

The Virtual Oregon Map: A Partnership to Enhance Geospatial Awareness and Interoperability for Improved Business Processes and Decision-Making

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Partner Organizations - Govt Lab: USDA Forest Service Pacific Northwest Research Lab. **Govt:** City of Corvallis GIS, Oregon Watershed Enhancement Board, Oregon Governor's Office (Natural Resources Policy), State of Oregon Dept. of Administrative Services, Willamette Council of Governments, Confederated Tribes of Umatilla Reservation.

Private Sector: Alsea Geospatial, ESRI, Global Mapping Technologies, Newlands & Company, Titan. **Other:** The National Map, U.S. Geological Survey

Proposed is the development of innovations in the open source web service cataloging, viewing and distribution of place-based (geospatial) environmental data of Oregon, along with education and outreach throughout the state on how best to incorporate various data sets, images, and geospatial tools to support private and government enterprises throughout the Pacific Northwest. The Virtual Oregon map will be an innovative portal that incorporates three components: an OpenGIS (geographic information system) service metadata catalog; an OpenGIS service map viewer; and a reference set of geospatial analytical web services; Planned **innovation outcomes** include developing the capacity to deliver interoperable geospatial solutions throughout our region by training and technical assistance, mainly via a series of training workshops for government agencies, businesses, and academic faculty/staff/students; a web portal for geospatial interoperability education; a unique internship program that sends students *out*, but brings private sector and government partners *in* (to campus labs); and general public outreach through the international GIS Day.

Intellectual merit of the project

Digital data sets are growing exponentially nationwide and our society has changed from being data-poor to data-rich. At the same time, our ability to *derive knowledge and management decisions* from all of these data in an analytical context remains poor. Any problems that remain in finding data are now compounded by the additional challenge of effectively filtering through large volumes of it in order to find meaningful knowledge. From an organizational perspective, although geospatial data sets are legion, there has been a general inability and often unwillingness to exchange data across boundaries, exacerbated by low levels of coordination. Government agencies, businesses, academic institution, and even non-profit organization all have a tremendous stake in the development and management of geospatial data resources. Developing and maintaining a unified community database requires an organizational structure that can build *and* link databases distributed throughout the worldwide web is sorely needed. Why geospatial data? It is: (1) critical for managing our natural resources and all public infrastructure; (2) management is more difficult for most types of geospatial data sets because of their large volumes do not lend themselves to existing database management approaches, particularly over the web; and (3) maps and imagery (especially of local features) are unusually compelling tools for teaching and public awareness. We note that the NSF PFI program has not yet funded an Oregon partnership, nor one that focuses on geospatial data in the manner that we are proposing.

Broader impacts of the project

Wide data dissemination to enhance scientific and technological understanding – Data will be broadly and easily accessible to the state of Oregon's natural resource community and to libraries, high schools, and outreach sites. Linkages will be made to parallel research in geographic information science, digital library development, and computer science.

Advancing discovery and understanding; promoting teaching, training and learning – Our partnerships with private sector and state, local, and tribal governments will allow us to incorporate natural resource data sets into faculty resource materials. Moreover, the project advances research in each of the component disciplines by building on other recent work, an approach that will yield a number of student research topics at both undergraduate and graduate levels

Broadening the participation of underrepresented groups – Three of the PIs are women; one is a woman of color. All will play vital roles in encouraging women and minority scientists to enter research careers. The research labs of the lead PIs have an established policy of recruiting from underrepresented groups, who consistently account for over 50% of its staff and student researchers.

Benefiting society – Developing workshop materials and demos/tours/presentations for international GIS Day will allow us to analyze, interpret and synthesize research and education results into formats understandable and useful for non-scientists.

Economic impact - The project heavily involves GIS development, use, and education. GIS is now an \$8 billion industry, still expanding, with 2003 software revenues that topped \$1.75 billion, an increase of 8%. ESRI, a major industry partner in this proposal, has software revenues accounting for nearly 1/2 of that total. We have a specific goal of increasing the scientific and technological capabilities of the workforce in GIS and similar geospatial technologies within the state of Oregon and to more fully meet these important needs through internships with our partners.