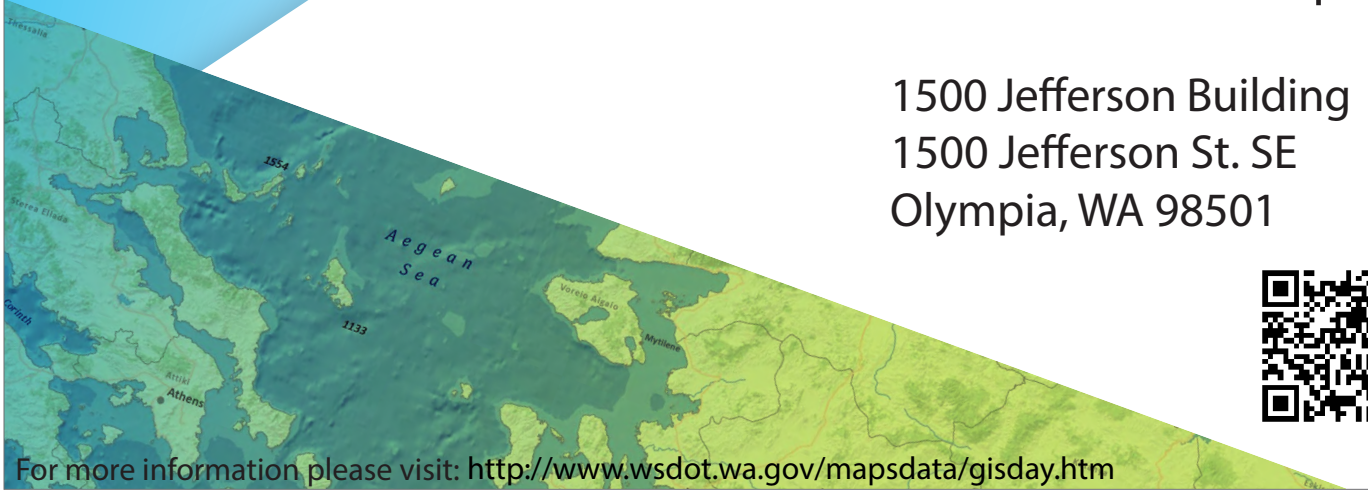
DISCOVERING THE WORLD THROUGH GIS

Join in the worldwide celebration of GIS Day, the annual salute to geospatial technology and its power to transform and better our lives.

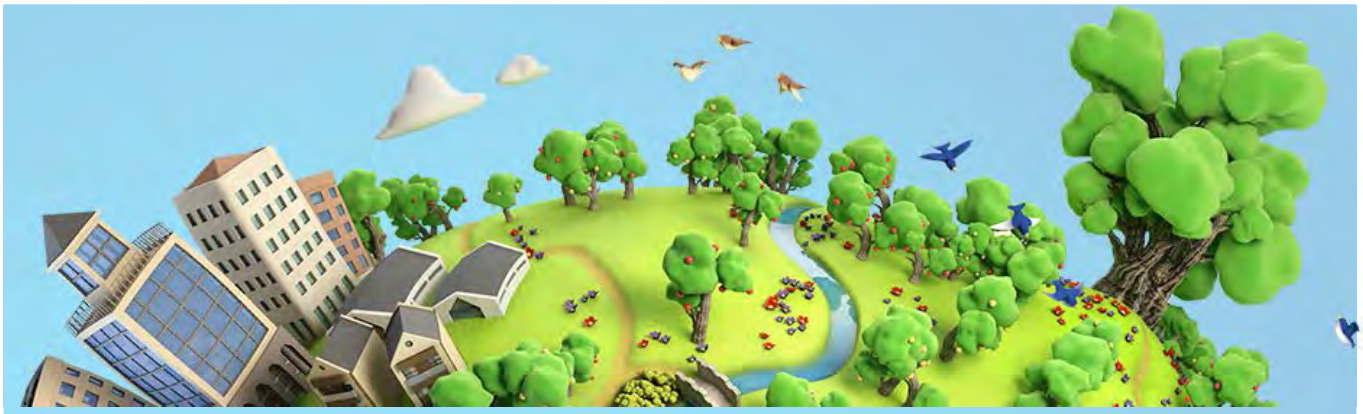
GIS day

Wednesday, November 16th 2016
8:30 am to 4:30 pm

1500 Jefferson Building
1500 Jefferson St. SE
Olympia, WA 98501



For more information please visit: http://www.wsdot.wa.gov/mapsdata/gisday.htm



GIS Day Schedule of Events

9:00 - 9:40	**Welcome and Keynote Address**
10:00 - 12:00	**GIS Presentations**
12:00 - 1:25	**Lunch**
1:30 - 4:30	**GIS Presentations**
4:30 PM	**End of GIS Day**

GIS Poster Display in Classroom 4

GISday WELCOME AND KEYNOTE ADDRESS IN THE FIRST FLOOR CONFERENCE ROOM - 9:00 AM

TRACK	TIME	CLASSROOM 1
MOBILE	10:00	Inspections in Collector: How to Show Your Progress on the Map – Marcy LaViollette, City of Olympia
WAMAS	11:00	Leveraging WAMAS for Wildfire Structure Assessments – Greg Tudor and David Wright, RCO & Joanne Markert, Leon Env.
MOBILE	11:35	Street Sign Inventory Web App – Chris James and Sanjay Chopra, City of Tacoma
12:00		***LUNCH***
MOBILE	1:30	Basemaps, Geocoding, Routing, Café; GIS Improves Government Inspection – Winston McKenna and Bryan Huebner, L&I
MOBILE	2:10	Building a Mobile Avalanche Atlas in ArcGIS – Keisha Chinn and Brandon Levy, WSDOT
MOBILE	3:10	Collector and iFormbuilder – Landon Udo and Brant Carman, AGR
CAD TO GIS	4:10	Intro to ProjectWISE GIS Connector – Jacob Tennant and Clint Hill, WSDOT
4:30 END OF GIS DAY & PRESENTATIONS		

TRACK	TIME	CLASSROOM 2
ArcGIS ONLINE	10:00	Making Data Accessible Agency-Wide through Web Maps – Tracy Trople, WSDOT
ArcGIS ONLINE	11:00	Lost in the Cloud: Data Integrity and ArcGIS Online – Tyler Graham, WSDOT
ArcGIS ONLINE	11:35	Data to Map: Not an Easy Task! – Lona Hamilton, WSDOT
12:00		***LUNCH***
ArcGIS ONLINE	1:30	On-boarding a Small State Agency to ArcGIS Online for Organizations – Greg Tudor, RCO
ArcGIS ONLINE	2:10	Our Story with Story Maps – Michelle Swanson and Kira Nelson, City of Olympia
3D MODELING	3:10	Using 3D Modeling to Visually Communicate Infrastructure Change – Kurt Stiles, WSDOT
DATA MGMT	4:10	Developing a Lands Information System for WDFW – Charlie Ware, DFW
4:30 END OF GIS DAY & PRESENTATIONS		

TRACK	TIME	CLASSROOM 3
HYDROLOGY	10:00	Big Data Approaches to County-Wide Water Modeling – Kevin Hansen and Kelly Alfaro-Haugen, Thurston Co GIS
HYDROLOGY	11:00	What's Happening with the National Hydrography Dataset (NHD) in Washington – Anita Stohr, ECY
DATA MGMT	11:35	One Solution for Tracking Number Two: Integrating GIS into an Existing Business – Christina Kellum, ECY
12:00		***LUNCH***
DATA MGMT	1:30	Data, Data Everywhere – Christina Kellum, ECY
MODELING	2:10	GIS Modeling Techniques for Assessing Stream Shade – Jeff Ricklefs, DNR
PYTHON	3:10	Python for Validation – Marcy LaViollette, City of Olympia
EMG. RESP.	3:50	The WISE System – Johnny Cochran & Joseph Siemandel, MIL
4:30 END OF GIS DAY & PRESENTATIONS		

TRACK	TIME	CONFERENCE ROOM
LIDAR	10:00	The New LiDAR Program at DNR: Collection, Analysis and Dissemination – Abby Gleason, DNR
R	11:00	Using R to Map Little Spokane River Travel Times – Steve Hummel, ECY
LIDAR	11:30	LiDAR and GIS: Revolutionizing Landslide Mapping & Field Evaluation – Kara Jacobacci, DNR
12:00		***LUNCH***
LIDAR	1:30	Revealing Washington's Hidden Landforms with LiDAR – Daniel Coe, DNR
LIDAR	2:10	Mapping the Nisqually River Delta using Topo Bathymetric LiDAR – Brad McMillan and Anita Stohr, ECY
LIDAR	3:10	Using LiDAR to Assess Olympia's Vulnerability to Sea Level Rise – Eric Christensen and Kira Nelson, City of Olympia
EMG. RESP.	3:40	Mapping of Animal Disease Emergencies – Dr. Lyndon Badcoe, AGR and Joel Demory, WSDA
4:30 END OF GIS DAY & PRESENTATIONS		

POSTER DISPLAYS AVAILABLE ALL DAY IN CLASSROOM 4

KEYNOTE ADDRESS – LIEUTENANT COLONEL CLAYTON BRAUN BIOGRAPHY

Lieutenant Colonel Clayton (Clay) Braun is the Deputy Joint Operations Officer and lead Plans Officer for the Washington National Guard (Deputy J3 and J35). In this role, he serves as the Domestic Operations & Domestic Operational Planning Officer in WA for the National Guard. Clay's military career spans more than 30 years and includes service in the Active Army, Traditional Guard, & Full Time Guard. His primary specialty is an Army Aviator in both helicopters and airplanes, although he has deployed twice to Iraq as an Infantry Officer.

LTC Braun was integral in the Guard response to SR530 Landslide & Wildfires of 2014 and 2015. He currently leads the Washington Guard's response planning for the Cascadia Subduction Zone Rupture and was recently the lead planner for the Guard participation in the Cascadia Rising exercise. Over the past three years, LTC Braun has worked closely with numerous Federal, State, Tribal and Local entities in the development of the Guard CSZ response and exercise planning that was foundational to the Cascadia Rising exercise.

Classroom 1 Presentation Abstracts

Inspections in Collector: How to Share Your Progress on the Map - Marcy LaViollette, City of Olympia

Now that Collector supports related tables, how do I show on the map which features have been inspected? This presentation dives to three different depths, eventually revealing the solution of how to show features that haven't been inspected in the past year, within a versioned geodatabase environment. The last bit is not for the faint of heart.

Leveraging WAMAS for Wildfire Structure Assessments - Greg Tudor, David Wright, Joanne Market, RCO

In 2016, as the Spokane Complex Fire quickly spread, structural firefighters went out to assess and protect structures. Incident GISS staff loading the GPS assessment data recalled the Okanogan County E911 address database and asked whether similar data existed for Spokane County – a building footprint layer did not meet the need. Several state agencies had developed Washington Master Address System point features, and we were able to develop a quick application to improve assessment quality.

Street Sign Inventory Web App - Chris James, Sanjay Chopra, City of Tacoma

The Street Sign Inventory Web Application combines the City of Tacoma's Enterprise Resource Planning solution (SAP) with the GeoCorTex/ESRI mapping solution to provide Street Operations and Traffic Engineering with operational efficiencies. The mobile optimized site enhances the management of the City's inventory of 37,000+ street signs. It reduces data entry by allowing users to display and edit street sign data stored in GIS and SAP.

Basemaps, Geocoding, Routing, Café; GIS Improves Government Inspection - Winston McKenna, Bryan Huebner, L&I

The Washington Department of Labor and Industries (L&I) has developed a custom application to perform mobile inspections for our electrical inspectors. These inspectors performed and recorded over 195,000 inspections in the past fiscal year resulting in over 69,000 safety and other code corrections. A new application was developed leveraging geocoding, routing and customized base maps to help increase the inspectors' efficiency.

Building a Mobile Avalanche Atlas in ArcGIS - Keisha Chinn, Brandon Levy, DOT

DOT avalanche crews identified the need to create a statewide inventory of all avalanche paths effecting state routes. Our goal was to go paperless by simplify the original Atlas and then transferring it to a user-driven digital format, accessible both on/offline via the web on ArcGIS Online and through our mobile application. Crews can view avalanche path polygons and collect avalanche occurrence data using an interactive map interface with the added ability to attach photos to forms on-site.

Collector and iFormbuilder - Landon Udo, Brant Carman, AGR

WSDA's Pest Program has taken full advantage of recent advances in mobile data technology to build an extremely robust, efficient, and user friendly system to aid in spatial asset management. The Pest Program GIS team has developed a seamless mobile data collection system utilizing iOS devices, Collector for ArcGIS, and Zerion Software's iFormbuilder. This system can be used to create new spatial features, modify and manage existing features, and track related data in online or offline environments. The individual apps are utilized by over 200 users from WSDA, WSU Extension, WDFW, USFW and 15 county cooperators to aid in invasive pest and weed management.

Intro to ProjectWISE GIS Connector - Jacob Tennant, Clint Hill, DOT

The GIS Connector is a Computer Aided Engineering (CAE) Support project currently under development. The project will provide a streamlined procedure for the movement of intelligent CAD data to GIS. We will briefly explain the concepts of the project and benefits to GIS users.

Classroom 2 Presentation Abstracts

Making Data Accessible Agency-Wide through Web Maps - Tracy Trople, DOT

Over the last couple years, WSDOT's Geotechnical Office has been able to share multiple types of geotechnical data with departmental staff located anywhere in the state through ArcGIS Online applications. Our applications combine various subsurface data sets, highway design plans, and historic geotech data with near real-time field mapped data. These application have benefited the decision making and design process, especially when related to cost savings and emergency decision making.

Lost in the Cloud: Data Integrity and ArcGIS Online - Tyler Graham, DOT

Field data collection with an ArcGIS Online (AGOL) feature service is fairly easy. Quality control however, is not as simple. Was all the required data entered? How do we identify missing attributes for completion to dispersed users? How do you know if the locally stored database archive is a complete copy? These are all important questions that don't have an off the shelf solution in AGOL. Some best practices and Python-based solutions to managing databases will be discussed.

Data to Map: Not an Easy Task! - Lona Hamilton, DOT

This presentation will talk about the journey and challenges WSDOT faces to make project and asset data available to the public. I will also be sharing some of the tools and processes we use for project prioritization.

On-boarding a Small State Agency to ArcGIS Online for Organizations - Greg Tudor, RCO

In 2015, the Recreation and Conservation Office re-evaluated its approach to using GIS across the agency. Many staff did not have GIS experience and could not take the time to learn ArcGIS Desktop. RCO engaged the ESRI Enterprise Advantage Program to fully implement ArcGIS Online, integrate ArcGIS Server, train and engage staff, develop business app prototypes, and implement an ArcGIS Open Data site for the biennial State of Salmon report. RCO progressed significantly in a single year.

Our Story with Story Maps - Michelle Swanson, Kira Nelson, City of Olympia

This year, the City of Olympia made two Story Maps. One documents the Bike Corridor pilot project, and the other addresses sea level rise. The stories behind the maps are different, so we used different Story Map templates to tell them. The Bike Corridor Story Map also sought input from citizens and included an embedded survey and editable map. Come and learn what went well, what didn't, and what we'll do differently next time.

Using 3D Modeling to Visually Communicate Infrastructure Change - Kurt Stiles, DOT

The Visual Engineering Resource Group (VERG) provides clear and effective communication of project development, design, and delivery issues through visual media made with a wide range of 3D modeling, animation, video, and other graphic software packages. From planning and communication to design and construction, VERG products are strategic to project success.

Developing a Lands Information System for WDFW - Charlie Ware, DFW

There have been several attempts to organize the lands owned and managed by WDFW in the past but they were not completed due to the effort involved in that task. This effort has a strong commitment from management and is on track to complete the database of owned and managed lands and to create a viewing tool for lands managers to visualize and analyze the WDFW land base.

Classroom 3 Presentation Abstracts

Big Data Approaches to County-Wide Water Modeling - Kevin Hansen, Kelly Alfaro, Thurston County GIS

Effective water management requires tracking all water in and water out. Thurston County Water Resources is using the synthesis of many large datasets in a long-term effort to track where our water comes from and where it goes - and what we do to it along the way.

What's Happening with the National Hydrography Dataset (NHD) in Washington - Anita Stohr, ECY

"A shared surface water dataset is critical for effective management of the state's natural resources". The NHD was adopted as Washington State's standard GIS hydrography dataset in 2011. This presentation will cover current projects such as storm water outfalls, GNIS names updates, incorporation of high quality County datasets. It will also show a new Ecology SharePoint Site that shows all linked datasets. Comments are welcome as we would like to release something similar externally.

One Solution for Tracking Number Two: Integrating GIS into an Existing Business - Christina Kellum, ECY

Identifying the best solution to integrating a geospatial editing workflow into a non-GIS savvy program can be challenging, especially when employee turnover is high. This presentation will focus on the approach to building a multi-user geodatabase, editing workflow, and data transfer process for a small environmental program in the WA Dept. of Ecology.

Data, Data Everywhere - Christina Kellum, ECY

In this day and age where data is distributed to multiple storage devices, locating data and tracking its replication can be a pain. In order to address this problem, we are developing a GIS Infrastructure database that identifies all the places and ways our spatial data is stored and utilized. This will help us optimize our data transfer and modification process, better manage our applications and services, along with creating a single location to search for data across platforms.

GIS Modeling Techniques for Assessing Stream Shade - – Jeff Ricklefs, DNR

We summarize the development and use of a computer model for assessing stream shade. The model predicts shade levels at the stream channel using a three-dimensional analysis that considers the geometry of riparian forest and the surrounding topography, channel orientation and view to sky, and vegetation characteristics such as tree height and canopy density. We estimate changes in stream temperature based on the predicted shade levels, and interpret the results for a variety of salmonid species.

Python for Validation - Marcy LaViollette, City of Olympia

Tired of manually checking for things like NULL values or whether attributes are set to the correct values? Let Python do it for you. We'll walk through my code line by line and talk about usage in a multi-versioned environment. Lots of code, not lots of pictures, geared toward people who've seen Python before.

The WISE System - Johnny Cochran and Joseph Siemandel, MIL

Discuss the Washington National Guard's WISE System and how it was used during the Cascadia Rising exercise.

Conference Room Presentation Abstracts

The New LiDAR Program at DNR: Collection, Analysis and Dissemination - Abby Gleason, DNR

Starting in winter 2016, the LiDAR program in the Division of Geology and Earth Resources has taken off with new collections, quality review, and managing Lidar data and derivatives. This presentation will review the program as well as the strategy for large scale, high–quality collection. The presentation will also include the status of current projects and future plans, using GIS to create derivative products and analyze data, product dissemination and a new online LiDAR portal.

Using R to Map Little Spokane River Travel Times - Steve Hummel, ECY

R is a (free) computer language used for statistics, data mining, mapping, and graphing. This talk is a basic introduction to some R packages and techniques that were used to make maps of travel time for water flowing into the Little Spokane river from its tributaries. The objective is to demonstrate the simple and powerful mapping capabilities of R.

LiDAR and GIS: Revolutionizing Landslide Mapping & Field Evaluation - Kara Jacobacci, DNR

Geographical Information Systems and LiDAR have revolutionized geologic fieldwork. The Landslide Hazards program at the Washington Geological Survey uses high quality LiDAR to map landslides remotely and create inventories of landslides for municipalities. Next, the LHP uses LiDAR in conjunction with various other GIS mobile applications in the field. Portable GIS allow for streamlined data collection and management as well as simplifying navigation in rural areas.

Revealing Washington's Hidden Landforms with LiDAR - Daniel Coe, DNR

Washington's incredibly diverse geologic history has been shaped by gravity, the elements, and events unknown. Lidar is a valuable tool in visualizing the state's landforms and interpreting the geologic events of the past. This presentation will show some of the ways the Division of Geology and Earth Resources is using elevation data to reveal the State's geology, natural hazards, and geomorphic history and will explain the methodology so that you may achieve similar effects with your data.

Mapping the Nisqually River Delta using Topo Bathymetric LiDAR - Brad McMillan, Anita Stohr, ECY

The marine shoreline surrounding the Nisqually River Delta has changed dramatically since the removal of the Brown Farm dike in 2009. The Department of Ecology updated the National Hydrography Dataset (NHD) to reflect current conditions using a combination of topo bathymetric LiDAR, aerial imagery, and mobile GIS. We will discuss the methodology used in updating the NHD hydrography for the Nisqually Delta as well as future improvements to Washington's coastline.

Using LiDAR to Assess Olympia's Vulnerability to Sea Level Rise - Eric Christensen, Kira Nelson, City of Olympia

The City of Olympia has used recent high accuracy LiDAR data to predict the impact of flooding on downtown as sea levels rise. Staff will be discussing how flood extents were rendered, potentially impacted structures were identified, and what steps are needed to protect our storm water system.

Mapping of Animal Disease Emergencies – Dr. Lyndon Badcoe, AGR and Joel Demory, WSDA

In 2014 – 2015, U.S. suffered the largest foreign animal disease outbreak in history. The first outbreaks of highly pathogenic avian influenza (HPAI) were detected in the Fraser Valley of British Columbia, followed by the first U.S. outbreak of Eurasian HPAI in Gyrfalcons, Whatcom County WA. Three new HPAI viruses (H5N1, H5N2, H5N8) were detected in wild waterfowl, Whatcom County. The development of a standard operating procedure for GIS mapping of avian disease outbreaks, for emergency rule making, aided in the response. Mapping the HPAI outbreaks with ArcGIS online helped movement control in quarantine areas. HPAI spread to 21 States, infecting 232 poultry farms, costing the Federal government $1 billion for the USDA response, and a $5 billion impact on the U.S. poultry industry.