

State Capitol at Olympia, Washington

News From and For the Washington GIS Community

WAURISA: The Washington State Chapter of URISA  
 The Association for GIS Professionals  
[WWW.WAURISA.ORG](http://WWW.WAURISA.ORG)



Celebrating Our 50th Issue!  
 Early Fall 2019

# THE SUMMIT

## WAURISA President's Message

By: Stephen Beimborn, WAURISA President

I am pleased that my first column as WAURISA President appears in this, the 50th issue of *The Summit*, the official publication of our organization. For the past fourteen years, *The Summit* has faithfully recorded the activities of our chapter members and others in the GIS community, tracked the evolution of our industry, and provided practical examples of how GIS technology can and is being used to solve problems; often by someone nearby.

The Washington GIS Conference that we hold annually in May is an amazing opportunity for us to meet with each other and compare notes, but between those and a few other events we hold throughout the year, we know we can depend on *The Summit* to keep us connected, informed, and inspired. It educates us, refers us to experts, inspires us, and acknowledges our efforts.

The fifty issues published to date certainly did not publish themselves! On the occasion of this milestone issue, I would like to acknowledge the impressive effort of the many committee members, volunteers and authors who have dedicated themselves to producing this newsletter. Deserving of particular



note are the four editors who have overseen the effort: the founder, Greg Babinski, Eadie Kaltenbacher, Jacob Tully and the current editor, Heather Glock. Their skillful leadership has attracted dozens of writers and volunteers to the effort, allowing them to

*(Continued on page 2)*

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## An Interview with Don Burdick, 2019 Summit Award Winner

By: Dusty Pilkington, GIS Analyst, CARMERA

This year's Summit award winner has a career story that exemplifies the value of keeping one's eyes open for opportunities to learn new things. While many of us in WAURISA have backgrounds in geography or specifically studied GIS, Don followed a winding path to his current position and to the Summit Award. He arrived at his current position as GIS Project Manager for the City of Bellingham by way of signposts labeled "Engineering", "AutoCad", "VB" and "LISP."

Don has managed to gain the utmost respect of his colleagues. Highlights from his nomination letter include:

*(Continued on page 5)*

publish one high quality issue after another. It would be nearly impossible to measure the benefit this has brought to our organization and to the GIS field in Washington State and beyond. I would say, though, that if anyone could [calculate the value](#) of all that has been invested in this labor of love, it would be Mr. Babinski himself!

Our May conference is reviewed in this issue. As can be expected, the posters and maps hung for display were eye candy, the Key-note speaker Bill Johnson told compelling stories, the students competing for the Dick Thomas Award were ahead of the curve, and our vendors and sponsors were fully engaged in the activities.

It was particularly great to see Don Burdick recognized during the Conference as the recipient of The Summit Award for 2019. Elsewhere in this issue you can read about his approach to working in the technology field and his professional accomplishments as a GIS leader at the City of Bellingham. Don has been among the most dedicated Board members WAURISA has had for well

over a decade, with terms as President and Past President, and several more as Treasurer. Thank you, Don, and congratulations!

Fall is a season of planning and renewal on the WAURISA calendar. The Professional Development committee and the Washington Local Government GIS Leaders are hatching plans for educational events, the Community Engagement committee is discussing how we might further deepen our ties to the educational community, and the entire Board of Directors is adjusting to new roles.

As we move further into fall, all of our committees really kick into gear. Our vibrant Conference Committee, with Kirsty Burt serving as the Conference Coordinator, recently held their first planning meeting to prepare for our next annual conference in May.

The City of Destiny has been a fantastic venue for us in recent years, so we will once again return to Tacoma for the 2020 Washington GIS Conference. This coming year we have arranged to hold the entire conference, including the workshops offered beforehand, at the Hotel Murano. Plenty of details to come, but mark your calendars for May 18 – 21, with two days of pre-conference workshops, followed by the main conference on the last two days.

Our immediate Past President, Ian Von Essen, has handed the reins off to me with everything in good order. I cannot tell you how helpful he has been in informing me of what I need to do next, who can help me with what, and what mechanisms I need to deploy. As useful as this tutoring has been, though, perhaps most instructive for me has been the living example he has provided of an effective leader in the way he has conducted the business of our chapter for the past two years.

We have three new members joining our Board this year. Mike McGuire is our new Vice President, Christina Chelf has assumed the role of Secretary, and Maria Sevier has joined as a member-at-large. They will fill the shoes of three giants in the world of WAURISA volunteers, Anna Yost, Katie Heim, and Josh Greenberg. We are lucky to have had, and continue to have, such dedicated and active Board members.

Send me a note at [president@aurisa.org](mailto:president@aurisa.org) or contact any of the committee chairs listed on our website [www.aurisa.org](http://www.aurisa.org) if you are interested in becoming more involved. If you would like to lead our communications efforts as the leader of our Marketing Committee, or a member, I especially want to hear from you!

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## Announcing the 4th Annual WAURISA Fall GIS Seminar

**October 29-30, 2019  
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Price: \$40.00 Professional/\$15.00 Student

### Sessions:

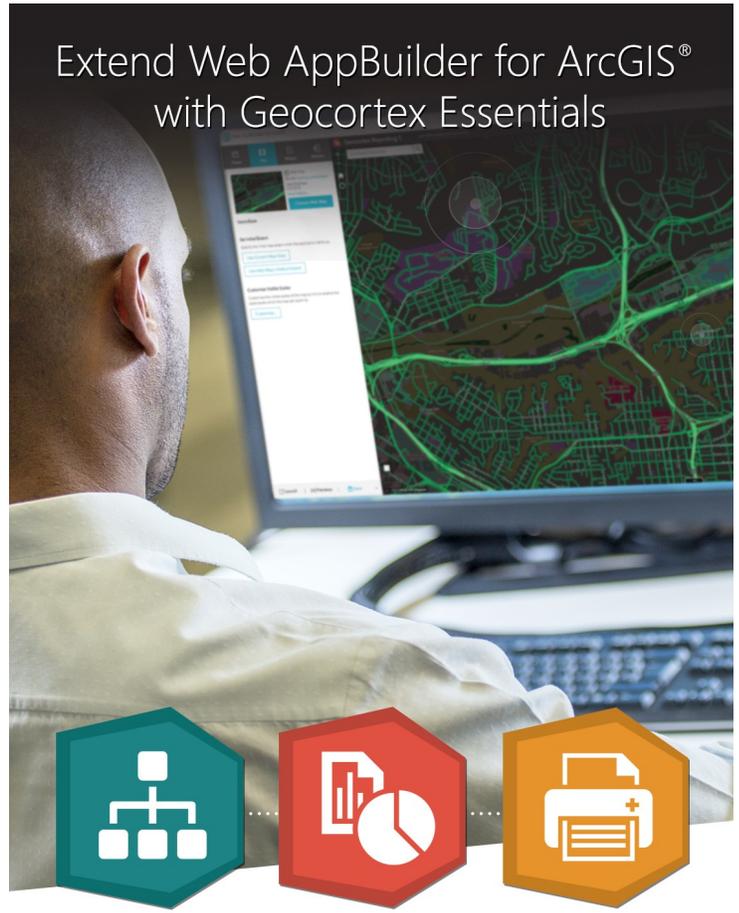
Migrating to ArcGIS Pro  
Washington Statewide Geospatial Activities  
ArcGIS Mobile Solutions    ArcGIS Urban  
ArcGIS Platform Update  
Federal Imagery & LiDAR Program Update

### Presenters:

TJ Abbenhaus—Esri  
Joanne Markert—WATech  
Mike McGuire—Ascent GIS  
Scott Wolter—Esri

Registration opens October 16 at [waurisa.org](http://waurisa.org)

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**The 2020 Washington GIS Conference is in the works -  
make this your year to volunteer and help shape the conference!**

Planning has started for WAURISA'S 2020 Washington GIS Conference, and there are opportunities for you to join the Conference Planning Committee. Volunteers are eligible for conference discounts and GISP Certification "Professional Contribution Points" depending on your level of participation.

**Next call is Thursday  
November 7th**

*Here are some of the ways that you can contribute:*

- Speakers/Presentations Organizational Support
- Dick Thomas Student Competition Support
- Poster/App Contest Support
- Workshop Support
- Marketing and Media Team
- Social Events Organizational Support
- Volunteer Coordination Support
- Vendor/Exhibitors Support

To learn more about joining the conference planning team, join our call on the first Thursday each month from 12:00 p.m. - 1:15 p.m.

<https://zoom.us/j/973253975> Dial by your location +1 669 900 6833 US Meeting ID: 973 253 975

You can also email Kirsty Burt, Conference Coordinator at [cc@waurisa.org](mailto:cc@waurisa.org)

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## Upcoming Summit Newsletter

### Deadlines for Issue 51

Submit articles to *The Summit* for publication by:

First Draft* (Optional)	12/4/2019
Final Draft	12/11/2019

\* We're happy to help you write or edit your article!

“His drive for excellence in the GIS profession along with outreach and coordination makes him an ideal candidate for this award...Don has served the GIS community in the Pacific Northwest for over 25 years...His philosophy of leadership is that we can accomplish more together than on our own and that has made the system what it is today. He is the epitome of a professional and he is enthusiastic and optimistic about the possibilities of GIS. Through this enthusiasm, many seemingly impossible things become possible. He mentors other GIS professionals and encourages their growth. He promotes growth of his employees by being a tireless advocate for education opportunities and opportunities for experimentation.”

A conversation with Don is below.

**Don:** I'd like to start off by noting what an honor it was to be selected for the 2019 GIS Person of the Year Summit Award. I am hum-

bled by being added to the list of GIS professionals that have preceded me as recipients and I can think of several that are sure to follow. I have been a GIS professional for over two decades and in that time, I have admired those that have propelled our profession forward, leading through powerful examples. Over those decades our GIS profession has continued to be focused on providing solutions and analysis for industries and decision makers throughout the region and the world. To be recognized as not only being a part of that movement, but a leader, by my peers and associates is truly an incredible honor.

**Summit:** Congratulations on the 2019 Summit Award. Do you have a special location where you plan to keep it?

**Don:** Yes, I have proudly displayed The Summit Award along with the other awards presented to me and the City of Bellingham GIS team under my management. Those other awards are URISA Exemplary Systems in Government 2010, Esri Special Achievement 2010 and my WAURISA Board Service 2018.

**Summit:** How did you start in the industry? How did you wind

up the GIS Project Manager for Bellingham?

**Don:** I started with the City of Bellingham Public Works Department as an engineering designer of street, water, sewer and stormwater systems. Before that I worked for a few engineering/surveying consulting companies doing a variety of engineering and surveying positions. At the time I was very good with AutoCAD and knew programming of VB and LISP, the AutoCAD scripting language. The city had an automated mapping system

that was AutoCAD based so I inherited the administration and development of that system. When the department migrated to Esri GIS my job transitioned to a GIS Programmer/Analyst position learning all about workstation ArcInfo, AML and coverages. About that time, I also went back to school to get a bachelor's in computer systems management.

Over the next several years as we grew the department/city GIS system and I migrated my way through a few other positions of GIS Senior Analyst, GIS Manager and GIS/Technical Services Manag-

er. It was during that time that I really got involved with Washington URISA focusing my efforts on educational/workshop content I thought my staff and other GIS professionals throughout the region would benefit from, along with sharing the knowledge I had gained through presentations and workshops as well. My last position with the Public Works Department was GIS/Technical Services Manager where I managed the GIS for the city and computer/business systems, surveying, and water account services for the department.

I have been in my current position of GIS Project Manager for the past six years when we transitioned to an Information Technology division. In that position I manage and coordinate the data and systems standards of the GIS and manage all projects that integrate the GIS business systems and processes. The title doesn't necessarily correlate with what I do and that is "under review" but the position underscored the City's commitment to GIS being considered a critical core system and a cornerstone to city business processes.

(Continued on page 7)



*Don Burdick (right) receiving the Summit Award from Josh Greenberg (left, WAURISA Board Member) at the 2019 Washington State GIS Conference*

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(Don Burdick—Summit Award Winner; continued from page 5)

**Summit:** When I'm at a party and I am asked what it is I do, I get excited and start nerding out, while my conversation companion's eyes usually glaze over. What kind of tips do you have for communicating the value of GIS those outside of the field?

**Don:** When I do have a chance to actually nerd or geek out in a conversation, I like to have some fun with some terms just to see what kind of response I get. My latest has been to say I work with "location intelligence systems". What an interesting twist on the term GIS. But it does allow me a gateway to talk about the parts of GIS that are really important to me which are analysis and business process productivity.

**Summit:** When you're not working with data or managing a project, what do you like to do to keep busy and/ or relax?

**Don:** I enjoy being outdoors: hiking, walking, kayaking, and camping, and many other activities like taking on home improvement projects, gardening and yardwork. I enjoy being active, so I'm known by friends and family as always needing to be busy.

**Summit:** The ultimate question.... Star Trek or Star Wars?

**Don:** Tough question and not a straightforward answer. Star Wars in general just because I enjoy the original three (4-6) and I like the recent storyline. But I really enjoyed the Star Trek Next Generation and Voyager series and when it comes to binge watching I would take those over Star Wars.

**Summit:** What kind of advice would you have to young professionals trying to break into the field?

**Don:** Be passionate about GIS but be just as passionate about some business, industry or cause. A professional is the most beneficial if they truly understand the processes and they are using GIS tools to develop an analysis, study or solution for.

**Summit:** It's been a pleasure speaking with you. Any final thoughts?

**Don:** I would encourage all GIS professionals, not just those new to the profession, to share your thoughts, methods and ideas through Washington GIS, Esri, meetups and group meetings. I have found members in the profession in general very encouraging and insightful and through that I believe I have grown as a professional.

## 2019 Washington GIS Conference: Why Did You Attend?

By: Helen Smith, Chugach

*Editor's note: 2019 Washington GIS Conference Volunteer Helen Smith (and aspiring GIS Analyst) was tasked with circulating among attendees to find out why they attend the conference for a post-conference Summit Newsletter article. Helen's article shares insights and photos about attendee motivations as well as her own. At press time, Helen is now employed with Chugach as an engineering technician. Congratulations, Helen!*

Hello, all WAURISAians - It was so much fun coming, meeting, and volunteering my time at the 2019 conference. I am new to the GIS scene and freshly completed the GIS programs at Olympic College in Bremerton, WA. So having the opportunity to volunteer my time was so valuable to me and I got to meet some pretty cool people. I find it funny that I was asked to go around and ask attendees why they come. It gave me a chance to meet people that I would never have met. It also got me out of my comfort zone and stretched me a bit.

A little bit about me: I have worked with kids as a preschool teacher, receptionist, clerical assistant and an administrative assis-



2019 Conference Plenary: The party's getting started!

tant wherein the slow times the doctor would ask me to play Farmville. About 8 years ago I looked at making a change and went back to school to work as a quality control inspector. I have

*(Continued on page 9)*

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always enjoyed computers but in the 6 years I worked as an inspector I discovered I enjoy working more on the analytical side of things working to find the answers to problems. However, quality control just didn't give me the satisfaction of feeling I was doing what I need to be doing. A friend told me to look into GIS and see if it's something I would like. She had bugged me about it for a few years before I decided to make the jump. I am so glad for friends that



Did you know—the catering order at the Tacoma Convention Center notes that we're "heavy coffee drinkers!"

push you because I love what I have learned and enjoyed the challenge of learning.

So when my instructor told me about the NW GIS Conference last October in Bremerton I jumped at the chance to help so I could come. I learned a bunch and meet a few people. It left a desire to meet more people and connect more with this unique group of people. When I was told about the WAURISA conference again I jumped at the chance of going and helping out. I truly enjoyed the WAURISA Conference. The attendees were approachable and easy to talk with, and quite a few attendees were people that I also saw at the NW GIS Conference. It made me feel like I was at a family reunion which made it easier to talk with them and ask why they decided to come to the WAURISA Conference. The responses were quite interesting:

- One person said he works from home so any reason to get out of the house is a good one and he enjoys coming because he gets to meet with his friends.
- Another person said it's a great way to bounce ideas off other people, they might have the answer you're looking for.

- Being with old friends and connecting with a new, great way to socialize.
- Collaboration and conversation!
- Location, Location, Location – can't afford to go to other conferences because of travel expenses, so being close to home helps.
- I learn something new each time.
- For new people to the GIS scene, it's a great way to network and learn new things.
- The social events!

I even talked with some of the vendors at the show and they like coming for some of the same reasons: networking, social events, and learning. They enjoy meeting clients face-to-face; new and current. It is also a great way to let people know they are still around and how they are changing to meet the needs of their clients.



The popular King's Books table helps attendees part with their cash—so worth it, though!

I had so much fun meeting people and connecting, hearing their story and sharing mine. I loved hearing about the wide-range of skills people in GIS bring to their work and talking with people about the different jobs they've been in that use GIS tools. Several attendees I spoke with said they picked up new ideas and helpful tips to bring back to

their work. It's clear to me that the use of GIS technology is not going away, and I hope to help it continue to grow. I hope to see you all next year!

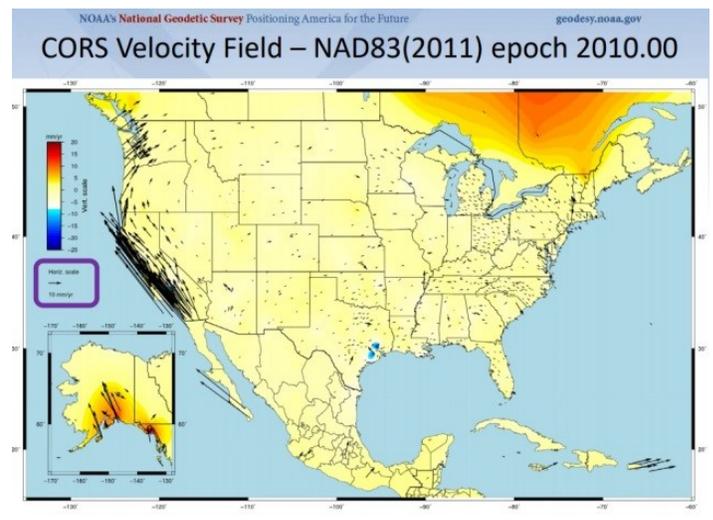
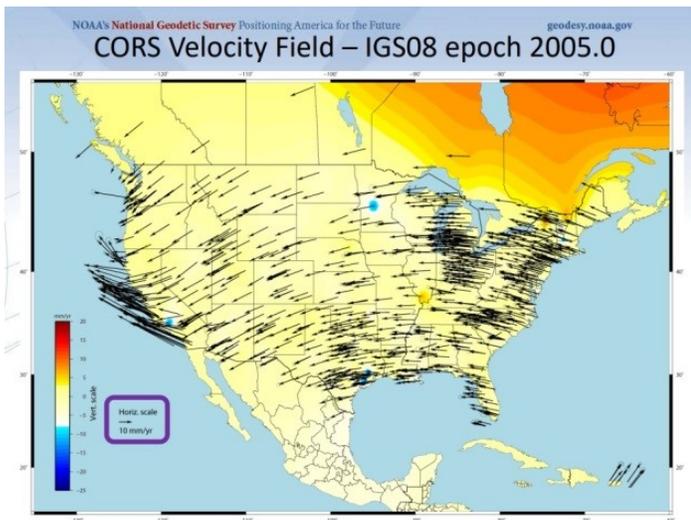
# World shifting? Washington State and the North American Terrestrial Reference Frame of 2022

By: Ian Von Essen, WAURISA Board Member and Joanne Markert, Washington State GIS Coordinator

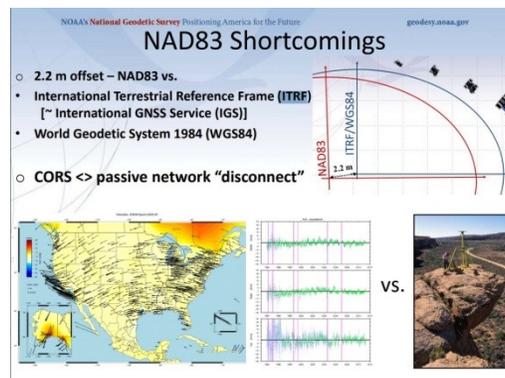
In April 2019, Washington State Geographic Information Council ([WAGIC](#)) hosted a webinar with Daniel Determan, Northwest Regional Geodetic Advisor with NOAA's National Geodetic Survey (NGS) to share planning information to modernize the National Spatial Reference System (NSRS). Dan's role is to assist the geospatial community throughout Washington, Oregon, and Idaho—including public- and private-sector surveyors, GIS professionals, engineers, and earth scientists—with proper application of NSRS. The webinar was focused on the "why" and "what" of NGS's plans to release new geometric (horizontal) and geopotential (vertical) datums in 2022 to improve spatial accuracy. 70 attendees logged-in for the webinar, and WAGIC expects a series of future webinars to educate GIS professionals about the benefits of the new datum and tools to transform between the old and new datums.

Here are the top 12 things we learned about Datum 2022 from this webinar & from the NGS website:

1. The world is not round, it is a geoid!
2. We are on the move! Washington State's continental plates are moving westward & northward—as illustrated here:



3. NAD83 has Shortcomings! It's a passive network basically disconnected from our highly used GPS world of WGS84 & ITRF:



(Continued on page 11)



# Test Your Geographic Knowledge—Challenge Yourself to Answer These Questions Without Using the Internet

Questions provided by the National Geographic GeoBee, the annual academic competition for grades 4-8. More National Geographic GeoBee questions, games, and study resources are available at [natgeobee.org](http://natgeobee.org)

1. In the mid-1800s, Chinese immigrants fleeing war and famine sought work in North America. Some settled near logging camps and salmon canneries on the Olympic Peninsula in which present-day U.S. state?
2. Pikes Peak State Park offers views of the confluence of the Mississippi and Wisconsin Rivers. The park is located northwest of Dubuque in what state?
3. What is the easternmost of Canada's three Prairie Provinces?
4. With one of the highest car ownership rates in the world, Iceland is looking to electric vehicles to reduce emissions in what city that is the country's largest?
5. In what city that is the largest in Switzerland have drones delivered coffee?
6. What city, the largest in Finland, was one of the first to deploy self-driving buses, in real traffic, with no driver aboard?
7. What inland city that was the center of the United Kingdom's cotton industry was linked to the sea by a ship canal in 1894?
8. What strait separating Greenland from Iceland connects the Arctic and Atlantic Oceans?
9. Vigo, a major seaport for fishing, is located in the autonomous community of Galicia in which European country?
10. During the Spanish colonial era, a 1,600-mile-long trade route linked Santa Fe, New Mexico with which present-day national capital city?
11. What city on the St. Lawrence River near Jacques-Cartier National Park was one of Europe's oldest settlements in North America?
12. In recent years the Karen people, an ethnic minority from Myanmar and Thailand, have found work in processing plants in the small town of Huron, located northwest of Sioux Falls in what state?
13. The drainage area of the Orinoco River spans Colombia and what neighboring country that is home to the Orinoco's source and mouth?
14. Hydroelectric power from Himalayan rivers could be a main source of economic growth for what landlocked country governed by a constitutional monarchy?
15. Name the oldest existing national park east of the Mississippi River.

To find out how you did, see answers on page 18

# Washington Women in GIS and Technology Collaborate on Posters

By: Jen Radcliff, City of Tumwater, WA; Maria Sevier, NW GIS Consulting; and Christina Chelf, City of Tacoma, WA

Most people join professional meetups to expand their networks. They hope to meet someone who is hiring or can help them advance to the next level of their career. However, the really successful meetups offer more than that nebulous “networking.” Successful meetups create an environment where members are excited to give back through volunteering, community engagement and projects that are truly collaborative.

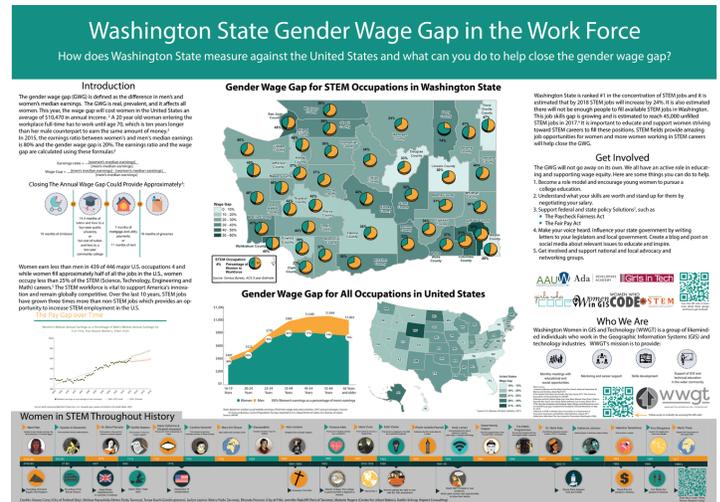
The Washington Women in GIS and Technology (WWGT) group encourages collaboration and connecting through group activities. For example, besides our regular meetings and socials, one thing we’ve done every year for the past three years is create a group poster. Yes, you read that right, we voluntarily participate in a group project. This is our chance to work with colleagues from a variety of organizations on a project of our choosing. We aren’t limited to work-related topics, and we get to try out new technologies and learn new skills along the way.

We start at the beginning of each year by first seeing who wants to be involved. From this we form a group, which is usually between 6-10 women, who then get together and brainstorm topic ideas. We narrow down our ideas and then vote with the winning topic being further refined after additional discussion. Then the fun really begins when we divide up tasks based on interest, with everyone being able to pitch in as much or as little as they would like. For example, someone may just want to research, and someone else may just want to help with cartography or graphics. Others may want to be involved in everything! We share work through a OneDrive account as well as in-person meetings.

One thing the group agrees on every year is that we never seem to start the process early enough, and the Washington State GIS conference, where we enter our poster first, sneaks up on us every year. The state conference provides a great opportunity to garner feedback from our peers and we make changes based on all of the great suggestions from WAURISA members. From there it’s on to the big show – the Esri UC.

In 2017, the topic of our group poster was the “Washington Gender Wage Gap.” We won an award at the WAURISA conference, and with our gift card, we bought WWGT buttons to hand out at the Esri UC. We didn’t win an award, but our poster was selected to be in the 2018 Map Book! You can see it on pages 6-7 in the Esri Map Book, Volume 33 and check out the related story map [here](#).

For the 2018 poster, the group celebrated Women in Science, Technology, Engineering and Math (STEM). We highlighted



Above: WWGT’s Washington State Gender Wage Gap Map

Download a PDF of this poster [here](#).

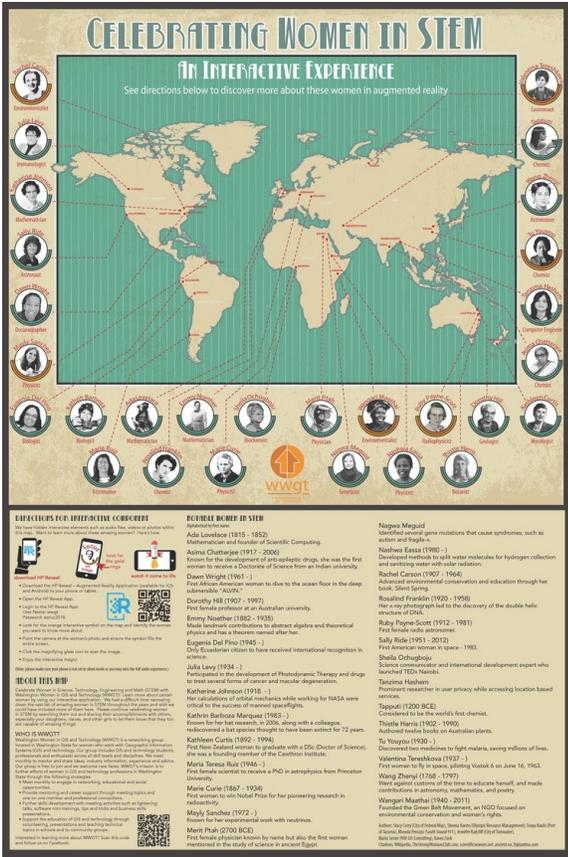
Below: A photo of WWGT members and their map standing with Jack Dangermond at the 2017 Esri UC

Left to Right: Robyn Pepin, Tonya Kauhi, Jack Dangermond, Jaclyn Layton, Jen Radcliff, and Melissa Hayashida



women in STEM through the ages, and feeling ambitious, tried our hands at a little augmented reality while we were at it. Viewers with the phone app could scan certain images of women to bring up additional content, such as videos and audio. In addition, we provided an opportunity for attendees to interact with

(Continued on page 14)



the poster by adding stickers in locations where women live who inspired them to be involved in a STEM career. It was great to see how many people chose to participate. We won an award again at WAURISA, and made the poster even better for the Esri UC.

This year we were interested in saving the world, so we explored the theory

*Above: WWGT's Celebrating Women in STEM poster*

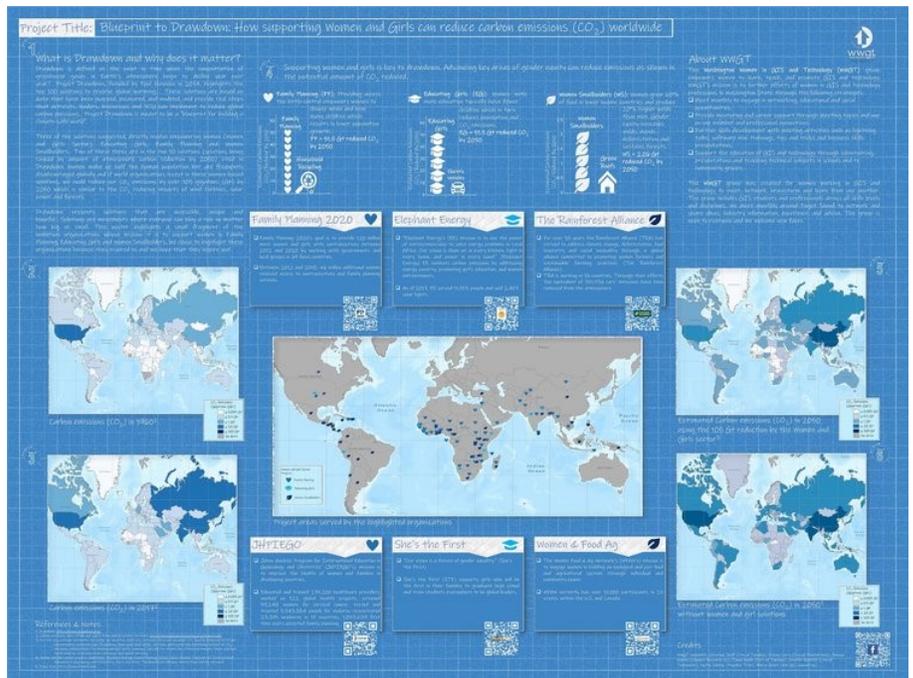
Download a PDF of this poster [here](#).

*Right: WWGT's Blueprint to Drawdown poster*

Download a PDF of this poster [here](#)

of [Drawdown](#) as it relates to climate change. Our "Blueprint to Drawdown" poster discusses how empowering women has a disproportionately huge impact on reducing levels of atmospheric carbon and combats the effects of climate change. We highlighted six great organizations doing work to promote these efforts on our poster and [story map](#). For the third year in a row, the group won an award at WAURISA and took new buttons to the Esri UC along with our poster. We are considering entering the poster contest at NACIS this year! We reached out to the folks at Drawdown, and they are potentially interested in highlighting our work on their website. Stay tuned for more information.

Our posters over the years have always made us proud, but was there a magic formula in executing the perfectly harmonious group project? Not really; much like we all learned in high school and college, the best groups are ones that leverage each members' commitment level, enthusiasm, skills and interests to make a functional team. Some members put in more work than others (and that is OK) and sometimes it takes time to get responses on email threads but in the end, everyone participates in a way that works for them and contributes something valuable to the poster. Our group has been successful time and time again because of a shared eagerness to extend our skills beyond our job and contribute to our own professional portfolio and more importantly to the group's success.



# Pre-Incident Planning in Snohomish County, WA

By: Katie Heim, City of Arlington and Battalion Chief Todd Anderson, South County Fire & EMS

Pre-Incident Plans are reports that contain maps of large buildings such as apartments, industrial sites, and arenas. The purpose of a pre-incident plan (as paraphrased from the Snohomish County Fire Chief's Association Pre-Incident Planning document) is to assist firefighters in their quest to effectively manage emergencies for the protection of occupants, responding personnel, property and the environment. These plans allow firefighters an understanding of population within the site, existing infrastructure in and around the site and possible hazards prior to arrival. An understanding of the site with an accurate and detailed pre-incident plan before an emergency response leads to a faster, safer response decreasing the community's recovery after an event.

Each fire agency is required to develop a pre-incident plan process as outlined in the National Fire Protection Association (NFPA) 1620 "Standard for Pre-Incident Planning." The pre-incident plan development process includes assign-

sites. All fire agencies meet this requirement in ways that meet their personnel's software and preferences.

Last year, Snohomish County's South County Fire established a County-wide group of interested parties under the leadership of Battalion Chief Todd Anderson. BC Anderson's vision included utilizing GIS from the very beginning of the process and he is leading the way in standardizing this process so that each agency collects the same data and data attributes. The data collected is sent to a standardized geodatabase, allowing for the assigned personnel across the County to access pre-incident plans that have the same symbols and attributes regardless of the agency that collected/uses the data whether it is South County Fire, City of Everett Fire or Fire District 16.

To meet this objective requires cooperation and buy-in at all levels from the Fire Chiefs within Snohomish County to fire



ment of personnel responsible for creating the plans, determination of sites that require plans, data collection at each site, incorporation of data into plan typically via sketches or maps, distribution of plans to responsible personnel for use during an emergency and then after an incident, review plan for accuracy and revise as needed.

In Snohomish County, some agencies have GIS data and can use a GIS workflow for the maps in these plans and some do not. Some have paper maps, some have online databases of

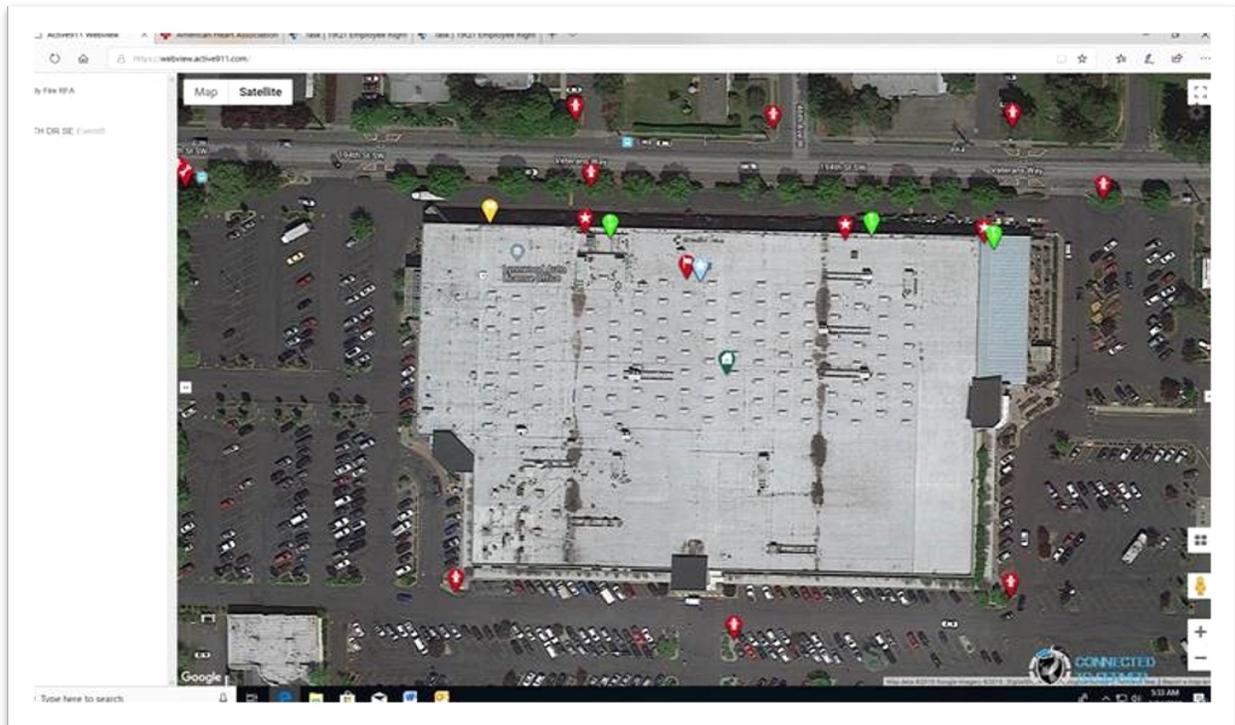
personnel assigned to pre-incident planning and assistance. Currently, the County group has agreed to use a GIS platform, with standard symbols to be used in the maps, and are reviewing the Snohomish County Fire Chiefs' Association Pre-Incident Planning document to bring it in line with the goals of the group.

As the group moves forward, the following topics will be the guideposts as agencies move to a standardized system for pre-incident plans that still meets the national standards:

*(Continued on page 16)*

- Education: what the new system is and how to utilize it
- Standardize data: what data is required to capture, what data is optional
- Standardize symbols: so that every map of every agencies' plans have the same look and feel
- Establish a new Pre-Incident Plan document to reflect these standards
- Establish goals: who is responsible for what, how do we deploy and educate agencies about GIS, who hosts the data, who reviews data, who accesses the data
- Establish security and privacy safeguards throughout the process
- Utilize grant funding for equipment: not all agencies have the hardware and software infrastructure for GIS in place so the group must find ways to assist those agencies via funding
- Train/assist non-GIS agencies: volunteers from the group will assist those agencies who don't have GIS staff members

One of the largest takeaways from this program that should be immediately evident is that this project requires cooperation and collaboration at all levels across all agencies to succeed. Factors in favor of this succeeding are both the leadership within the group lead by Battalion Chief Todd Anderson and Everett Fire Chief Dave DeMarco and the goal of fire agencies to protect life, property and the environment. Pre-incident plan maps help fire agencies to meet this goal making the argument for a standardized maps an easy win. But these plans should not just be for fire agencies. County governments and local governments should also be aware of these plans. Currently there is a push for governments to perform risk assessments, highlighted by recent earthquakes in California. GIS data as the backbone of pre-incident plans can be mined by governments to enrich and improve those risk assessments. Making the plans GIS based is incredibly useful for governments, and Snohomish County is leading the way!



*Snohomish County-South County Fire & EMS Pre-Incident Fire Web App*



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## ArcGIS Online Mapping Contest Announced for K-12 Students

By: Bruce Schneider, Office for the Superintendent of Public Instruction

For the 2019-2020 school year, Washington State is again supporting a GIS competition for middle and high school students. The national competition, called the [ArcGIS Online mapping competition](#), is sponsored by Esri for U.S. middle school (grades 4 – 8) and high school (grades 9 – 12) students. The competition challenges students to do a research project about something within the boundaries of their state, and present results in a Story Map or web application. Students may work solo or in teams of two, in school or out, and submit their entry through the school.

The contest is supported by a leadership team headed by members of the Washington State Office of Superintendent of Public Instruction (OSPI) and Office of the Chief Information Office (OCIO) and includes geospatial professionals from a variety of state and local government agencies as well as higher education.

The 2018-2019 school year was the first time that Washington State participated in the contest. This past June, the leadership team proudly announced that our participant at the middle school level, sixth-grader Owen Robertson from OASIS K-8, Orcas Island School District, became the [National Honorable Mention Winner](#) for his project [Measles Epidemic in Clark County, Washington State](#). At the high school level, there were five entries from Tesla STEM High School in the Lake Washington School District, and the state high school winner was Daniel Rashevsky for his project on [The State of Seattle's Homeless Population](#).

For the 2019-2020 competition, the state leadership team will choose five top entries from each division (middle and high school) to receive a \$100 gift card. The leadership team will then choose one winner from each division who will advance to Esri's national competition. Esri will choose one national winner from each division who will be invited to attend Esri's Education Summit at the 2020 Esri User Conference in San Diego, California.

Please consider participating, or encouraging a school you are familiar with to participate! More information about the contest and the registration form can be found on the state competition [website](#) or via this [flyer](#) created by the Washington State Library. Questions can be emailed directly to the [state leadership team](#).

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- Answers to Geographic Quiz on page 12**
1. Washington
  2. Iowa
  3. Manitoba
  4. Reykjavik
  5. Zurich
  6. Helsinki
  7. Manchester
  8. Denmark Strait
  9. Spain
  10. Mexico City
  11. Quebec (also acceptable: Quebec City)
  12. South Dakota
  13. Venezuela
  14. Bhutan
  15. Acadia National Park (also acceptable: Lafayette National Park)

# Census 2020 and the Complete Count Committees

By: Katie Heim, City of Arlington, WA

*"The Census is coming!! The Census is coming!!"*

Yes, I am sure you have heard something, somewhere about the Census especially with all the hoopla about the citizenship question. Unfortunately, the actual purpose of the Census tends to fall by the wayside when a topic is so political. So take a step back with me to take a look at the purpose of the 2020 Census.

The Census was established in 1790 to count population residing in the United States. Citizenship has never been the primary reason for the Census, as it has focused on the count of persons living in the US. That count in turn, helps establish the breakout of federal funding for all kinds of programs as well as determining the number of seats in the House of Representatives and drawing the boundaries of Congressional and state legislative districts.

In a nutshell the Census is about fair representation and money, lots of money. Census data determines how more than \$675 billion dollars are spent in and around your house. For example, here in Washington State, we received nearly \$17 billion in 2016 based on data taken from the 2010 Census. The list of programs receiving this money is long and might be surprising to you – it

was to me. Here is just a sample of some of the programs that received money here in Washington State based on Census counts:

- Medicaid
- Federal Direct Student Loans
- Highway Planning and Construction
- Section 8 Housing Vouchers
- Temporary Assistance for Needy Families
- Very Low to Moderate Income Housing Loans
- National School Lunch Program
- Head Start
- WIC
- Low Income Home Energy Assistance
- Unemployment Insurance Administration
- Federal Transit
- Adoption Assistance
- Crime Victim Assistance
- CDBG Entitlement Grants
- Rural Rental Assistance Payments
- Water and Waste Disposal Systems for Rural Communities
- Business and Industry Loans
- WIOA Youth Activities
- Low Income Housing Tax Credit



*City of Arlington staffs a table to help educate the public and other stakeholders about the importance of Census 2020*

Something to keep in mind about the Census and funds – the one year count sets funds for the next 10 years. It is not one-and-done type of thing.

The goal of the 2020 Census is to count each person, once and only once and in the right place. What's new in 2020 count is that the Census Bureau is switching from all paper forms to hosting the self-response survey online. Paper forms will be available but the focus is completing the survey via the internet. With this change and political issues surrounding the Census, completion rates are expected to be lower than

*(Continued on page 20)*

## Holding a GIS Day Event this year?

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highlights with us—we'd love to  
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(Census 2020; continued from page 19)

the 2010 Census. And that is where the Complete Count Committees enter the picture.

Washington State's complete count committee is headed up by former Governor and former US Commerce Secretary Gary Locke with the intention of bringing state, county, city and tribes together to ensure a complete count here in Washington State. Governments, non-profits and businesses are encouraged to participate in local complete count committees as they are an important tool for a successful Census count.

The Complete Count Committees:

- Educate Washington State residents about the census, its impact on redistricting and impact on government, business and nonprofit budgeting and planning
- Explain innovations (e.g. use of internet as new self-response tool, new categories, citizenship questions) and dispel myths
- Engender trust in the process despite the citizenship question, invasive nature of census and cybersecurity concerns
- Encourage and ensure self-response and cooperation with census workers

The Committees want to ensure and encourage everyone to be counted with the expectation that more people will find barriers to participation this time whether because of technology, lack of trust of the government, language barriers, or even lack of housing. The Committees want to reach out with churches, non-profits, senior centers and assistance leagues to help hard-to-count populations participate in the Census. These Committees not only encourage and educate citizens to respond but also provide pathways for response by providing technology, translators, and connecting people willing to help their communities be counted. The Complete Count Committees do more than educate citizens about their civic duty but also encourage citizens take part in the Census by applying for the various jobs available with the 2020 Census. The Committees also reassure citizens about Census employees as they are required to keep all Census information private their entire lives, not just during the Census.

I encourage each and every one of you to educate yourselves about the Census and make your response a priority next year. And if this topic interests you, get involved with a local Committee or start your own. It is a great way to support your local community and learn about the Census.

More information can be found on the Washington State OFM 2020 Census page at <https://www.ofm.wa.gov/washington-data-research/population-demographics/decennial-census/2020-census-everyone-counts>

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# 2019 Dick Thomas Student Award Winners

By: Anna Yost, City of SeaTac, WA

Once again, the students really shone at the Dick Thomas Memorial Student Presentation Competition and Award (DTA) at the WAURISA 2019 GIS Conference. About 15 students participated in both individual and group presentations from a variety of universities – Seattle University, UW – Tacoma, UW – Seattle, and Central Washington University. All the students presented on May 23rd to the judging panel and large crowd of interested GIS folks. The morning session was dedicated to the group presentations with the individual presentations in the afternoon.

**First Place, Individual Presentation Category: Naod Sebhat (Seattle University)** for his presentation on “Characterizing the impact of the Kariba Dam on the geomorphology of the Zambezi River using a GIS based model.” Naod



trict boundaries. He used a variety of tools in his process, including Jupyter Notebooks, Pandas Library, SciKit Learning Library, Mat Plot Lab, and a BING routing API.

**Third Place, Individual Presentation category: Carson Risner (Central Washington University)** for his presentation on “Washington State Rooftop and Community Solar Installations: A Spatiotemporal Analysis.” Carson used data from the Washington State University Energy Program to explore the geographic patterns of solar installations in Washington state in order to identify trends and inform future policies and incentives.



explained the Kariba Dam has impacted sediment transport on the Zambezi River and how he developed a GIS model to characterize the rate of sediment movement from satellite imagery.

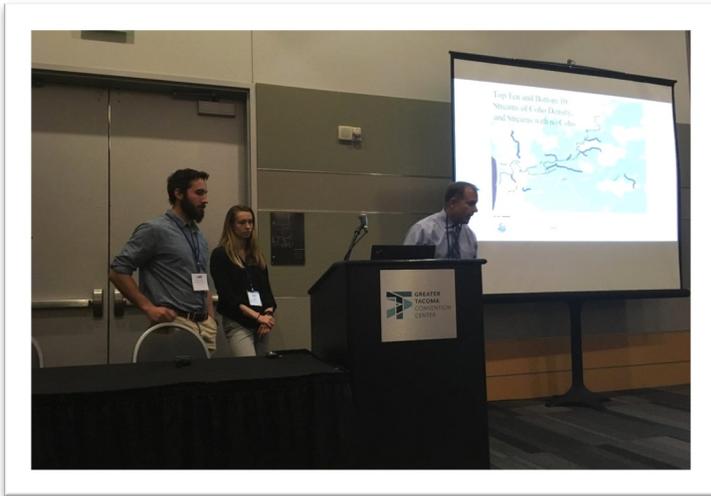
**Second Place, Individual Presentation category: Austin Jennings (University of Washington Tacoma)** for his presentation on “Time-Space Mapping in Congressional Districts—Using Distance Cartograms to Explore Gerrymandering.” Austin explained how his goal was to create a process for representing space as a function of travel time (instead of distance) as a potential basis for drawing congressional dis-

(Continued on page 23)

**Honorable Mention, Individual Presentation category: Rainey Carlin (University of Washington Tacoma)** for her presentation on “Proposed Remediation Sites Due to Arsenic and Lead Contamination: Protecting Vulnerable Populations.” Rainey used soil samples from the Tacoma area to map concentrations of lead and arsenic resulting from air pollu-

marks in Kent and discussed issues of landmark preservation and pedestrian access to historic sites.

**First Place, Group Presentation category: Zak Bartholomew, Katherine Collins, and Jeremy Leonard (University of Washington Seattle)** with their presentation on “Applying GIS to support salmonid conservation efforts in the Lower Nehalem Watershed, Oregon.” They worked with the Lower Nehalem Watershed Council (LNWC) to analyze hy-



tion from the Asarco copper smelter in Tacoma. She overlaid these contaminant concentration areas with areas with a high likelihood of being used by vulnerable populations in order to identify and prioritize locations for remediation.

drography and habitat data to help prioritize salmon conservation efforts and future habitat restoration projects.

**Competition Runner-Up, Individual Presentation category: Shivani Lai (University of Washington Tacoma)** for her presentation on “Historic Treasures of Titusville.” Shivani mapped potential historic buildings and land-

**Second Place, Group Presentation category: Kirsten Hooper, Abdulrahman Alsammahi, and Raghad Ashoor (Seattle University)** with their presentation on “Sound Transit’s Interactive Noise Map Application



(Continued on page 24)

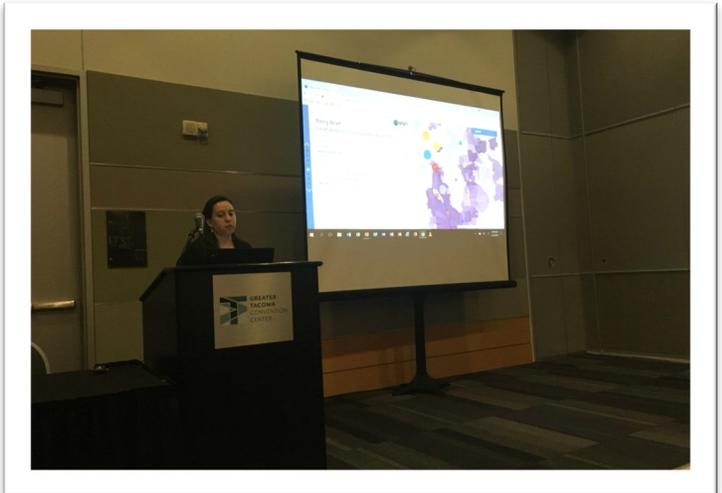
(INMA).” The students worked with Sound Transit to develop an interactive noise map for the public which allows people to explore the current noise impacts, and results of noise mitigation for Link Light Rail extension projects.

**Third Place, Group Presentation Category: Nancy Sola-Llonch, Trent Ducken, and Christopher Fay (University of Washington)** with their presentation on



“Beaver Relocation in Upper Columbia River Basin.” The students were working with Trout Unlimited to explore beaver habitat suitability in the Entiat, Methow, and Okanogan basins in support of relocating nuisance beavers to more suitable locations.

**Honorable Mention, Group Presentation category: Aline Moch Islas (University of Washington Evans School of Public Policy and Governance)** with her presentation on “Creative Economy in Seattle through a Racial Equity Lens.” Aline presented her research on how spatial analysis can help identify patterns in the creative economy in Washington State, and how these insights can help identify funding opportunities to support racial and social justice.



We were really impressed with the high quality of student presentations on engaging and relevant topics. Thank you to the judges– Yuko Caras (King County), Shane Clarke (Esri), and Katie Heim (City of Arlington). We appreciate their time and support! Congratulations to all the students for presenting their work and contributing their perspectives to the WAURISA community. We wish you the best as you move forward in your careers!

*(see page 25 for tables summarizing winning places, presenters, and presentation topics.)*

## Editor’s Note

By: Heather Glock

You’re reading issue 50 of the Summit Newsletter, a publication of the Washington State Chapter of URISA (WAURISA). This newsletter has been rolling steadily since 2005. It has seen just four editors over the years, each contributing his or her energy to evolve the content and style. Earlier this year, three of the four editors, along with several WAURISA board members and volunteers, collaborated to develop an index of all Summit Newsletter articles, capturing issue, author, title, topic, and page length. The idea was to take the index and geolocate each article, ultimately creating a mapping app readers can use to search for specific newsletter article topics, authors and/or locations. The app would also serve to show the geography of submitted articles over time. So where is this app? Well, summer came and the project was put aside. Now that colder days are on their way, it is time to pick this project back up. Do you have some time to help us finish it? Email us at [summit@waurisa.org](mailto:summit@waurisa.org) if you can help out. But if this project isn’t for you, there are other projects and tasks we need help with, from updating the newsletter design to encouraging new article submissions from first-time contributors. We also need feedback to keep the newsletter relevant, so a really easy way to contribute is to drop us a line telling us what you like, don’t like, or a topic you’d like us to cover – [summit@waurisa.org](mailto:summit@waurisa.org). We’ve published nearly 1,000 pages of content so far, and we want your help to publish the next 1,000 pages!

# Dick Thomas Student Competition Award Winners

## Summary of Winner Places, Presenters and Topics

*Interested in being a student competition judge for the 2020 contest? See page 3 for details!*

Dick Thomas Contest: Individual Presentation Results			
Place	Name	School	Title
1st Place	Naod Sebhat	Seattle University	Characterizing the impact of the Kariba Dam on the geomorphology of the Zambezi River using a GIS based model
2nd Place	Austin Jennings	University of Washington Tacoma	Time-Space Mapping in Congressional Districts—Using Distance Cartograms to Explore Gerrymandering
3rd Place	Carson Risner	Central Washington University	Washington State Rooftop and Community Solar Installations: A Spatiotemporal Analysis
Honorable Mention	Rainey Carlin	University of Washington Tacoma	Proposed Remediation Sites Due to Arsenic and Lead Contamination: Protecting Vulnerable Populations
Competition Runner-Up	Shivani Lai	University of Washington Tacoma	Historic Preservation: Downtown Kent Core Walking Tour

Dick Thomas Contest: Group Presentation Results			
Place	Name	School	Title
1st Place	Zak Bartholomew, Katherine Collins, Jeremy Leonard	University of Washington Seattle	Applying GIS to support salmonid conservation efforts in the Lower Nehalem Watershed, Oregon
2nd Place	Kirsten Hooper, Abdulrahman Alsammahi, Raghad Ashoor	Seattle University	Sound Transit's Interactive Noise Map Application (INMA)
3rd Place	Nancy SolalLonch, Trent Ducken, Christopher Fay	University of Washington Seattle	Beaver Relocation in Upper Columbia River Basin
Honorable Mention	Aline Moch Islas	University of Washington Evans School of Public Policy and Governance	Creative Economy in Seattle through a Racial Equity Lens

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From small-town infrastructure to federal design-build projects, and from large mixed-use communities to urban in-fill projects, **Timmons Group** has proudly built a reputation of excellence since we first opened our doors in 1953. Our deep experience positions us as an industry leader with an unwavering commitment to forward-thinking, innovative design and complete solutions for client success. Recognized for nearly 20 years as one of Engineering News Record's Top 500 Design Firms, Timmons Group provides civil engineering, environmental, geotechnical, GIS/geospatial technology, landscape architecture and surveying services to a diverse client base. Our market-focused organization is structured to help fulfill our mission "to achieve unparalleled understanding of our clients, their businesses and their visions, resulting in unrivaled customer service and shared success."



**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](http://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](http://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](http://www.wvu.edu/huxley/spatial/nwwgis/nwwgis_mtgs.htm)

### Snohomish County GIS User Group

<http://www.arlingtonwa.gov/350/Snohomish-County-GIS-Users-Group>

### 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>

Join Listserve [here](#)



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