IOWAccess Project 8

Statewide Coordinated Geographic Information Systems (GIS)

Mission

To construct the infrastructure needed for all levels of government, the educational sector, and the private sector to take full advantage of geographic information systems and related technologies.

List of Members

Marty Adkins, US Department of Agriculture/Natural Resources Conservation Service
David Plazak, Center for Transportation Research and Education, Co-Chair
Joyce Baker, Iowa Social Science Institute
John Brandt, Linn County Department of Human Services
Beth Henning, State Library of Iowa, State Census Coordinator
Bernie Hoyer, Iowa Department of Natural Resources
Harold Jensen, Story County Engineer
Kevin Kane, Iowa State University, GIS Faculty
Tom Kane, Des Moines Metropolitan Planning Organization
Roger Patocka, Iowa Lakes Community College
Bill Schuman, Iowa Department of Transportation
Stu Turner, Siouxland Regional Council of Governments

Staff

Tori Squires, State Public Policy Group
Shannon Tyler, State Public Policy Group

Table of Contents

Section 1 ■ Approach

Background Information

Geographic Information Systems (GIS) technology uses computers to organize and analyze complex data through digital mapping and tabular databases. The versatility and popularity of this tool is evident in the broad spectrum of applications demonstrated throughout the country – from tax assessing, crime mapping, natural resource management to public health services distribution. This is a tool that spans the urban/rural spectrum as to the value and educational opportunities it affords Iowans in both urban and rural sectors.

First used in Iowa's academic institutions in the mid-1970s, GIS has in the last ten years become an integral data management tool in private business and in state, city, county, and federal offices. The growth in the use of GIS and related technologies will be fueled, in part, by rapidly improving and lowering the cost GIS hardware and software. This growth in user numbers also creates an expanding number of potential cooperation and partnering opportunities among organizations (both in the public and private sectors). A wide range of social and economic impacts across these sectors is anticipated. While most of these impacts are positive, there are potential pitfalls that need to be mitigated for, including privacy, confidentiality, data ownership, and other issues.

The GIS Work Group of the Intergovernmental Information Technology & Telecommunications (IITT) Task Force studied issues related to the implementation of GIS technology in all levels of the public sector, as well as the private sector.

Purpose

This project will design and implement a geospatial data infrastructure for Iowa, including a formalized coordination body, a coordination staff, an enhanced data clearinghouse, and a statewide GIS training and education effort.

To achieve this goal fiscal resources and technological expertise among the sectors will need to be shared, cooperative GIS training programs will need to be developed and guidelines regarding data format, access, and retention will need to be established and promoted. An important step toward achieving the widespread and efficient use of GIS in the public sector is improved coordination of resources among and within agencies at every governmental level. Some agencies would benefit from the establishment of a core staff that would oversee GIS implementation and expansion. Others will need to rely on formal and informal intergovernmental networks for technical support and coordination.

Project Goals

- Have a formalized GIS coordination mechanism in Iowa that is widely known about and

effective. Develop an overall support network through which government agencies, educational institutions, and private companies can initiate and leverage their GIS-related efforts.

- Develop a more effective GIS coordination effort for Iowa that involves all relevant client groups.

- Hire an expert statewide GIS coordinator who can act as staff for the coordination body and act as an effective GIS champion.

- Enhance the existing Iowa GIS data clearinghouse to make it much richer in terms of data sets identified and in terms of functionality offered (jobs exchange, links to expertise, etc.).

- Work through government and trade associations to promote existing GIS standards, such as metadata standards. (Metadata are "data about data" or useful descriptions of how data were collected, their characteristics, and their errors and weaknesses).

- Gain Federal Geographic Data Committee (FGDC) recognition as a state cooperator organization and FGDC recognition of the clearinghouse.

- Develop an effective program for developing trained GIS experts throughout Iowa who can train others. Eventually develop a GIS "train the trainer" program.

- Involve citizens and potential GIS users in the process through a series of regional meetings.

- Find or develop educational materials that illustrate the benefits of GIS to potential users and citizens.

- Take full advantage of Internet technology to achieve all project goals.

Determining the client base for this program was relatively easy due to the existence of a 25 member GIS coordinating council whose members reflected a broad spectrum of both public and private sectors. Through the IGIC and citizens within the GIS Community, *objectives* to achieve the goal were identified:

- Develop and distribute a request for proposal (RFP) for hosting the enhanced GIS clearinghouse.
- Select a host for the GIS Clearinghouse and proceed with development.
- Determine a host agency for the GIS coordination staff.

- Develop a job description for the GIS coordinator.
- Develop an Executive Order formalizing the Iowa Geographic Information Council.
- Secure adequate funding to support the coordinator and clearinghouse.
- Identify potential training and educational sites and partners throughout Iowa. Use the GIS training facilities now in place or under development at the three Iowa Regents' universities and at community colleges where possible.
- Develop a "train the GIS trainers" effort.
- Develop an Iowa GIS CD-ROM that would contain public domain Iowa GIS data and software.

Input from the citizens on workplan initiatives was garnered through meetings and a statewide conference (October 6, 1997). The conference hosted more than 250 citizens, vendors and local-decision makers. Additionally, the IGIC had completed a Statewide GIS Strategic Plan in 1997 through which many citizens were able to provide input.

Early on a web site was developed to provide a means for the public to provide input and to learn of the developments of the coordinating GIS initiatives. Additionally, a list serve address was initiated to provide more direct information to the GIS Community. These means of communication bode well for encouraging a greater participation and help increase state, federal, county, and local governments' efficiency by allowing staff to participate locally, thus reducing travel costs and time away from work.

Needs Statement

Geographic information systems (GIS) technology is a powerful tool for analysis and graphical display of data based on a combination of digital maps and tabular databases. It is extensively utilized for many purposes, ranging from law enforcement to natural resources management. The ultimate benefits of GIS use to citizens is illustrated by the case of New York City, which decreased street crime rates partly through the use of GIS-based crime mapping. The costs of GIS hardware and software have decreased to the point that barriers to use are now mainly in the areas of data development and training. This project is aimed at building networks and partnerships that will overcome those barriers.

In Coordinating GIS activities statewide, all sectors of government, educators, students, and private citizens will be served. Specifically, workshops for educators and state agency staff will be offered on a quarterly basis. The Clearinghouse will not only allow the public with access to geospatial data, but will also provide a tool that will afford the opportunity to do mapping interactively through the Internet. The Clearinghouse will post information on academic institutions that conduct classes on various topics that support GIS and related technologies. The Clearinghouse will host numerous other resources to enable the public to become more knowledgeable and aware of product, services, and opportunities related to GIS and related technologies. The CDROM will provide the same tool mentioned above for those citizens and

organizations without or with limited Internet capabilities.

Approach

Because of the diversity of the technology and broad knowledge base and accessibility issues, a multifaceted approach for coordinating GIS and related technologies identified through the public meetings with the GIS community. The development of the RFP for the Clearinghouse began in May of 1996 and the products and services that have evolved (listed below) will continue indefinitely. (Dates of delivery are indicated whenever applicable in the accomplishments listed below.)

Accomplishments

Develop and distribute an RFP for hosting the Iowa Geospatial Clearinghouse

The GIS Work Group developed a Request for Proposal (RFP) that was distributed statewide. The RFP developed by the GIS Work Group required the host to construct an infrastructure needed for all levels of government, the educational sector, and the private sector to take full advantage of geographic information systems and related technologies. The RFP included seven requirements:

1. A sustainable institutional and financial commitment to the development and maintenance of the Iowa Geospatial Clearinghouse (IGC). Information Technology Services (ITS) will devote 1.5 FTEs to the project for the GIS Coordinator and .5 of the Clearinghouse Specialist positions. ITS staff helped purchase the hardware and software needed to support the Clearinghouse.

2. The ability and willingness to provide access to other organizations and the public to the information in the IGC via the Internet and other appropriate means. ITS has been the official Internet presence since 1994. ITS's partnership with the ICN ensures large bandwidth which will help accommodate and facilitate training and other services currently unavailable to Iowa citizens. This connectivity further allows city, county, state, and federal government offices in remote areas ready access to geospatial data and services.

3. The ability and willingness to conduct a regular program of information and education to individuals and organizations that use or contribute to the IGC. ITS regularly conducts multi-level classes and seminars for mainly state agency staff but are fully capable to conduct training via the ICN on GIS and related technologies.

4. Knowledge of GIS standards and protocols. ITS has been charged by the governor to develop standards and best practices for emerging technologies. ITS will work with the GIS Coordinator (Ann Peton) and IGIC to develop these standards and protocol that best suit the needs of Iowa's GIS Community. She participates in the

review of current and proposed standards, including metadata. Ms. Peton is developing several enterprise initiatives with contiguous states regarding the creation and use of GIS standards. A standards committee within the IGIC will provide input on the minimal metadata standard acceptable for distribution through the Geospatial Clearinghouse.

5. Experience in maintenance and distribution of information. ITS has the experience along with the GIS Coordinator in designing clearinghouse of distributed GIS databases and services. ITS administration and staff often act as service centers for improved access for both state agencies and the public.

6. A current status as, or commitment to become, a cooperator with the Federal Geographic Data Committee (FGDC). Ms. Peton has initiated a partnership with the FGDC. A status of State Cooperator will be formally applied for after the first of the year. In the development of the Clearinghouse, compliance to Z39.50 will be sought.

7. An ability and willingness to work cooperatively with the Iowa Geographic Information Council (IGIC) and its Coordinator. ITS will continue to house the ICIG and its staff. Conference, workshops and seminars that ITS participates in will have a GIS component at which Ms. Peton will represent Iowa's GIS Community as well as the State.

Determine a host for the GIS Coordination staff

The Iowa Office of Information Technology Services (ITS) was selected by the Project Team (following the use of a formal solicitation and evaluation process) as the host organization for the State GIS Coordinator, and the clearinghouse host. ITS was deemed by the project team and its subcommittees to be the organization best suited to perform both functions. Having both functions hosted by the same organization was also considered to create important synergy.

Develop a job description for the GIS Coordinator and hire coordinator

Supporting documents discovered that hiring a GIS Coordinator to "champion" the causes for statewide efforts was vital to the success and continuation of efforts initiated through Project 8. The GIS Work Team developed a job description. An exhaustive search was conducted by the Information Technology Services agency through internal, as well as external means (Internet GIS job clearinghouses, contiguous states web sites, etc.). Applications received were reviewed based on evaluation criteria. Once the telephone interviews were completed, the top two finalist were determined and were invited to Des Moines for a personal interview with members of the IGIC in December. With the interviews complete, Ms. Ann K. Peton was

offered the position on December 26, 1997. She started her work on Coordinating GIS initiatives on February 16, 1998.

Within Information Technology Services, Iowa Geospatial Information Clearinghouse proposal was the identification of a 1.5 FTE for the GIS Coordinator and Clearinghouse Specialist. Plans for the second staff began immediately after Ms. Peton came onboard at ITS. Due to the high level of technical skill required for this position, external hiring mechanisms were employed with 18 applicants. A short list of six qualified applicants were interviewed during the month of June by Ms. Peton, Kevin Kane (Iowa State University's GIS Coordinator), Todd Bishop (a DNR GIS Coordinator), and Steve Zimmerman (EMD Project Manager). The job was offered and accepted by Ms. Michelle Lantermans on July 7 with Ms. Lantermans starting on July 23, 1998, with her primary responsibility to deploy and support Clearinghouse activities. Being that this position was funded in part by ITS, Ms. Peton has secured continued funding for this position through a Federal Emergency Management Agency (FEMA) funded grant project beginning October 1998.

Develop an Executive Order formalizing the IGIC

Through a series of open meetings, an Executive Order was drafted to formalize the IGIC and detail its structure and role in statewide GIS activities. The Executive Order was signed by Governor Terry Branstad on May 5, 1998. With the Executive Order in place, the formalized IGIC immediately met to establish subcommittees to start addressing issues to help coordinate GIS activities in Iowa. Within two months of the signing of the Executive Order the IGIC had established a set of by-laws that were ratified and adopted at the August 5, 1998 meeting.

All IGIC meetings are conducted through the ICN to encourage intergovernmental input. The agenda and minutes are posted on the Iowa Geospatial Clearinghouse.

Secure adequate funding to support the coordinator and clearinghouse

ITS's Clearinghouse proposal provides for 1.5 FTE for the GIS Coordinator and partial funding of the Clearinghouse Specialist position. An agreement between the Emergency Management Division and ITS has been made that will provide additional funding for .5 FTE for the Clearinghouse Specialist position starting October 1998 for at least three years. The IGIC is aware of the need for planning for the replacement cost of the server. Ms. Peton will investigate federal funds that could be utilized in the future to support the clearinghouse when necessary.

Identify potential training and educational sites and partners throughout Iowa

Through the IGIC Educator's Committee and through interaction with the GIS Community the type and need for GIS and GPS training have been determined. Additionally, a questionnaire was distributed to 850 state employees to determine their training interest. Ms. Lantermans is a certified GIS instructor and all of the major GIS software vendors have agreed to allow Ms.

Lantermans to conduct GIS training either locally or through the ICN. Vendors that provide their own GIS training will be identified on the Clearinghouse, too.

Develop and implement a "train the GIS trainers" effort

The vendor selected to provide GIS training statewide was the Iowa State University (ISU) Extension Service, in particular Extension to Communities. ISU Extension has a long and distinguished history in Iowa of working on educational and technology transfer projects with key target groups such as the Iowa League of Cities, the Iowa Association of Counties, and the Iowa Association of Municipal Utilities. All of these groups co-sponsored the series of GIS workshops entitled "Putting Information to Work" held at fifteen Iowa Communications Network (ICN) sites around the state in September 1998. With two hundred and eleven local decision makers (city council, city managers, county supervisors, assessors, auditors) in attendance, examples and information on how GIS and its related technologies could apply to their daily routine and responsibilities were presented and discussed during the two-day workshop. Information on how they could become a part of Iowa's GIS Community through the IGIC was discussed at length. Another important component of the workshop was the opportunity to gather information from the participants on their additional training and educational needs through the evaluation. This information is used to help the IGIC in creating statewide educational activities and provides a focus for the next GIS Users' conference to be held July 28-30, 1999 at Buena Vista University. Several technical documents were developed by Ms. Lantermans in support of this workshop that were provided to the participants along with the book *Zeroing Inn: GIS Applications at Work in the Community*

Develop an Iowa GIS CD-ROM that would contain public domain Iowa GIS data and software

This medium was chosen in order to provide access to Iowans that didn't have Internet capability or had slower speed Internet capabilities making the use of the Clearinghouse's interactive mapping tool cumbersome. In addition to statewide geospatial data, a portion of Black Hawk County's specific GIS data will be included to give the users an appreciation of smaller scale product and its applications. The CDROM will walk users through several suggested applications that will demonstrate the versatility of GIS. Five thousand copies of this CDROM will be distributed to various academic settings, public libraries, state agencies, regional planning organizations, the legislature, and Iowa citizens.

Additional deliverables created to support Coordinated GIS in Iowa

Metadata Initiative - Assist five counties/cities (Polk, Black Hawk, Emmet, Johnson, and Story Counties and Iowa Falls, Denison, and Davenport) in the development of FGDC compliant metadata and other "value-added" applications for their GIS data. An additional service of hosting their data and/or metadata on Iowa's Geospatial Clearinghouse will be offered to each of the participants. In this way, citizens can have access to information they previously didn't have access to, which will ultimately result in improved government services. Ms. Peton and Ms. Lantermans will encourage them

to develop enterprise initiatives within their own community taking them "beyond the box" in their mentality toward GIS and related technologies. Through this "train the trainer" program, they will be required to partner with another similarly sized community/county to share their experience and "lessons learned."

Iowa's Geospatial Clearinghouse (IGC) - The IGIC Clearinghouse committee provides guidance to Ms. Peton on all components of the IGC. Primarily viewed as a "one-stop shop" for geospatial data and services, the sites currently hosts a static set of the most complete set of Iowa's geospatial data and "points" to the Department of Natural Resources web site should a user want to "download" in a format other than shapefiles. Once the infrastructure for a more dynamic link to occur, the switch will be made without "down time" for the user. Because most issues don't recognize state borders, links to our contiguous states' geospatial clearinghouse is provided, too. One of the goals is to afford the user the ability to query all data based upon feature type (e.g. river, roadway, tree type, soil type) with a simple one-phase query. In order for this to be accomplished, much work will need to be done to make all of the metadata (i.e. data dictionary) as unique as possible. Until such time, the user can view geospatial data they are interested in interactively through their web browser. In creating the Internet Interactive Mapping Tool, all users can view the data prior to actually downloading to determine if the data provided enough information and/or accuracy needed by the user. This helps eliminate wasted time, efforts, and costs associated with downloading data through a slow Internet connection. The Internet web address is: http://www.iowaccess.org/igisc.

Identify 50 additional technical resources that can be used for consulting – At this time, there are not 50 additional technical resources that can provide consulting in Iowa. Those that were found will be listed on the web site under GIS/GPS Resources. New sources as they are identified will be added to the web site and provided in the GIS Resource Guide being planned for development in the spring of 1999.

Increased outreach to policy makers and general public – Through both personal and telephone conversations, Ms. Peton has met this goal. The Iowa Geographic Information Council has built up a broad GIS community in Iowa over the past four years. Based on its mailing list, up to 800 persons in Iowa are now involved from the federal, state, local, educational, and private sectors. GIS service companies and vendors are also involved. The IGIC publishes a quarterly newsletter, which has a broad distribution. It also operates a World Wide Web site and an Internet electronic mailing list (igic@iastate.edu).

Parcel Mapping Workshop – Iowa has received national recognition because of the level and number of counties and cities involved in GIS and its related technologies.

Because of the diversity and dynamics of GIS, a statewide coordinated focus of the professional knowledge behind Iowa's success began at the December 17 Parcel Mapping Workshop. Participants will be treated with demonstrations by four counties and vendors on how the technology is working and not working. During the question/answer session, issues will be raised and formulated into action items that the IGIC and the GIS Community will continue working on in the future.

GIS Resource Manual – Sources of GIS and GPS software and hardware, service providers, useful Internet sites, description of existing GIS applications in Iowa, academic institutions with GIS/GPS classes, members of the IGIC, federal and state agencies contacts, information about remote sensing sources, and upcoming workshops and conferences will be included in the manual.

GIS Resource Library – Books and manuals on GIS and related technologies, applications and cirriculum are available for checkout through ITS. The purpose of the GIS Resource Library is to provide resources to county and local government unable to afford or just starting a GIS program. This outreach resource will be marketed through the Iowa Association of Counties, the Iowa League of Cities, and community colleges.

Section 2 ■ Cost/Benefit Analysis

Timeframe for the Project

- RFP was developed and distributed for the Clearinghouse in May 1997.
- In March, planning sessions began with ISU Extension to deliver the statewide GIS training program via the ICN in the fall of 1998.
- GIS Coordinator's job description was developed and the search began August, 1997
- The state GIS Coordinator, Ann Peton, was hired in early 1998 and began work on February 16.
- The Executive Order was signed by Governor Branstad in May 1998 and was presented at an official ceremony to IGIC on July 2, 1998.
- A GIS Specialist, Michelle Lantermans, was hired in July 1998 and is mainly responsible for developing the on-line clearinghouse.
- Also in May, the IGIC and Project 8 Team held a formal retreat at the STARC Armory in Johnston to map out the work plan for the Coordinator and Specialist for the coming year (1998/1999). At this meeting, the IGIC also established the standing committees needed to guide Project 8 into the future and deal with such issues as metadata development, training, and standards promotion.
- The Framework Survey of GIS users was conducted and compiled during the spring and summer of 1998.
- A pilot version of the clearinghouse came on-line in August 1998 for public consumption.
- The CD-ROM, which will contain Iowa GIS data and software needed for potential GIS users to explore the use of the technology, was distributed in September.
- The Statewide GIS training sessions coordinated by ISU Extension was held and evaluated on September 28 & 30, 1998.

Planning for coordinating statewide GIS activities has been going on since the initial meeting of the IGIC in May of 1994. Through more than a dozen meetings, the IGIC garnered input from technical and administrative staff on the planning/implementation/evaluation of statewide GIS

issues and activities. Implementing the deliverables began May 1, 1997, through the GIS Team. Once Ms. Peton was on board, products and services such as the Clearinghouse and training became the focus of activity. Because of the dynamic nature of GIS/GPS technologies many opportunities exist and are being planned for expansion of products and services for Iowans. Ms. Peton with input from the IGIC is working with IOWAccess in marketing these products and services.

Project Expenditures

Technical (GIS Coordinator)	$ 90,000
Contract for GIS Clearinghouse	80,000
Contract for GIS Education	65,000
Total	$235,000

Ongoing Costs

Training and other educational activities will be covered through attendance fees. As noted above, the IGIC and Ms. Peton are addressing clearinghouse replacement costs. The creation of additional products will be paid for through grants obtained through federal and/or state sources. Several sources are available including: Federal Geographic Data Committee, Environmental Protection Agency (EPA), and Federal Emergency Management Agency (FEMA). Ms. Peton in conjunction with the IGIC will be working toward establishing partnerships with the private sector to help offset costs, too. For example, the GPS Subcommittee has requested that Ms. Peton conduct an independent study of the state's real-time differential coverage for use in precision agriculture and surveying applications. The private sector has already expressed interest in financially supporting this effort.

Project Benefits

- GIS development will be better coordinated in Iowa, which will allow development, data, and training resources to be leveraged. The costs saving for training are significant. Currently, GIS training costs $750 per student for a basic class (excluding travel costs). Having in-house expertise and being able to conduct training via the ICN will save approximately $268,500 (two staff per AEA, COG, County, State Agency, Academic).

- There will be easier and quicker adoption of GIS technology by federal, state, local, education, and private organizations.

- There will be better quality information available for decision-making and other uses in government, education, and the private sector. Through the Geospatial Clearinghouse, data and services will be available that won't have to be generated individually. This is a costs savings in staff time reaching for this same information of approximately $27,000.

- More GIS partnerships will be put in place. There will be better integration of data among agencies at various levels of government. Data development costs can be very high depending on the level of accuracy and availability of source material. More data will be shared, reducing the cost of GIS data development.

- More GIS expertise will be shared, reducing the cost of GIS development. Avoidance costs for having to hire or contract for GIS planning and development can potentially be reduced with decision-makers and staff becoming more familiar with the technology. Counties that currently use GIS service providers collectively spend $250,000 annually on maintenance of GIS data. Over time, this amount will be reduced. Counties in the process of developing programs can achieve a higher degree of in-house technical expertise that will allow them to avoid spending money on maintenance costs of about $50,000.

- GIS data and expertise will be widely accessible via the Internet. The Interactive Mapping Tool on the Geospatial Clearinghouse allows the public to do limited mapping on the Internet without having to purchase software. They can either use the tool to help with decision making or make a map to print out in their office to use. The public can download the data in a format that allows them to use GIS software on their own PC. An estimated 500 users a year will take advantage of the Clearinghouse's service, the avoidance costs will be $1,200 per individual or $600,000.

- Areas of the state unable to afford Internet access are still able to participate in GIS activities through the outreach educational programs and Iowa's Geospatial Data Interactive CDROM.

- Having a State GIS Coordinator to focus activities for all levels of government, public and private sectors has short and long term benefits.

- Educational efforts and training activities that are coordinated statewide can reduce duplication of effort and costs.

- More Iowa agencies and businesses will become aware of GIS technology and its potential uses.

- Cost savings to state/local government and citizens due to improved data access, better planning, and decision-making through the use of GIS is estimated to upwards of $500,000 annually.

Intangible benefits are often difficult to realize in the short term. Bringing an awareness of the use of GIS and related technologies to the public through statewide coordination was the main

intent of this project. In doing this, many Iowans and organizations will see a costs savings. There have been several situations were money was saved because the State GIS Coordinator was able to get educational information from vendors free of charge. CD-ROM's and educational books valuing $25,000 have been donated.

Black Hawk County requested Ms. Peton help in the selection of a GIS coordinator and even interviewed potential candidates. Due to the lack of knowledge of their staff and concern about compliance with statewide GIS activities, they requested that Ms. Peton review its GIS Service contract. Because of her comments, several thousands of dollars were saved and the services that the county really needed were more succinctly stipulated in the final contract. The benefit to the staff and future applications of this information are hard to measure, but are sure to be noticed.

Section 3 ■ Evaluation

Evaluation Criteria

- Formalization of the Iowa Geographic Information Council through Executive Order.
- The GIS Coordinator is employed and is actively promoting GIS to a variety of audiences.
- Number of public agencies and private companies aware of GIS technology.
- Number of "hits" on IGIC and clearinghouse sites.
- Number of individuals completing GIS training courses sponsored through the project.
- Number of attendees at regional information meetings and their evaluations of those meetings.

Evaluation Results

- Governor Branstad signed Iowa Executive Order No. 65 in May 1998, creating official status for the Iowa Geographic Information Council. Since the signing, the IGIC has adopted formal bylaws, held its first official quarterly meeting, and elected officers for 1998/1999.
- The GIS Coordinator has been employed and has been busy making contacts with a large number of potential GIS users throughout Iowa. Ms. Peton has made presentations at three national conferences, and three regional, seven state agency, and 13 county/local organizations.
- An extensive, computerized survey of Iowa GIS public and private sector users (the FGDC Framework Survey) and the data being created and maintained has been completed and a 70 percent response rate realized in Iowa. This survey provides a valuable baseline of information about the extent of GIS use and interest in Iowa as of 1998. The results of this survey will be provided through the Clearinghouse in a manner that will allow users to determine similarities and varieties of applications and contact names. The survey was conducted from March to July 1998.
- 5,000 copies of Iowa's Interactive Mapping CD-ROM will be distributed to schools, libraries, citizens, and private/sectors organizations throughout Iowa.
- The GIS Clearinghouse officially came on-line September 11, 1998 and was "hit" by

about 850 users in the first week.

- A formal evaluation by the 211 participants of the Local Decision-Makers GIS seminar was completed at the conclusion of the September Local Decision-Makers Workshop. Overall, participants rated the workshop as average or above average. With a more focused group and the level of expertise more plainly marketed, ISU felt the rating would have been higher. This will be incorporated into future workshop and education sessions.

- Two certified GIS training courses were conducted at which 50 state agency staff were able to become proficient in the use of the Environmental Systems Research Institute (ESRI) Arcview GIS tool. With additional sessions scheduled for December 1998 and January 1999, the IGIC will offer more educational opportunities.

The IGIC has requested a quarterly report of activities from Ms. Peton. This was presented at the August 5, 1998 IGIC meeting and met with favorable response. Since Ms. Peton is an employee of the state, Mr. Stuart McDaniel, her direct supervisor, has performed a six-month review, too. This document is available upon request only.

A stumbling block for Iowans considering starting or enhancing their GIS programs has been the lack of local technical expertise. To remedy this, Ms. Lantermans is available to provide limited technical telephone support. Additionally, summations of GIS software problem resolutions will be posted on the Clearinghouse by vendor. In this manner, the public can find the solutions to some of their problems without cost for a technical expert or long-distanced telephone call.

Coordinating and providing technical support to Iowans has raised the awareness of GIS and related technologies tremendously. This can be seen in the increase number of local, county, and state agencies either purchasing GIS software or by attending academic institutions. A testament to this would be the more than 200 enrollees for the upcoming Local-Decision Makers workshop.

Section IV ■ Future Plans – Conclusions & Recommendations

Sustainability

The Iowa Geographic Information Council (IGIC), charged with coordinating GIS activities statewide, was ratified through Executive Order No. 65. Having the Governor recognize the need for coordinating GIS statewide, bodes well for the need for sustaining this program.

New or enhancement of current GIS or related technologies initiatives will depend upon input from the Iowa GIS Community. Possible sources of future funding include small federal grants (through the FGDC), state appropriations, agency contributions, and proceeds from value-added activities (conferences, training courses, workshops, value-added data sets). Information Technology Services has agreed to sustain the GIS Coordinator position into the future, which is the single largest ongoing expenditure item. The specialist position will be maintained partly by ITS and partly through project work for other state and local agencies.

Expansion

Training will be expanded on a "pay as you go" basis. Various courses on GIS and related technologies will be coordinated through Ms. Peton and Ms. Lantermans in conjunction with the GIS community. The IGIC has as one of their five year goals to expand the services of the Geospatial Clearinghouse through the ICN to counties that want to serve their geospatial data to the public but can't afford required firewall protection. Considering this service is based upon the ability of the county government to educate their public through the use of GIS, we feel that this may become a reality. Currently Polk County is in the process of finalizing a MOU with the City of Des Moines that may ultimately allow Iowa's Geospatial Clearinghouse to be able to serve Polk County's GIS data.

The functionality and services of the Geospatial Clearinghouse will scale up over time as the GIS community request additional services. An example of this would be the development of an interactive mapping application specifically for teachers. During class, teachers could connect to the Geospatial Clearinghouse via the Internet and demonstrate predefined data and applications that were developed by the Clearinghouse staff. The costs of this type of service would be absorbed by ITS.

The number of active participants in the IGIC and its subcommittees will be increased through the various activities accomplished through this project. Additionally, through the 1999 conference and through various training and workshops, GIS users willing to help support IGIC initiatives will be identified.

Maintenance

Maintenance costs associated with the Clearinghouse and its software will be the responsibility of ITS. The 1.5 FTEs and fringe benefits will be absorbed by ITS, too. There have been discussions between IGIC and ITS on methods for distributing these costs among IGIC members. The potential for offset will be pursued in grant proposals, too.

Ms. Lantermans will maintain the Geospatial Clearinghouse. The frequency of updates for data will not be directed by either Ms. Peton or IGIC, but determined by the data originator.

Intergovernmental & Citizen Focus

Over 80 percent of Iowa's counties have some type of method to improve their ability to assess taxes that involves GIS. With this in mind, the IGIC and Polk County sponsored a Parcel Mapping workshop on December 17 to encourage the sharing of information on standards, practices, funding, and accuracy among both the technical and administrator level staff. This type of intergovernmental workshop will help to encourage enterprise efforts within Iowa's communities and counties and the private sector that directly benefits from this type of information.

The IGIC and its subcommittee meetings will continue to be offered via the ICN. Frequently, citizens provide input to either the council members or Ms. Peton or Ms. Lantermans through email or telephone on statewide GIS activities to pursue. The IGIC is required through its by-laws to participate in meetings and garner input from the GIS community on statewide GIS issues.

The 1999 Iowa GIS User's Conference will focus on applications through Iowa that encourage intergovernmental initiatives. Citizens will attend this conference and benefit from the training offered, too.

Standards for GIS information development, exchange, and interpretation already exist through the Federal Geographic Data Committee (FGDC) and within state governments (e.g. Kansas, Missouri, and Illinois). State government should have a role in the oversight of GIS standards use in Iowa. The use of these standards will be important as more information is developed and used by growing numbers of entities.

Public Awareness

In future years the IGIS, ITS, and the GIS Coordinator plan on continuing an extensive marketing and public awareness program regarding GIS and related technologies. The coordinator will continue her outreach activities in cooperation with the IGIC. More aggressive use of association publications and conferences put on by associations will help the "GIS message" to get out to key audiences.

Ms. Peton and Ms. Lantermans showcased the product and services to both the public and private sectors through a "traveling show" during the months of October, November, and December.

Ms. Peton has developed a presentation that showcases Iowa's GIS initiatives. This is one of a dozen presentations that have been developed by Ms. Peton for use in presenting to state, local, county, and federal organizations. Additionally, a modular display unit was purchased to display maps that also demonstrate Iowa's GIS applications. Ms. Peton has made presentations at three national conferences, and three regional, seven state agency, and 13 county/local organizations.

Evaluations

In order to keep abreast of the effectiveness of these trainings, each course will have an evaluation form that will be offered for review to the IGIC. The 1999 GIS User's Conference will have an elaborate evaluation form as well that will provide additional insight on Iowans needs as they relate to GIS and related technologies.