

Final Report
NSDI Cooperative Agreements Program
Metadata Training and Outreach Project (Category 2)
August 2004 – August 2005

Date: September 23, 2005
Agreement Number: 04HQAG0159
Organization: Iowa Geographic Information Council (IGIC)
Project leaders: Patrick Brown, Iowa State University GIS Support and Research Facility
Kevin Kane, Iowa State University GIS Support and Research Facility
Alan Jensen, State GIS Coordinator and Iowa State University Extension

Project Narrative

The goals of this project were to provide metadata training and metadata tools to assist geospatial data administrators throughout the state of Iowa in the development and publishing of metadata. Three primary areas were addressed: **development of internet based metadata entry tools, coordination of metadata efforts or related data efforts throughout Iowa, and providing metadata training and assistance.**

Metadata Tools, Training and Outreach Assistance

Internet based metadata tools

A major portion of this project has been the development and testing of internet based metadata tools which allow metadata publishers to self-register, publish and maintain metadata on the Iowa Geospatial Data Clearinghouse (IGDC <http://maps.gis.iastate.edu/clearinghouse>). The IGDC is primarily designed to fill in the documentation of data not represented by other data clearinghouses in the state. Clearinghouses, such as the Iowa DNR Natural Resource GIS library (<http://www.igsb.uiowa.edu/nrgislibx/>), provide users access to metadata for a large proportion of the data available in the state of Iowa. Anticipated users of the metadata entry and maintenance system will primarily come from local and county government, Tribal government and other state governments such as the Department of Health, Department of Transportation, and universities without their own metadata serving capabilities.

Using ESRI's ArcIMS and ArcSDE software, a system was developed on the IGDC to allow users to enter, store and manage their metadata. Users can use web forms to publish a minimal metadata record accepted by Geospatial One-Stop (GOS), including ISO Topic Category

keywords, cross listing of metadata in sub-categories, and by publisher. Users can also submit, by a web form, FGDC compliant metadata encoded as XML to the system, and have it checked by MP prior to publishing. ArcGIS 9.x users can also request to publish directly to the Iowa Geospatial Data Clearinghouse using ArcCatalog. Currently there are 9 registered publishers on the Iowa Geospatial Data Clearinghouse. Publishers include the Iowa Department of Natural Resources, Natural Resources Conservation Service-Iowa (NRCS-IA), Muscatine Area Geographic Consortium, Iowa State University, University of Northern Iowa, Iowa Department of Transportation, Harrison County, Emmet County, and USDA-National Soil Tilth Laboratory. Records are actively being harvested by the Geospatial One-Stop portal on a monthly basis. Additional publishers to the Iowa Geospatial Data Clearinghouse will be forthcoming in the next 3 – 6 months or will register directly with the Geospatial One-Stop portal and commence harvesting. Further explanations of these activities are described in the metadata outreach section below.

Metadata training

Current publication on the Iowa Geospatial Data Clearinghouse is low. Many reasons exist for this including the non-existence of metadata within most of state, county and municipal government and the lack of commitment by institutions and organization to make metadata development part of the data development work flow. The metadata training portion of this grant tried to address the fundamentals of data documentation and the integration of metadata into data development or planned data process. We chose to use existing metadata training materials developed under previous “Don’t Duck Metadata” grants, adapting the material to fit in a 1-day workshop. During summer 2005, 3 metadata workshops were held. A total of 33 people registered for the one of 3 workshops held in Ames, Waterloo or Council Bluffs, Iowa. A majority of participants were from county government but included other sectors such as federal and state government. Appendix A has a listing of registered participants and collaborators for ongoing metadata related activities. Workshops were facilitated by Patrick Brown, GIS Analyst –Iowa State University GIS Support and Research Facility, and Casey Kohrt, State GIS Librarian – Iowa Department of Natural Resources. Each participant was given a binder containing presentation slides, examples of metadata, a metadata template, and the CSDGM Workbook. The course was structured to include the presentation of standards, clearinghouses, writing and

maintaining metadata. Additional time was allocated to allow participants time to publish to a test metadata server set up to duplicate the Iowa Geospatial Data Clearinghouse and to start developing metadata for one of their own data sets.

Outreach Assistance

Metadata outreach occurred in several ways throughout the duration of this grant. There were some preliminary metadata informational sessions that spoke generically of the importance of metadata and the Iowa Geospatial Data Clearinghouse. These occurred at the Black Hawk County GIS Day and the Iowa State University GIS Day in November 2004. Approximately 75 people attended the session at Black Hawk County and 30 at Iowa State University. Other sessions occurred during quarterly IGIC meetings over the Iowa Communications Network (ICN), a statewide conferencing system. Outreach has also occurred by providing phone and email assistance to individuals wanting direction in organizing and developing metadata within their GIS libraries. Additional information regarding future outreach and support activities can be found in the 'Future Directions' section of this document.

Status of Metadata Service

The Iowa Geospatial Data Clearinghouse (IGDC) was originally registered with the FGDC Clearinghouse Registry in January 2003. The IGDC was next registered with Geospatial One-Stop in January 2004. Harvesting has occurred on a monthly basis since that time. New metadata entries are expected as a result of outreach and training from this grant.

Future Directions

GIS professionals in Iowa, in general, seem excited about the direction of metadata development and the future availability of metadata training opportunities. The IGIC, staff from the ISU GIS Support and Research Facility, and the Iowa DNR have verbal commitments to continue support for professionals needing assistance in developing and maintaining metadata. Other training sessions will continue through the spring of 2006 at various venues including a workshop at the Iowa Geographic Information Council's GIS Conference (August 30, 2005) and a variety of GIS Day activities.

Casey Kohrt, Iowa DNR and Patrick Brown, ISU GIS Support and Research Facility have agreed to act as metadata resource contacts for individuals throughout the state requesting metadata assistance. There are plans to implement a metadata resource guide on the IGIC website (<http://igic.gis.iastate.edu>) in the next few months. Included will be links to existing metadata resources, tips and tricks for developing metadata, FAQs and upcoming training opportunities. ICIT and IGIC members have also expressed an interest in organizing a metadata retreat to develop metadata, provide the opportunity to peer review metadata and publish the resulting documents to the IGDC.

There are several ongoing projects that have or will benefit directly from this grant and add either to harvestable metadata from the IGDC or additional metadata to Geospatial One-Stop. Three projects that are in process will be highlighted. The first is an agreement between the Iowa Geographic Information Council and Iowa Counties Information Technology (ICIT). ICIT has 99 member counties who have been planning the implementation of an FTP/Web based data delivery system for county geospatial data. The Iowa Geospatial Data Clearinghouse will act as the repository for metadata for data products available on the ICIT server. The second project is to work closely with Casey Kohrt, GIS Librarian-Iowa Department of Natural Resources, to ready their metadata for harvesting by Geospatial One-Stop. The ISU GIS Facility has helped them in the past to automate the process of extracting metadata stored in a database to the CSDGM compliant metadata encoded in XML. Additional work needs to be done to insert ISO Theme Keywords (ISO 19115 Topic Category) in the 17,000+ documents maintained by the Iowa DNR. Methods have been discussed about how to do this programmatically so the timeline for completion of this portion is relatively short. The Iowa DNR has made a commitment to place all documents in a web accessible folder and register directly with Geospatial One-Stop rather than publish to the IGDC. The third project involves providing support for Iowa State University faculty, staff and graduate students with data archiving and metadata development for archived geospatial data. Many datasets associated with thesis and dissertations lack formal metadata or a means for future researchers to access these datasets. The ISU GIS Facility is working with the Graduate College and Thesis Office, on mechanisms to ensure that geospatial data has metadata.

Feedback on Cooperative Agreements Program

The Cooperative Agreements Program has provided an excellent opportunity for the state of Iowa to increase its participation in the NSDI. Funding through this program has allowed us to expand metadata services, raise awareness of metadata, and increase participation in clearinghouse activities. The online payments system was also relatively easy to use with disbursement being prompt. Overall our experience in this program has been very positive. We hope to apply for another grant if future funding opportunities are available.

Appendix A. Metadata Workshop Participants and On-going Project Contacts

Metadata Workshop Participants

| | Name | Title | Organization |
|---------------------------|--------------------------|-------------------------------|--|
| <i>Ames, IA</i> | Abrams, Eric | GIS Technical Coordinator | Iowa Department of Transportation |
| | Brucker, Dustin | Soils Technician | USDA-National Soil Tilth Laboratory |
| | Combs, Jeff | GIS Technician | Sac & Fox Tribe of the Mississippi in Iowa |
| | Deng, Lang | GIS Coordinator | Story County, IA |
| | Ewen, Alex | Technician | Emmet County, IA |
| | Harter, Leanne | Director, Planning and Zoning | Story County, IA |
| | Hartpence, Lawrence | GIS Coordinator | Jasper County, IA |
| | Juggoth, Rittirong | Post Doc | Iowa State University/Thailand Post Doc. Conard Environmental Research Area - Grinnell College |
| | Mottl, Larissa | Resource Manager | Iowa State University-Agronomy |
| | Nutter, Forrest | Professor | |
| | Oesterreich, Wolfgang | GIS and Soils | USDA-National Soil Tilth Laboratory |
| | Packard, Anne | GIS Coordinator | Fox Engineering |
| | Patocka, Roger | County Engineer | Emmet County, IA |
| | Powell, Terry | GIS Mapping Specialist | Polk County, IA |
| | Roberge, Dominic | GIS/Planning Department | City of Ames |
| | Seeger, Chris | Professor | Iowa State University, Landscape Arch. |
| | Swaim, Brenda | Appraiser | City of Ames |
| Tuke, Gishe | Researcher | Iowa State University | |
| <i>Waterloo, IA</i> | Berquam, Barb | GIS Coordinator | Black Hawk County, IA |
| | Laughlin, Ellen | Draftsperson | Waterloo, IA |
| | Kloberdanz, Lynn | Engineer | Black Hawk County, IA |
| | McDonald, Ray | GIS Coordinator | Buchanan County, IA |
| | Peterson, Marc | Remote Sensing Specialist | University of Northern Iowa |
| | Swanson, Lisa | Public Health Officer | Black Hawk County Health Department |
| <i>Council Bluffs, IA</i> | Cutler, Brad | GIS Coordinator | Golden Hills RC&D |
| | Cutler, Micah | GIS Administrator | Harrison County, IA |
| | Heien, Bob | Systems Analyst - GIS | Woodbury County, IA |
| | Koch, Ron | GIS Cadastral Technician | Sioux City Assessor's Office |
| | Kuehne, Herb | Crime Analyst | Sioux City Police Department |
| | Lawver, Mike | Senior GIS Analyst | Council Bluff, Public Works |
| | | GIS/GPS Technologies | |
| | Sizer, Mike | Instructor | Iowa Western Community College |
| | Stueve, Tim | GIS Analyst | Council Bluff, Public Works |
| Wilburn, Carl | GIS Coordinator | Carroll County, IA | |

Ongoing Metadata Related Projects

Central GIS Data Repository – Iowa Counties Information Technology (ICIT)

Wayne Chizek
Marshall County GIS
1 East Main St.
Marshalltown, Iowa 50158
wchizek@co.marshall.ia.us
(641) 754-6338

IGIC and the ISU GIS Facility will provide metadata training to 99 member counties. We will also provide metadata publishing services and support to data publishers. Timeline: Fall 2005 – Winter 2007.

Natural Resources GIS Library – Iowa Department of Natural Resources

Casey Kohrt
NRGIS Library Manager
Iowa Geological Survey
109 Trowbridge Hall
Iowa City, IA 52242
ckohrt@igsb.uiowa.edu
(319)335-1353

IGIC and the ISU GIS Facility have assisted and will continue to assist the Iowa DNR in the conversion and attribution of metadata. Currently the Iowa DNR maintains over 17,000 data sets for the State of Iowa. Assistance will be provided to automate the process of including ISO theme keywords into existing metadata and to publish to Geospatial One-Stop. Timeline: Fall 2005.

Iowa State University Research GIS Repository

Patrick Brown
GIS Analyst
ISU GIS Support and Research Facility
213 Durham
Ames, IA 50011
patrickb@iastate.edu
(515)294-7312

The ISU GIS Support and Research Facility is in the process of providing geospatial data archiving services for the Iowa State University research community. Part of the archiving process will ensure that researchers have assistance in developing metadata for their data. Metadata resulting from this process will be published.