APRIL 19 - 21

2010

Tacoma, WA

RISE

TO THE CHALLENGE

GIS CONFERENCE

GREATER TACOMA CONVENTION & TRADE CENTER

WAURISA

PRESIDENT'S MESSAGE

GIS Friends and Colleagues,

Welcome to the WAURISA thirteenth annual Washington GIS Conference! Our theme "Rise to the Challenge" is very pertinent to the state of the world economy and how we, as GIS professionals, can lead the way to its recovery. We can show the world how to do more with less, have access to more information with easier or more intuitive access, show how even better decisions or innovations of tomorrow can be made with our tools, information and knowledge, making an even better tomorrow.

This year's conference promises to be another exciting event. We have an excellent wide variety of topics presented from many great speakers from throughout our region. We are always proud to provide a conference with many options so that everyone goes away having seen a wide variety of relevant information. We are proud to have Ian Von Essen from Spokane County as our keynote speaker this year sharing his experiences and successes in building the great program at Spokane County and all the work he has done with the Geographic Information Council, WA-Trans steering committee and USGS National Map Program. And I anticipate our Tuesday night social event is shaping up to be a great time with our own Washington State Geography spin to the popular Jeopardy game. I hope that you plan to stay a little later on Tuesday to meet our great vendors and enjoy some social time with your GIS comrades.

I would like to extend a special thanks to all the volunteers and board members who have worked so hard to prepare for this conference and make it a success. The time and energy that all these people have put in to make this conference happen is an incredible gift to all of us. The many people with the great "can do" attitudes have been refreshing and we would not be able to have this conference without them. Please join me in thanking these people and please acknowledge them if you see the badge ribbons indicating how they have helped with the conference.

Finally, a special thinks to you, our members, for attending this conference and acknowledging everything that we do and are about by attending this conference. We focused last year on how "GIS is EveryWHERE" and so now we will build on that concept and "Rise to the Challenge" and use GIS to make tomorrow even better than today.

Don Burdick, President

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BE SURE TO VOTE...

Washington URISA Chapter Board Position Nominees

Board members are elected for two year positions during the annual conference. Several positions are up for election this year. Ballot and candidate statements are included with your conference program. Please take a few moments to review candidate statements for this year's open positions, fill out your ballot and return it to the registration box by Noon Wednesday, April 21st. One ballot per attendee. Winners will be announced at the closing session on Wednesday afternoon.

Treasurer nominee: Tonya Elliot

At-Large Position nominees (three positions open):

> Heather Glock
> Ann Stark
> Jean Postlethwaite
> Cort Daniel

MAP CONTEST

The Map Contest is a terrific opportunity for conference attendees to showcase their work in a map or poster format and let their peers and colleagues be inspired by the interesting projects they are involved in. All contest maps are on display in Ballrooms A & B. Please take some time to view the maps and cast your vote for best professional and best student maps. Return your ballot to the registration desk by Noon on Wednesday, April 21st. Prizes for best maps will be awarded at the closing session on Wednesday afternoon. Your vote matters!

Monday, April 19 Workshops

WAURISA

ROOM 315	ROOM 316	ROOM 317
8 a.m.—Noon: **Developing with the Silverlight API** **in ArcGIS Server 9.3.1** Tim Weisenburger, Solutions Engineer, ESRI	**8 a.m.—Noon:** **Using A Free and Open Source** **Geospatial Stack** Mike Pumphrey, Outreach Engineer, OpenGeo	**8 am—Noon:** **Building an Return on investment** **(ROI)-based Enterprise GIS** **Strategic Plans & Business Case** Craig Rintoul, PA Consulting Group
The Silverlight API for ArcGIS Server allows web developers to embed maps and spatial functionality into their new and existing web applications. This workshop covers some best practices in creating Silverlight-based web mapping applications that follow the web map 2.0 concepts of fast, easy to use, modern looking, designed for the end user and have specific targeted themes of information. Attendees will explore the programming and configuring aspects of the Silverlight API and learn to implement spatial functionality like Mapping, Geocoding, Networking and Geoprocessing tools. We will also explore samples and online resources that are available for getting up to speed with this latest technology from ESRI.	Learn how to use a geospatial stack featuring free, open source, and standards-compliant software. Starting with shapefiles, a spatial database will be created using PostGIS, a robust object-relational database system. The data will then be served with GeoServer using OGC (Open Geospatial Consortium) protocols. Mention will be given to basic styling, as well as map composition. Map serving will be optimized via GeoWeb-Cache, a tile-caching server, and finally displayed using OpenLayers, a popular JavaScript library for web mapping. Prior GIS experience is helpful but not required. Enthusiasm for GIS and web mapping is a must (but will be provided regardless).	The objective of this workshop is to provide sufficient insight, structure, templates and examples to allow attendees to build their own robust ROI-driven Enterprise GIS Strategy, Business Case & Implementation Roadmap. Relevant for new or mature GIS implementations, it is based upon the methodology described in the book: *Business Benefits of GIS: An ROI Approach* that was co-authored by ESRI Inc. and PA Consulting Group, the originators of this successful methodology. The workshop also provides the materials, tools and templates that allow attendees to put the insights gained on this workshop into practice at their own organization.

12:00 p.m. to 1:00 p.m.—Boxed Lunch near Room 317

ROOM 315	ROOM 316	ROOM 317
1 p.m.—5 p.m.: **Python Scripting for Map Automation in** **ArcGIS 10** Jeff Barrette - Software Development Team Product Engineer, ESRI	**1 p.m.—5 p.m.:** **Open Source Tools for Spatial Analysis and** **Geoprocessing on the Desktop** Karsten Vennemann - Terra GIS Ltd. and the "Cascadia Users of Geospatial Open Source" group	**1 p.m.—5 p.m.:** **Installing, Configuring, and Using an SDE** **SQL Server Express GeoDatabase** Bruce Kessler - Kesler GIS
ArcGIS 10 introduces the ability to automate mapping tasks through a new Python mapping module. This hand-on session will provide an overview of the arcpy.mapping module and will demonstrate how it can be used to process MXD documents, map layers, data frames, and layouts in batch without having to learn the complexities of ArcObjects. Printing and exporting map documents and creation of PDF map books via Python will be covered, as will creation of script tools that can be used in an interactive ArcMap session. Attendees will be introduced to the best resources and fastest ways to start writing their own mapping scripts in ArcGIS 10 as well as understanding how Python development fits within the ArcGIS scripting/customization framework. Limit 40 participants, two per laptop.	A general introduction and overview about the tools covered in this workshop will be followed by examples illustrating the use of desktop utilities based on the OGR/GDAL libraries, PostGIS ("the" open source spatial database) and gvSIG (a desktop GIS) for spatial analysis and geoprocessing. The workshop consists of the following three parts (with 15 minute breaks in between sessions): • Introduction to Free and Open Source GIS Tools on the Desktop • Examples for Spatial Analysis and Geoprocessing using OGR/GDAL, gvSIG, and PostGIS. • Using OS tools for your everyday Spatial Analysis and Geoprocessing Tasks	ESRI provides Microsoft® SQL Server® Express Edition with Advanced Services and enables it to store ArcSDE® GeoDatabases with ArcEditor™ and ArcInfo® licensing. This capability is somewhat hidden from the typical install as it dos not happen automatically. Attendees will be introduced to the topic and shown an installation of SQL Server Express software including installation of ArcSDE for SQL Server Express. A GeoDatabase will be constructed using a sample schema from a small local government. Finally using the GeoDatabase in a versioned environment will be demonstrated..

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Tuesday, April 20 Schedule

8:00 am - 4:00 pm	Conference Registration
8:00 am	Continental Breakfast—Ballrooms A & B

9:00 am - 10:15 am — Opening Session—Ballrooms A & B
Opening by Don Burdick, President ; Welcome by Marilyn Strickland, Mayor, City of Tacoma
Keynote Address by Ian Von Essen, Spokane County GIS Manager

10:15 am- Morning Break—Vendor Area

ROOM 315	ROOM 316	ROOM 317	ROOM 318
Vendor Presentations	**Rise to the Challenge**	**Crisis Management**	**Environmental GIS**
Configuring Flex Applications with ArcGIS Server Darin Herle, Latitude Geographics	**Discussion: Rising to the Challenge, Robust GIS in Recessionary Times** Ian Von Essen, Spokane County GIS Mgr; George Horning, King County GIS Center Mgr; Kirsty Burt, Kirsty Burt GIS; Steve Beimborn, Seattle Public Utilities GIS Section Mgr; Linda Gerull, Pierce County IT Mgr	**The Howard Hanson Dam & Green River Valley: A Flood Impact Analysis on Washington DOT Infrastructure** Richard C Daniels, WA DOT	**GIS Modeling and Web Services Made Easy -- Promoting Community Awareness about Stormwater Runoff** Angie Venturato, Xiongjiu Liao; Pierce County GIS
The Use of CORS Derived Control in GIS Nathan Bentley, Electronic Data Solutions		**To Help the Most Vulnerable: Using GIS for Emergency Planning in the Lower Green River Valley, WA** Irina V. Sharkova, WA Dept. of Social & Health Services	**Non-Point Source Pollution— Community Pilot GIS Project** Suzanne Shull, Austin Rose, Jack Middleton; Padilla Bay National Estuarine Research Reserve
GeoAutomation Mobile Mapping System Dan Tresa, McElhanney Consulting Services Ltd	**GIS in a Down Economy—Achieving Return on Investment** Elizabeth J Marshall, Marshall GIS	**Rapid Open Source Development during Crisis Response: www.haiticrisismap.org** Aaron Racicot, Z-Pulley Inc.	

12:00 pm-1:00 pm — Lunch—Ballrooms A & B

Vendor Presentations	Census 2010	3D Modeling	Open Source Introduction and Practical Examples of Application
Using Oblique Imagery Integrated with GIS to Rise to the Challenge of Today's Economics Russ Michel & Scott Faust, Pictometry		**Creating a Sketchy 3D Model to Visualize Proposed Building Height Increases** Michael Stoddard, City of Tacoma	**Introduction to Open Source Tools – Their Philosophy and Community** Michael Gerlek, Charter Member Open Source Geospatial Foundation and Lizardtech **Making Open Source Sing: How Commercial Funding of Open Source GIS Projects can Benefit Your Bottom Line** Roger Andre', Zonar Systems **Mapping People in Need—The WA State Office of Civil Legal Aid Web GIS** Karsten Vennemann, TerraGIS Ltd. **Open Source Application Panel Discussion**
WebGIS and ArcGIS.com Leah Saunders, ESRI	**2010 Census and More: Data for Dollar$** Linda Clark, U.S. Census Bureau	**An Irregular Tessellated Surface Model Map Algebra to Define Flow -- Directions and Watershed Boundaries using Bare-Earth LiDAR Sample Points** Gerry Gabrisch, The Lummi Nation	

2:30 pm-3:00 pm — Afternoon Break—Vendor Area

Vendor Presentations	Census Mapping and Addressing	Crime Analysis	Washington Statewide GIS Plan
GIS Training Express - An Update on the KCGIS GIS Training Program Dennis Higgins & Cheryl Wilder, King County GIS Center	**Mapping Census Data** Chris DeSisto, US Census Bureau	**Crime Early Warning System – Spatially Enabling Crime Data for Pierce County Law Enforcement to Help in Reducing Violent Crime** Maria Sevier, City of Lakewood Kathy McAlpine, City of Tacoma	**Washington Statewide Strategic GIS Plan** Tom Carlson, PhD, USGS WA Geospatial Liaison Joy Paulus, State GIS Coordinator Ian Von Essen, Spokane County GIS Manager Cy Smith, Oregon Statewide GIS Coordinator
AutoCAD Civil 3D 2010 Dusty Gallinger, PacifiCAD Inc	**An Enterprise Approach to Address Management** Katherine Sotnik, Geoff Almvig, Janice Baird; Skagit County GIS	**An Open Source Approach to Geospatial Intelligence for Crime Analysis** Martin Davis, Mark Sondheim; Refractions	

4:30 pm –6:00 pm	Vendor Social — Vendor Area
6:00 pm—7:30 pm	Washington Jeopardy! — Room 316

Vendor Exhibits Open—8 am to 4:30 pm

Wednesday, April 21 Schedule

| 8:00 am - 1:30 pm | Conference Registration |
| 8:00 am - 9:00 am | Continental Breakfast—Ballrooms A & B |

	ROOM 315	ROOM 316	ROOM 317	ROOM 318
	Vendor Presentations	**Tools and Technology**	**Managing GIS**	**Data and Application Development**
8:30 am-10:00 am	**ArcGIS 10 Highlights** Timothy Weisenburger, ESRI	**Open Source GIS at Pierce County** Jared Erickson, Pierce County GIS	**Update on the Proposed Municipal GIS Capability Maturity Model** Greg Babinski, King County GIS Center	**Maintaining a Tax Parcel Geodatabase – a Technical and Political Success Story told by the City of SeaTac and King County, Washington** Zinta Smidchens, City of SeaTac
		Using PostgreSQL—PostGIS and ArcSDE: An Overview of Strengths and Weaknesses Cort Daniel	**Regional Problems, Regional Solutions: Tactics for Using GIS to Convene Governments** Chris Overdorf, Jones & Jones Josh Knauer, Rhiza Labs	**The Development and Use of the Washington State Parcel Database** Luke Rogers, University of Washington
		Beyond PostGIS—New Developments in Open Source Spatial Databases Karsten Vennemann, TerraGIS Ltd.	**Keys to a Successful Software Project** Kirk van Gorkom, Woolpert, Inc.	**Update and Modernization of Sales Tax Rate Lookup Tool for Public and Agency Users** David Wright, WA Dept. of Revenue

| 10:00 am-10:30 am | Morning Break—Vendor Area |

	Vendor Presentations	**Panel: If it is Free, is it Good?**	**Mapping Road Assets**	**Dick Thomas Student Competition**
10:30 am - 12:00 pm	**ESRI Mobile Solutions Overview** Shane Clarke, ESRI	**If it is Free, is it Good?** Panel Members: • Ian VonEssen, Spokane County GIS Manager • Roger Andre', GIS Developer, Zonar Systems • Michael P. Gerlek, LizardTech Directory of Engineering. • Jared Erickson, Pierce County GIS • Donna Wendt, Wendt Consulting and GIS Services	**Finding Your Assets: City of Des Moines Sign Inventory** Steve Schunzel, City of Des Moines	**Iliamna Lake - Fish First Project: Sustainable Fisheries and a Proposed Large-scale Mine in Bristol Bay, AK**
	Open Source GIS Training Classes and Support Karsten Vennemann, TerraGIS LTD		**GIS Applications Solve City of Tacoma Challenges** Pam Murray, City of Tacoma	**As the Fish Swims: Improved Habitat Connectivity Between Wilderness Areas Using the River Network**
			Map Applications in a Large Organization—Reflections and the Road Ahead Dana Trethewy, City of Seattle DOT SunHee Helm, City of Seattle DOT	**Mercer Island Certified Wildlife Habitat & Corridor Project**
				A Geodemographic and Statistical Analysis of Bike Lane Access in Seattle

| 12:00 pm-1:30 pm | Box Lunch — Near Room 317 / Leadership Meeting 12:20 pm to 1:20 pm— Room 315 |

	Vendor Presentations	**Transportation Networks**	**Modeling with GIS**	**Panel: Spatial Data Quality**
1:30 pm-3:00 pm	**Flex Based Web Applications for ArcGIS Server** Jarod Bishop, GeoNorth	**Washington Transportation Network, Getting a State Travel Network Together into a Single Map** Tami Griffin, Washington State DOT Ian Von Essen, Spokane County GIS Manager	**Modeling the World: Collaborative Spatial Analysis using the GeoAnalytic Grid Engine** Martin Davis, Refractions Mark Sondheim, Refrations	**Spatial Data Quality: Dealing with the Devil in the Details** Panel Members: • Karl Johansen, Port Madison GIS • Doug Smith, CP, PE, RPP, David C. Smith and Associates, Inc. • Michael Kulish, PLS, GISP, King County Dept. of Transportation • Gavin Schrock, PLS, Seattle Public Utilities
		Connecting Purgatorio to Paradiso--Ferry Tracking and Captain's Log Automation using a GPS/AVL Solution Xuejin Ruan, Pierce County GIS Chuck Buzzard, Pierce County GIS	**Quantifying Differences Among Similar Sets of Linework with Hydrodiff** Kenneth B. Pierce, PhD, WA Dept of Fish & Wildlife	

| 3:15 pm –4:00 pm | **Closing Session: Board Election, Poster Contest Winners and Dick Thomas Award Winner Announcements—Ballrooms A & B** |

KEYNOTE

Ian Von Essen

GIS Manager, Spokane County

Chair Elect, Washington State
Geographic Information Council

Ian Von Essen is the GIS Manager for Spokane County and Chair Elect of the Washington State Geographic Information Council. Since 2000 he has served as Chair of this Council for four one-year terms (2000-02, 2004-05, 2007-08) as well as a member of the National States Geographic Information Council for eight years

He is also a member WA-Trans Steering Committee and is currently helping manage the Washington State Department of Transportation's Eastern Washington WA-Trans project.

He served on the Northwest ESRI Users Conference Board from 1995-2006 and has helped host two Northwest GIS Conferences in the Spokane area (1995 Coeur d'Alene, 2006 Spokane) and will be doing this again for the 2010 Northwest ESRI Users Conference in Spokane, Washington.

He has participated in the USGS National Map Program from the original USGS Northwest Pilot Project (2001-02) to his involvement in the USGS Best Practices Model Workgroup. In 2002 at the request of the Mapping Science Committee of the National Research Council, he was invited as a contributing member to the National Academy of Sciences workshop to review the U.S. Geological Survey Concept of The National Map.

In 2004 he received the John Wesley Powell Award which recognizes a representative of state or local governments for outstanding achievements that have made significant contributions to the advancement of the USGS mission.

Ian's current job is as the GIS Manager of Spokane County, a position he has held for the last twenty years. In 1992 he helped establish the Inland Northwest's first Public-Private Digital Ortho Data consortium. The Spokane County GIS Program has twice been given ESRI's Special Achievement in GIS award. In 2004 he helped establish one of the first multi-agency local government ESRI Enterprise License Agreements; in 2005 he helped establish the first GIS Center within Spokane's Regional Emergency Operation Center; and in 2006 he helped establish the first multi-agency Economic Development Web Site. He has taught GIS at both Washington State University's Design Institute and Eastern Washington University's Urban and Regional Planning Department. His most recent publication is "Apprehending Murderers in Spokane, Washington Using GIS and GPS" GIS in Law Enforcement Implementation: Issues and Case Studies. Mark R. Leipnik, et al. Chapter 12, pp 167-183. Taylor & Francis. 2002.

Prior to coming to Washington State, Ian was the manager of the North Carolina DOT GIS Project (1988-89) and before that the co-manager of the University of North Carolina at Chapel Hill's GIS and Remote Sensing Lab (1986-88). He has an MA in Geography from the University of North Carolina at Chapel Hill. Ian's work experience includes over 10 years of cultural resource surveying and mapping experience and 24 years of GIS management experience.

RISE TO THE CHALLENGE 2010 Tacoma, WA

OPENING SESSION

Opening Statements   Don Burdick, WA URISA President

Welcome   Marilyn Strickland, Mayor, City of Tacoma

Keynote Address   Ian Von Essen, GIS Manager, Spokane County

Presentation of Summit Award   Marty Balikov

General Announcements   Neil Berry

SUMMIT AWARD

The Summit Award, or GIS Person of the Year, began in 2003 to honor the GIS movers and shakers in Washington State. Criteria for the award focus on four areas: longevity of experience, quality of experience, consistency of volunteerism, and degree of mentorship effort.

The nominating committee is made up of the former Board President and other interested board members. Each committee member petitions the GIS community for nominees and submits findings to the Chapter Board of Directors for selection. This award is not only an instrument of appreciation, but a statement of qualities that we, as an organization, embrace and continue to promote through our outreach and educational efforts.

Dick Thomas	2003
Linda Gerull	2004
Geoffrey Almvig	2005
Nancy Hultquist	2006
Donna Wendt	2007
Mike Onzay	2008
Marty Balikov	2009

LEADERSHIP

Wednesday April 21st
12:20 p.m.—1:20 p.m. Room 315

Join us for the Leadership Meeting during lunch on Wednesday. We'll be meeting to fill you in on our successes during the past year, and spread the news of the exciting things we have planned for the future. Some of our successes include…

· Hosting successful URISA workshops
· Improving our online forums
· Continuing to outreach to students and encourage
    their participation
           …and a glimpse at what are planning
               for the future, with your help…
· Planning events for the next year
· Clearly defining ways to volunteer and participate in
    WAURISA
· Continuing to gather and integrate suggestions from
    our membership

MOUNT RAINIER SPONSOR

ESRI leads the international geographic information system (GIS) software industry with innovative solutions that help more than 300,000 organizations create, manage, visualize, and analyze information. Our clients use ArcGIS software to unlock the spatial component of their data and quickly make effective decisions. ArcGIS is an integrated family of products for use in desktops, severs, or custom applications; in the field; or over the Web.

ESRI

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Electronic Data Solutions proudly offers sales and support services for Trimble GPS mapping systems, ESRI GIS software, Laser Technology rangefinders, Ricoh GPS Digital Cameras, Juniper Systems field computers, In-Situ water level and water quality instrumentation, Teledyne ISCO water samplers & flow meters, and Teledyne RD Instruments Acoustic Doppler current profilers.

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RISE TO THE CHALLENGE 2010 Tacoma, WA

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GeoLine, Inc. is a long-time authorized Trimble dealer in the Pacific Northwest, providing products, service, training, rentals, and support for its customers. Today, GeoLine, Inc. provides high-precision position-ing solutions for the surveying, mapping, and construction customers in Washington, Ore-gon, and Idaho. It has sales and service offices in Bellevue, WA (Seattle area) and Tigard, OR (Portland area) with satellite offices in Spokane, WA and Boise, ID. The company is proud of its employees and the many years of experience they bring to each of our markets.

The King County GIS Center provides GIS services to customers throughout the Puget Sound Region. We operate one of the most capable enterprise GIS organizations in the Pacific Northwest. We have developed innovative programs like *GIS Services Express* and *GIS Training Express* to deliver quality services and exceptional value for our clients. The KCGIS Center is unique in the breadth of the GIS services we provide and the depth of staff resources we have available. We operate and maintain core enterprise GIS resources (data warehouse, database administration, application development, etc.) for KCGIS users and the public at large. We provide matrixed GIS staff and turn-key GIS operations for clients, which provides insight into the specific GIS Business solutions required by end-users. We also provide custom on-demand GIS consulting and client services. Unlike most consultants through, our professional staff are not merely theoreticians, but practicing users of the types of GIS solutions government agencies require. Why does the KCGIS Center offer its services to external agencies? We have a long-term interest in the success of GIS at the local government level. We believe that local government GIS users are highly qualified to assist other local agencies. We know that our success depends on satisfied clients and

Since 1989 PacifiCAD has always been committed to delivering the highest quality of Autodesk products and services to ensure our customers are able to use advanced technology to accurately and productively model and realize their designs.; ; PacifiCAD services customers from three offices in Spokane, WA, Boise, ID and Helena, MT. PacifiCAD products and services are available throughout the United States for federal government GSA contract groups.

MOUNT ADAMS SPONSORS

Juniper GIS specializes in hands-on GIS training, providing ESRI-authorized classes and Juniper GIS custom classes developed for specific applications. Our laptop computer lab makes training convenient at your locations. Our qualified instructors have taught hundreds of classes to all levels of government and a wide variety of industries. Juniper GIS offers consulting and technical services and provides competitive pricing for ESRI software.

OpenGeo is a social enterprise working to open government by building the best web based geospatial technology. OpenGeo brings the best practices of open source software to governments and other organizations around the world.

Pictometry International is the leading provider of intelligent aerial oblique imagery and measuring software. Pictometry's patented image capture system takes high-resolution, geo-referenced images that show the fronts, sides and rooftops of locations from up to twelve different views. Users can access the imagery with desktop software or over the Web -- measure and annotate directly on imagery. Pictometry has captured imagery in all 50 states. See Everywhere * Measure Anything * Plan Everything(tm) http://www.pictometry.com

Aerials Express provides digital aerial photography for use with GIS systems and DataDoors Desktop GIS viewer. We serve counties, cities, utility districts, engineers and developers in the Washington; since 2002. Our new June 2009 Puget Sound flight, provides 1' pixel resolution geo-referenced, color, seamless, ortho imagery. We also have, 2009 Portland, Spokane and Boise imagery.;

RISE TO THE CHALLENGE 2010 Tacoma, WA

MOUNT BAKER SPONSORS

A division of Latitude Geographics Group Ltd., Geocortex provides a suite of proven products, services and knowledge that organizations can use to deliver effective, successful web-based mapping using ESRI's ArcGIS Server. With success stories around the world, we help clients and partners deliver top-notch web-based GIS implementations to end-users.

Terra GIS provides expertise in GIS, and consulting for social & environmental issues, and sustainable development. Services include environmental research and reporting, spatial analysis, cartography, and implementation of information systems related to conservation, natural resources management, and public & social engagement issues. We are specialized in creating web mapping solutions using Open Source Geospatial Tools and offer GIS Training Classes and support in Open Source Technology including MapServer, PostGIS, OpenLayers, Mapbender and others.

We are a BC and Alberta based firm offering engineering and geomatics services to clients all over North America. With our new GeoAutomation Mobile Mapping system we can now offer survey quality mapping, images and virtual models for asset managment and detailed design activities. We are interested in partnering with local survey and engineeing firms to provide services to the urban land development and public works industry.

MOUNT BAKER SPONSORS

We are an Autodesk value added reseller and a Topcon GIS/GPS dealer. We service the GIS community with solutions for field and office.

Founded in 1994 with offices in Alaska and Oregon, GeoNorth has successfully completed diverse projects and developed a number of enterprise and specialized software solutions for clients throughout the U.S. and worldwide. GeoNorth is a full-service software solution provider dedicated to helping organizations become more efficient and effective through practical and innovative uses of Internet, GIS, and database technologies. GeoNorth specializes in planning and developing Integrated Enterprise GIS and data management solutions for government, oil and gas, natural resource and utility industries.

Intermap is a preeminent digital mapping and geospatial solutions provider that has set the industry standard for creating uniform high-resolution 3D digital models of the earth's surface. The Company has proactively remapped entire countries and built uniform national databases, called NEXTMap®, consisting of affordably priced elevation data and geometric images of unprecedented accuracy. Demand for NEXTMap data is growing as new commercial applications emerge within the GIS, engineering, energy, hydrology, telecommunications, transportation, and visualization markets.

EXHIBITOR/FACILITY MAP

Join us Tuesday April 20th from 4:30 p.m.—6:00 p.m.
for the vendor social in the vendor area.
Then try your hand at Washington State Jeopardy from
6:00 p.m.—7:30 p.m. in Room 316!

Washington State Jeopardy contestants will have a chance o win one of many great prizes including a $100 gift Certificate to Amazon.com. Jeopardy audience members could win $25 gift certificates.

Appetizers and sodas will be served, and your conference registration includes one free drink ticket! Cash bar is also available.

Booth	Vendor
4	Intermap Technologies
5	OpenGeo
6	The PPI Group
7	Pictometry International
8	PacificCAD Inc.
11	Juniper GIS
12/13	ESRI
14	King County GIS Center
15	Latitude Geographics
16	Electronic Data Solutions
17	Aerials Express—WA
18	GeoLine, Inc.
19	McElhanney Consulting Services Ltd
20	GeoNorth
21	CUGOS
22	Terra GIS Ltd
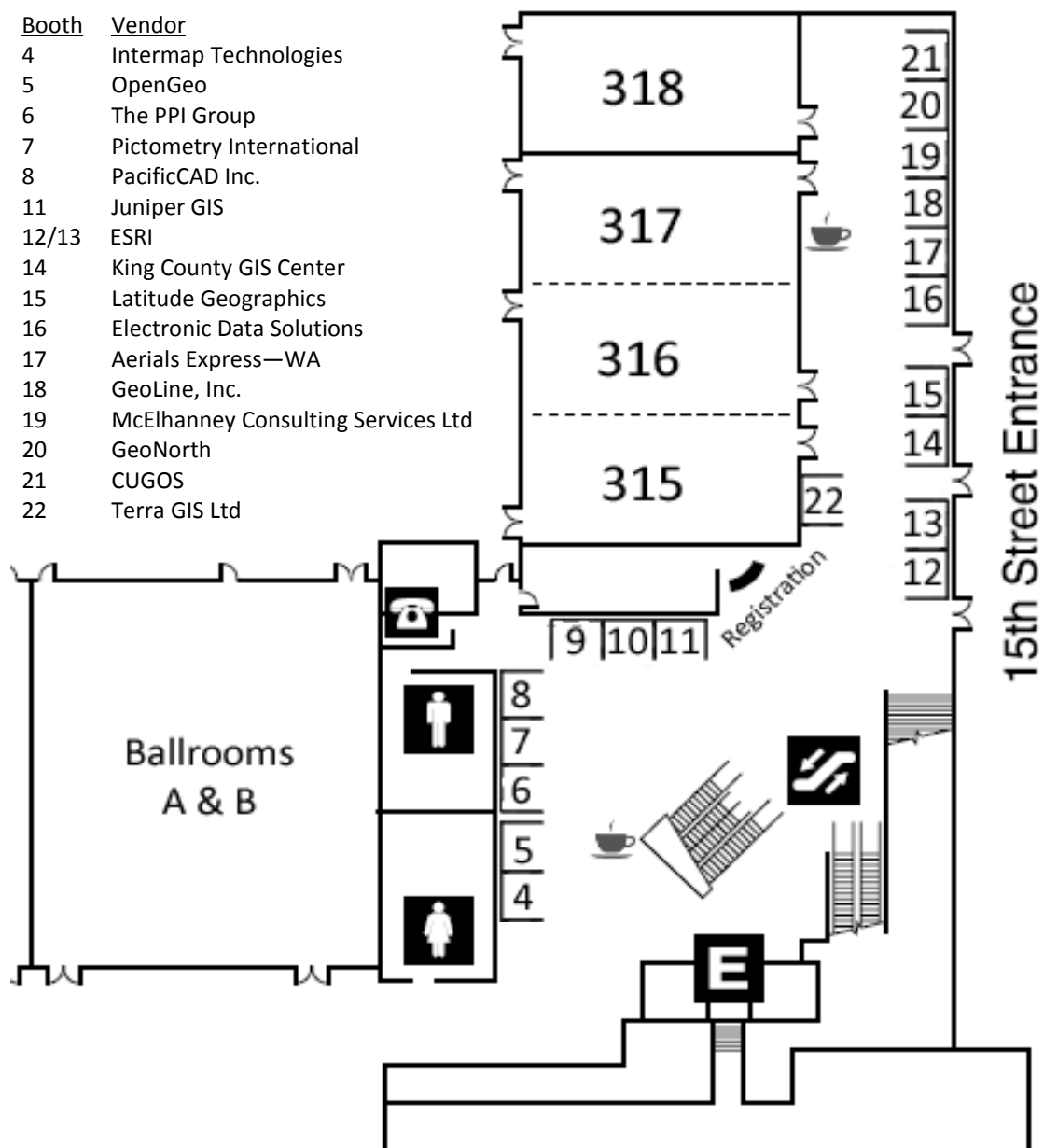
Configuring Flex based Applications with ArcGIS Server
Darin Herle

Using Flex to provide rich, web-GIS or web mapping applications with ArcGIS Server has gained a lot of recent momentum within the ESRI development community. Latitude Geographics/Geocortex has spent considerable time and effort to create a configurable and extensible application framework for Flex-based ArcGIS Server applications, with the goal of appealing to non-developers and developers alike. Join us, as we take a pragmatic look at deploying both simple, and full featured Flex based, ArcGIS Server mapping applications using Geocortex Essentials. Even if you're busy deploying ArcGIS Server yourself, we'll share insight into best practices we've gained working with ArcGIS Server, its REST API and Flex.

The Use of CORS Derived Control in GIS
Nathan Bentley

As we create representations of land use, land cover and ownership in our GIS data the foundation of our GIS Data is at risk. The ongoing degradation of the physical control monuments established by the federal government has placed the geospatial community, which depends on an accurate and documented control network in a precarious position.   Participation with the National Geodetic Survey's (NGS) National Spatial Reference System and with state, regional and local CORS networks stabilizes your Control layer by the use of the Satellite based control network and moving away from dependency on the physical monument network. Utilizing cellular and/or other wireless technologies, correction information is received by the handheld units from the CORS network to produce highly accurate field data.

GeoAutomation Mobile Mapping System
Dan Tresa

McElhanney is a Western Canada based engineering and geomatics firm offering services primarily across North America and South East Asia. Our latest venture is in Mobile Mapping Systems (MMS). After investigating many different types of MMS we chose GeoAutomation due to its simplicity from an technological and operational standpoint. The presentation will focus on the technology and the various uses of GeoAutomation. We are also looking for partners in Washington to provide this technology to end users.

Panel Discussion: Rising to the Challenge, Robust GIS in Recessionary Times
Ian Von Essen, Kirsty Burt, George Horning, Linda Gerull and Steve Beimborn

Top GIS leaders discuss how to not just survive, but how to make their GIS programs thrive during the recession. This panel discussion will be a continuation of the keynote presentation. After the initial panel discussion, audience participation will be welcome as we exchange ideas for a proactive approach to moving ahead with new GIS technology to solve today's problems. This session is a must-attend for GIS managers and analysts alike. Come participate and hear GIS managers give away their best management secrets.

GIS in a Down Economy – Achieving Return on Investment
Elizabeth J Marshall

As government and private sector re-evaluate how they do business, and how to streamline operations, GIS expenditures need to show a return on investment (ROI). This presentation explores how to define the characteristics of a streamlined operation, what sorts of metrics can be used to show operational advances or problems, and the role GIS can play. Key integrations of GIS with mission critical business systems will be reviewed using a case study approach. Examples of significant ROI for GIS integration projects will include: Hillsborough County Florida, City of North Las Vegas, and City of Kirkland. Examples of how to continue to improve ROI by "thinking outside the box" for future applications will also be discussed. We will brainstorm ways to bring just enough, but not too much, consumable information to users in the field, at the front desk and in operations management.

The Howard Hanson Dam & Green River Valley: A Flood Impact Analysis on Washington DOT Infrastructure
Richard C. Daniels, GISP

After a record high water level behind the Howard Hanson Dam in January 2009 the U.S. Army Corp of Engineers (COE) discovered unexpectedly high rates of water seepage through the earthen dam. The COE placed restrictions on the pool elevation at the dam until repairs could be implemented. It is anticipated that repairs will be completed by spring 2011.
 Under this pool restriction, downstream communities in the Green River Valley face the highest risk of flooding since 1961, when the dam was completed. In response, on September 14th, 2009 the Governor directed all State agencies to conduct a risk analysis of the impact that a major flood in the valley would have on infrastructure and services. This is the most comprehensive GIS analysis ever conducted in Washington on the potential impact of single flood. Washington DOT developed an ArcToolbox model to assist in conducting this analysis. Our analysis determined that WSDOT's Kent Maintenance Facility and portions of SR 18, 167, 181, 516 would be impacted by the 11,000 cfs flood scenario –which approximated the pre-dam 2 year flood.

To Help the Most Vulnerable: Using GIS for Emergency Planning in the Lower Green River Valley, WA
Irina V. Sharkova, PhD

As multiple disasters have demonstrated, people with disabilities, aged, frail, sick, young children, people in poverty, those with limited English proficiency tend to suffer more devastating consequences. Since the Hurricane Katrina, federal, state and local governments have been under pressure to develop emergency management plans which explicitly take into account special needs of vulnerable populations. The Washington State Department of Social and Health Services is responsible for providing economic, medical and other assistance to those in need and presently serves one in three residents of the state. Among DSHS clients are 344,300 persons with physical or developmental disabilities, 94,100 seniors, 11,000 foster children and 130,600 persons with limited English proficiency; most DSHS clients are low income. DSHS provides services in a variety of settings, from its offices and clients' own homes to long-term care residential facilities and institutions. Since the summer of 2009 DSHS has been involved in emergency planning efforts in the Lower Green River Valley. This presentation will discuss how GIS was used to assist DSHS staff and local planners to identify the most vulnerable residents of the Valley, evaluate their transportation and sheltering needs, and conduct outreach. We will talk about challenges in acquiring, geoprocessing, analyzing and displaying client and hazard data, including:
· how to define vulnerability;
· the need to develop accurate locational data while protecting privacy of individual information as required by federal and state laws;
· how different geocoding methods affect determination of potentially impacted locations;
· whether there is a higher concentration of vulnerability in the areas most prone to the risk of flooding.
The presentation will conclude with an overview of our plans to develop an emergency management GIS for DSHS and the broader emergency response community.

Rapid Open Source Development during Crisis Response: www.haiticrisismap.org
Aaron Racicot

Out of the Jan 12th earthquake in Haiti a new approach to software development during crisis response has emerged. During the initial response, crowd sourced data became the most sought after and authoritative data. Rapid turnaround of image processing by third party entities heavily outpaced the imagery vendors themselves in providing assistance to these crowd sourced communities. Code developed at makeshift developer sessions/camps around the world paved the way for much of the on-the-ground work during response and recovery efforts in the region. Through a unique partnership between Telascience (infrastructure lab) and a dedicated group of Open Source GIS hackers, HaitiCrisisMap was created to provide rapid deployment of massive amounts of satellite and aerial imagery. Using all Open Source tools and being open source itself, this new application has been deployed by multiple organizations for humanitarian assistance in Haiti. A standalone version of HaitiCrisisMap was developed and deployed on portable hard drives and hand delivered to government agencies in Haiti. During this disaster HaitiCrisisMap has provided a valuable resource, but has also provided valuable lessons in rapid GIS software development and innovation using Open Source tools and distributed developers.

RISE TO THE CHALLENGE **2010** Tacoma, WA

GIS Modeling and Web Services Made Easy -- Promoting Community Awareness about Stormwater Runoff
Xiongjiu Liao and Angie Venturato, GISP

If you live in the Pacific Northwest, you are used to carrying an umbrella. Rain is simply a way of life here, and stormwater runoff is a real problem when trying to maintain the health of Puget Sound and our local waterways in Pierce County. So how do we inform the public about stormwater runoff without breaking the budget? We combined open source web technologies with a hydrologic flow model to produce an easy-to-use online GIS application. Pierce County designed a flow model from hydrologic data using geometric networks in ESRI© ArcGIS Desktop and a little ingenuity. Data from the flow model was then output to the online GIS application for presentation. The online application was built upon open source web technologies, including the OpenLayers framework, the Dojo Toolkit, and Java Servlets. The adoption of tile caches and database caches significantly improved the application speed. The user can use locate functions to enter an address or double-click anywhere in the map to watch the water trace downstream in animation. The combination of proprietary and open source software and collaboration between Pierce County Surface Water Management and GIS divisions has led to a useful public education tool at a minimal cost.

Rural Non-Point Source Pollution—Community Pilot GIS Project
Suzanne Shull, GISP, Austin Rose and Jack Middleton

Coastal non-point pollution in our Puget Sound rural near-shore communities continues to be a major problem. Of specific concern is community awareness and participation in identifying sources and moving ahead with solutions, particularly in communities adjacent to shellfish producing tidelands. In Skagit County, BayView Village Watershed is a small village of hobby farms and houses on septic located on the shores of Padilla Bay. Shellfish harvest in the tide flats below this watershed have been closed to harvest due to high levels of fecal contaminants. BayView State Park visitors no longer enjoy recreational oyster harvest due to this problem. Community residents have volunteered to initiate a project to bring this issue to the full community and work to identify sources and possible solutions. What is needed is a means to assist and transfer community data gathering into products that can be used for public education and decision-making. Ecology and Washington Conservation Corps. staff from the nearby Padilla Bay National Estuarine Research Reserve (PBNERR) supply hard copy base maps to assist the volunteers in the field as they determine sub-basin boundaries and inventory culverts, streams, ditches and outfalls. The staff and volunteers work together to build the fine spatial scale GIS database, produce wall maps for community education, and digital data products with metadata to be shared with County GIS, Public Works, and Health Department. The data provides excellent education material as well as a framework for continued water quality monitoring and future analysis.

Using Oblique Imagery Integrated with GIS to Rise to the Challenge of Today's Economics
Russ Michel and Scott Faust

Due to current economic restraints, leveraging existing technologies while employing cross-departmental utilization of a product or service has become a vital requirement for County Governments. Come see how this technology is being utilized by multiple cities and counties in Washington State. This 25 minute presentation will combine a brief Power Point presentation with a live software demonstration of oblique imagery working in a web services environment and will provide specific examples of how local governments are using this technology to do their jobs while reducing costs.   3D models created from oblique imagery will also be on display.

WebGIS and ArcGIS.com
Leah Saunders

ArcGIS.com provides a common platform for ArcGIS users to discover, create, and share GIS resources. ArcGIS.com is a cloud-based GIS that allows publishers to reach web users without having to manage and maintain their own software and technology. It addresses the needs of both GIS and IT professionals and "neo-geographers" (web developers, designers, and general mapping enthusiasts). This presentation will review many of the significant enhancements and new functionality being made to the ArcGIS.com system.

2010 CENSUS AND MORE: DATA FOR DOLLAR$
Linda Clark

This presentation focuses on the Census Bureau's three main demographic programs:
1. Decennial Census,
2. American Community Survey (ACS), and
3. Population Estimates Program.

You will learn the difference between a census and a survey and the benefits and challenges of using data from each for your grant proposals. The following questions will be raised and discussed:

- What improvements have been put in place for the 2010 Census?
- What are the differences between questions on the Decennial Census and similar questions on American Community Survey? How do these differences affect comparability of data?
- What does it mean to consider "currency of data" vs. "reliability of data?"
- What is the difference between a "period" estimate and a "point-in-time" estimate?
- How do I make comparisons over time for a specific geographic entity? How do I make comparisons between two geographic entities in the same timeframe?
- How often are new data available? When are the next data releases?

The Census Bureau serves as the leading source of quality data about the nation's people and economy. We honor privacy, protect confidentiality, share our expertise globally, and conduct our work openly.

Creating a Sketchy 3D Model to Visualize Proposed Building Height Increases
Michael Stoddard

"But what would it look like?" The City of Tacoma Planning Commission asked this question as it considered an amendment to the Comprehensive Plan that would increase the allowable heights of buildings in a designated growth center. To help Commission members visualize the proposed building heights, staff in the Planning Department requested a sketchy, easy-to-update 3D model. With LiDAR and building footprints, GIS staff created a terrain and derived building heights. 3D Analyst was used for initial display of the data, and SketchUp for the final presentation. This talk will cover the process of creating the model, its utility to the Planning Commission, and future uses of 3D in the planning process.

An Irregular Tessellated Surface Model Map Algebra to Define Flow -- Directions and Watershed Boundaries using Bare-Earth LiDAR Sample Points
Gerry Gabrisch

Geographic Information Systems (GIS) typically rely on raster grid data structures to define overland flow and delineate watershed boundaries. The interpolation of grids from sample points and the algorithms used to define flow directions introduce errors, especially in areas of low relief. Triangulated Irregular Networks (TIN) do not rely on interpolations and define a spatial relationship between neighboring nodes. For this project TIN surface models generated from airborne laser altimetry (LiDAR) were used to develop algorithms to define flow directions and delineate watershed boundaries employing the Python programming language. The spatial relationships of the TIN nodes and edges were used to define flow directions across the TIN surface. Coincident flow lines were aggregated and attributed with basin identifiers. Finally, basin boundaries are generated from the aggregated flow lines.

Introduction to Open Source Tools – Their Philosophy and Community
Michael Gerlek

GIS professionals are managing the real world! As such they require timely access to a range of software tools. Both their careers goals and their work effectiveness are influenced by the quality of those tools and the freedom to grow in their use of them.   Existing free and open source geospatial software serves as a powerful base for the GIS professional at many levels. Bundled together into a personalized toolkit, the professional has unfettered access to the tools required for the job - now and into the future - all with no forced upgrades, no license costs and free support.
This presentation will introduce several of these tools, the community behind them and the philosophies that are changing the world, reducing costs and motivating professionals to take control of their own toolkits. Learn where/when you can save costs, motivate employees or find help in unexpected places.

Making Open Source Sing: How Commercial Funding of Open Source GIS Projects can Benefit Your Bottom Line
Roger Andre'

PostGIS and MapServer are two of the most well-established Open Source GIS applications today and are used by public agencies, non-profits and commercial firms alike. Zonar Systems, a vehicle telematics company that provides electronic inspection, tracking, and management solutions for public and private fleet operations has found it advantageous to not only use these products, but also to invest in their ongoing development. This presentation will provide a high level overview of how Zonar implemented a geospatial application stack based on Open Source and commercial offerings, and why these applications were chosen. Some insight will also be shed on the use cases that prompted the financial support of PreparedGeometry in PostGIS, and internal metatiling in MapServer, and how these features have improved the performance of Zonar's applications. For those of you who wonder what working with Open Source is like in a commercial setting, how numerous advances in Open Source are funded, or just plain wonder what this Open Source stuff is all about, come to this presentation and find out.

Mapping People in Need - The WA State Office of Civil Legal Aid Web GIS
Karsten Vennemann

The Office of Civil Legal Aid (OCLA) Geographic Information System was implemented in 2008/2009 to replace the previous system of the Washington State Alliance for Equal Justice. The preceding system was first used by the Access to Justice (ATJ) Board during the development of its 2006 State Plan. The upgraded system aims to support the day-to-day operations of OCLA and its partners in order to better serve the population in need of civil legal aid. It is designed to facilitate the analysis of existing legal aid services and demand (e.g. to localize existing over or undersupply of services), supply up-to date and localized (spatial) information about these services, and support the planning and design process of future civic legal aid programs. Both the old and the new systems are based entirely on open source technology. In addition to MapServer as the web rendering engine the new architecture includes the MapBender web framework and uses spatial databases hosted in PostGIS. MapBender is a web mapping framework based on JavaScript, PHP and PostgreSQL/PostGIS. Most aspects of the OCLA system can be managed and configured over a web interface using the MapBender administration tools. The data layers for the new system where upgraded to OGC WMS services served by MapServer (which already was part of the previously existing system). Additional data layers where added and existing data sources updated. The system now includes about 120 individual WMS data layers. Data in the system can be categorized as base layers, demographic information from the census (up to census tract level) and information about civil legal aid providers. System functionality includes custom map creation and printing, dynamic queries and mapping of demographic information, and data export and reporting of query results (including maps and spread sheets).

GIS Training Express - **An Update on the KCGIS GIS Training Program**
Dennis Higgins and Cheryl Wilder

A geographic information system (GIS) has become a common component of large city and county governments and many medium and small sized municipalities as well. A key success factor for a successful program is access to adequate ongoing training for the GIS professionals who run the system and for the users who depend on it for their business applications. The potential benefit of an agencies investment in GIS will not be realized without trained and highly skilled users. However GIS training is expensive and the need for training is continuous. The evolving nature of the technology and the needs of expanding numbers users in search of more sophisticated capability drive the need for an agency's training budget. This presentation will describe the King County GIS Center training program and how it is designed to meet the educational needs of GIS users throughout the Puget Sound region. The presentation will cover curriculum development and training program partners, including ESRI, Washington Department of Personnel, GeoMobile. The presentation will also describe the recent designation of KCGIS as URISA's Pacific Northwest Education Center and how this will help bring URISA's portfolio of 24 workshops to Washington. This presentation will be of value to GIS professionals and managers interested in learning about cost-effective GIS training.

AutoCAD Civil 3D 2010
Dusty Gallinger

AutoCAD Civil 3D 2010 provides a set of tools to consume and analyze GIS data. See these tools in action as Civil 3D is used to select a candidate site from various GIS data including ESRI SHP files, digital elevation models and aerial imagery based on LEED and GREEN Building specifications. Once a suitable site is selected, the results are published to Google Earth for easy presentation to the masses.

FIND AND USE CENSUS DATA ArcGIS
Chris De Sisto

This presentation will provide a brief tutorial of how to access US Census Bureau statistical data and TIGER/Line®
Shapefiles, as well as how to join them into a single shapefile in ArcGIS. The US Census Bureau provides statistical
and spatial data separately online. Using American FactFinder, the Bureau's online statistical data clearinghouse
for current and historical data, you will learn how to navigate to and download various datasets available on the
web. TIGER/Line® Shapefiles, created by the US Census Bureau are also available for download and provide the
spatial component to map and analyze statistical data. You will see how to select and download your relevant
geography to correspond with tabular data. Using ArcMap, you will learn how to join tables from American Fact-
Finder with TIGER/Line® Shapefiles based on geographic identifiers to create custom spatial/statistical products.

Enterprise Approach to Address Management
Katherine Sotnik, Janice Baird, GISP and Geoff Almvig, GISP

Many public and private entities can benefit from a well-conceived addressing system that involves cooperation,
sharing of resources, and forming alliances. The addressing system must be easily understood, accepted and used
by everyone. Any successful addressing system must include the cooperation of all stakeholders and the United
States Postal Service (USPS). A strong maintenance program is also essential for maintaining the integrity of the
addressing system. This track will cover what Skagit County has done to build an enterprise approach to address
management. See how addresses are maintained and distributed to the public safety system and County web site
using custom built tools that run within ESRI's ArcMap. Plus, watch how road centerlines are imported from
AutoCad and how addresses are applied spatially to the address routes. Questions will be answered by the Ad-
dress Coordinator, Software Engineer, and GIS Manager.

Crime Early Warning System – Spatially Enabling Crime Data for Pierce County Law Enforcement to Help in Reducing Violent Crime
Maria Sevier and Kathy McAlpine, Captain Support Services Division

The cities of Tacoma and Lakewood Police Departments, and Pierce County Sheriffs Department are working together with the Law Enforcement Support Agency (LESA) in Pierce County, Washington, to implement a Crime Early Warning Web Mapping system which will include a Crime Spike Detector system called Hunchlab (developed by Azavea). Hunchlab, originally implemented in Philadelphia, PA, can be run nightly to detect a change in crime in a geographic area based on a series of queries established by a user. Alerts are then automatically emailed to the requesting user (police officer) for quick response. This proactive approach to lowering crime is coupled with an open source web based crime mapping tool. This tool will be available to all police officers and staff and is planned for deployment during the third quarter of 2010. The development of this tool is enabled through a Bureau of Justice Assistance (BJA) grant directed to help reduce violent crime through more timely and accurate information based policing.

An Open Source Approach to Geospatial Intelligence for Crime Analysis
Martin Davis and Mark Sondheim

Most criminal activity occurs at specific locations. The incidents are often described by police records maintained by Record Management Systems (RMS) and Computer Aided Dispatch systems (CAD). Police officers and crime analysts are interested in assessing such data to gain understanding of the current status of crime incidents and of longer-term trends. Supervisors can make better informed decisions about the most effective force deployment strategies. To make such capability practical, the incidents must be defined in both space and time. Location may be defined explicitly in map coordinates, but more commonly address geocoding techniques are employed. Time is more straightforward since both RMS and CAD data include the time of the incident. The user interface must support: (i), query formation, (ii) the display of crime incidents against a user-controlled, geographic backdrop, and (iii) report generation for tabular and graphical results. Once queries are defined, they must be able to be saved and shared with others, following adjustable access policies. Modern Web 2.0 and Web mapping technologies enable effective delivery of collaborative tools and geospatial intelligence in near-real time to a broad spectrum of users. An example of this is the Crime Early Warning System (CEWS) recently developed for the police departments in Pierce County, Washington. In order to maximize functionality and reduce development time and cost, the system architecture makes use of open source components and open standards. This talk will describe the architecture and capabilities of this system. The ability of open source software to integrate with existing IT infrastructure will be highlighted.

Washington Statewide Strategic GIS Plan
Tom Carlson, Joy Paulus, Ian Von Essen and Cy Smith, GISP

Washington State received a USGS 50 states Cap Grant Program in 2009 to create a Washington States GIS Business Plan and to update its existing GIS Strategic Plan. Meetings were held in the fall of 2009 throughout the state to gather input for both plans. During this panel discussion you will hear about: 1) USGS's mission for its 50 states Grant program, 2) the direction of GIS within Washington State based on the statewide input, 3) our brand new Washington State GIS Business Plan, and finally, 4) Oregon's Statewide GIS Coordinator will provide some pragmatic examples (future visioning) of what's possible given such state-level GIS plans. This should be a lively discussion and we welcome your participation and input.

ArcGIS 10 Highlights
Timothy Weisenburger

The upcoming release of ArcGIS 10 will make significant improvements to ArcGIS Desktop and ArcGIS Server. This presentation will provide a look at many of the major highlights and additions to the ArcGIS 10 Desktop and Server releases.

The highlights for ArcGIS Desktop 10 include the following; updated user Interface, ArcCatalog integration into ArcMap , automated mapping workflows, fully integrated python scripting, dynamic search window, symbol search, coupled TOC's and map displays, template based editing, and new geo-processing menus & tools. Additionally we will review enhancements to the 3D Analyst, Spatial Analyst, and Network Analyst extensions for Desktop.

The highlights for ArcGIS Server 10 include the following; new services to allow editing with the REST API, Image Delivery and analysis capabilities and increased functionalities with geometric calculations. Support for more platforms and configurable applications for mobile devices, Microsoft SharePoint, smart phones and the Apple iPhone.

Open Source GIS at Pierce County
Jared Erickson, GISP

Open Source GIS is increasingly battle tested and production ready. Learn how Pierce County is using Open Layers, PostGIS, and GeoTools with ESRI technology to produce compelling web applications.

Using PostgreSQL-PostGIS and ArcSDE: an Overview of Strengths and Weaknesses.
Cort Daniel, GISP

PostgreSQL is an open source database. PostGIS is an open source extension that spatially enables PostgreSQL. Many of the GIS open source software applications can use the PostGIS data types. ESRI's ArcGIS 9.3 added functionality that allows ArcSDE feature classes to go into PostgreSQL and use PostGIS data types. Once set-up, this allows one to use ArcCatalog to easily move data from ArcSDE into PostgreSQL with the PostGIS data types which then can be used by open source software. See an overview of how this was done at Pierce County and the strengths and weaknesses.

Beyond PostGIS - New developments in Open Source Spatial Databases
Karsten Vennemann

PostGIS has proven to be an attractive and viable alternative to proprietary spatial databases. With new developments in a variety of open source software projects there are more and more emerging options for storing and manipulating spatial data based on FOSS. The talk will introduce and compare some of the exciting new developments in open source database technology, many of which are about to become viable alternatives to proprietary systems. Some of the database systems are aimed to be used in desktop environments and web applications and scalable to support enterprise level applications. Among this group is PostGIS and new emerging developments (in terms of spatial capabilities) such as the INGRES database and JASPA (JPostGIS). INGRES is a database that has been around for a long time but only recently became opens source and has been added with spatial capabilities. JASPA is a rewrite of PostGIS functionality in Java and can be used as a replacement or complementary to PostGIS.

SpatiaLite is a portable light weight spatial DBMS built on top of SQLite. A related tool is the RasterLite library that can handle Raster data. SpatiaLite has the potential to replace shape files as a simple data exchange format. GeoCouch (an extension for Apache CouchDB) uses a different approach. It is a not a relational databse but manages a collection of JSON document instead. It is designed for local replication, supports geo-spatial queries like bounding box or polygon searches and scales vertically along a wide range of devices. Other spatial databases include MySQL which also offers spatial capabilities and H2 Spatial which is being created as an embedded Java database in conjunction with the Geoserver web mapping application. A summary of GIS applications that can be used with the databases mentioned above will finish the talk.

Update on the Proposed Municipal GIS Capability Maturity Model
Greg Babinski, GISP

A geographic information system (GIS) has become a common component of city and county governments. All large munici-palities and many medium and small sized cities and counties have now established GIS capability.

Just as each municipality is different, municipal GIS operations vary greatly. Partly this variation results from the ongoing development of GIS capability within many city and city and county governments. But how do these agencies know where their GIS development is in relationship to potential capability for similar agencies?

Other agencies consider that their GIS is mature because their implementation project has been completed and they are doing ongoing GIS operations and maintenance. But how do these agencies know if they are lacking basic GIS capability.

Capability maturity models have been used to assess the ability of agencies to develop software successfully. Recently a GIS maturity model was developed to assess state government GIS capability.

This presentation will outline the proposed Municipal GIS Capability Maturity Model first introduced during the 2009 Wash-ington GIS Conference and the preliminary results presented during the 2009 URISA Annual Conference. It will include pre-liminary results from applying the model to city and county GIS operations in Washington State and compare those results with others from across the US. Future options to refine and institutionalize the model will also be discussed.

This presentation will be of value to managers to self-assess their GIS operation, determine areas for efficiency or effective-ness improvements, assess system risk factors, analyze capability gaps, and prioritize developments required for a mature GIS.

Regional Problems, Regional Solutions: Tactics for Using GIS to Convene Governments
Chris Overdorf and Josh Knauer

Invasive species cost the United States $138 billion annually, and these pesky plants don't care if they cross municipal lines. Jones & Jones, a Seattle-based planning, architecture, and landscape architecture firm, is coordinating the front line of at-tack. Through new web-based collaborative GIS tools, the firm is helping public and nonprofit agencies in the Puget Sound to launch a concerted effort to curb invasive plants. Using these tools to foster better collaboration, the cities, counties, and task forces of Washington State are acting as one government.

This geospatial technology isn't new. The challenge is organizing disparate agencies to use it. Join Chris Overdorf, a principal at Jones and Jones, and Josh Knauer, CEO of Rhiza Labs, for a discussion of incentives and tools to align fragmented govern-ments. Drawing on Overdorf's experience in the Pacific Northwest and Knauer's experience in Southwestern Pennsylvania, the two will illustrate successes in using geospatial tools to incentivize interagency collaboration. The pair will detail the rela-tionship-building tactics that have overcome resistance to sharing data to coordinate cross-agency planning. They also will discuss the design techniques that make tools from any vendor easy-to-use for non-technical government staff. Finally, they will explain how to combine these tactics to implement geospatial portals for intergovernmental collaboration.

Keys To A Successful Software Project
Kirk van Gorkom

Software projects have a notoriously low rate of success. This presentation will convey keys to a successful project, gleaned from years of experience both as an in-house developer and consultant. We'll avoid buzzwords and fads, focusing on practi-cal steps you can take to ensure a successful project.

Planning — You can't get anywhere without a map.

Infrastructure — Basic tools to keep everything on course whether you're working solo on geoprocessing scripts or with 100 people on an enterprise integration.

Communication — Listen to the right people and develop a decoder ring to understand what they mean.

Maintaining a Tax Parcel Geodatabase – a Technical and Political Success Story told by the City of SeaTac and King County, Washington
Zinta Smidchens

The role of GIS departments in municipalities evolves from one of implementation, characterized by gathering and integrating GIS data, to an analytic and business support role for other departments, leaving fewer resources available for important but time-consuming data maintenance tasks. Parcels are subdivided, roads vacated, the parcel data set is not static. This paper describes a joint project between the City of SeaTac and the King County Department of Assessments in Washington State to reduce the data maintenance burden by eliminating duplication of effort for maintaining updates to tax parcel boundaries and attributes. Also, this paper describes a parcel geodatabase design that was created by the City of SeaTac and the King County GIS Center, for the City's use. The City's parcel geodatabase holds a simplified subset of the County's geodatabase, and is now updated quarterly, with a minimal amount of staff time on the City's part. Improving tax parcel boundaries at the database of record, and creating periodic updates for the City from the County's database is a model that could be replicated by other municipalities.

The Development and Use of the Washington State Parcel Database
Luke Rogers

Researchers at the University of Washington have collected and normalized parcel and tax roll information from Washington counties, state and federal agencies. The resulting Washington State Parcel Database is being used by government partners in the Parcels Working Group on nearly two hundred projects throughout the state.
This project is designed to construct a single, regularly updated, statewide parcel dataset using data from all agencies producing parcel data within Washington State. Researchers at the University of Washington have been collecting parcel data from each county Assessor's office and/or GIS department and other government agencies since early 2007. To date, two statewide parcel databases have been produced and researchers will soon begin on a third round of data acquisition and normalization. Project goals include: reducing the cost, inefficiencies, and redundant efforts of state and federal agencies, that independently and periodically contact parcel data originators for current data sets; increasing interagency cooperation by providing the same parcel dataset across agencies; supporting, where needed, local efforts to develop and maintain parcel data; transparently communicating the project objectives with each county/agency contact; and addressing any questions or concerns. Part of this communication includes negotiating agreements with parcel data producers on the acquisition, terms of use, data updates, and cost of acquiring the data.
This presentation will discuss the challenges associated with collecting and managing data from over 40 different organizations, give an overview of the rigorous data documentation and normalization routines that have been developed, demonstrate how to use the 2009 Washington State Parcel Database, highlight some current uses of the database, and explore future directions.

Update and Modernization of Sales Tax Rate Lookup Tool for Public and Agency Users
David Wright

Over the last couple of years DOR has been moving to migrate its public facing applications from being based on legacy ArcIMS tools to a more modern and up-to-date ArcGIS Server interface. This project has gone through several half-steps to get to its final incarnation. Starting with a hybrid ArcIMS/Server tool, to a ArcGIS Server Web-ADF project that was abandoned to finally a JavaScript API based solution that grew to leverage multiple pre-built caches, expansion of internal Model-Builder processes to expand on not only the needs of the agency to build but also on the expectations of the public to see a modern application on the same level as Google Maps or Microsoft Bing. We will cover the original technologies as they developed from the beginning, then to the hybrid system that was designed to support a high quantity of users to the final incarnation where we are leveraging the power of a ArcGIS Server JavaScript Application powered by a highly structured SQL database to optimize the various search methods to leverage the best performance of all tools to support the needs of a highly visible and mission critical tool.

ESRI Mobile Solutions Overview
Shane Clarke

A mobile GIS is an extension of your Geographic Information System into the field supporting activities leveraging maps and data on mobile devices.   ESRI provides out-of-the-box mobile GIS applications in the form of the ArcPad and ArcGIS Mobile software and will soon add an iPhone based solution as well. Software developers can build mobile GIS solutions using the ArcGIS Mobile SDK, the ArcGIS Engine SDK, and will soon have an iPhone based GIS SDK as well. This presentation will review many new functions and capabilities being made to the existing mobile solutions technologies and offer a glimpse of the brand new iPhone based solutions.

Open Source GIS Training Classes and Support
Karsten Vennemann

Terra GIS presents on "Open Source GIS Training Classes and Support". This short presentation will outline our consulting services and mainly focus GIS support and training classes. It will be followed by a in depth question and answer session/ discussion with Terra GIS founder Karsten Vennemann.   Terra GIS provides expertise in Geographical Information Systems, consulting for social and environmental issues, and subjects related to sustainable development. Services include environmental research, spatial analysis, cartography, implementation of web mapping and information systems, and the creation of specialized tools related to conservation, natural resources, and public and social engagement issues. We provide support and training classes for proprietary and Open Source GIS systems. More information online at http://terragis.net .

Panel Discussion
If it is Free, is it Good?
Ian Von Essen, Donna Wendt, Roger Andre, Michael P. Gerlik and Jared Erickson

Now that the world around us (our computers, cars, cell phones, watches, etc.) are all becoming spatially enabled with such tools as Garmin Watches, Tom Tom Navigation systems, MapQuest, Google, Bing, etc., the barriers to using spatial data in our everyday lives has dramatically fallen away. Now everyone can "do GIS" with all sorts of devices, web applications, and widely available "crowd sourced" GIS data, and as a result, we are seeing a dramatic increase in the use of such tools within the work environment. Panelists will discuss issues, opportunities, and challenges this trend presents; such as how it affects the public's understanding of spatial information and whether smaller jurisdictions and organizations can benefit from this trend. Who scales back on more traditional GIS technologies in favor of using free tools? What are the opportunities and the pitfalls of that this new spatially enabled world presents to the average public or private sector GIS organization? What are your thoughts? Please come - this should be a lively discussion.

Finding Your Assets: City of Des Moines Sign Inventory
Steve Schunzel

The City of Des Moines is a City of 30,000 located in SW King County. In late 2007 the City recognized that it did not have an active sign inventory. Upcoming retro reflectivity and MUTCD compliance requirements dictated that the City be able to assess the condition of their signs. The City began taking some initial steps towards compliance by changing out sings at some locations. An audit in June 2008 by Washington Cities Insurance Authority pointing out possible liability issues elevated the need for a current sign inventory as a priority. By January 2009, using primarily ArcGIS & ArcPad, a Trimble Pro-XT GPS receiver, a barcode reader and sticker printer, the City's Sign Technician began collecting sign locations, assigning ID's and recording conditions. By October 2009, nearly 4,000 signs had been collected and an active maintenance recording and reporting program had begun. This presentation will discuss with a GIS emphasis, the setup and workflow to complete a successful sign inventory for under $9000 (not including existing hardware/software) and along the way, share some of the lessons learned.

GIS Applications Solve City of Tacoma Challenges
Pam Murray

In 2009, the City of Tacoma passed an ordinance requiring major upgraded streets be placed in moratorium, restricting further street cuts for five years. This presented the challenge to facilitate proactive project coordination between the city, private developers, and utility contractors. The Citizen Solutions GIS Development team rose to the challenge, developing an application where City and private engineers identify project scope, contact information, and affected street segments. Following the completion of the project, City engineers identify streets placed in moratorium. Project and moratorium information is publically available online (tabularly and spatially). City engineers state this application will allow for better coordination of capital improvement projects within the city; reduce scheduling conflicts; and minimize the impacts of construction projects to City of Tacoma citizens. Also during 2009, City officials identified a need to facilitate communication about potential surplus property offerings between regional government entities. Again, the Citizen Solutions GIS Development team rose to the challenge, developing an application where various government entities such as the City, County, parks, and schools could identify properties in the surplus process. The public web page includes specific information about each entity's surplus property process as well as contact information about potential surplus property offerings. Properties are searchable in a data grid as well as spatially. This demonstration will walk through the web applications, detailing how the spatial data is collected, stored, and displayed using web services and how asp.net membership functionality was leveraged to facilitate logins and roles.

Map Applications in a Large Organization – Reflections and the Road Ahead
Dana Trethewy, GISP and SunHee Helm

The City of Seattle's Department of Transportation (SDOT) has several publicly facing web map applications displaying traveler's data (traffic and current construction), planned construction, street right of way and neighborhood information. These seamless applications provide an easy to use, web based interface for disseminating timely information to the public.
This presentation will focus on the many facets of designing, building and deploying web applications in a large organization. An overview of all the public SDOT web applications will be presented along with a demonstration of a few applications as they are intended to be used by the general public to communicate critical information. A brief historical profile will be given to illustrate how business needs led to the development of these applications. The recent incorporation of ESRI's ArcGIS Server technology has enabled SDOT to standardize the design, development and implementation of the newest web applications which has resulted in shorter project durations and lower cost.   The advantages of using these new standards will be discussed along with issues, tips and tricks that have been discovered during this process. The application currently being developed is the Parking Map, which will be used to illustrate the latest project process at SDOT. This web application integrates a number of data sources and provides real-time and static off-street parking locations, availability and other characteristics to the public. The project process portion will include information for those organizations particularly interested in launching a publicly facing web application including: tips on getting started, staffing needs, lessons learned from researching appropriate platforms, parking data reliability, user testing, and selecting the review panel.

RISE TO THE CHALLENGE **2010** Tacoma, WA

Iliamna Lake - Fish First Project: Sustainable Fisheries and a Proposed Large-scale Mine in Bristol Bay, AK

Harry B. Rich, Jr. (contact), Dave Muller, Sage Miller, Sara Bloom, and Richard Lewis

The Pebble Mine project is a copper-gold-molybdenum porphyry deposit that is in the advanced exploration stage. The project is located in the Bristol Bay region of southwest Alaska, situated near the headwaters of two of the five main sockeye salmon river districts comprising the Bristol Bay commercial fishery. The Bristol Bay metapopulation is the world's largest sustainably managed and commercially exploited run of wild sockeye in the world. The fishery has an average return of 30 million sockeye, with an ex-vessel value ranging between $100-200 million annually. The Bristol Bay region is home to the largest subsistence harvest of salmon in Alaska, with over 80% of subsistence harvest comprised of sockeye salmon. The region is also home to world class sport fisheries and unspoiled habitat for several species of wildlife. Pebble consists of two contiguous deposits, totaling 7.5 billion metric tons which will be removed, pulverized and disposed of. The diffuse nature of the deposit will generate large amounts of waste rock and require the use of cyanide leaching procedures; toxic waste products will need to be retained in perpetuity. Tailings ponds will be created with a series of earthen dams over 700 feet high and 4 miles wide. Additionally, massive road and power generating projects need to be installed in this pristine wilderness. The University of Washington's Fisheries Research Institute (FRI) and the Alaska Department of Fish and Game (ADFDG) have been collecting data on the abundance and distribution of sockeye salmon throughout the region since the mid 1950's. We built a geodatabase incorporating data on adult sockeye salmon abundance, distribution to spawning grounds, and juvenile rearing areas in the lake. We conducted spatial risk analyses to show the direct (planned/unplanned) and possible catastrophic effects this mine's development may have on the salmon populations and wildlife around Iliamna Lake.

As the Fish Swims: Improved Habitat Connectivity Between Wilderness Areas Using the River Network

Stephan Gmur

Continuing changes in global climate and fragmented habitats hold unknown consequences for many species of wildlife. Current wilderness and other protected areas provide valuable habitat for many species that are predicted to migrate asynchronously across the landscape in response to changing habitat conditions [1 <]. This is of great conservation concern for areas surrounding wildernesses, including other protected areas, are rapidly being developed. Historically rivers and riparian areas provided connectivity across the landscape, yet today, record levels of human development, especially along river corridors, this functional role has significantly diminished. These changes have decreased connectivity of the wilderness landscape in unknown ways [2 <]. Scientific understanding of wildlife utilization of corridors has predominately been applied to overland terrestrial movement, leaving aquatic and semi-terrestrial connectivity relatively unknown [3 <]. The RiSLaR lab is developing a GIS tool to address large scale connectivity questions by identifying habitat connectivity networks based on stream network and core habitat characteristics. Implementation uses the geoprocessing framework of ArcGIS Desktop 9.3.1 using Python 2.5 with ArcToolbox. The stream network is modeled using Network Analyst, using NLCD and the National Inventory of Dams, capturing a travel cost per stream segment based on human development and infrastructure, providing a detailed representation of the theoretical resistance species will encounter.
Questions that are addressed with the tool include:
1) Which wilderness areas are the most disconnected on the existing landscape, based on aquatic, semi-terrestrial and terrestrial movement?
2) Where on the network would a newly protected area improve the overall reserve connectivity?
3) Where on the network are the areas predicted to see the largest changes in climate and concurrent influence by surrounding land development?
4) What wilderness areas will be most impacted by climate change due to high levels of habitat fragmentation through land use, dams or other human-related alterations?

Mercer Island Certified Wildlife Habitat & Corridor Project

Kari Hiser (contact), John Willard and Elaina Snyder

The objective of our GIS course project will involve the development, design and implementation of a wildlife habitat and corridor network map for the city of Mercer Island. Mercer Island is a community located on Lake Washington and connected to Seattle to the west and Bellevue to the east by Interstate 90. The boundaries of our project site will be contained within the island's 6.2 square miles, with a primary focus on areas with current sustainable habitat and wildlife passages. Our sponsor Rita Moore is a member of IslandVision, a nonprofit sustainability-focused organization on M.I., and the main project stakeholder. In addition to Moore, secondary stakeholders will include M.I. residents, IslandVision committee members, green businesses, developers, and other local cities interested in wildlife corridor preservation and habitat certification. The primary goal of our project will be to provide Moore and IslandVision with an electronic and hard copy map of potential and current M.I. corridor habitat. Our project deliverables will assist Moore and IslandVision with prioritizing public outreach efforts and certifying M.I. as a Wildlife Habitat Community. In order to receive certification, M.I. must meet a list of environmental standards provided by the National Wildlife Federation. In addition to the NWF list, we will use site observations, sponsor recommendations, and native species criteria to help prioritize our cost-analysis for both current and potential corridors. To develop our corridor map, we will build a geodatabase consisting of primary and secondary data layers. Some examples of primary layers will be DEM, drainage basin, stream network, soil type/erodability, and riparian maps of M.I. The secondary layers will include surface vegetation, zoning boundaries, and road maps. From our research, we will perform multiple cost distance and cost-benefit analyses to assess areas of current and future sustainable wildlife habitat.

Continued from previous page

A Geodemographic and Statistical Analysis of Bike Lane Access in Seattle, WA
Micah Babinski (contact) and Phil Murray

Much is known in the academic and urban planning communities about the benefits of active lifestyles and efficient transportation networks. The layout of the urban landscape has tremendous influence on the levels of walking, biking, and other alternative modes of transportation. Community-oriented coalitions such as Active Living by Design (ALbD) work to encourage urban planners and policy makers to implement projects aimed at increasing 'walkability' and access to bike lanes within Seattle and other major cities. This project uses GIS software and correlation testing to evaluate two demographic factors based on their predictive influence on bike lane access in Seattle.

We gathered King County census information and tailored it to represent population and median income data for the census tracts of Seattle. We then performed a spatial join of Seattle bike lane data to the Seattle census tracts, allowing us to represent the percentage of total bike lane access for each tract. We calculated z scores for each tract representing per-tract variation in population, median income, and bike lane access. We performed two regression analyses based off of the z scores, to find the correlation coefficients for the associations between population and bike lane access, and between median income and bike lane access. Essentially, we used statistical and geodemographic methods to evaluate Seattle's bike lane implementation based on criteria of equity and efficiency.

We conclude that both median income and population have low to moderate associations with bike lane access, and that both associations are significant at a .05 significance level. We also observe that the correlation coefficient for median income is slightly higher than the coefficient for population. This study would be useful to groups like ALbD to determine which factors contribute to below-average levels of bike lane access in certain parts of the city.

Wednesday, April 21st 1:00 pm—2:30 pm
Vendor Presentations — Room 315

Flex Based Web Applications for ArcGIS Server
Jarod Bishop

Are you leveraging your ArcGIS Server investment fully? GeoNorth develops simple and powerful web applications for ArcGIS Server to help organizations large and small make the most of their ESRI technology. This presentation will introduce the latest exciting new version of GeoNorth's MapOptix™ solution for ArcGIS Server: MapOptix Lite™. Taking advantage of the sleek Flex API for ArcGIS Server, this application offers users a snappy, intuitive interface for viewing GIS data over the web. It is the perfect solution for organizations that need an affordable, lightweight, focused web application but lack the resources or time required to develop and maintain one internally. Configuration is simple and requires no programming to set up. Based on GeoNorth's core MapOptix technology, MapOptix Lite is available at a significantly lower cost, making it the ideal solution for small to medium sized organizations with limited resources. For those familiar with the MapOptix product, this release also does not require ColdFusion. For this presentation, GeoNorth's Jarod Bishop will demonstrate MapOptix Lite, as well the latest version of MapOptix.

Washington Transportation Network, Getting a State Travel Network Together into a Single Map
Tami Griffin and Ian Von Essen

Have you ever tried to combine just two GIS datasets from different sources into a single design? It can be challenging to agree on standards and a design, then to maintain the scripts to keep ongoing changes up-to-date. The WA-Trans project must consider the design goals of 39 Washington counties and bordering Oregon and Idaho counties. A model of purposeful database design and cooperation, this project involves many advanced GIS techniques to standardize, update, and maintain a state level travel network.   There are currently two areas of focus in this implementation. They are high population counties and a regional dataset in the eastern part of Washington State.
This presentation includes:
- A brief review of the WA-Trans process,
- A look at data collected and integrated so far including in depth reviews of issues and business rule development to support this integration and provide for data consistency,
- Time for questions and discussion of future directions.

Connecting Purgatorio to Paradiso--Ferry Tracking and Captain's Log Automation using a GPS/AVL Solution
Xuejin Ruan and Chuck Buzzard, GISP

Puget Sound is blessed with a variety of beautiful islands and laid back island life style, but paradise comes with a cost. "Where is that ferry? Will it arrive on time? When did it leave? Why is it delayed?" As Dante would tell you, a trip from Paradiso to Purgatorio can be stressful. But if you are a rider of the Christine Anderson, Pierce County's island hopping ferry, you can get all your questions answered on the web or on a newly installed reader-board.
Pierce County GIS built a ferry tracking system on top of their enterprise, web-based, Automated Vehicle Location (AVL) solution. The system not only facilitates ferry management through increased efficiency and reduced cost, but it also provides better service to the public by feeding ferry location and status information to riders. The main functions of this system include:
1. AVL data to automate the ferry schedule table and the Captain's Log;
2. Ferry arrival/departure data and delay information for use on a reader board;
3. Ferry location and status information are passed to a web-based, public map;
4. Rider alerts by email are available to subscribers when the ferry is delayed;
5. Digital reports and graphs are generated showing various statistics about the ferry.

The value of this system is that it provides accurate GPS data; it increases efficiency and accuracy by replacing a manual log with auto-populated digital records; it allows quick report creation without going through piles of paper logs; and it increases transparency in ferry operation by providing objective ferry location and status information to the public.

Modeling the World: Collaborative Spatial Analysis Using the Geoanalytic Grid Engine
Martin Davis and Mark Sondheim

Large geospatial data warehouses play a significant role as a source of searchable, standardized datasets. The datasets typically can be viewed and downloaded for later analysis by GIS specialists. Another paradigm exists in which the architecture supports sophisticated analysis over the web by managers, resource experts and even the public with little or no GIS training. Furthermore, the architecture must enable complex spatiotemporal analysis of large and diverse data volumes, while providing fast response and support for collaboration.

The GeoAnalytic Grid Engine (G2E) is a new tool that realizes this paradigm. When populated with many datasets, it can be considered as a geoanalytic warehouse, or simply as an analytical engine suitable for a broad range of geospatial problems. Typical use cases include habitat modeling, forestry analysis, watershed-based assessments for rehabilitation, determination of ecological reserve potential, and comparison of different global warming scenarios. The area of interest may be small, such as a county or watershed, or large such as a state or continent, or potentially even the entire earth. Queries can be defined, stored, and later accessed and extended by others. The results are displayed in map form, with linked tables and business graphics.

G2E employs a rich Web interface accessible through modern browsers. Queries are first defined interactively through a clever user interface; they are then processed in the background utilizing a custom query evaluator that provides a full range of mathematical and logical operations. The map, graph and tabular results can be viewed and exported if desired. The interface is implemented using open source components including OpenLayers, MapServer, and the Google Web Tookit. The specially-designed, grid data format provides both fast performance and low storage requirements.

Quantifying Differences Among Similar Sets of Linework with Hydrodiff
Kenneth B. Pierce PhD and Andrew D. Weiss

Hydrodiff is a tool developed by the WA Dept. of Fish and Wildlife to compare two sets of polyline layers. The impetus for Hydrodiff was the need to compare statewide stream layers consisting of hundreds of thousands of lines. Because stream layers can be generated from many sources (e.g., digital elevation models, digitizing contour maps or tracing aerial photos) stream layers for the same location can differ and those maintained by different organizations can diverge over time. Hydrodiff uses successive predicate filtering to assess similarity between a target layer and a comparison layer, and …result. Buffers of different radii are created for the comparison layer. The target layer is then compared to successively larger buffers and tagged with the radius of the containing buffer. For example if 1, 10 and 40 foot buffers were used, a target line that completely fits inside the 40-foot buffer but not the 10-foot buffer would be labeled 40. Subsequently, the 1-foot and 40-foot buffers are used to clip the target layer so that the percentage of the target feature class within the respective buffer can be calculated. Depending on the analysis parameters, streams with high percentages can be labeled. For example, the USGS similarity rule states that 95% of a stream must be within 40feet to be considered similar. Streams meeting the criteria would receive an appropriate code. This can be especially useful for finding stream lines that only differ by extension. The remaining streams, not previously coded, are tested for 0 overlap with the 1-foot buffer and <2 ft overlap. Segments with < 2ft overlap are usually densification. Using these criteria, the overall similarity between two polyline layers, be they streams, roads or GPS tracks, can be assessed and actions can be assigned. Additionally, projects can be prioritized when multiple areas need adjustment.

ABSTRACTS

Wednesday, April 21st 1:00 pm—2:30 pm
Spatial Data Quality: Dealing With the Devil in the
Details - Room 318

Panel Discussion
Spatial Data Quality: Dealing With The Devil In The Details
Karl Johansen, Doug Smith, CP, PE, RPP, Michael Kulish, PLS, GISP and Gavin Schrock, PLS

Development of increasingly sophisticated GIS software, mapping tools, and related business applications continues un-abated. GIS users also can access massive amounts of spatial data, often at no cost, to feed this technology explosion. How-ever, there is a lack of clarity on the business ramifications of spatial data quality; the foundation elements of data creation, management, and maintenance; and effective metrics of data and its usage. Three panel members representing the land survey, photogrammetric, and GIS disciplines will offer their impressions on spatial data issues, from primary collection through use cases. They will describe ideal and less-than-ideal scenarios where outcomes could be traced to applying or ignoring industry best practices. The panel will conclude with a round table discussion on what specific steps – analysis, edu-cation, policies, etc. - might advance this topic to the benefit of all spatial data users.

Doug Smith is a consulting photogrammetrist and Vice President of David C. Smith and Associates, Inc., a photogrammetric mapping firm located in Portland, Oregon. Doug is a registered professional engineer, professional photogrammetrist, and certified photogrammetrist with fifteen years of experience in photogrammetric mapping. He has worked with technological advances in this field such as LIDAR and digital aerial mapping sensors.

Like other mapping/surveying disciplines, aerial photogrammetry continues to experience impressive leaps in sophisticated technology. Aerial mapping vector data and orthophotography figure prominently in most GIS programs, especially as base layers for urban mapping applications. GIS managers and super-users should have a basic level of knowledge about the in-puts, processes, products, and uses of aerial mapping. The author will discuss industry best practices, as well as common pitfalls and misconceptions that emerge in some GIS projects. The presentation will conclude with a summary of data qual-ity parameters for both vector and imagery products.

Michael Kulish has been a Professional Land Surveyor for more than 25 years, using and advocating GIS for most of that time. Working in both public and private sectors, his experience ranges from small, highly detailed site work to projects covering hundreds of square miles with an emphasis on the areas of cadastral and public works. He has been privileged to be involved in the early stages with several of the seminal evolving technologies in the field including GPS, Lidar, Digital Photogrammetry, and 3D Mobile Mapping. He also serves as adjunct professor of Surveying and GIS at Olympic College in Bremerton.

This section will give a brief review of some fundamental concepts of the spatial data acquisition and analysis chain and dis-cuss how attention to or disregard of these principles can affect real world projects. Consideration of these issues is perti-nent to anyone involved in the acquisition, processing, or use of spatial data, from the planning and procurement to direct data collection, post-processing, and quality control, to final use for production of maps or other information products.

Gavin Schrock, PLS is the administrator of the Washington State Reference Network (www.wsrn.org), a regional consortium of cooperative GPS networks in the Pacific Northwest. He has worked in surveying, mapping, data management, and GIS for three decades in the civil, utility, and mapping disciplines. He has published in these fields and has taught these subjects at local, state, national, and international conferences.

The data is not 'bad', it depends what you want to do with it…
The spatial precision of a GIS feature or theme need only be considered with respect to statutory or regulatory restrictions depending on the end use. A feature or theme may have never been intended for engineering design work, or conveyance of real-property; two examples of end users of spatial data can be subject laws. Fear of misuse of spatial data has driven much of controversy over the stated (or not stated) spatial accuracy of specific GIS features and themes. It may be less of an immi-nent hazard than most would fear; existing laws already protect against unlicensed engineering and surveying… and in all but a few rare situations the preparation and use of GIS data has no potential legal ramifications.

CLOSING SESSION

Wednesday April 21st 3:00 p.m. - 4:00 p.m.
Ballrooms A & B

Board Elections	Nomination Committee
Map Contest Winners	Amanda Askren
Dick Thomas Award Winners	Amanda Taub
Final Announcements	Don Burdick

SUPPORTING ORGANIZATIONS AND USER GROUPS

WAURISA would like to thank the following professional organizations and user groups who helped promote the 2010 WASHINGTON GIS Conference to

Organization Name	Organization Web Site	Contact person	Contact Email
ACSM Washington Chapter	http://www.wss-acsm.org	Tim Leach	Tim@TimLeachGIS.com
ASPRS Puget Sound Chapter	http://www.photogrammetry.com/ASPRS-PSR	Dave Brown	daveb@ehsintl.com
Association of Washington Cities	http://www.awcnet.org/	Greg Babinski	
APWA _ Washington Chapter	http://www.apwa-wa.org/	Randy Brackett	RandyB@co.island.wa.us
Cadalyst Magazine	www.cadalyst.com	Nancy Johnson	nancy.johnson@cadalyst.com
Cascadia Users of Geospatial Open Source	http://groups.google.com/group/cugos/	Karsten Venneman	karsten@terragis.net
NW ESRI GIS User Group	http://www.nwesriusers.org/	Paul Ferro Bart Butterfield Mike Onzay John Schaeffer Joanne Markert	geotrekGIS@gmail.com bbutterf@idfg.state.id.us mike.onzay@mercergov.org john@junipergis.com jmarkert@geoengineers.com
Association of Washington Geographers	http://washingtongeographers.org/	Tim Scharks	tscharks@greenriver.edu
Washington Chapter – Intergraph GIS User Group	http://www.intergraph.com/community/chapters/	Dann Borden	dborden@co.franklin.wa.us
Aboriginal Mapping Network	http://www.nativemaps.org/		info@nativemaps.org (GB Can Post with own Account)
Central Puget Sound GIS User Group	http://waurisa.org/phpBB2/viewforum.php?f=24	Nora Gierloff	Via List serve
GITA Pacific NW Chapter	http://www.gita.org/chapters/pacific/pacific.asp	Goodhorse Nation	goodhorse.nation@pgn.com
King County GIS User Group	http://www.metrokc.gov/gis/KC_Users_group.htm	Cheryl Wilder	Cheryl.wilder@metrokc.gov
Land Surveyors Association of Washington	http://www.lsaw.org/	James A. Main	jimmain@ramco-mainland.us
Northwest Washington GIS User Group	http://www.acadweb.wwu.edu/gis/nwgis_info.htm	Stefan Freelan	Stefan@cc.wwu.edu
Portland Area GIS User Group		Greg Newkirk	greg.newkirk@ci.vancouver.wa.us
Puget Sound Autodesk User Group	http://www.augi.com	Jamie Thomas	jthomas@midpointcad.com
Tri-Cities AutoCad User Group	http://toxicfrogmultimedia.com/tcaug	Dave Espinosa-Aguilar	tcaug@toxicfrogmultimedia.com

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Education		**Finance**		**Conference**		**Outreach**	
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On behalf of all the conference committee
members and volunteers –

Thank you for attending
and we look forward to seeing you next year!

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Follow us on Twitter at @WAURISA.
The Twitter hashtag for the 2010 Washington GIS Conference is #wagis10.