

**2006 Summer Edition**

**Global Spatial Data Infrastructure - 9**

The next major conference of the Global Spatial Data Infrastructure Association (GSDI) is approaching



and will be held in Santiago, Chile from 5-10 November 2006. The theme of this year's conference is "Spatial Data: Tool for Reducing Poverty," and the conference will highlight plenary and technical sessions focused on this theme. The call for papers and sponsorship opportunities are readily available at <http://www.gsdi9cl/> Similar to our last meeting in Cairo, we are expecting a large attendance but this time the predominant participation is likely to be from Latin America, the Caribbean and of course will engage international leaders in the field. We would be pleased to have you personally participate in this meeting. We also encourage you to invite other representatives of your organization to join you and we encourage your agency to consider sponsorship at some level. You can contact the conference organizers directly at [info@gsdi9cl](mailto:info@gsdi9cl) or by fax at 56-2-2742789. Please note on the schedule that we are having over 60 technical sessions along with special SDI Regional round tables and Development and Mapping Agency round tables, workshops, plenary sessions and social events. For further information, contact [astevens@usgs.gov](mailto:astevens@usgs.gov) or 703-648-5119.

**Developing the Geospatial Enterprise**

Enterprise architecture is a planning practice that documents the business activities performed by an organization in fulfilling its mission and goals, and identifies the information technology and other resources needed to support those activities. The identification and deployment of common architectural elements across partnering organizations will facilitate the sharing of information and services and enhance overall mission effectiveness.

The Federal Enterprise Architecture (FEA) is a business-based framework for government-wide improvement that is being developed by the Office of Management and Budget (OMB) to transform the Federal government

to one that is citizen-centered, results-oriented, and market-based. The FEA includes reference models focusing on business processes, performance, technology, services and data as key areas of interest.

Two activities have taken place over the past year to address the systematic recognition of geospatial capabilities within the government enterprise to improve efficiency and effectiveness of government business and ultimately providing better service to the citizen. The Geospatial Profile of the FEA provides agency business architects with the references and background to recognize and incorporate common geospatial capabilities in their business planning. The Geospatial Line of Business is a recently launched effort by OMB to track and refine geospatial investments that support the breadth of government requirements.

**Development of a Geospatial Profile**

Across all levels of government, geospatial capabilities are being discussed and implemented in many different ways and with varying degrees of progress and consistency. These capabilities exist in most organizations and yet have not been documented and implemented in systematic ways, leading to breaks in potential interoperability.

To remedy this, the Federal Geographic Data Committee (FGDC) and the Federal Chief Information Officers (CIO) Council, in concert with key collaborating non-federal partners, have developed the Geospatial Profile of the FEA as guidance for use by planners at all levels of government. Enterprise architecture profiles describe cross-cutting capabilities that are common to multiple lines of business and apply across agencies. FEA profiles have already been developed for Security and Privacy and for Records Management.

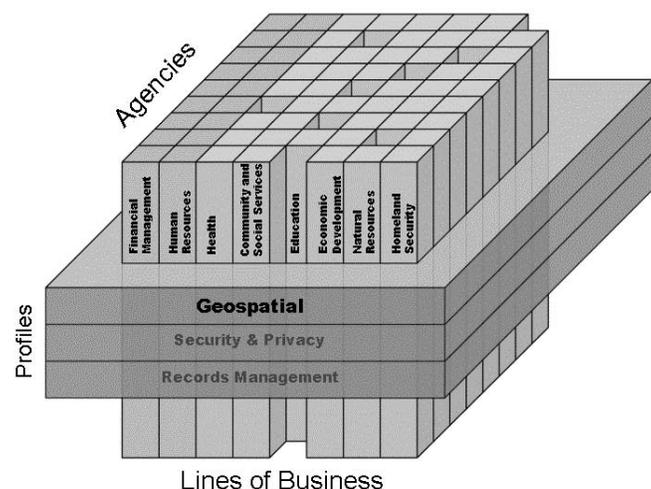
The Geospatial Profile document highlights geospatial patterns in each of the FEA reference models and instructs agency architects on best practices in building interoperable geospatial capabilities. It provides annexes of information to assist in an agency's development of all five FEA Reference Models to reflect geospatial capabilities – Business, Performance, Technology, Data, and Service Components. Through application of this Geospatial Profile in the design and

execution of business practices, organizations have the opportunity to improve information exchange across – and beyond – the federal government. To this end, the Profile document was co-authored by key non-federal participants also interested in building architectures that are consistent and compatible at the state, local, and federal levels.

## Geospatial Line of Business

OMB is building upon the resources collected for the Geospatial Profile to identify a cross-cutting Geospatial Line of Business initiative. According to the FEA Concept of Operations for Line of Business initiatives, the goals of a LoB effort include:

- Improved agency mission performance,
- Reduced costs government-wide through consolidation and standardization, and
- Simplified service delivery for both customer-facing and back-office services



This process will result in guidance to federal agencies that will be phased in over the coming budget years to formalize operational responsibilities, budget planning and execution, and identify opportunities for shared data and services stewardship in the context of geospatial functions and data.

There are three phases in the realization of this Line of Business initiative – analysis, definitional, and operational. The analysis phase includes the development of a vision, goals and objectives, a notional business architecture, and a baseline inventory of data and services. The definitional phase includes a public Request for Information (RFI) and its analysis, a concept of operations, solution requirements document, target business architectures, the business case, and a transition strategy. These two phases will be concluded by early fall, when the operational phase begins. The operational phase will provide guidance to agencies on meeting policy objectives, on integrating the LoB into target business architectures, and facilitate the implementation of LoB common solutions.

Outcomes of the Geospatial Line of Business initiative are likely to formalize budgetary and business alignment practices that optimize the government’s overall geospatial investment. This may include enhanced governance, procurement guidance, service level agreement templates for geospatial services, and the identification of government-operated or contracted common solution service providers for specific functions to be identified in the definitional phase. Another likely outcome is a formalization of the roles, responsibilities, and performance metrics for geospatial information stewards as listed in OMB Circular A-16 in support of their thematic communities and common government-wide requirements. In its operational phase the LoB will have a continuing requirement for a small project management office, coordinated with FGDC and OMB, to maintain high awareness and visibility of the planning and reporting requirements as well as a forum for the logistical agreements on establishing government-wide geospatial capabilities.

These two efforts – the Geospatial Profile and the LoB – are trying to tackle the issue of how to effectively implement the NSDI through the use of business-driven requirements, enterprise architecture, and budgetary techniques. Whereas geospatial technology and capabilities still require some context and logical architecture, the realization of an effective NSDI is more critically dependent on the social and organizational commitment to establish and maintain robust capabilities and agreements that support mission requirements that transcend the needs of any one agency, company, or organization. For further information contact Doug Nebert, dnebert@usgs.gov, 703-648-4151.

## Framework Data Standard On Its Way To Becoming An American National Standard

The International Committee for Information Technology Standards (INCITS) Technical Committee L1, approved INCITS project 1574-D, Information Technology – Geographic Information Framework Data Content Standards, for further processing to become an American National Standard. A comprehensive history of this project may be found at <http://www.fgdc.gov/standards/projects/incits-l1-standards-projects/framework/status>.

The draft Framework Data Standard was created to enable data exchange for seven themes of geospatial data of critical importance to the National Spatial Data Infrastructure (NSDI), as they are fundamental to many different Geographic Information Systems (GIS) applications. The seven themes are: digital orthoimagery; cadastral data; elevation; geodetic control; governmental unit boundaries; hydrography; and transportation. These themes are referred to as

NSDI framework data themes. In the draft standard, the transportation theme was divided into five parts, with each part covering a different mode of transportation; airport facilities; railroads; roads; transit; and waterways.

Each part of the draft Framework Data Standard contains an application schema that specifies the feature types, attribute types, attribute domain, feature relationships, spatial representation, data organization, and metadata for the data set of a particular framework data theme. The application schema is expressed in Unified Modeling Language (UML) and depicted by UML class diagrams.

XML Metadata Interchange (XMI) format files enable the exchange of UML models between various modeling software packages. An implementation of the draft Framework Data Standard has been created using the Geography Markup Language (GML) developed by the Open Geospatial Consortium. A compressed file containing XMI and GML files may be downloaded from: <http://www.fgdc.gov/standards/projects/incits-1-standards-projects/framework/models>

The FGDC and various member agencies participate in INCITS Technical Committee L1, consistent with OMB Circular A-119, which directs Federal agencies to participate in voluntary consensus standards activities. INCITS L1 membership is the means by which to get involved with ANSI and ISO standards activities for geographic information. More information about INCITS, ANSI and ISO may be found at: <http://www.fgdc.gov/standards/organization/external-standards-organizations>

The draft Framework Data Standard will be forwarded to the INCITS Secretariat, which will then arrange to announce public review of the draft document in ANSI's "Standard Action" bulletin. Following ANSI public review, the INCITS Standards Review Board will review the draft standard and recommend that the INCITS Executive Board approve the standard. After the INCITS Executive Board approves the draft standard, it will be forwarded to ANSI's Board of Standards Review for approval and publication as an American National Standard. For further information contact Julie Maitra at [jmaitra@usgs.gov](mailto:jmaitra@usgs.gov), 703-648-4627 or Bill Tolar at [btolar@usgs.gov](mailto:btolar@usgs.gov), 703-648-7759.

## The Fifty States Initiative

The Fifty States Initiative outlines a fundamental change in the way all governments should work together to build the National Spatial Data Infrastructure (NSDI). Instead of the current "build it and they will come" philosophy that relies on random grants and partnerships, a new program emphasizing strategic and business planning with specifically targeted implementation grants, performance measures and incentives will be employed. This initiative is one of twelve planning activities that

were begun as part of the Federal Geographic Data Committee's (FGDC) Future Directions strategic planning process.

An action plan for the Fifty States initiative was approved for implementation by the Board of Directors for the National States Geographic Information Council (NSGIC) and by the Steering Committee of the Federal Geographic



Data Committee in early 2005. The plan identified the criteria, characteristics and activities that will lead to effective statewide coordination councils in the future. It also described implementation steps that the Federal government and other entities need to undertake to establish more formal statewide coordination councils that will take an active roll in completing the NSDI. The term "statewide" applies to the states, the District of Columbia, Puerto Rico, and all of the Insular Areas.

FGDC awarded a contract to NSGIC in September 2005 to begin developing the component pieces of the Fifty States Initiative. NSGIC hired a subcontractor (Applied Geographics, Inc.) and appointed a Steering Committee from eight stakeholder groups to develop guidance documents that will assist the geospatial community with the creation of strategic and business plans. These documents can be obtained at either the FGDC Web page: <http://www.fgdc.gov/policyandplanning/50states/50states> or at the NSGIC Web page: [http://www.nsgic.org/hottopic/fifty\\_states.cfm](http://www.nsgic.org/hottopic/fifty_states.cfm)

During its Midyear Meeting, NSGIC hosted a half-day workshop to discuss the use of these guidance documents. The workshop was attended by 95 participants from state, academic, federal, and business sectors, but it was initiated for the eleven states that received the FGDC CAP Category III grant awards this year (CT, LA, MD, MN, NC, NH, OK, TX, WV, WI, & WY). Eighty-eight percent of the workshop attendees felt they were better prepared to create strategic and business plans after attending this workshop, and 78% thought this workshop should be repeated at other venues. Many workshop attendees also felt that additional help and workshops dealing with return on investment (ROI) calculations would assist them. This will be discussed as a potential future activity.

NSGIC is about to begin work on new baseline measures to help monitor the status and health of statewide coordination efforts. This work will follow-up on previous efforts to develop a rating system that allows the states to compare themselves and learn from each other. Stay "tuned" for future activities related to the Fifty State Initiative. For further information, contact [William.burgess@comcast.net](mailto:William.burgess@comcast.net)

## What's New: Geospatial Digital Rights Management Report Released

The GeoData Alliance announced publication of a report on Geospatial Digital Rights Management. The 98-page report includes an introduction to digital rights management (DRM) and why the geospatial case is unique, and it places GeoDRM in a technical and policy context. The report documents the accomplishments of a cooperative agreement executed by the Open Geospatial Consortium (OGC), the Federal Geographic Data Committee (FGDC) and the GeoData Alliance. In the foreword, Roberta Balstad, Director of the Center for International Earth Science Information Network (CIESIN) at Columbia University, noting that research progress is sometimes slowed by the lack of technologies and policies to manage rights to geospatial information, points out that "...this project illustrates the value of developing networks to accomplish shared goals." Vanessa Lawrence, Director General and Chief Executive of Ordnance Survey of Great Britain, endorses these efforts to advance technology and policy in geospatial DRM. For the Ordnance Survey, supporting GeoDRM is a priority because advances in this area will provide protection for our investments in data creation and will help our customers have confidence in the authenticity of data carrying the Ordnance Survey name." The report Geospatial Digital Rights Management is available as a 6.3-megabyte pdf file on the websites of the three sponsoring organizations. For further information contact Kathy Covert, [kcovert@usgs.gov](mailto:kcovert@usgs.gov), 303-477-4184.

## Couer D' Alene (CDA) Tribe GIS Program

In September of 2005, the FGDC and USGS funded the CDA Tribe's Cooperative Agreement Program (CAP) grant to supply Native American place names to the National Map (TNM). Over the year, the CDA Tribe will be working with the FGDC and USGS to enter Native American place names both into the Geographic Names Information System (GNIS) and to provide pertinent information about these place names on TNM. One of the most important goals of this project is preserving the oral history of the geographic name, as well as the correct pronunciations.

Once the content is displayed on TNM, the users will be able to click on a location and bring up a web page that displays items of interest about the site. In all cases, this will include an audio file of how to say the name, along with other historic site information. In addition, some sites will have photographs and video clips of the geographic area that have been identified by elders at the CDA Tribe, and will also include a history and video narrative about the site.

If you wish to start creating your own copy of the Native Names project, you may obtain an empty template and description for the database by going to <http://gis.cdatribe-nsn.gov/NativeNames/>. You can then send your completed database to CDA Tribe and they will append it to the existing Native Names database. Once that is done, your information will be available from this site. For further information, please contact Frank Roberts, [fmroberts@cdatribe.nsm.com](mailto:fmroberts@cdatribe.nsm.com), 208-686-5307 or Bonnie Gallahan, [bgallahan@usgs.gov](mailto:bgallahan@usgs.gov), 703-648-6084.

## NativeView

NativeView is a geospatial consortium consisting of members from tribal colleges and universities nationwide. The goal is to empower Native American's with state of the art technology in geosciences and geospatial data so they can preserve their land, people, and culture for future generations. NativeView will assist Tribal communities with the integration and building of the National Spatial Data Infrastructure (NSDI) through geospatial technology to meet the cultural, academic, scientific and management needs of the people they serve.



The NativeView Executive Leadership Committee would like to cordially invite you to the Tribal College Forum V "Water's Effect on the Landscape", September 7-9, 2006 in Bismarck, ND. The ND Intertribal Summit coincides with the Forum, and will increase exposure and participation in building the NSDI. As with previous forums, the FGDC and USGS are co-sponsors and welcome your participation. For further information, contact Bonnie Gallahan, [bgallahan@usgs.gov](mailto:bgallahan@usgs.gov), 703-648-6084 or Mike Choate, [mchoate@usgs.gov](mailto:mchoate@usgs.gov), 605-594-2829.

## 2006 NSDI Cooperative Agreements Program

The NSDI Cooperative Agreements Program (CAP) is an annual program to assist the geospatial data community through funding and other resources in implementing the components of the NSDI. This program is open to Federal, State, local and tribal governments, academia, commercial, and non-profit organizations. This program provides small seed grants to initiate sustainable on-going NSDI implementations and emphasizes partnerships, collaboration and the leveraging of geospatial resources in achieving its goals. The funding categories for the 2007 CAP will be announced in the

**fall of 2006 at <http://www.fgdc.gov/grants>.  
Funding Categories for the 2006 Cooperative  
Agreements Program**

Approximately \$1,150,000 was granted under this year's program.

**Category 1: Metadata Trainer and Outreach**

**Assistance** provides assistance to organizations with NSDI expertise knowledge and experience in assisting other organizations with the training and implementation of metadata, clearinghouse or web mapping services.

**Northern Arizona University**

Flagstaff, AZ  
Neil Bobb

**Strategic Consulting International**

Tulsa, OK  
Eric Jones

**National Biological Information Infrastructure**

Seattle, WA  
Vivian Hutchison

**Virginia Tech**

Blacksburg, VA  
John McGee

**Alaska Fisheries Science Center**

Seattle, WA  
Bernard A. Megrey

**Category 2: Framework Client Development** projects will develop software clients for Framework Data Services. These services will exploit online Framework Data to support operational needs of an application community. Software will be distributed freely through an established community as an extension to an existing geographic information system or as an open-source software solution that can be integrated into specific decision- support or data management processes.

**Richland County, ND**

Wahpeton, ND  
Doug Bartels

**Image Matters LLC**

Leesburg, VA  
Jeff Ehman

**geoLeaders, LLC**

Burlington, MA  
Jeff Harrison

**Category 3: Fifty States Initiative:** Strategic and Business Plan Development in Support of the NSDI Future Directions Fifty States Initiative. Projects will develop and implement statewide strategic and business plans that will facilitate the coordination of programs, policies, technologies, and resources that enable the coordination, collection, documentation, discovery, distribution, exchange and maintenance of geospatial information in support of the NSDI and the objectives of the Fifty States Initiative Action Plan.

**State of Minnesota**

St. Paul, MN  
David Arbeit

**Oklahoma Conservation Commission**

Oklahoma City, OK  
Mike Sharp

**North Carolina Dept. of Environment & Natural Resources**

Raleigh, NC  
Zsolt Nagy

**Connecticut Geospatial Information Systems Council**

East Hartford, CT  
Mike Varney

**State of Texas**

Austin, TX  
Michael Ouimet

**State of Wisconsin**

Madison, WI  
David Mockert

**Louisiana State University and A&M College**

Baton Rouge, LA  
Craig Johnson

**State of Wyoming**

Cheyenne, WY  
Larry Biggio

**West Virginia University**

Morgantown, WV  
Kurt A. Donaldson

**Towson University**

Towson, MD  
Matthew S. Felton

**State of New Hampshire, Office of Energy and Planning**

Concord, NH  
Ken Gallager

**Category 4: Canadian-US Spatial Data Infrastructure Project**

will support one collaborative project between organizations in the U.S. and Canada that have an interest in creating, maintaining, and sharing geospatial data over a common geography. This is a collaborative funding opportunity sponsored by GeoConnections Canada and the FGDC.

**American Lung Association of Maine**

Augusta, ME  
Edward Miller

**Category 5: Geographic Information Integration & Analysis** category seeks to develop sustainable partnerships to integrate, maintain and provide access to current geospatial data and to develop the infrastructure needed to integrate these data and make them available through geospatial programs of the NGPO. The goal of this category is to assist organizations and consortia to work together with the NGPO to develop and provide access to geospatial information that serves community needs.

**New Jersey Office of Information Technology**  
Trenton, NJ  
Andrew Rowan

**Channel Islands Regional GIS**  
Ventura, CA  
Paul Van Zuyle

**Connecticut Geospatial Information Systems Council**  
East Hartford, CT  
Mike Varney

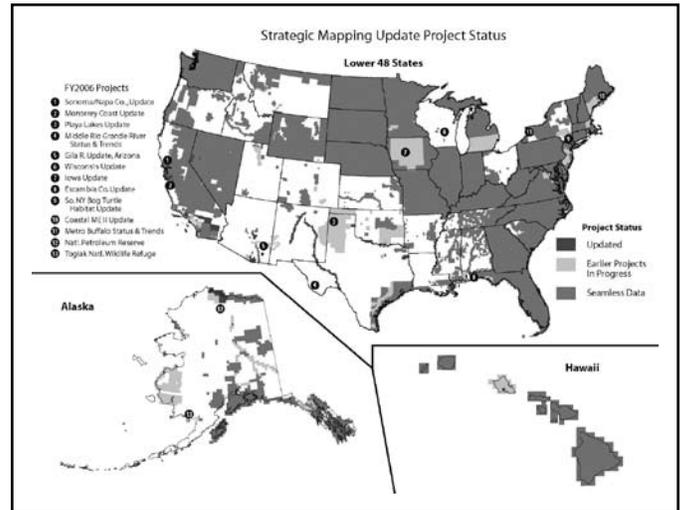
**Pend Oreille County**  
Newport, WA  
Jim Marthaller

**Benton County-State of Arkansas**  
Elizabeth Bowen

## Building the Wetlands Layer of the NSDI

The U.S. Fish and Wildlife Service is the lead federal agency responsible for building the wetlands layer of the National Spatial Data Infrastructure (NSDI). As such, the Service continues to modernize the National Wetlands Inventory Program to achieve operational efficiencies and enhance service to customers over the Internet. In partnership with the U.S. Geological Survey, the National Wetlands Inventory implemented a national wetlands geodatabase to manage and provide via the internet all available digital wetlands data in seamless format for the conterminous United States, Alaska and Hawaii (shown below). This provides resource managers and the public with contemporary digital wetland information that can be used in geographic information systems, as well as in key assessment reports to address complex conservation issues with our partners.

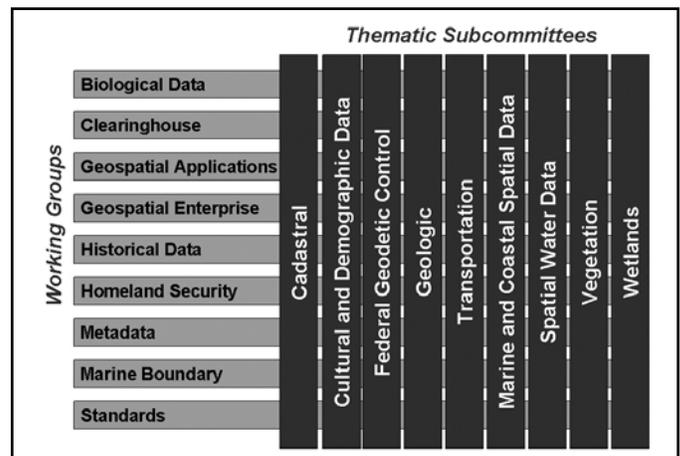
The wetlands layer of the NSDI currently has wetlands geospatial digital data for over 1.9 billion acres of the United States, 49 percent of the total area of the nation. These data were developed in partnership with approximately 100 organizations and are made available at [http://wetlands.fws.gov/mapper\\_tool.htm](http://wetlands.fws.gov/mapper_tool.htm) and through the National Map <http://nationalmap.gov/>. The Inventory



wetland maps are also part of the E-government's geospatial one-stop, [geodata.gov](http://geodata.gov) <http://gos2.geodata.gov/wps/portal/gos>. In addition to digital wetlands data, the Service also has available hardcopy maps for 90% of the nation. These maps can be ordered from cooperator-run distribution centers located through [http://wetlands.fws.gov/distribution\\_ctrs.htm](http://wetlands.fws.gov/distribution_ctrs.htm). For further information contact Bill Wilen, [Bill\\_Wilen@fws.gov](mailto:Bill_Wilen@fws.gov), 703-358-2278.

## Updates on Subcommittees and Working Groups

The subcommittees and working groups of the FGDC were formed to effectively address specific geospatial issues. FGDC subcommittees and working groups are comprised of representatives from Federal agencies and FGDC recognized stakeholder groups who share a common interest in coordination and standards associated with a geospatial data theme with regard to data collection, access, exchange, and applications using those data. Existing working groups for cross cutting themes include data standards, framework, clearinghouse, homeland security, etc. If you would like to become a member of a subcommittee or working group, please contact Alison Dishman, [adishman@usgs.gov](mailto:adishman@usgs.gov), 703-648-5086.



## Coordination for Better Geodetic Control in Idaho

Idaho GIS folks struggle with variable accuracies of the control fabric that is available across the State; we access the Federal Geographic Coordinate Database (GCDB) with its level of reliability in question as the "Core" control for the state. It has been recognized that the State of Idaho needs to update their records in order to have reliable data. A member of our state's survey community has recommend that local control; the information from the Records of Survey and Corner Perpetuation, be used to readjust or recalculate GCDB for Idaho. Idaho's BLM GCDB manager has stated that he has been unable to accept control from local sources for use in the readjustment of GCDB because they were still using the legacy datum of NAD27 and that they didn't have the staff to receive and verify this source of control data. In the winter of 2005, the Idaho Cadastral Technical Working Group (ICTWG) was asked to encourage the State of Idaho to play a stronger role in the maintenance of GCDB.

The CTWG is exploring opportunities to revive the previous State Resident Cartographer position and renaming it the State Surveyor Coordinator. The CTWG has also asked for participation from the Idaho Society of Professional Land Surveyors Board and the Idaho Board of Professional Engineers and Land Surveyors in defining the potential role and mission of an Idaho State Surveyor.

The combined working group believes that the creation of the Idaho State Surveyor would benefit the surveying community and serve the citizens of Idaho. Potential benefits include:

- Improved coordination.
- Creation of a control database available to all surveyors.
- Guidance and assistance on technical matters and programs.
- Re-monumentation of PLSS.
- Assistance to BLM with updating and maintaining the GCDB.
- Liaison with federal, state, and local governments, private industry, and organizations.

For further information contact Nathan Bentley, State GIS Coordinator, 208-332-1879, [nathan.bentley@adm.idaho.gov](mailto:nathan.bentley@adm.idaho.gov)

## Achieving Training Goals Through Collaboration

FGDC has utilized the existing Cooperative Ecosystem Studies Units (CESU) multi-agency agreement to gain training program support services and development of training materials to support standards implementation.



The CESU ([www.cesu.org](http://www.cesu.org)) is a biogeographic network of universities and federal agencies which provide research, technical assistance and education to federal land management, environmental and research agencies and their partners. The network is based on an inter-agency agreement addressing joint mutual benefits and interests, broadened scope of scientific services for federal agencies, increased technical assistance to resource and environmental managers, additional scientific resources and opportunities for universities, and increased diversity of research scientists and institutions. An Introduction to Metadata and Train the Trainer workshops were held at Texas A & M University, the host university for the CESU, Gulf Coast. Texas A & M also has support logistics for proposed training supporting FEMA staff currently stationed in Orlando, Florida. The Wyoming Geospatial Information Science Center, (WYGISC), at the University of Wyoming, is developing on-line training materials to assist framework data standards implementation, and is developing a white paper on academic framework standards implementation. The University of Wyoming is a partner university at the Rocky Mountain CESU.

The Texas A & M agreement, supported by FY '04 funding, sustains metadata training at CESU, Gulf Coast region and partner universities. The current training schedule proposes to continue training in Texas with possible workshops at partner universities in Mississippi and Florida.

The Framework training materials development project at WYGISC will generate a web based framework standard training module and the academic white paper. Remaining framework standards training modules will be developed in future years. For further information contact Sharon Shin, [sshin@usgs.gov](mailto:sshin@usgs.gov), 303-202-4230.

## 2006 Upcoming Conferences

Aug 4-8	NACO Annual Conference	Chicago, IL
Aug 7-11	ESRI International User Conference	San Diego, CA
Sept 7-9	Tribal College Forum V	Bismarck, ND
Sept 7-9	USGS/FGDC 5th Annual Tribal GIS Forum	Bismarck, ND
Sept 10-13	ICMA 92nd Annual Conference	San Antonio, TX
Sept 13-15	GIS in the Rockies	Denver, CO
Sept 18-20	GITA's 15th Annual GIS for Oil & Gas	Houston, TX
Sept 26-29	URISA Annual Conference	Vancouver, British Columbia
Oct 1-5	NSGIC Annual Conference	Little Rock, AR
Oct 22-25	The Geological Society of America's Annual Meeting & Exposition	Philadelphia, PA
Oct 23-24	2006 Virginia GIS Conference	Roanoke, VA
Nov 5-10	GSDI Annual Conference	Santiago, Chile
Nov 6-10	ASPRS/MAPPS Speciality Conference	San Antonio, TX

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