ESRIGNSS_LONGITUDE	Longitude	Double	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric
ESRIGNSS_ALTITUDE	Altitude	Double	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric
ESRIGNSS_PDOP	PDOP	Double	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Numeric

Average Horizontal Accuracy (m)	Average Vertical Accuracy (m)	Averaged Positions	Standard Dev
0.1	0.105	15	0.008541
0.1	0.105	15	0.003434
0.1	0.105	15	0.002474
0.1	0.105	10	0.003044
0.1	0.105	10	0.001762

The two screenshots above show ArcGIS Pro tables of both the design and output of the schema. The design view shows the fields after running the “Add GNSS Metadata Fields” tool and the output shows the fields being written to after collection.



ArcGIS Pro project showing georeferenced as-builts, LiDAR DTM and stormwater assets.

We used ArcGIS Pro to create assets from the as-built drawings provided by the City. The feature classes were published to ArcGIS Online for use in Collector so that we could easily field verify attributes and locations. This pre-field effort saves significant time in the field and leads to a more complete asset inventory.

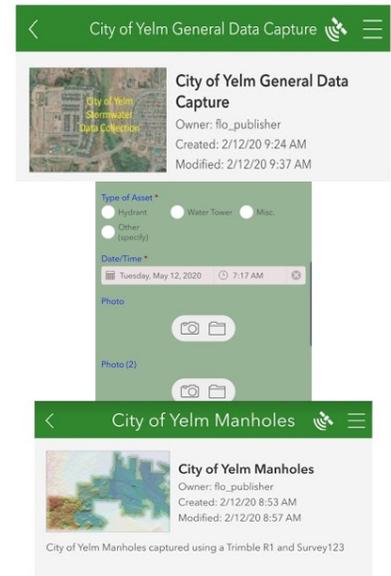
I used a Trimble R1 with ArcGIS Survey123 and Collector to perform an initial capture of stormwater manholes and selected inlets to determine if +/- 1-2 feet SBAS corrected horizontal accuracy would suffice for these features. We did this to demonstrate the configuration flexibility and data collection form options available to city staff. Staff was excited to test the application, attach photos and then review the results back in the office after lunch (great eats at El Rey Burrito btw!).

It was determined that the Trimble DA1/Catalyst precision on-demand service (capable of @10-20 cm accuracy horizontally in this geographic area) would be used to supplement/improve the horizontal accuracy of these assets. A web map was created and shared with the field data capture group in ArcGIS Online to enable spatial and attribute updates in an offline/disconnected workflow using Collector classic. City staff that were not as comfortable with field GIS apps such as Collector were given the option to use Survey123,

(Continued on page 18)

favoring its form-driven user experience after geometry was collected using Collector to update attributes. Both apps write to the same hosted feature service, so data stays current in both apps. Leveraging these tools allowed us to develop a low-cost field data collection that is efficient, accurate and adheres to industry standard best practices.

An Esri Dashboard provides metrics on the project progress and allows staff a real time status of field data collection and as-built conversion. In Phase II FLO will configure an editing tool using ArcGIS Web AppBuilder to enable staff to edit attributes and features for stormwater and other city-managed GIS layers hosted in ArcGIS Online. This will be controlled via ArcGIS Online group permissions settings to limit which features are edited by which users. FLO is in the process of side-loading the city’s aerial photography from 2018 as a raster tile package to be used in Collector and eventually Survey123. FLO recently learned that ArcGIS Collector now supports full integration with the Catalyst receiver, so the city can now collect accurate z values without having convert Height Above Ellipsoid (HAE) to Mean Sea Level (MSL) in ArcGIS Pro. This will help the City update its stormwater assets with top of casing and invert elevation values to be used in future modelling applications.



ArcGIS Survey 123 was used by city staff



- Technologies Used**
- ArcGIS Pro Basic 2.4
 - ArcGIS Online
 - ArcGIS Collector (Classic edition)
 - ArcGIS Survey 123
 - Trimble Mobile Manager
 - Trimble DA1/Catalyst on-demand VRS
 - Samsung Galaxy Tab 5Se with 3rd-party battery, USB cord setup to maximize device battery life

An ArcGIS Dashboard provides metrics on project progress.

The city is very happy with the accuracy, level of transparency and completeness of the data captured to date. The city plans to update the data as new developments are added and maintain the spatial accuracy of the data using this project as a template for future data collection efforts.

It's Time To Renew Your WAURISA Membership!

By: WAURISA Board of Directors

The COVID-19 pandemic has created unprecedented economic and social conditions for this generation.

Notwithstanding the challenges, your WAURISA Board has been working diligently to continue providing value to you. Which brings us to the matter of annual WAURISA membership dues. Historically, WAURISA has included a one-year membership as part of the conference attendance fee, meaning most memberships are automatically renewed since many members attend the conference year after year. Likewise, any non-member who attends a paid WAURISA event during the year also receives an active membership. In other words, most WAURISA members become so without having to take specific action to join or renew.

Membership runs from May 1 – April 30 each year. Since there will be no conference this year, the WAURISA Board met to discuss how membership will be handled in this uncertain time. The Board voted to automatically extend all current memberships until June 30, 2020. Current memberships include all those who attended the conference last May (2019), anyone who attended a paid WAURISA event during the 2019-2020 membership year (workshop or summit), and anyone else who may not have attended the conference or one of the paid events, but who has paid their 2019-2020 membership fee (\$25 professional members, \$15 students). Extending memberships to June 30 this year will allow all current members to vote for board member elections, which normally would take place at the conference.

Beyond June 30, 2020, your WAURISA Board is encouraging you to renew your membership on our website: <https://waurisa.org/join-us>. The minimal fee helps the WAURISA Board pay for administrative costs, but it also gives you continued access to:

- Opportunities for networking with other geospatial professionals
- Information sharing on our website
- Discounts on registration and workshops provided by WAURISA
- Access to the member directory and discussion forums
- Support for GIS education events
- Volunteer opportunities for the WAURISA committees and other agencies
- Archived conference presentations

Additionally, your WAURISA Board is working on providing professional training opportunities and presentations throughout the rest of this year using remote technology delivery methods. Stay tuned for more information on these opportunities for WAURISA members. Please email membership@waurisa.org with any questions. Thanks to all of you for your continued support of our great organization. Please stay safe.



Look at all these people having fun at a WAURISA-sponsored event. Join or renew today to keep the good times rolling (when we can safely do so again).

Not sure if you are a WAURISA member? Visit www.waurisa.org. If you are a current member, you'll be able to log in and see the additional "Member Resources" tab. If you have questions or troubles logging in, please [email](#) the membership committee for assistance.

Going From ArcGIS Server to ArcGIS Enterprise

By: Richard L'Esperance, Configuration Engineer, Esri

Editor's note: In early February 2020, WAURISA and King County GIS hosted a [User Portal Summit](#) designed to share experiences migrating from ArcGIS Server to a full, federated ArcGIS Enterprise environment. Esri was invited to the summit both to present and to take notes in order to provide a follow up workshop to address ArcGIS Enterprise questions and concerns that attendees discussed, offer best practice tips, and help our customers understand the fundamental importance of Enterprise portal to the future of Esri's solution platform. Due to COVID-19, the workshop is now taking shape as a series of articles for WAURISA's Summit Newsletter. You can read a summary of the User Portal Summit in issue #52 of [The Summit Newsletter](#).

This first article in the follow up series gives an overview of the "why" of ArcGIS Enterprise, followed by a case study of implementation from the city of Wenatchee, WA. If you have suggestions for future ArcGIS Enterprise User Portal Summit follow-up articles, please contact Shane Clarke, Esri Solution Engineer: sclarke@esri.com

GIS has come a long way since the card readers at Harvard, and in many ways its evolution has mirrored the larger technologies around computing in the digital age. From the early days of the 60s and 70s, when GIS was done on centralized mainframes, to the 80s when computing power steadily moved to the desktop, to now as organizations are realizing the benefits of centralizing their data storage and computing power and reducing their IT infrastructure footprint while still getting the benefits of wide usage.

This brings GIS, its data and its capabilities into the hands of virtually anyone, anywhere, and from any device.

Why ArcGIS Enterprise?

ArcGIS Enterprise is a platform of several interconnected products. They work complementary to each other, even if they are installed on separate servers in separate locations. Originally, they were developed and sold separately, but they were designed to come together and now are distributed as a single package and, once federated, are all managed from one location – your Enterprise portal.

ArcGIS Server is still the heart, and the workhorse, of this family of applications. GIS data, in whatever form it's stored in, must be made available in a standard format across a broad range of platforms. ArcGIS Server generates and houses the feature, map and

geoprocessing services used in the web sites and applications that you will build.

ArcGIS Data Store is used by ArcGIS Server as a data repository for hosted services. Hosted services are useful for project data, prototyping and innovation. It functions like a relational database or a file geodatabase, but it also serves as the storage for analytic outputs of geoprocessing operations, 3D scene caches, and big data spatiotemporal data.

ArcGIS Portal (Enterprise portal) is the front-end interface that drives all of ArcGIS Enterprise. The Enterprise portal is the "identity store" for ArcGIS Enterprise, and Enterprise portal is the recommend licensing option for

ArcGIS Pro and other apps in the ArcGIS platform. When federated with the other components, all management of ArcGIS Enterprise is done from the Enterprise portal. This means that any access to any content that is not shared to everyone requires a named user account in the portal. Users create, manage, organize and share maps, apps and data from the portal.

ArcGIS Web Adaptor: an Esri-built load balancer that directs network traffic, serves as a reverse proxy and enables web-tier authentication.

ArcGIS Enterprise Extensions allow your organization to take advantage of big data, data science, or real-time tracking abilities. These server capabilities include Image Server, GeoEvent Server, GeoAnalytics Server and Notebook Server. While they are separate installs, they are all managed from your Enterprise portal.

ArcGIS Enterprise Deployment Scenarios

A "base deployment" of ArcGIS Enterprise means you have ArcGIS Server federated with the Enterprise portal, data store,

...deployment of ArcGIS Enterprise portal is a requirement for a modern GIS system – it is the vital component that enables a modern GIS system to function and to meet the many challenges that customers face.

(Continued on page 21)

(Going from ArcGIS Server to ArcGIS Enterprise, continued from page 20)

and web adapter. A base deployment is becoming increasingly important as Esri adds new capabilities that require a base deployment implementation. Two examples are the ArcGIS Utility Network and the new ArcGIS Pro-based Parcel Fabric for multi-

your enterprise geodatabase), and improvements to ArcGIS Server services performance and capabilities, such as shared instances. These improvements to ArcGIS Server are only supported when publishing services from ArcGIS Pro to a federated ArcGIS Server.

Deployment Scenarios

ArcGIS Enterprise allows a range of possible architectures, from a base deployment of all the components on a single server, to a highly available configuration of multiple ArcGIS servers and data stores, with each software component installed on separate servers.

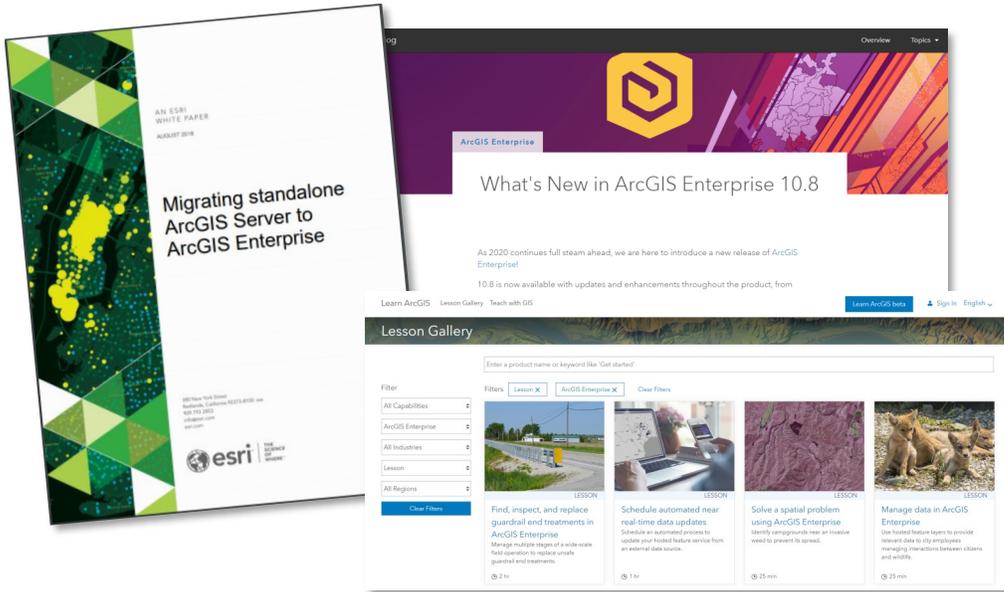
- The base configuration – using ArcGIS Enterprise Builder – installs all the base components on a single server. This is known as a single-tier approach. This has the benefit of being easier to manage but has the tradeoff of performance limitations and less flexibility for growth.
- The most typical configuration is a single server for each component. This is known as a multi-tier

deployment pattern. ArcGIS Portal, Server and Data Store each get their own server, and additionally the extensions also would get their own servers.

- Other common deployment patterns involve loading multiple components on one tier, such as the Server and Data Store on a single server. However, again, considerations must determine if this is going to affect performance of your services. You can add resources to the machines supporting your Enterprise deployment by adding more processing (CPU) or RAM. However, separating your configuration into multiple machines is more recommended.
- The largest configurations include multiple ArcGIS Server installations federated together to work either in series, each handling multiple separate services, or in parallel, handling copies of the same services in a highly available system.

When asked what metrics determine what configuration you should be designing, the usual answer from Esri is probably,

(Continued on page 22)



Esri's white papers, blogs, and online lessons will help you prepare for your migration.

user editing environments. Both require a base deployment of ArcGIS Enterprise. The goal of ArcGIS Enterprise is about bringing GIS, its data and its capabilities into the hands of virtually anyone, anywhere, and from any device. With a base deployment of ArcGIS Enterprise, using the power of web services, employees can edit complex data types on a phone or tablet, while in the field. You no longer need expensive desktop software to edit complex feature type data, and there is no need to wait to have data edited back in the office.

From Esri's perspective, deployment of ArcGIS Enterprise portal is a requirement for a modern GIS system – it is *the* vital component that enables a modern GIS system to function and to meet the many challenges that our customers face. Without it you will increasingly lose the ability to deploy solutions to meet your organization's needs and objectives. It is possible to continue with standalone ArcGIS Server and ArcGIS Desktop to perform GIS work, and you can use ArcGIS Online to provide web-based access to GIS, but it is not a complete path forward. You lose out on the ability to efficiently provide editing tools to field staff (it is cumbersome to sync ArcGIS Online hosted feature services with

“well, it depends.” And it does. How much data are you serving? How many services will you be publishing? How many web maps and applications? How many users will be hitting these applications? Will you be allowing anonymous access to your web servers, and if so, how much traffic do you expect? What’s your authentication model? Do you need a highly available system? Work with your Esri Account Manager to discuss options and get resources to help you design your configuration. It is important to do more than read help documents and cruise the GeoNet forums. You should fully understand the ramifications, benefits, and drawbacks before you migrate from ArcGIS Server to ArcGIS Enterprise. If you do not fully understand ArcGIS Enterprise and how it will benefit your organization, be sure to talk to Esri until all your questions are answered.

City of Wenatchee, WA ArcGIS Enterprise Migration Case Study

By: Matt Collins, GIS Manager and Ron Hall, GIS Analyst, City of Wenatchee, WA

Problem:

The city of Wenatchee had a robust GIS started in 2014, but it was missing structure. Each time management changed, changes to GIS priorities followed, leaving behind disorganization and ineffectiveness. This problem required a great amount of GIS administration and Esri technical support cases since hardware and software conflicts caused many things to not work correctly. Lastly, the system, since it went through several iterations, lacked documentation.

Solution:

In 2018, the city of Wenatchee purchased an Esri Professional Services ArcGIS Enterprise Jumpstart package. Since the city already had a widely used ArcGIS Enterprise deployment, Esri helped custom-build a strategy to upgrade and unify their system. Esri also provided on-site administration training to both the Information Systems department and GIS team. Lastly, they provided documentation of the Enterprise system, next steps and step-by-step instructions how to perform future upgrades to their particular system. As a result, in 2020, the city per-

formed an enterprise upgrade on their own, guided by this documentation.

Why the city moved to ArcGIS Enterprise

The city had implemented an older version of ArcGIS Enterprise in 2016, specifically the ArcGIS Server and ArcGIS Enterprise portal components. This enabled the city to provide GIS and mapping functionality to more city staff. To increase efficiency and usability, the city worked with Esri Professional Services for a fresh installation of a complete ArcGIS Enterprise implementation (ArcGIS Server, Enterprise portal, data store, and web adaptors). Because the professional services included documentation for the city’s specific deployment we could upgrade ourselves in later releases. Enterprise 10.7.1 was very easy to upgrade to from 10.6 since all the components, like Enterprise portal and data stores, were integrated.

“The speed and accuracy that we now have to research property and utility data has provided more to Public Works than almost any other advancement.”

Rob Jammerman, City of Wenatchee, WA Public Works Director

What is the city using ArcGIS Enterprise for?

We try to involve all city services in our GIS, from a story map showing city council districts and the councilmembers bio’s to a web app that helps the school district assign a student’s school based on address. We use Enterprise portal to create web maps and apps using our data and authoritative data layers from ArcGIS Online, such as the U.S. demographics map which we configured to the extent of just the city. We have both an internal-facing portal, where city teams create and share maps and documents; and a public ArcGIS Online site, created with ArcGIS Sites, where we publish both interactive and static maps, and make our public data discoverable. Public Works crews use ArcGIS Collector daily in the field, our cemetery uses ArcGIS Desktop and ArcGIS Collector to map grave sites and enter record information, and we serve-up a web app for users to find plots by name on their own devices. We are currently deploying

(Continued on page 23)

Utility Network Manager, which will help us manage our public utility systems better using GIS. Engineers and crews will be able to better visualize their system as a whole system, instead of just points and lines representing assets.

ArcGIS Enterprise and Third-Party Application Integration

We share maps and apps with the public using ArcGIS Online. We share data with consultants using ArcGIS Online, which eliminated the use of FTP and e-mail to send and receive data. The city shares maps, apps and documents with each other through our internal-facing Enterprise portal. We grant group access to the Enterprise portal for the local 911 service-provider and contract consultants to send and receive data. For example, our consultant updating the city's Stormwater Comprehensive Plan pulls down Stormwater utility layers whenever they need; reducing data requests and ensuring the data they're analyzing is the most current, since the service is live and not a point-in-time snapshot, like a shapefile would be. Our asset management, building permit and pipe video inspection software use our published web services, as well.

How access is provided to employees

Being a public agency, we are compelled to share as much data as we can with the public, so our public-facing maps have a great deal of information displayed. Likewise, we want the city departments to use GIS as part of their daily routines, so we have 20 groups based on divisions and job functions in Enterprise portal; and each employee is assigned to one or more groups. In trainings, when we show that they already have their space set-up and that it really takes no effort to use Enterprise portal as a content management system instead of using a shared drive, they warm-up to Portal quickly; the curtain is pulled back. A bonus is that once they start using it, seeing the simplicity and power, they bring-up ideas for services, which increases our reach. The ideas for our cemetery grave loca-

tor, traffic and lighting, and school locator apps came directly from users during training.

How do you ensure quality and accuracy when there are so many Enterprise portal users?

We have very few editors. Most of the editors are subject-matter experts whom the GIS staff trained-up on proper editing techniques. They are restricted to only edit their layers. We also use versioned editing for all services. We have a list of required attributes that must be populated completely and correctly. We have customized or created many domains and use Editor Tracking as well, which has helped greatly when we need to hunt down a QC issue. Of all of these, we've found reducing the number of editors has helped data QC the most. Having fewer editors reduces the number of licenses, direct connections and transactions we manage, not to mention fewer Desktop installs. As the city

staff continue to transition to mobile devices and laptops, web services will continue to prove their worth by their smaller footprint.

How do you avoid and eliminate junk data and maps?

Having very few editors helps greatly to eliminate junk. We use domains wherever possible. On data where it makes sense, like public utilities, we use Data Reviewer. We also run queries straight from SQL Server to create reports of errors, which the editors use to fix their errors.

Examples of Return on Investment

Return on investment has always been hard to quantify, and usually takes the form of time savings or less risk. I expect the city has saved hundreds of thousands of dollars by operating an innovative GIS program. For example, a surveyor in Engineering uses GIS and LiDAR to visually inspect and measure proposed project areas. He told me it would've taken two days in the field for what he was able to complete in three hours from his desk. A storm and sewer collections crew member



City staff using ArcGIS Collector in the field.

(Continued on page 25)

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FLO Analytics
 ASSOCIATION OF WASHINGTON CITIES

(Amber Case; continued from page 12)

real-time based on a Geofence. Geotriggers are another great example of Calm Technology; the message is not sent or received until it's needed.

Amber continues her groundbreaking work through her company Caseorganic. She is an internationally recognized design advocate and speaker and a researcher at the Institute for the Future in Palo Alto. She is the author of the books *Calm Technology* and *Designing with Sound*, published by O'Reilly. Amber is currently working on the next edition of *Calm Technology*. I'm excited for us all to hear her latest ideas in person at a future WAURISA event. Until then please follow Amber's work and adventures here:

Case Organic: <https://www.caseorganic.com/>

Medium: <https://medium.com/@caseorganic>

Twitter: <https://twitter.com/caseorganic>

and Instagram: <https://www.instagram.com/caseorganic>

2020 Annual Dick Thomas Memorial Student Competition Results

*By: Dan Miller, E911 GIS Manager,
 Washington Military Department*

The annual Richard 'Dick' Thomas Competition had a little twist this year having to move to an entirely virtual venue. Due to the still ongoing COVID-19 pandemic plus the Annual WAURISA GIS Conference being cancelled, the competition organizers had to seek alternative options. Since many of us have become much more proficient at using various teleconferencing platforms, Zoom was chosen to make it happen.

This year's competitors were from programs at Central Washington University, the University of Washington-Tacoma and the University of Washington Professional & Continuing Education: GIS Certificate Program. Our four judges were a one-to-three split from the private and public sectors. The competition was held Saturday afternoon, June 6th. Everyone participating joined in via Zoom with Taylor Dixon facilitating and Dan Miller running things from behind the curtain. There were even two of the advisors listening in on the presentations. We will feature our 4 winners in the next issue of *The Summit*.

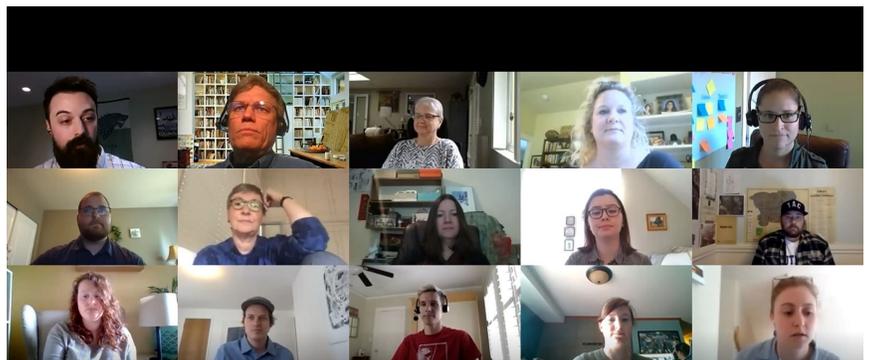
The 2020 Competition Results:

1st Place: Megan LaFever, Ana Ledgerwood and Stacia Wrench – Whatcom County Wildlife Crossings.

2nd Place: Michael Sowa, Rhys Coffee and Marco Evert – Evaluating the Magnitude of Floodplain Loss and Identifying Restoration Potential in the Upper Columbia River Basin.

3rd Place: Amanda Moody - Comparing RUSLE LS calculation methods across varying DEM resolutions.

Runner-Up: Michael Mizer - Green Investment Zoning: Mapping Opportunity in Communities Supporting Retail Cannabis Operations.



Judges and facilitators get ready to view students giving live competition presentations.

(City of Wenatchee ArcGIS Enterprise Migration; continued from page 23)

who uses ArcGIS Collector to populate inverts, conditions and other attributes of manholes and catch basins said that using a paper journal would average 20 minutes per manhole; using ArcGIS Collector reduces that to 5; that's a 15 minute reduction of risk in the field per asset, so GIS is keeping our crews less exposed to field risks such as traffic or bad weather. Our Public Works and public-facing web maps have scanned images of record drawings, legacy sketch cards and pictures hyperlinked, which are used heavily by our Capital Project and Development engineers. It's impossible to count the number of hours saved by city staff, consultants and the public; and the reduction of data requests from giving users the ability to search, view and print record drawings from a single source has been huge. More than half of the Public Works staff use GIS daily which makes us very happy.

Workflows for things converting to digital

In our view, not everything paper needs to be digital and in many cases, scanning the document and making it available as a hyper-link on web maps is the best solution. For example, our grease-trap inspection program uses a custom-Crystal reports format. It would not make sense to re-create this form, let's say in Survey 123, since it would be trading one electronic entry form for another, so they continue to use Crystal reports. However, if we receive a paper site plan for a sewer connection request, we would either ask the operations crew to let us know when they were digging and we'd go to the site and take a GPS shot, or the inspector would update the site plan with the correct location and we would on-screen digitize the new connection point and fittings. In our experience, very few paper-based GIS records should be converted to

digital, especially if there are questions whether those records have been updated since they were received by the city. If so, we could be overwriting new data with old. We'd prefer to deploy a new solution and create a new workflow for digital instead. The city requires digital-versions of site plans and as-builts, urging CADD or GIS formats, however still allowing hand-sketches for smaller-scope construction permits, such as a curb cut. For example, we built a ArcGIS Collector app for sign inspection and retro-reflectivity testing. We didn't convert existing paper journals to digital since each sign would be inspected regularly and there was no need to make old sign inspection data accessible through GIS.

The Numbers and Goods

The City of Wenatchee is in central Washington State. It has a population of 35,000 within the city limits and services over 100,000 from Chelan and Douglas counties. The City has 194 employees, 65 of those in Public Works. The GIS Division is organized under Public Works and supports users throughout the City.

ArcGIS Enterprise portal usage

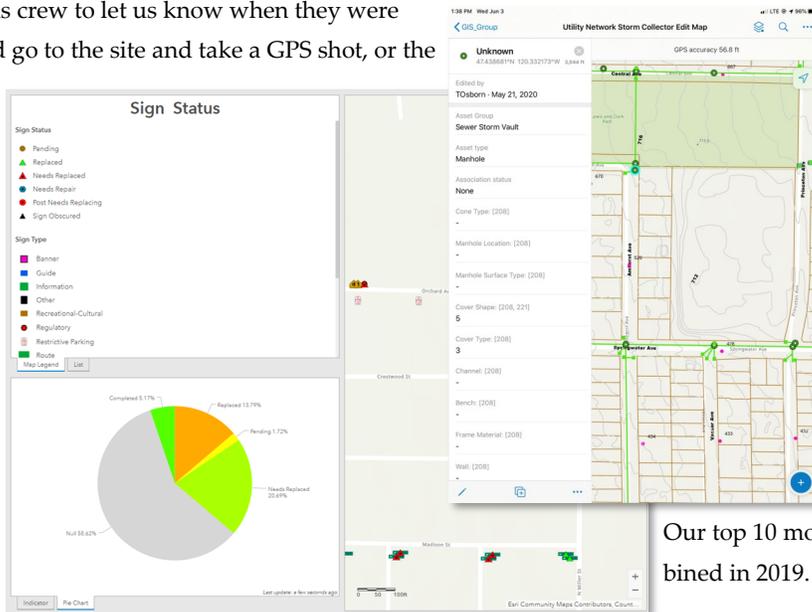
232 members of which 70 are at the Creator level. Most of these Creator level members use Enterprise portal in conjunction with our asset management system. We also have 6 members with full editing capability. We have 826 items stored in our ArcGIS Enterprise portal throughout 20 groups.

Software and Hardware

ArcGIS Enterprise 10.7.1, ArcGIS Enterprise Sites, ArcGIS Pro 2.5, ArcGIS Collector, Operations Dashboard, ArcGIS Online, Survey 123, Story Maps, ArcGIS Utility Network PC and laptop (Windows 10), iPad Pro, EOS Arrow 2 GPS, iPhones

ArcGIS Online usage by the public

Our top 10 most popular layers had 60,000 hits combined in 2019. In 2018, it was 5,000.



Dashboards and field apps make it easy for city staff to collect and maintain data.

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EagleView Technologies offers GIS Software and Pictometry® Intelligent Images®: the highest-resolution oblique and ortho images- captured and processed with patented technology, delivered through innovative analytical tools to allow for the most accurate seamless blend of GIS and real-world visualization along with offerings such as WMS, WFS, 3D and software integrations. Dustin Walters, WA District Manager, at 541.325.3781 or dustin.walters@eagleview.com or www.eagleview.com

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GeoTerra, Inc. is a leading provider of Aerial Acquisition, Mapping, and GIS Services for all types of projects requiring engineering quality mapping. Based in the Pacific Northwest, the Company focuses its efforts on geospatial data acquisition and processing to include; aerial imagery acquisition, GPS control surveying, feature data collection, terrain modeling, contour development, orthophoto generation, LiDAR data acquisition, processing & integration, and Geographic Information Systems (GIS.) The company is on the cutting edge for utilization of photogrammetric point clouds, 4-band orthophoto imagery, automated processing for aerial triangulation, and generation of GIS impervious surfaces. The U.S. based production staff is located in Eugene and Portland, as well as Boise.

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For 20 years, the **King County GIS Center** has been providing quality services and exceptional value with the most capable GIS organization in the Pacific Northwest. Unlike most consultants, our professional staff members are practicing users of the GIS solutions that cities, counties, utilities, tribes, and regional agencies require. Why do we offer our services to outside customers? We have a long-term interest in the success of GIS throughout the region. Our success depends on satisfied clients. We are committed to delivering quality GIS business solutions that provide value for our customers. Whenever you need GIS consulting, programming, data, mapping, or training let KCGIS help you put GIS to work!

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The **School of Urban Studies at the University of Washington Tacoma** offers an Undergraduate GIS Certificate (25 Credits/5 courses) and a BA in Urban Studies degree with a concentration in GIS & Spatial Planning. In the BA, Graduates are well prepared to either compete for a variety of employment opportunities in technical, planning and policy-making domains or to pursue graduate study. The program also offers an 11-month MS in Geospatial Technologies (40 Credits/8 Courses). The MS degree provides advanced training in GIS, including the use and application of geospatial hardware, software, and data in urban and environmental planning scenarios as well as the development and deployment of location-based mobile and web applications. <https://www.tacoma.uw.edu/urban-studies/urban-studies-home>

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GIS User Groups in Washington

Cascadia Users of Geospatial Open Source

www.cugos.org

Contact [Karsten Vennemann](#)

Central Puget Sound GIS User Group

Join Listserve [here](#)

Central Washington GIS User Group

<https://www.linkedin.com/groups?home=&gid=8252704>

Meets the 2nd Wednesday of each month.

Contact [Amanda Taub](#)

Cowlitz-Wahkiakum GIS User Group

Meets the first Wednesday of each month at 3:00 pm at the Cowlitz County Administration Annex Building, CWCOG meeting room, 207 North 4th Ave, Kelso WA (*unless other location is announced*).

Contact [Ken Pearrow](#)

King County GIS User Group

www.kingcounty.gov/operations/GIS/UserGroups.aspx

Meets 1st Wednesday every other month at 11:00am at the KCGIS Center, 201 S. Jackson Street, Seattle WA, Conf Room 7044/7045.

Northwest Washington GIS User Group

www.wvu.edu/huxley/spatial/nwwgis/nwwgis_mtgs.htm

Snohomish County GIS User Group

<https://snoco-gis.maps.arcgis.com/apps/Shortlist/index.html?appid=d9ee08e6b1c648db8cd077fc8bb5f27c>

Southeast Washington/Northwest Oregon GIS User Group

<http://gisgroup.wordpress.com>

Washington Geographic Information Council (WAGIC)

<http://ocio.wa.gov/boards-and-committees/washington-state-geographic-information-council-wagic-0>

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