A Report in Support of a

Situation Assessment for an Enterprise Geographic Information System

Prepared for

Scott County, Iowa

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Prepared by:

GeoAnalytics®

GeoAnalytics®

Corporate Office	1716 Fordem Avenue
	Madison, Wisconsin 53704
	Phone: 608-241-7100
	Fax: 608-241-7116
Illinois Office	950 Lee Street, Suite 202
	Des Plaines, Illinois 60016
	Phone: 847-824-6404
	Fax: 312-896-5917
Florida Office	101 N. Clematis Street, Suite 321
	West Palm Beach, Florida 33401
	Phone: 561-655-1216
	Fax: 561-655-0681

Web Site: www.geoanalytics.com

Email: office@geoanalytics.com

GIS Steering Committee Members

Ross Bergen	Emergency Manager, Emergency Management Agency, Scott County
Jon Burgstrum	Assistant County Engineer, Secondary Roads Dept., Scott County
Cathy Creighton	Deputy City Assessor, City of Davenport Assessor's Office
Dale Denklau	County Assessor, Scott County Assessor's Office
Dave Donovan	Director, Facility and Support Services, Scott County
Jim Hagerman	Program Development Coordinator, Scott County Health Dept.
Matt Hirst	Director, Information Technology, Scott County
Kathy Hinrichs	Tax Deputy, Auditor's Office, Scott County
Craig Hufford	Deputy Treasurer, Treasurer's Office, Scott County
Tim Huey	Director, Planning and Development, Scott County
Art Miller	Director, Sheriff's Office, Scott County
Mitch Tollerud	Webmaster, Information Technology, Scott County
Lisa Miller	Data/Graphics Mapping Manager, Bi-State Regional Commission
Marc Miller	Assistant Conservation Director, Conservation Dept., Scott County
Ed Winborn	Former Recorder, Recorder's Office, Scott County
Rita Vargas	Recorder, Recorder's Office, Scott County

Project Team

Scott County

Dave Donovan	Scott County FSS Director
Matt Hirst	Scott County IT Director
Mitch Tollerud	Scott County Webmaster
Ed Winborn	Scott County Recorder (Former)

GeoAnalytics, Inc.

William Holland	GeoAnalytics, Inc., Principal, Project Manager
Anita Temple	GeoAnalytics, Inc., Systems Analyst, Project Lead
Barb Irvin	GeoAnalytics, Inc., Systems Analyst

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For

Scott County, Iowa

A. Executive Summary

1. Project Overview

a. Problem Summary Statement

Scott County, Iowa, and its departments and offices, have determined that a number of opportunities exist to improve their management and use of geographic and land information systems. These opportunities are technical, data centric, and organizational. In particular, there is an opportunity to improve both the efficiency and effectiveness of departments in carrying out their missions and mandates. To that end, the Scott County Board, the County Administrator, and the GIS Steering Committee, with the support of these various departments, have determined that the County needs a coordinated effort to build a countywide, enterprise Geographic Information System (GIS).

It is the intention of the County that its efforts will complement other substantial GIS initiatives within the region. In particular, the Cities of Davenport and Bettendorf and the town of Walcott have made significant investments in GIS and related technologies and data. Building an atmosphere of coordination and collaboration of GIS efforts between the County and these municipalities represents a substantial opportunity for all jurisdictions, but more importantly, taxpayers. Leveraging these efforts is not without organizational or technical challenges. This is because data standards will vary, data sources will certainly vary, and other entities' maintenance processes may not meet the needs of all entities. That being said, it is highly probable that the needs of the County and of the municipalities are sufficiently aligned to form the basis of improved processes and work and data flows.

No matter what the opportunities may be, a successful GIS program for the County will be determined by the development of a system that meets the business needs, resources, and priorities of the County. Therefore, it is wise for the County to strategically plan for its own countywide GIS that meets its departments' business needs while staying within acceptable system and data standards. The first step in this strategic planning process is to assess and document current circumstances and to identify impediments and opportunities. From this benchmark, a vision for a GIS for the County can be established and a plan to achieve that vision be developed.

b. Methodology

This situation assessment is the first of four phases of this project. The other phases, which build on the situation assessment, include a conceptual system design, a strategic and tactical plan, and a cost-benefit analysis. These four phases are part of a larger planning, design, and implementation methodology that GeoAnalytics uses in systems development projects.

The Situation Assessment is comprised of three steps: Education/Workshops; Fact Investigation; and Analysis.

1) Education/Workshops

Two educational events were held, both of which solicited information from participants. One was directed to the County Board and other County leaders. The second was a kick-off workshop that involved a wide range of stakeholders, including County leadership and staff, representatives from several municipalities, and other interested parties.

2) Fact Investigation

Fact investigation included a survey and formal and informal interviews with County agencies, constitutional offices, and a few key stakeholders, namely the Cities of Davenport and Bettendorf. The interview process included a survey, which was distributed before the scheduled interviews. A copy of a blank survey form is attached in Appendix B.

3) Analysis

The third step of this situation assessment is the analysis of facts and circumstances. This analysis takes the form of a synthesis of factual findings and an issues and opportunities analysis. Issues are impediments or problems that affect business functions, including those that may stand in the way of GIS program development. Opportunities are positive circumstances, including those that may be leveraged to advance the development of a countywide GIS.

The Situation Assessment process was organized around a set of system components to standardize information. The four main information system components are: Process, Organization, Data, and Technology. The system components are key elements to this project and serve as organizing principles. These components provide a way to characterize the County at its functional level. These system components also provide an analytical framework for this document and those that follow. Accordingly, this document organizes its findings, issues and opportunities, and recommendations in a consistent, logical fashion using the system components.

2. Key Findings

a. Process

"Process" is generally understood to mean business functions and activities undertaken by organizations in pursuit of their mandates and missions. It is clear that County departments and staff are committed to function as best as possible for meeting their specific missions and mandates. It is also clear that many staff function with tools and processes that are both technically and functionally obsolete. Many interviewees

indicated cumbersome processes, duplication in business activities as well as difficulty in accessing records.

There are a number of core processes that could be redesigned to make the County and other agencies much more efficient and productive. For example, parcel maintenance is undertaken by several different agencies across the County including the Cities of Davenport and Bettendorf as well as within several departments in those agencies. Much of the parcel maintenance redundancy is avoidable. This highlights the need for better coordination within the County and with other agencies. This theme was a frequently chosen as a major issue in surveys and interviews.

Given current circumstances, both technical and organizational, many staff and departments are poised to take advantage of an enterprise GIS system. It is obvious that there is support for enterprise GIS from potential users in County departments and offices as well from County leadership. It is also clear that the County leadership is prepared to budget for GIS creation.

b. Data

The County has little in the way of digital spatial data. The County houses considerable digital non-spatial (tabular) data. Most of the tabular data is in the County's tax system, accessed by the ZIM applications. What digital spatial data that does exist is either stored locally in AutoCAD or managed by the Bi-State Regional Commission. Some GIS data layers from the State's GIS are available but are not widely used or available for use. Because of the technical and functional obsolescence of mapping systems in the County, many business needs go unmet or are very antiquated. Accordingly, the County needs to develop its own corporate, digital data resources. There is a very discreet need for the County to develop a base map comprised of fundamental data layers. In the surveys, the need for the creation of data in accord with appropriate standards was the top requested need. The most frequently requested data layer for digital conversion or creation was parcels, followed by addresses, followed by zoning.

c. Technology

The County has invested well in technological resources that will support an enterprise GIS. This has been accomplished through a series of steps, including: new server installations; a Citrix server cluster; excellent network connectivity (fiber, CAT6E, T1); PC upgrade schedules; installation and training in GIS software; and good website construction. The County has been following the recommendations of the Technology Assessment Report, December 2000, and is moving away from Novell toward a full Windows 2000 Active Directory domain.

However, there is one bottleneck on the application side, which affects large numbers of the County's users and key functions. At this time, most applications are for accessing the tax system and are written in ZIM Application Development Language. This is an archaic language. Because the primary ZIM application programmer has retired, it will be very difficult to update the applications as laws and needs change. Therefore, migration to a new tax system is a critical technology need. The County is currently pursuing this migration.

Existing staff in both programming and network administration are very busy with responding to crises and managing day-to-day operations. At the same time, staff are still working to implement the new technological changes. Testing of MetaFrame

applications is slow but holds much promise for ease of administration once applications are rolled out. The Citrix MetaFrame cluster is sized such that it may support GIS applications as well as the other intended applications. Moving IT offices and operations in the next year will delay technological progress.

d. Organization

The County has made some excellent investments in the technology architecture to support GIS in terms of network connectivity, additional IT staffing, PC upgrades, and GIS software purchases and training. Yet, the County is still very much in the start-up phase of an enterprise GIS. There is still has much to do toward providing resources to support GIS data creation, data maintenance processes and procedures, and applications for its general use.

At an organizational level, more formal governance and operational models will need to be developed and implemented to support a multi-purpose and multi-participant system. For example, staff resources dedicated to enterprise GIS administration and management will be needed, including the possibility of a new position of authority. In addition, investments in existing staff training and education will be critical to the success of an enterprise GIS program. As well, implementing a GIS provokes changes in organizational operations.

3. Summary Issues and Opportunities

There is a level of consensus within County government, from the staff to the County Administrator to the County Board of Supervisors for the development of more automated geographic and land information systems. There is broad recognition that the manual mapping systems and redundant data maintenance is unnecessarily inefficient, expensive, and unproductive. There are a number of issues and opportunities, including the following.

To implement countywide GIS it is clear that it will require a significant investment in data. While there is considerable non-spatial (tabular) data in digital form, there is very little spatial (map) in digital form. Data conversion will be essential but potentially costly. Prudent decisions as to the level and scope of data acquisition must be made.

The County's recent effort and investment and effort in modernization of its information technology infrastructure offer tremendous opportunities. The robustness of the architecture and the degree of connectivity created affords the County considerable flexibility and scalability in the adoption of enterprise GIS. In short, those technology investments provide a technical infrastructure for enterprise GIS.

Investments in systems and data made by the Cities of Bettendorf and Davenport create both issues and opportunities. While it may be somewhat opportunistic, to be in a position to leverage those investments for County purposes, it will require, at the same time, to bring value to the cities. Given the opportunities for more discreet, accessible and useful parcel maintenance, the County is in the position to bring value to the Cities. In the longer run, the ability of the County to collaborate with Davenport and Bettendorf (e.g., for system and data procurement and maintenance) presents many potential benefits to all. It is particularly an attractive proposition for taxpayers to save costs and have improved services through multi-jurisdictional collaboration.

Finding the balance that will permit inter-jurisdictional collaboration will be a challenge technically, organizationally, and politically. It appears that there is political leadership to tackle these challenges. The County is maintaining a position of openness to City collaboration. The cities appear to be supportive of collaboration but are guarded as to making sure that their business needs are met and existing investments protected. This situation presents, at the least, the opportunity for collaboration and, perhaps, coordination.

B. Project Description

1. Introduction

Scott County, Iowa, through its Board, administration and departments (collectively, the "County") have determined that there exist a number of opportunities to improve the County's management and use of geographic and land information and systems. In particular, these opportunities may afford the County the opportunity to improve both the efficiency and effectiveness of County agencies in carrying out their missions and mandates. These opportunities are both technical and organizational. To that end, County Administration, department heads, and staff with the support of the County Board, have determined that the County needs to evaluate and, if appropriate, plan for the development of a multi-purpose, countywide enterprise Geographic Information System (GIS).

To this end, Scott County formed a GIS Steering Committee to oversee the project's objectives and outcomes. The project's objectives serve as a framework and justification for this study.

2. Project Objectives

a. Enterprise GIS Implementation

The County desires to take advantage of present and future technologies to quickly build and operate a Countywide or Enterprise GIS. This means that the emphasis on GIS implementation needs to be broad-based, rather than focused on individual department technology solutions and data. The objective here is a comprehensive solution that embraces compatible technology components, along with well-organized, accurate, and accessible GIS data, managed under a set of accepted organizational arrangements.

Although it is clear that the County, its departments, and leadership seek a level of modernization and automation, the over-riding objective of this project is to develop a plan that is sensible and actionable. The outcome of this project as a whole seeks to be one that meets the needs, priorities, and resources of the County and that, ultimately, benefits taxpayers.

This is to suggest that modernization and automation must meet the needs and be scalable to circumstances within Scott County. Scott County, by itself and as part of the larger Quad Cities region, has needs for business functions, systems and services that are comparably demanding. Scott County has several municipalities with which it must function on a workflow and data-flow basis. The combined population of the County, the economic base, and broader environmental circumstances all demand supporting information systems that can meet the needs of the community.

At the same time, these systems must not be overly complex and sophisticated. Nor should the system be so simplistic as to not meet the functional needs of the County and its potential strategic partners. Accordingly, the project approach is intended to focus on the business process, data, technology, organizational, and application needs of the County, while working to understand their relationships from an enterprise

perspective. One primary outcome of the project is to educate and empower the County so that it takes ownership of the implementation plan and maintains it for the future.

b. Data Focus

County business processes are heavily dependent on data and subsequently, information, in its decision-making and operations. Data typically represents more than 80% of the cost of GIS/LIS system development. As a result, a major area of inquiry in this assessment has been to document the status of data and related information. The purpose in doing this is to begin to address this critical element from the systems perspective—that is, with a more unified view across departments, business units and, potentially, other jurisdictions.

c. Business Focus

Enterprise GIS is not an end unto itself. It is only part, albeit an important part, of the overall systems used by the County. The success of enterprise GIS will be determined in large measure on how well it enables the various business units within the County to improve their processes to become more productive and effective. This assessment, the conceptual design, and the plan will focus on the business functions of Scott County government.

d. System Integration

The County has already made a large investment in information technology systems and databases, primarily on centralized servers, network connectivity and various desktops. There is great potential benefit in the integration of various databases so that one database can serve multiple functions for multiple users, while allowing increased accessibility, simpler maintenance, and lowered costs. Users from different departments would be able to access appropriate information to better serve the public needs and synthesize new views of the community. Should municipalities become partners in the development and maintenance of various system components, the needs for system integration will be larger, more beneficial, and more complicated.

e. Education

GIS technology does require training to maximize the benefits, starting at user level training (i.e., showing staff how to browse for information), to advanced database design and spatial theory (i.e., writing modeling programs). With respect to education, there are two objectives for this project. First, is to involve staff in the process to foster knowledge transfer. The other is to identify skills that will be needed for the creation, maintenance, and operation of the system overall and within the departments.

f. Governance and Operations

The County recognizes that a key step to successful GIS implementation requires addressing non-technical as well as technical challenges. Subsequently, a major goal of this project will be to define an organizational model for GIS program management that can guide both strategic and operational decision-making. This will require obtaining "buy-in" from major program constituents, namely the County Board, Departments and staff, to ensure a base level of support for the establishment of program priorities and actions. Ultimately, there will need to be a level of buy-in from other possible strategic partners, including municipalities, energy and utility companies, regional, state and federal agencies, and other private sector firms. Finally, a successful GIS

organizational structure needs to be based on or tied into existing IT and other decision-making and budget-setting structures already functioning within the County.

3. Methodology

This situation assessment is the first of four phases of this project. The other phases, which build on the situation assessment, include a conceptual system design, a strategic and tactical plan, and a cost-benefit analysis. These four phases are part of a larger planning, design, and implementation methodology that GeoAnalytics uses in systems development projects.

a. Situation Assessment Activities

The situation assessment is an inventory of current conditions, business issues, key components, and perceived needs. The situation assessment establishes the baseline for the GIS program. This baseline details existing work and data flows between departments within County government and between county agencies and others. This effort establishes the key business processes that must be supported by the GIS system. It also inventories and documents current circumstances with respect to data holdings, the technology infrastructure, key business applications that must be supported by the system, and the organizational dimension of existing systems and processes.

The second part of this phase also addresses key issues and opportunities. The issues and opportunities are extremely important to how the system will be developed. This is because if the system is going to be successful, it must solve or at least improve current problems or issues. In addition, the opportunities that present themselves may be leveraged to make the system successful.

The following section outlines the methods and activities forming the situation assessment phase. The Situation Assessment is comprised of three steps: Education/Workshops; Fact Investigation; and Analysis.

1) Education

Two educational events were held, which solicited information from participants. A briefing for the County Board and key staff was held. The second event was a larger, more broadly based audience. The first part of the workshop was a kickoff meeting that was open to key County staff, elected officials, municipalities (particularly from the cities of Davenport and Bettendorf), and others from public and private agencies across the County. The second part of the workshop was a more formal educational session about GIS concepts and uses. As part of that workshop, process, data, technology, and organizational needs and issues were discussed in detail. Both portions involved considerable group participation and interaction. One objective of these sessions was to begin the process toward consensus building.

2) Fact Investigation

Fact investigation, conducted before the educational workshop, included a survey and formal and informal interviews with County staff. A second interview session was held with key outside stakeholders, including the Public Works departments from the cities of Davenport and Bettendorf.

a) Survey

Before the interviews, a survey form was distributed in digital form via email (Appendix B). The form was structured to capture specific details on the activities that each of the participating governmental units engaged in relative to GIS. In this case, GIS activities were interpreted as being those that currently involve production, maintenance or utilization of location-based information. This included any information with a geographic and spatial component, whether in digital form or not.

b) Interviews

Fact investigation, primarily done by interviewing staff members from agencies across the County, was conducted to determine the current state of GIS technology and data in County government and a few key outside agencies. Participants in these interview sessions and summaries of the results are included in Appendix C.

This interview process was organized around a set of system components to standardize information from each department or business unit. The four main information system components are: Process, Organization, Data, and Technology. (See section B.3.b below)

These interviews were also designed to identify the broad cross-departmental elements related to each of the design elements. As an example, in the technology arena, the major systems serving all departments were identified as well as the applications and databases serving the various departments.

3) Analysis

This report provides the analytical dimension and is comprised of a synthesis of factual findings and an issues and opportunities analysis. This analysis includes an inventory and description of problems, gaps, and unfulfilled needs—*Issues*. The second part of the analysis is a listing and description of best practices, events and programs that can be leveraged to assist in system development—*Opportunities*.

Information from the interviews and forms are gathered, collated and summarized to develop an interview summary for each governmental unit. A summary of results for each participating organization is included in Appendix C.

The system components, which are described in more detail in the next section, guided this document by organizing findings, issues and opportunities, and recommendations in a consistent, logical fashion.

b. System Components

System Components are key elements to this project and serve as organizing principles around which an enterprise system can be developed. These Components provide a way to characterize an information system at its functional level. They provide an analytical framework for this document and for project design purposes. The following five analytical categories were established and guide this document by organizing findings, issues and opportunities, and recommendations in a consistent, logical fashion.

1) Process

Processes are the business functions (e.g., regulation responsibilities) and business activities (e.g., permitting) undertaken by organizations as they meet their mandates and missions. This category includes all the statutes, administrative rules, mandates, and ordinances that affect the County. This category also addresses organizational missions. Missions differ from mandates in that they are not defined or required, but are those activities agencies undertake as the result of tradition or direction from decision makers and elected officials. For the purposes of this project, we focused on only the processes that utilized GIS technology to support the activities of the business unit.

2) Data

This component addresses the raw data and processed information that supports business processes, missions, and mandates. Consideration is also given to the flow of data and information within and between organizational units (e.g. departments and divisions).

3) Technology

The technological component deals with hardware, software, and communications between systems in various governmental units (e.g. departments, divisions, sections, offices, stations, and service centers). Technology includes operating systems, data communication hardware, workstation and server hardware, system software, database software, and the like.

4) Organization

Organization is the broadest dimension and includes intergovernmental relations, data and workflows, resources, and policies. These include interactions between departments and between various jurisdictions affected by geographic and land information. This section also encompasses the political and interpersonal dynamic of system implementation and support with an emphasis given to resources. Resources take many forms, such as financial, technical, and personnel. The personnel dimension encompasses education, experience, and capability. For the purposes of this project, we focused on the organizational structures that may be used to support GIS technology adoption.

5) Applications

Applications are the specific tools needed to support business processes and decision-making. For the purposes of this report, applications have been included in the technology section.

C. Situation Assessment

The Situation Assessment Report is an inventory of current conditions, business issues, key components, and perceived needs among all participants. This includes an inventory of current GIS and related activities within the context of the design components: process, data, technology, and organization. The purpose in this project is to establish a sufficient factual basis to support the next stage, the planning and design of an Enterprise GIS.

This section of the report provides a synthesis of the current situation within Scott County. These findings are presented in summary format, not as individual department/office profiles. Those profiles can be found in Appendix C.

1. Business Processes

The process component refers to the business functions and activities of the organization. Normally, these are direct functions such as permitting or planning. In this case, because the subject is enterprise GIS, the focus is on those business functions that relate specifically to system coordination, management and operations. Obviously, the work of an enterprise system must address the business functions of its participants.

However, the relevant processes for this analysis are at the higher level, namely on those processes that affect the operations of the enterprise system. The processes at hand cover a range of entities. The principal entity involved in the execution of enterprise GIS is the Information Technology Department. Notwithstanding this Department's key role, the success of an enterprise system is dependent upon the active participation of system stakeholders. This participation takes two forms: system adoption and use, and involvement in system governance. In order to be adopted, the system must accommodate business needs and offer some level of enhancement over existing tools and processes used. For that to happen, it is essential that a governance model be in place.

a. Key Business Processes

The GeoAnalytics team interviewed most of the County's departments and offices. There are many business processes essential to each department; many of them rely on other departments or offices for informational input or distribution. Key business processes are those considered to be of high public safety value (e.g., emergency management services, health), high value to the County (e.g., tax collection, assessment, parcel management), or high public profile (e.g., planning and development, snow removal, recreation).

1) Land Records Management

The first major business function category within the County is Land Records Management, which involves tracking boundaries and ownership of legal parcels and plats, valuation and assessment, property tax collection, voter registration and elections, and land use regulations. In addition, it includes a high level of front-line citizen relations. The County Recorder, Auditor, Treasurer, Assessor, City Assessor, and Planning and Development departments handle the majority of land records management functions. However, nearly all other departments deal with land records information at some level.

2) Infrastructure Management

The second business function category can be generally referred to as Infrastructure Management. The County, like other local governments, has major investments in facilities that need effective management systems. Effective infrastructure management is an important government function that includes the planning, design, construction, and maintenance of roads, bridges, signs, and rights-of-way. Functions include review of new subdivision roads and driveways, trip permitting, snow removal, mowing, removal of dead animals, and so forth.

The Secondary Road Department is primarily involved in infrastructure management activities. Management activities include maintaining bridge and sign inventories, asset management, planning and scheduling repairs and maintenance. Facilities & Support Services engages in similar activities including facilities management, building maintenance, fixed asset management, planning and building additions and enhancements and permitting.

3) Community Services

The next major business category is Community Services. The principal community service agency, relevant to GIS and LIS, is the Health Department. The Health Department has a broad range of responsibilities including environmental health services, which includes solid waste, public safety and inspections, and clinical service programs. The Health Department is involved in a range of environmental regulation and services for water and wastewater systems, including on-site wastewater testing treatment, real estate transaction and subdivision review, and well water regulation and testing. All of these activities are dependent on spatial and related data.

4) Public Safety

The Sheriff's Office and Emergency Management are the two key County agencies involved with Public Safety. The Sheriff's Office provides law enforcement and citizen protection, including patrol, criminal investigation, emergency services team, and detention. This office operates a dispatch center that works in cooperation with the Cities of Davenport and Bettendorf.

Emergency Management is a coordinating agency with federal, state, local, private agencies. Its responsibilities are to assist citizens and their communities to prepare for, respond to, recover from, and eliminate or reduce the effects of natural, civil, and technological emergencies and disasters.

b. Summary Process Findings

It is clear that County departments and staff are committed and function as best as possible at meeting their specific missions and mandates. It is also clear that many staff function with tools and processes that are both technically and functionally obsolete. Many interviewees indicated cumbersome processes, duplication in business activities as well as difficulty in accessing records. Much of the business process problems in the County have to do with a lack of automation with respect to spatial information, some archaic systems, and non-interoperable or "stove pipe" systems. That being said, there are a number of core processes that could be redesigned to make the County and other agencies much more efficient and productive. In addition, there seems to be willingness

both at the staff and leadership levels to automate and, where appropriate, integrate systems and processes.
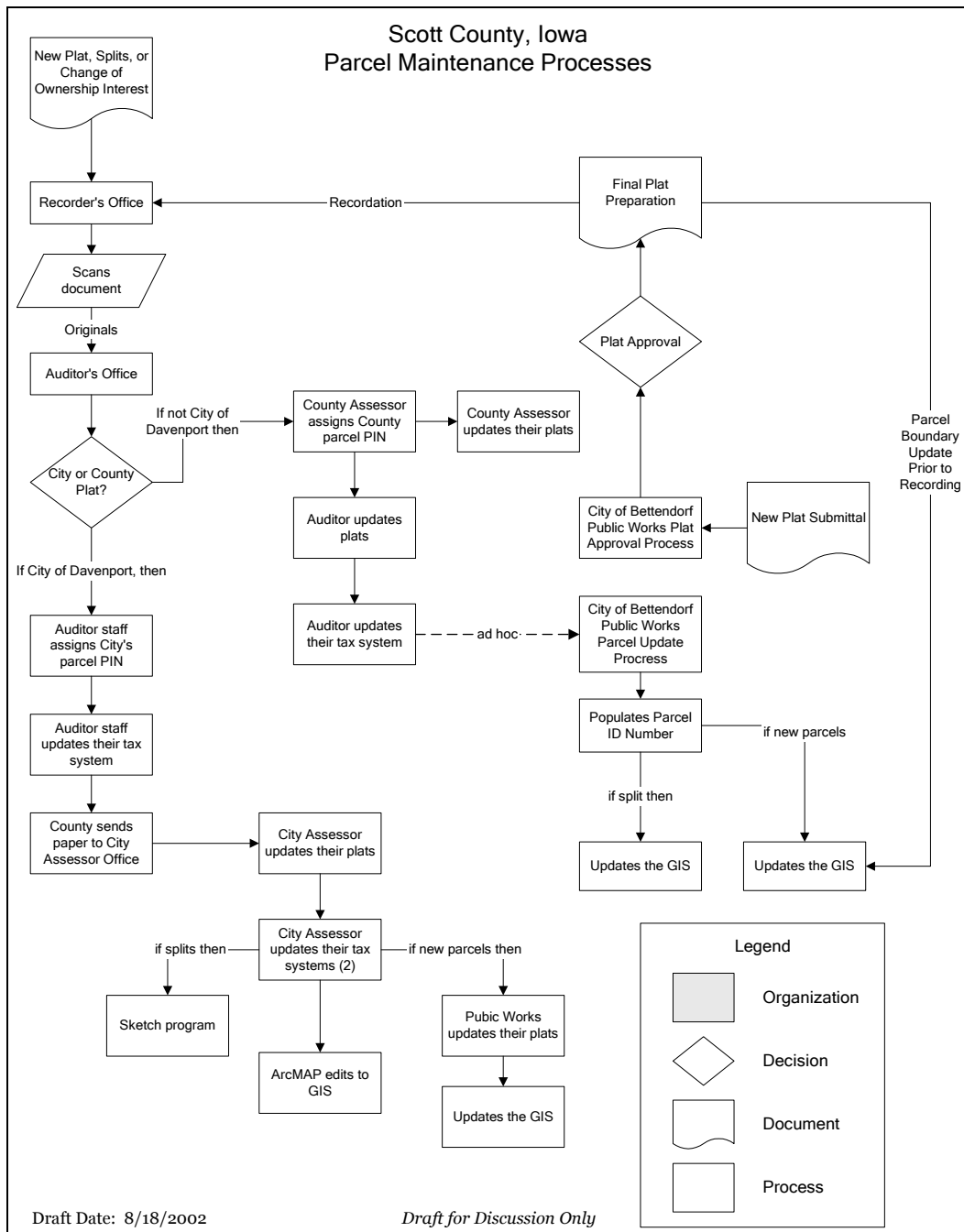
c. Process Issues and Opportunities

Process improvement has been widely recognized as one of the greatest benefits, if not the greatest economic benefit, to modernization, automation, and collaboration of land records management systems. At this time, GIS is not an integral part of County business activities and work processes. However, many potential users could see how business process improvement could be part of GIS implementation. The following describes issues and opportunities for process improvement, either based on the utilization of GIS technology or in general, are also described.

1) Parcel Maintenance

The most significant process dysfunction is in the area of land records, particularly parcel maintenance. Parcel maintenance is undertaken by several different agencies across County and the Cities of Davenport and Bettendorf (see Figure 1 for a schematic of these processes). The lack of automation of parcel maintenance drives much of this inefficiency. Individual agencies in both the County and municipalities separately maintain parcel information based on their own business needs. While these efforts are rational from departmental perspective, it is highly irrational from countywide, taxpayer view. Fortunately, much of the parcel maintenance redundancy is avoidable through a process of automation and coordination. This highlights the need for better collaboration and coordination within the County and with other agencies. This theme was a frequently chosen as a major issue in surveys and interviews.

Figure 1: Parcel Work and Data Flows

Scott County, Iowa
Parcel Maintenance Processes

- New Plat, Splits, or Change of Ownership Interest
- Recorder's Office
- Scans document
- Originals
- Auditor's Office
- City or County Plat?
  - If not City of Davenport then → County Assessor assigns County parcel PIN → County Assessor updates their plats
    - Auditor updates plats
    - Auditor updates their tax system
  - If City of Davenport, then → Auditor staff assigns City's parcel PIN → Auditor staff updates their tax system → County sends paper to City Assessor Office → City Assessor updates their plats → City Assessor updates their tax systems (2)
    - if splits then → Sketch program
    - ArcMAP edits to GIS
    - if new parcels then → Pubic Works updates their plats → Updates the GIS

- Final Plat Preparation ← Recordation
- Plat Approval
- City of Bettendorf Public Works Plat Approval Process ← New Plat Submittal
- City of Bettendorf Public Works Parcel Update Procress
- Populates Parcel ID Number
  - if split then → Updates the GIS
  - if new parcels → Updates the GIS
- Parcel Boundary Update Prior to Recording
- ad hoc

Legend
- Organization
- Decision
- Document
- Process

Draft Date: 8/18/2002   *Draft for Discussion Only*

2) Parcel Numbering

A closely related process is parcel numbering. Currently, there are at least two separate parcel-numbering schemes, one for the County, one for the City of Davenport. Developing consistent or, at the least, interoperable parcel identification schemes will be essential to advance both the automation and process improvement.

In addition, because this is largely a manual process, assignment and access to new parcel numbers is awkward. Streamlining parcel identification can have many positive results for parcel management and related business applications that can utilize parcel information. In the short run, until parcel boundaries are automated, consistent/interoperable, unique, and accessible parcel IDs that are coupled with address information will serve many business functions.

3) Access

Another major function for all departments at the County is to handle citizen inquiries. Requests for a variety of information or answers to questions can start at the counter of any given department. Depending on the scope or depth of the inquiries, they may be handled immediately at the counter or transferred to other departments. This problem is not limited to citizens alone. Access to information by staff, as part of their normal work processes or special projects, is often similarly frustrating. One common scenario is finding documents that are linked to a particular parcel. Frequently, citizens and staff are asked to move between the Recorder and Auditor's offices to obtain the information they require.

There are a number of implications to the failure or impedance of access to data. First and foremost, the quality and efficiency of staff responses to citizen inquiries is a primary process issue due to often inaccessible and/or out-of-date land information. At times, this situation limits the staff's ability to respond to inquiries in a timely and accurate manner, whether they are related to property, roads, or other topics. In some cases, answers are available but not readily accessible since they are housed in another department. In other cases, information is either unavailable or not current. When this happens, customer service suffers.

At the same time, time spent by staff chasing information is expensive. It also diverts time and attention from other, more productive, activities. As a result, data inaccessibility has a direct cost as well as cost in the form of lost opportunity. The economic cost is not limited to government staff. There are similar economic impacts for citizens, developers, and others who spend time and resources retrieving information.

The creation of an Enterprise GIS database, which would house most land-related data about the County and make it accessible and usable by both professional and support staff, would greatly enhance the current work and business processes. Basic access to land records need not be excessively complicated. There are a variety of tools and applications that can make access easier. The same base information can be easily accessed from any office. Public access terminals could be made available to reduce the number of inquiries staff must answer.

2. Data

This component concerns both hardcopy and digital data that supports departmental missions and mandates. It also concerns the flow of data within and between departments. This leads to questions about organizational data standards, accessibility, and availability. In the case of Scott County, many surveys noted that creation of data standards is a major need. As well, data accessibility is highly desired as some but not all departments have access to data they need and use. It almost goes without saying, but automation of parcel and related data is a vital need. Data standards, while valuable, are only part of the need for automation.

By all accounts, County departments have information needs where having a GIS would be highly beneficial.

a. Key Data Types

The following are two primary types of data that are used within a GIS.

1) Spatial Data

Spatial data generally refers to mapped information that depicts the geographic location and dimension of physical or administrative features of a real world entity. An example of a physical feature would include landscape elements, such as a river, roadway bed, etc. Administrative features include representations legal entities such as a parcel of land. In most instances, though not all, spatial data is displayed as a conversion of a three-dimensional reality into two-dimensional graphics that depict both physical and administrative elements on a map. For example, a road network is a represented as a set of lines, with road names as associated text.

Spatial data encompasses all map-related records created, maintained, and/or used by staff depending upon their responsibilities. There are some data layers from the State DNR website that are applicable to the County, such as the digital soils. Most of the current County spatial data exists in paper format such as plats, index books, aerial photos and maps from the Bi-State Commission. There is some data for roads from the Iowa DOT system that exists in digital format and is accessed using AutoCAD and ArcView. For the most part, much of the County's critical spatial data exists in paper format.

2) Non-spatial Data

Non-spatial or textual data is an important component of a GIS since it often has relationships or linkages to GIS data layers and has additional value when accessed through the GIS (e.g. deed documents interpreted through the GIS parcel layer). One form of non-spatial data is documents. At this time, only the Recorder's Office is using document imaging, with an index system, so that documents can be viewed on line. Access to these documents is through terminal emulation to the mainframe. Other departmental access to this system is via permissions granted through the IT Department.

Other non-spatial business data such as well and septic databases can also be linked to a GIS and offer not only a visual display of information but analyses capabilities as well.

b. Data Issues and Opportunities

Obviously, data is one of the most crucial elements of a GIS system. Accuracy, quality, currency, and communication of data content are fundamental elements that contribute to the proper functioning of a GIS. The following sections discuss those data issues that can challenge GIS implementation in general and those that were specifically identified during the interview process.

1) Redundancy

Most organizations have several examples of duplication of information and/or effort. This is due to either several departments' perception that the records are for

different purposes so it warrants duplication or the technology is not in place for them to use these records from a central server.

As detailed above, one example of redundancy is the three to four sets of plat maps in use at the County and the City. The Auditor is the official custodian of the plat updates, but changes are also maintained (and sometimes differ slightly to accommodate different information) at the City and County Assessors' offices. As well, the City Assessor indicated that for every parcel split, several processes for both digital and hardcopy changes are done. The City Public Works department also keeps plats. Although out of scope for this project, this duplicative effort can be alleviated by relying on a stable GIS.

Another redundancy example is document management by the Recorder and Auditor offices. One office, the Recorder, manages documents primarily in digital form. The Auditor manages documents manually. The Auditor's office would like to have digital access to documents for digital distribution to the City and County Assessor. It is also essential to tie the document number to the parcel number/address for better searching and querying in response to public queries.

2) Accessibility

There are several important considerations with data accessibility and one of the primary ones is the physical infrastructure. Reliable and fast network communications are essential for transmitting data between departments, especially considering the size of some GIS datasets. The presence of the County's upgraded network infrastructure, presents a significant opportunity that can be built on for the development of an enterprise GIS.

Unfortunately, not all hardware and software will "speak" to each other. That is to say that some of the business applications used by the County are not, at a minimum, designed to accommodate database integration. As result multiple versions of data must be maintained. Although this situation will improve with every passing year, it is problematic at this time (e.g., the ZIM applications will have to be replaced). A robust enterprise GIS offers the opportunity to leverage data that is maintained in many forms and formats.

In regard to parcels, a top concern of many departments, the County Assessor office uses Vanguard's CAMAVision (http://www.camavision.com/), a proprietary software system. There is a specific module that allows a link between its database and other software packages including GIS. The City of Davenport has two customized tax systems for residential and commercial properties. These need to be considered as well for accessibility to the enterprise system.

The Recorder's document imaging system will also need to be incorporated into the GIS system in some fashion. Most of the centralized data will need either a migration strategy or interface to become accessible in conjunction with the GIS.

3) Compatibility

Another issue related to access is compatibility. In this case, the compatibility has two dimensions. The first is the referencing systems of the data. Data layers will not overlay with each other unless they are in the same coordinate system. For instance, downloaded data layers from the Iowa DNR will be in Universal

Transverse Mercator (UTM) and not in the County's coordinate system of Iowa State Plane South. The data from the State (e.g. soils) will need to be projected into the County Coordinate system. Some software provides "projections on the fly" but this is not always recommended because of application performance issues.

The second is format. There are a number of different tools that are being used to maintain digital data across the County. There is some data stored in AutoCAD in the County and in the City of Bettendorf. There are different databases in play as well, including Db2, Oracle, MS SQL Server, Access, and proprietary databases. Reconciliation of these different data formats will have to be addressed as part of the system design. There is one opportunity, however. The County and the Cities of Davenport and Bettendorf all have GIS software developed by the Environmental Systems Research Institute (ESRI). Many state and federal agencies use ESRI technology. ESRI technology is a de facto standard. This should simplify, though not necessarily eliminate, some of the format issues.

In addition, for decision makers, scale compatibility is important. If one is using a very accurate source for local roads (say, 1:24,000) and compares that network with a smaller scale (say, 1:100,000) from a statewide agency, one would find that there could be large differences in the location of the roads. This is due to the source scale and compilation methods. Smaller scale maps (larger denominations) are much coarser and less accurate than larger scale maps. This issue is amplified when combining many different kinds of data. It is not unusual, for instance, to have highly accurate parcels fall on the wrong side of a road derived from a statewide map. To the untrained eye, like the public, this looks like gross errors and can place the GIS in question.

Resolution of these discrepancies will be essential to the overall program success. More than just technical detail, these decisions account for the wide range of business needs of the County and its partners.

4) Information Quality

Digital information has several aspects that affect its quality and hence, its reliability for making decisions. Those aspects are accuracy, consistency, completeness, currency, and compatibility.

a) Accuracy

Accuracy can be defined as a measure of truth. Methods of observing real world objects will differ in accuracy according to the method and scale. For instance, capturing the location of a sign post using GPS (Global Positioning System) to get a latitude/longitude coordinate will be more accurate than noting that the sign post is on the SW corner of the intersection of Main and First Streets. Both are valid observations and used for two different purposes (engineering scale versus field work descriptions). In general, higher levels of both map and tabular database accuracy are required in urban versus rural areas primarily due to the density of features. As well, public works and engineering activities require higher accuracy measurements than do planning and development needs.

Because there is no digital base map for the County, required spatial accuracy will be determined during the design phase. This is advantageous because business needs can drive the level of spatial fidelity.

There is at least one accuracy issue that will need to be overcome relative to digital parcel mapping. The Cities of Davenport and Bettendorf currently have digital parcel maps. In the event that the County can make arrangements with these cities to make use of that parcel mapping, accuracy issues will have to be resolved. This is not to suggest that these parcel maps are inaccurate. In all likelihood, these existing parcel maps probably will meet or exceed accuracy requirements for the County. Rather, this is a matter of uniformity. Each City compiles parcel maps in different ways to meet different business needs. If complete uniformity of parcel representations is needed across the County, this will have to be reviewed.

b) Consistency

Base map data can be represented in more than one way, based on different map source scales. For instance, on a map at a small scale such as 1" = 4000', a building may be represented as a point and points have no area measurement. On a map at a much larger scale, say 1": 400', the same building could be represented by a rectangle to scale (also called a polygon in GIS terms). Thus, interpretations or analyses of the data will be quite different.

Again, because there is no base map for the County, consistency can be dealt with as part of the design. The only issue will be for those data that are incorporated into the system from whatever source. This may be dealt with in design, in specifications, or possibly through some disclosure method such as Metadata.

c) Completeness

Incomplete or neglected data is perhaps the most serious issue with data and has the highest risk for decision-makers. Frequently, data is created for one department's needs only and not for multiple departments' use. Take, for instance, the road network and its associated information. The cities may only be concerned with their local roads, Secondary Roads may want only roads that they manage, Planning and Development may want all roads including private ones, while Emergency Management would have the most demanding need for all roads, including those under construction. Therefore, the challenge for Scott County will be determine what purposes for which data will be developed and, as a result, the level of detail and scope data layers will have. Generally, database designs are geared towards the highest user needs because if those are served, then all others will be as well.

d) Currency

As with completeness, currency is another issue for consideration as needs across departments will differ. For roads, the Secondary Roads Department may be satisfied with bi-annual updates to the network, while Emergency Services needs real-time road information for dispatching. Maintaining currency of data can be complex as there can be mixed timeframes among different departments for updating the layers.

One of the most often cited needs is for current parcel information. There are two forms of current parcel information. The first is the certified tax roll. That data is updated and deemed current on an annual cycle. The certified tax roll has explicit legal functions and implications. On the other hand, as parcels or plats are recorded, there is the need for very contemporary updates to support other

business needs such as emergency services, permitting, and infrastructure support. The currency requirements for that data vary from daily to weekly to monthly to quarterly. Presently, the City and County Assessor have different timeframes for doing parcel splits and other maintenance. Resolution of this will be a system design level decision.

Currency is also driven by work and data flows. Ideally, updates are transactional as part of the normal workflow in a given department. Of course those updates must find their way into the enterprise database. Depending on the system architecture, that may be an automatic process or there may be intervening steps that must be done. Although an agency may be willing to provide transactional updates, it may require different tools on the desktop or operating in the background. Another consideration is to provide tools to staff so that updates to data layers aren't difficult. If updates are difficult to do, they can quickly fall out of date and then stay that way.

5) Custodianship

Data custodianship is driven by data management and legal mandates considerations. There are data that certain departments are legally mandated to maintain (e.g., parcels by the Auditor's Office). That mandate does not mean that the custodial department could not have explicit agreements or arrangements for another entity to maintain the data. Thus, while the Auditor is the official custodian of the parcel data layer, it may be possible for maintenance to done through arrangements such as outsourcing or delegation another department.

Along with data custodianship comes accountability. If the County enterprise as a whole sanctions the custody of a data layer to a given department, all of the users of that information must rely upon that custodian to maintain the data in a timely, accurate, and consistent fashion. This responsibility includes maintenance to support not only internal department needs but also other County department requirements. Therefore, maintenance requirements and schedules need to be clearly defined. Generally, organizations assign custodianship to the department that has the greatest investment, highest needs, and/or highest use since this usually satisfies lesser external agency data layer maintenance needs.

Documentation of data is also a primary responsibility of the data custodian. One of the most essential components of any GIS database is metadata. Metadata describes the characteristics of a GIS data layer, such as its contents, accuracy, date created, custodian, and associated databases. Communicating this information is critical for users to understand how to avoid inappropriate uses of GIS data.

There are several models of data custodianship for adaptation to the County's situation. During the Conceptual Design phase, data custodianship scenarios will be discussed in relationship to the type of operational GIS model that the County prefers.

6) Spatial Data Needs

The County is rich with textual/tabular data and hardcopy data but little of it is in a spatial, or mapped, format. From the surveys and interviews, County staff indicated the following to be important map types:

- **Aerial Photography**: Used by Planning and Development, Secondary Roads, Emergency Management, Assessors' Offices. There are a host of other possible uses, including law enforcement, etc.

- **Plat maps**: Used by Auditor's Office, City and County Assessor, and City Public Works for depicting parcel information.

- **Parcels**: Considered to be the most crucial data layer to be developed by many departments for different reasons.

- **Streets**: Road centerlines and legal right-of-way boundaries are important for a number or uses in many departments.

- **Address**: There are three distinct forms of addresses for local government. Street address (typically tied to parcels with improvements). Street address ranges for routing, planning, and analysis. And, mailing addresses for tax administration and legal notices. Addresses include intersections and are critical for parcel information.

- **District boundaries**: Zoning, tax, election, SMID, TIF, school districts.

- **Hydrography**: Particularly floodplain boundaries.

- **Conservation facilities**: Park buildings, park habitats, infrastructures.

- **Elevation**: Topographic contours for planning, floodplain delineations.

- **Soils**: For valuations, floodplain management.

a) Base Map Considerations

Most local governments work from or reference some type of base map that depicts important natural and built features such as streets, parcels and streams. As well, other data layers can be derived from the base map that are considered resource layers such as zoning boundaries, school districts, tax districts, and so on. Since the development of a base map is inherently integrated (as is GIS in general), any layers derived from it will automatically be compatible and usable.

The primary data conversion expenditure for enterprise GIS implementation will unquestionably be for GIS base map layers. Typically, the base map should include current data for a densified network of horizontal and vertical control points to support mapping and field survey work. The survey control network ties the aerial photography to real world coordinates. The acquisition of aerial photography, also called digital orthophotography in the trade, can include derivation or mapping of contours, rivers, streams, road centerlines, building footprints, and other features. The use of the "orthos" and the control network, in turn, are frequently used for parcel mapping. Figure 2 depicts how the base map is the foundation for the entire GIS.

The County will have to make decisions regarding the costs and benefits associated with the various options for converting base layers. The next phases of this project will present a clear explanation of accuracy and comprehensiveness, correlated to County departmental needs.

Figure 2: Example High Level Spatial Data Model
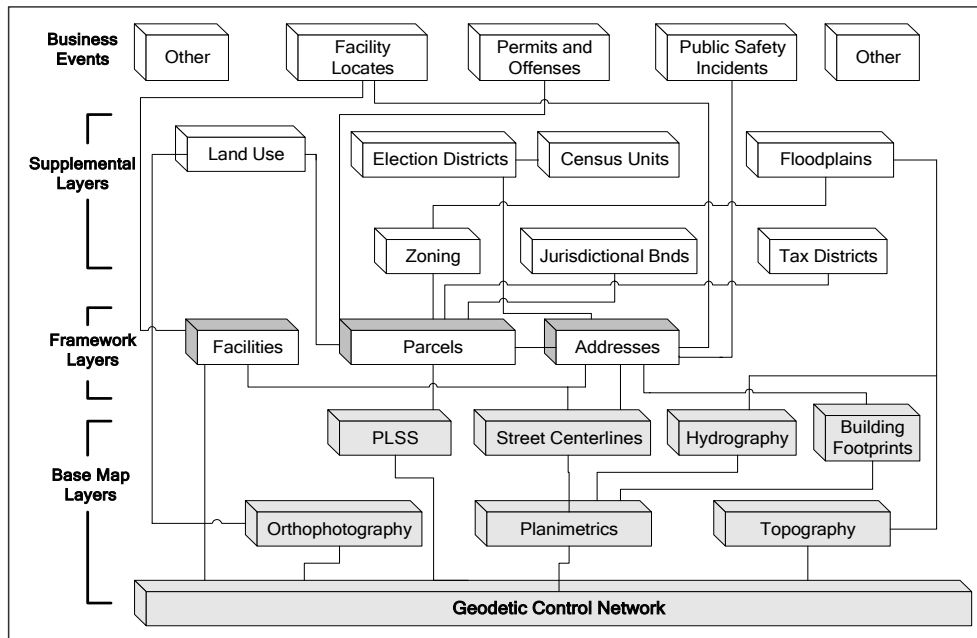
b) Tabular and Document Integration

There are several non-spatial databases that could be leveraged to augment the functionality of GIS databases. Virtually any database that contains references to parcel number, address, coordinate or other locational information can be represented on a map, thus increasing the value of the database itself. Other databases can be slightly modified with locational information to contain locational references.

As part of any database development, a significant effort toward database design should be pursued. While designing spatial data entities, the process should look at the capacity of the data layer to connect with non-spatial databases and develop the design accordingly. All too often, the non-spatial databases that will connect to GIS data are neglected in the design process, thus resulting in limited usefulness of the data in agency business functions or in complex measures to integrate the spatial and non-spatial data.

In particular, the document imaging system that has already been implemented, as well as other imaging systems that may be implemented in other departments, should be evaluated for their ability to link to other related enterprise datasets like the parcel database. Ideally, only one imaging solution would be implemented across the enterprise.

Many problems associated with data incompatibility are related to the data storage format. Whether or not this is occurring at the County will be further explored during the next phase, Conceptual Design, for the development of a data model. It would be useful for the County to limit the number of open database formats that are suitable for enterprise integration. Whenever possible, the purchase of new

applications or the development of new datasets should be compatible with one of the standard database formats.

c) Parcel Data Maintenance

The workflow for parcel maintenance is complex and varies between County and City of Davenport parcels, and, as mentioned earlier, there is much duplication of effort. If all partners agree, the workflow can be greatly streamlined and simplified. Rather than the current process, which is based on the flow of hard copy maps, it can be designed around ease of use for the staff and public.

A single parcel identification number (PIN) scheme for both County and City parcels would further simplify the process. While this may be the appropriate time to settle on one County and City PIN scheme, it is not absolutely necessary to the success of the system. A cross-reference table can be built between PIN systems that will allow for interoperability.

The larger issue with parcel maintenance will be changes in the workflow for parcel creation, splits and transfers. One department should be the custodian for the map updates, thus eliminating the need to maintain separate maps in the Auditor and Assessor offices.

3. Technology

The Information Technology Department (ITD) is the primary department for deploying and maintaining the County's technology. The ITD is a major participant in this project and will be supporting GIS implementation within the County as it progresses. ITD has been implementing a Technology Assessment Plan, completed in December 2000 by RSM McGladrey. Many of the report recommendations have already been accomplished such as restructuring the department and hiring an IT Director, a Webmaster, and a Help Desk person. In addition, the Department has three programmers (legacy applications) and three network support/administrators. The Department supports approximately 350 desktop computers and over 30 servers.

a. Existing Network Communications

The County has been upgrading its network infrastructure with an eye to the future. Fiber has been run between buildings and between departments and the central servers. Other cable runs within buildings range from CAT 5 to CAT 6e. Gigabit speeds are supported as switches have gigabit blades installed. Desktop PCs are connected at 100-megabit speeds. This system should serve the County's needs for quite some time, even with the heavier bandwidth requirements of large GIS data sets. Fiber has also been run to some City buildings. This connection is being used for public safety purposes but also presents the possibility of linking County and City, where appropriate.

b. Existing Hardware

The County computing resources are very centralized with most, if not all, of the important applications and databases being served by a block of servers located in the Computer Room. This arrangement allows for streamlined backups, physical security of the machines and shortened support response times.

The County is running a mixed Novell/Windows 2000 network but is working toward migrating completely to Windows servers. Currently, clients log in to Novell and are then authenticated to Windows 2000.

As recommended in the Technology Assessment Report, the County has invested in a Citrix Metaframe server cluster though it is still in the testing phase. The size of the cluster is quite large, and therefore, the potential for an array of application serving is quite extensive. The plan is to deploy Internet Explorer and Adobe Acrobat first.

c. Existing Software

In the past, all application development was done using ZIM, a 4th generation programming language used to access a proprietary relational database. There are at least 75 ZIM applications in use at the County and they have been highly customized to users' needs. All offices interviewed use one or more of these applications. It is difficult to access the database from non-ZIM applications, so usually data must be dumped to another format before it can be accessed by other programs.

At this time, there are four concurrent ArcGIS ArcView floating licenses with plans to purchase more. One training session was provided to staff, taught by an ESRI trainer, for ArcView (Parts 1 and 2). More training is planned for Fall 2002 for two days. The Secondary Roads department owns four seats of AutoCAD and plans to purchase additional seats.

d. System Administration

In addition to database support, management of the technology infrastructure is a critical part of an enterprise system. Again, many of these indispensable functions are being carried out by the ITD staff. ITD has responsibility for the network, desktop workstations, corporate servers, desktop tools, ZIM applications and Internet and email access. Those functions explicit to GIS that are being undertaken include:

- Installation of GIS software, namely ArcGIS ArcView;
- GIS software support; and
- Arranging for GIS training.

e. System Support

The ITD provides basic system and GIS support. The ITD help desk offers one-on-one support for desktop applications. The ITD also provides application development coordination, consulting, infrastructure support and new technology evaluations, in addition to centralized hardware purchasing and configuration services.

## f. Application Development and Management

Another effort of the ITD is the coordination of application development. This coordination role encompasses all aspects of enterprise application development. At this time, most applications are for accessing the tax system and are written in ZIM Application Development Language. As a result of the primary ZIM programmer's retirement, the County is faced with migrating to another tax system. The tax database is not easily accessed by applications other than ZIM but can be accomplished by dumping the database to a static file for access.

g. Technology and Applications Issues and Opportunities

The County's Information Technology Department has made significant progress at advancing information systems and data communication networks over the past few years. This has all been done during unprecedented growth in the use of computer information systems and under constrained staff resource conditions. Following are highlights of some perceived issues or challenges that can (or may) constrain and opportunities that may be leveraged to advance evolution and implementation of GIS technology within the County.

Figure 3 depicts something of a GIS technology hierarchy capturing different types of users, tools and applications being used, and supporting technologies. It is important to note that different classes of users have different requirements for applications, workstations and servers, databases and other (web) services, and network bandwidth. Editors and Analysts have fairly high demands for software and processing capabilities on the desktop. Viewers typically only need thin client or browser based access. All three classes of users need fairly high network bandwidth to support orthophotographic and other imagery. Predictably, Analysts have higher demand for spatial and non-spatial database access to support analysis and modeling. Obviously the type of user dictates technology requirements, as is discussed below.

Figure 3: High Level GIS Technology Model
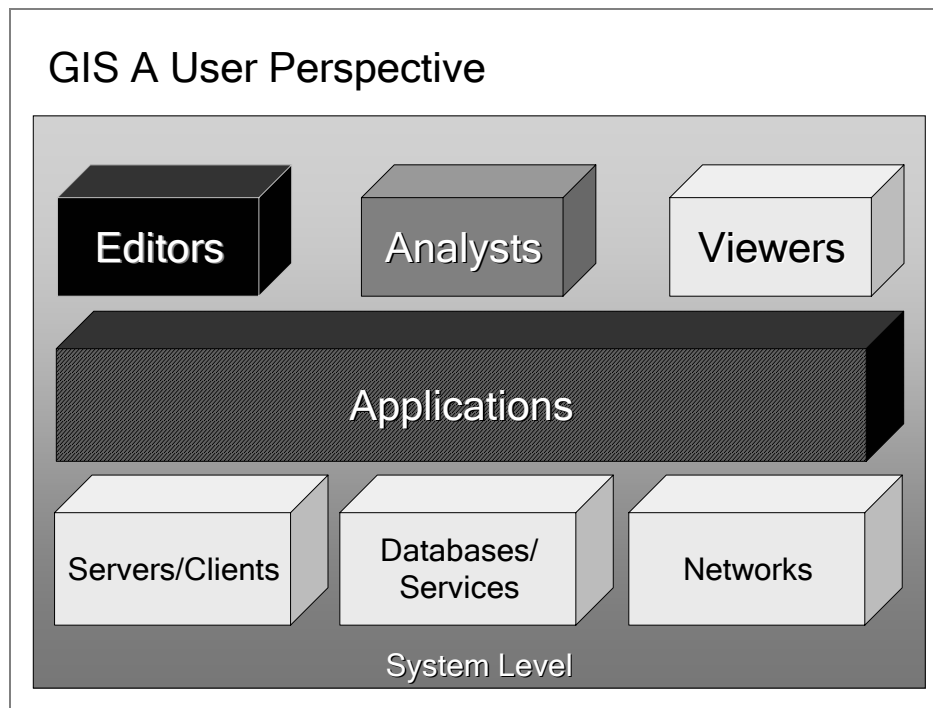
1) Adequate System Performance

System performance was not specifically highlighted as a major issue during this assessment; however, because of the centralized nature of a large number of applications at the County, there has not been a need for powerful desktop computers in most departments. With the advent of Editor and Analyst GIS users, this will change. There may be some need to upgrade desktop computers for

Editor and Analyst staff, due to the performance requirements for running digital mapping and GIS software. If the County invests in a web-based GIS data viewer tool to support basic browse and query (Viewer) uses, the age or performance of the client machine becomes less relevant than the performance of the network. Another option may be to run many of the GIS applications on the Citrix Metaframe server, which also decreases the need for high-performance desktop machines.

Once the parcel maps are converted to digital format and orthophotography is acquired, a centralized GIS data server will likely be needed as well as other machines to serve GIS applications.

Since the network communications within the County have recently been upgraded, the only network issues have to do with connections to the municipalities that may want to access the GIS. Some fiber runs are in place to the City of Davenport and between the Cities of Davenport and Bettendorf. Should these cities become full partners, network connectivity and bandwidth will become critical issues. If that is the case, some level of network equipment and configuration design will be required.

2) Integration with GIS and Other New Technology

The integration of hardware and software technology is fundamental to developing a database and application environment that is reliable, efficient, scalable, and analytically sound. This stresses the need to have all key land information management systems that are, or will soon be, in place at the County (including GIS, CAD, document imaging, the new Recorder system and the new tax system) be interoperable and data format compatible. Integration can happen on different levels, including the data communications (network), application software, operating system, and database levels.

3) Applications

Once the GIS has been established and data converted, there will be ample opportunities for web-based publishing of information, possibly reducing the taxpayers' needs for trips to the Courthouse. The pilot project for online payments in Fall 2002 should help determine the impact of online alternatives on trips to the Courthouse.

Implementation of a new tax system should provide for easier access to tax data by other applications. The technology assessment report recommended Visual Basic as the County platform for application development. Integration with the GIS should be much simpler in a new environment than it would be if the County continues with a proprietary database format for its tax data.

4) Administrative Support

Administrative support for County information technology is handled by the ITD through its Help Desk and other staff. Having a centralized IT department should increase the availability of technical support to departments, and simplify the design of information technology from a countywide standpoint.

GIS technology investments will, in general, increase computing activity while also adding special administrative requirements associated with software solutions. A

significant issue that will need to be addressed as part of successful GIS implementation is the provision of technical administrative support for GIS technology investments. Since GIS use is somewhat dependent upon its setup and configuration, deployment of GIS technology within the County will require advanced technical expertise. Training for additional technical support skills, as well as specialized GIS technology skills, will be a necessary investment. In addition, many successful enterprise GIS implementations bring on additional technical expertise either in the form of additional staff or contract support.

4. Organization

The County is organized into some 15 departmental offices. The organizational chart is shown below:

Figure 4: Scott County Organizational Chart
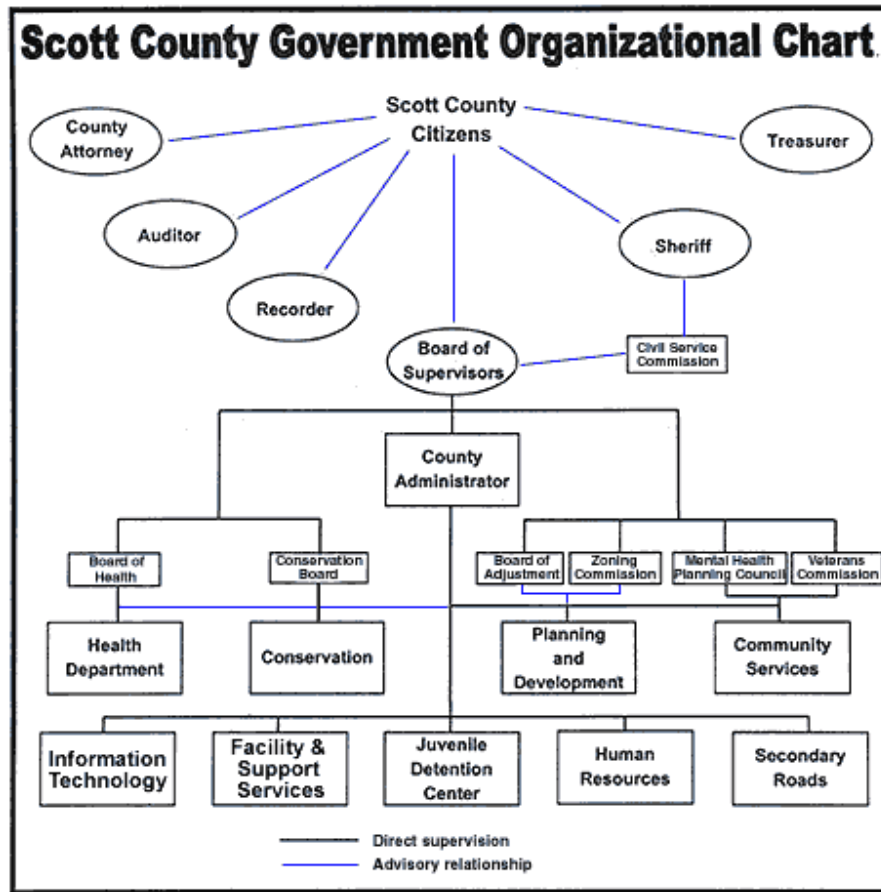
The GeoAnalytics team interviewed representatives from the offices of the Auditor, Treasurer, Recorder, Sheriff, County Administrator, Health Department, Conservation, Planning and Development, Information Technology, and Secondary Roads. As well, the County Assessor, City Assessor, Emergency Management, and Public Works departments from the Cities of Davenport and Bettendorf were also interviewed. The list of County departments and staff interviewed is in Appendix A: Interview Participants.

a. Inter-governmental Relations

A major benefit of GIS implementation, generally, is the integration of information technology across multiple organizations. It allows information that is maintained in several different forms and formats to be used by others. This has the immediate effect of lowering costs by eliminating duplication. In the long run, costs can be further reduced by joint procurements and cost sharing (i.e., economies of scale) of digital data to be used for multiple purposes. However, the lynch pin in these endeavors is communication, cooperation, coordination, and collaboration across agencies.

The County has several relationships with other governmental agencies in different capacities. For instance, the Planning and Development Department is authorized to issue building permits for several municipalities. Secondary Roads has agreements for road maintenance activities with several municipalities as well. The County Auditor Office works intensively with the City Assessor's Office on parcel splits, taxation, and valuations. Many departments work with the Bi-State Regional Commission for mapping needs. In addition, data is shared and reports are provided to the State on a regular basis from departments such as Secondary Roads, Health, EMS, and Conservation.

One of the many goals of this planning process is to educate these organizations about the project and, hopefully, get their involvement and cooperation. It takes many participants to build an enterprise GIS and cost-sharing, data-sharing, and cooperative agreements provide better overall public good and service.

b. Intra-departmental Relations

Quite like inter-governmental relations, relations between the County's departments and offices will benefit to an even greater degree from GIS implementation through timesavings, increased efficiency, and reduced duplications. Departmental cooperation and collaboration are key factors for GIS implementation success. It is a goal of this project to educate County departments and staff, empower them in the process of change, and include their business activities in the system design framework. Since each department has a stake in the outcome of this project, they must all be part of the process.

The County departments and offices have many relationships amongst each other. As mentioned several times in this document, key legal information sharing occurs between the Recorder, Auditor, City and County Assessors, and the Treasurer. The relationships between these offices are not only mandated by law but are key to long-term County sustainability and stability.

c. Resources

Resources cover a wide gamut, including financial, technical, and staffing. Each can be either a strength or a constraint. Financial considerations will drive the intensity and timeliness of GIS implementation. For instance, finances will determine if the base map will be developed in two years or planned out for five years. The County has to make some sort of long-range financial commitment to GIS development and implementation.

Unlike many counties, the technology infrastructure at Scott County is more of a strength than a weakness, because significant investments have already been made.

However, additional resources will be needed, to be determined as part of the Conceptual Design.

Personnel at the County have a wide range of skill sets, workloads and job longevity that can all relate to their adaptability to change. While staff is quite competent, it is clear that additional education and training will be required as enterprise GIS becomes a reality. Learning new skills will place additional workload stress on staff; therefore, time for learning should be properly allocated.

At the County, there are a few staff members trained in basic GIS concepts and software usage. Several staff members have attended a formal ArcGIS ArcView training session (Parts 1 and 2). The Webmaster has a GIS background and knowledge, being formerly employed at the Bi-State Regional Commission.

d. Organizational Issues and Opportunities

There are a number of facets to administering and implementing a countywide GIS. The organizational aspects of information technology and land records management are as critical as the technical and data requirements.

1) Agency Participation

It would be preferable to have the City of Davenport, the City of Bettendorf, and others who have already made investments in GIS to participate with the County in a countywide GIS. While there does seem to be interest on the part of the County and outside agencies, the County should be prepared to move ahead on its own if appropriate arrangements and logistics cannot be worked out.

It well may be the case that with parcels, for instance, the County manages its own countywide parcel layer, with the City duplicating efforts. Obviously, this would be sub-optimal from the taxpayer perspective—both for the duplication and for the fixed costs of the County acquiring data. As a result, there is a heavy incentive to engage the cities in cooperative efforts. The challenge will be to establish institutional arrangements that meet the business, technical, and policy needs of both the County and the cities.

2) GIS Program Governance

One of the inescapable facts is that enterprise GIS is as much an organizational challenge as a technical one. This is because enterprise level GIS must satisfy the varying business needs of multiple agencies. Inherently enterprise GIS involves concerted effort and, often, resource commitment. Given the presence of both disparate and common interests, some forum for decision-making must be in place. This takes the form of some governance model or mechanisms.

At this time, the County has established a GIS Steering Committee comprised of 14 individuals (one to represent every department). It is the entity responsible for steering the GIS program in the appropriate direction. While this governance model is appropriate for the current efforts, it may have to be changed. This will be particularly true in the event that there is some level of collaboration with the Cities of Davenport and Bettendorf. The precise nature of the governance model remains to be seen. It will involve some level of negotiation and compromise, particularly if this becomes an intergovernmental exercise.

For the time being, the Information Technology Department will be responsible for fostering the GIS Program and its Director should report activities back to the Steering Committee. Since the GIS Program is in a startup phase, this situation will work well for a few years. As the GIS Program moves from a startup position to an operational one where demands for applications increase over those for data creation, then a reassessment of the GIS Program structure may be warranted.

3) Operational Demands

Organizations faced with limited financial and staffing resources combined with increasing demands from the public, other agencies and decision makers, find that they have few options for change. Options are to cut back on fulfilling public services (usually not a valid option when taxpayers need services), maintain the status quo, or change the way business is conducted. Changing the way business is conducted is usually the only option for organizations to meet increasing demands with decreasing resources.

Changes to business functions and activities first begin with automation of common activities (e.g., document scanning, data entry, web-based data entry). However, automation of single activities still promotes department-specific solutions ("silos" of functions). The County has experienced much of this kind of automation whereby several applications exist for data entry into the tax system. Each application is stand-alone and users have to log onto each one separately in order to enter different information.

Modernization of operations goes a step further. It improves workflow processes and implements task redesign. It typically involves automation but it also requires improving information management procedures, designing information storage and retrieval systems, and developing integrated tools for data entry, maintenance, and analyses. The participants in this study, through the interviews, realize the need for process and task redesign, additional automation of procedures, and full access to data.

The challenge confronting the County is how far to go in the automation and process improvement (modernization) realms. As part of the next phase, Conceptual Design, an operational model will be developed with the County to further scope and discuss operational changes.

4) Departmental Endorsements

Modernization efforts will need to be sanctioned by all departments and they must agree to work together collaboratively. Typically, resistance to change is directly related to the status quo. If the status quo is perceived to be working just fine, then change is not warranted. The need for change is driven by the department's business activities and functions. For example, if staff are overloaded with work, the public is complaining about services, or access to data is so difficult that significant time is needed to track something down, then the department must look for ways to improve its internal operations.

As an organization, the County will be faced with increasing demands from the public for services in return for the public tax support. The status quo, from an organizational standpoint, won't suffice for very long. Implementing integrated technological solutions have proven in many municipalities to increase efficiencies

and improve public services. Each department will need to be part of the change process, part of the consensus building, and part of the decision-making. Since Scott County has included representation from each department in its GIS Steering Committee, this important first step has been taken. It is one of the goals of this project to further consensus on the GIS Program and its directions.

5) Personnel and Expertise

With any new system, particularly an enterprise level system, new staff may be required. This is for two reasons. First is capacity. Enterprise GIS will bring with it many new responsibilities and tasks. The level of these responsibilities probably cannot be absorbed by existing staff given current workloads. Second is competency. The County will likely need to acquire, in one way or another, knowledge, skills, and abilities to support range of responsibilities for system coordination and administration. It has been observed that a good GIS coordinator must be part politician, part educator, and part technician. All of these facets must either be developed with existing internal staff or be brought in from the outside.

The Information Technology Department has nine staff members that support the IT operations for the County. Six of those staff support application programming and network administration. The ITD is fortunate to have a Webmaster who also has GIS knowledge. In order for a GIS implementation to be successful, GIS expertise is essential. There is a long list of tasks to accomplish such as guiding the design and development of databases, setting up procedures and processes for data maintenance, providing services to the departments such as GIS support and training opportunities, developing policies for access, sharing, and data standards, overseeing application development, and performing a myriad of other tasks.

The sequencing of educating current staff and bringing new expertise on board can be difficult to plan and execute. Rhetorically, should the County hire a GIS Coordinator to supplement the IT Department staffing? If yes, when should that hiring take place? When should staff training be provided? Although training has recently been offered to staff, it should be pursued cautiously and based on need and usage. If training is provided too early, without data to work on, then learned skills atrophy and training may become outdated very quickly. Since out-of-the-box GIS software will probably still be too complicated for some users, front-end applications may need to be developed to assist them with their work.

For reference, there are a number of ways to increase GIS expertise within an organization and its staff. These are:

- Hire additional staffing with the required skill sets. This is most often recommended because it is the fastest way to get a GIS off the ground.

- Train existing staff on the required skills. This includes IT staff and internal departmental staff. This scenario is for the long run, as it will take much time for staff to acquire the skill sets necessary to operate a GIS.

- Outsourcing GIS projects to other agencies or consultants. This type of outsourcing can range from parcel maintenance to application development to on-call consulting.

Staffing considerations are essential for GIS implementation success so the County should consider the options. Further discussion about personnel and expertise will be part of the organizational model exercises in the Conceptual Design workshop.

6) Information Policy and Access

External demand will increase with the increasing investments the County will be making in digital land and geographic data. Generally, there is a need to define information policy within the County as it relates to the sharing and exchange of digital land information. Considerations can be made for cost recovery on the distribution of some records to the public, such as parcel and street maps. Iowa State Law allows for GIS cost recovery. The Public Records Laws (sec. 22.1 1, Iowa Statutes) carve out an exception for a "geographic computer database"[1].

The County should consider, at some point, a formal information policy with respect to data ownership, distribution, pricing, licensing, and cost recovery. An appropriately constructed information policy can clarify each of these issues.

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[1] sec. 22.2 3 a, Iowa Statutes provides in part:

.... notwithstanding subsections 1 and 2, a government body is not required to permit access to or use of the following:....

A geographic computer data base by any person except upon terms and conditions acceptable to the governing body. The governing body shall establish reasonable rates and procedures for the retrieval of specified records, which are not confidential records, stored in the data base upon the request of any person.

D. Conclusion

The purpose of this report has been to document existing circumstance and to identify key issues and opportunities. It is understood that this report creates more questions than it solves. Through the conceptual design phase and as part of the planning process issues will be prioritized for resolution. Some will be resolved.

Appendix A: Interview Participants

The following tables lists participants who were interviewed in person on June 18, 19, or 20, 2002 (County) and on August 12, 2002 (Public Works departments at the cities of Bettendorf and Davenport). Follow-up emails and/or phone calls may have also been done for clarification on information gathered. As well, interview profile drafts were sent to participants for review and comments.

Table 1: County Participants

CONTACT	DEPARTMENT
Dave Donovan	Facility and Support Services
Matt Hirst	Information Technology
Mitch Tollerud	
Jim Hagerman	Health Department
Larry Linnenbrink	
Art Miller	Sheriff's Office
Pam Bennett	
Terry Glandon	
Ross Bergen	Emergency Management Agency
Jon Burgstrum	Secondary Roads
Larry Mattusch	County Engineer
Tim Huey	Planning Director
Marc Miller	Conservation
Roger Kean	
Craig Hufford	Treasurer's Office
Kathy Hinrichs	Auditor's Office
Kurt Ullrich	
Dale Denklau	County Assessor
Beth Haney	
Ed Vieth	
Lew Zabel	
Cathy Creighton	City Assessor

CONTACT	DEPARTMENT
Katrina Loving	
Nick Van Camp	
Ed Winborn	Recorder's Office
Sue Brewer	
Ray Wierson	County Administrator

Table 2: Other Participants

CONTACT	DEPARTMENT
Kevin Lannan	City of Bettendorf, Public Works
Wallace Mook	
Dee Bruemmer	City of Davenport, Public Works
Steve Gartner	

Appendix B: Interview Survey Form

Scott County GIS Plan Questionnaire

In order to develop a strategic plan for a coordinated GIS, we first must investigate the existing circumstances to establish a baseline of current issues or problems and expected needs. When you are interviewed, we will go through this information plus ask other questions. You may fill this out in Microsoft Word or if you fill it out in hardcopy form and there is not enough room to answer the questions here, please attach additional sheets and reference the questions and section numbers. In order to conduct efficient and effective interviews, please supply the following information. Please fill it out as completely as you can. If you have questions or cannot otherwise answer a particular question, we will go over those matters during the interview.

Thank you for completing this survey and we look forward to meeting with you.

Contact Information

1. Office name:

   Location:

   Number of Employees:

2. Your name:

3. Phone:

4. Email:

Organization

1. Purpose of your office

   a. Does your organization have a specific purpose (such as processing and recording deeds)? Is it defined by law or ordinance (if yes, please provide a citation if you can)?

   b. What are your responsibilities?

   c. In carrying out your responsibilities, do you collaborate with or report to other departments? Stated another way, is the work that you perform part of a larger workflow or process involving other people or organizations? Please list the other departments.

Technology

1. Computers/Servers

    a.   How many desktop PCs are in your group? _____

    b.   How many are less than three years old? _____

    c.   Please indicate how many PCs are running each of the following operating systems:
       1)   Windows 95/98 _____

       2)   Windows NT _____

       3)   Windows 2000 _____

       4)   Windows XP _____

       5)   Other   (please specify: _____)

    d.   How many centralized servers does your office have? What are they? (e.g., AS400, Unix, Windows NT/2000 Server, Windows NT/2000/XP Workstation, etc.)

    e.   Are your computers connected to a network? Yes/No

       1)   Does the network extend to other departments or agencies within the County? Yes/No

       2)   Any connections to the City of Davenport? Yes/No

2. GIS Software

    a.   Does your office presently use any GIS software? Yes/No

    Please indicate the number of copies of each:

	Current	Planned
1) ArcView		
2) Arc/Info		
3) AutoCAD		
4) GeoMedia		
5) Microstation		
6) Other		(please explain)

3. Business Software/Applications

a. Please list any business software or other custom applications (e.g., CAMA, Pavement Management, Document Imaging, etc.) in use in your office. Do any of them have any special needs (e.g. special databases, equipment, connections)?

Data

a. Does your office presently use any Digital GIS data?

1) ____ Shapefiles/Coverages

2) ____ CAD drawings

3) ____ Aerial photos/ Other digital images

4) ____ Other (please explain)

b. What types of databases do you use?

1) ____MS Access

2) ____MS SQL Server

3) ____Excel

4) ____DB2

5) ____Oracle

6) ____Other - list please _____

c. How much of your department's data contain location information such as street address, zip code, X, Y coordinates, etc.?

Most   Some   Minimal

d. Please list data that you use that contain some location reference. (Add sheets or rows if needed)

Data	Location Reference Method (e.g., address, MCD, Census, coordinates)

e. What types of spatial (map) or descriptive data (text and tables) do you use? Examples of spatial data might include tax/parcel maps or topographic maps. Examples of non-spatial data might include, assessment data, master address list, and voter registration records, etc. (Add sheets or rows if needed)

Data	Form Spatial = S Descriptive = D	Format (digital or paper)	Source

f. Please list any data or information that your office provides *to* other County departments. (Add sheets or rows if needed)

Data	Format (digital or paper)	Departments

Process

1. What current problems or issues are there with respect to your work? For instance, communications, work flow issues, etc.

2. What is your perception of the issues that impact your department's ability to make use of GIS technology? 1 = major, 2 = minor, 3 = not an issue

   1   2   3   Insufficient funding for personnel

   1   2   3   Insufficient funding for equipment/software

   1   2   3   Lack of coordination within the County

   1   2   3   Lack of coordination with other agencies

   1   2   3   Lack of data standards

   1   2   3   Insufficient access to existing data (e.g. poor network connections)

   1   2   3   Need of digital map data that does not exist or is too old or too poor

   1   2   3   Complexity of developing or managing a GIS

1   2   3   Availability of training

1   2   3   Expense of training

1   2   3   Recruitment and/or retention of qualified technical staff

1   2   3   Other _____

1   2   3   Other_____

3.   How could your job be made easier?

THANK YOU!!

Appendix C: Interview Summaries

1. Auditor's Office

Interviewees: Kurt Ullrich, First Deputy
                          Kathy Hinrichs, Tax Deputy

Date: June 20th, 2002

a. Organization

The Auditor, Karen Fitzsimmons, is an elected official. The First Deputy, Kurt Ullrich, is responsible for daily operations of the office. The office processes the transfer of all property in the County, maintains all property records and keeps all plat and transfer books and records current. It is mandated to keep the official plat maps for the entire County. Once the plats are approved by Planning and Development, they are sent to the Recorder for scanning and recording. Then, the original plats are delivered to the Auditor's office where a half-time draftsperson enters them into the plat maps. The County Assessor assigns the parcel identifier number (PIN) for rural areas and Kathy Hinrichs, as manager of the plat room, assigns the City's parcel identifier (based on book reference and page number – Book A, pg. 64 would be A0064-3). At this point, the parcel is entered into the tax system.

The plat room transfers property titles for the City of Davenport; the County Assessor does it for all areas outside of the City. After scanning in the Recorder's Office, the property is transferred in the tax system, transferred on the plat maps and entered into the transfer book.

The plat room has 4.5 persons. Other functions within this Office are election management (5 staff persons), payroll (2 persons for 400 employees), accounts payable (2 persons), and budgets.

The Auditor's Office staff work most closely with the Recorder's Office but also work with the City and County Assessors and the Treasurer.

b. Technology

1) Hardware

Desktop PCs – 8, all less than 3 years old, 2 running Windows 98, all networked
They do have a connection to the City of Davenport.

2) Data Storage

All digital data (tax information) is held on the centralized servers. Other data is located in hardcopy plat and transfer books.

c. Data

1) Data Inputs

Data is stored on the central server, in Access and in Excel. Most of the data contains location information. Tax parcels include a parcel #, legal description, address, name, document # and routing #.

Plat books and other maps such as tax district and fire districts are paper. Assessment and tax data is digital.

There are approximately 78,000 tax parcels with about half in the County and the rest within the City jurisdictions. Kathy Hinrichs assigns the City's parcel identifier numbers based on the plat book's volume and page (e.g. A0064-03A) while the County Assessor assigns a PIN based upon the Township, Range, Section, and so on. Once a year, City splits are done for the City, which takes about 2 months with the assistance of a person from the City Assessor's office. A new parcel number is assigned to each side of the split.

2) Data Outputs

City parcel identifier numbers are outputs from this office. As well, election districts are manually derived and updated. The Bi-State Regional Commission compiles hardcopy maps for distribution.

Other data outputs that are used by other departments include valuation reports, plats and recorded documents, all in paper format, and budgets, which are in both paper and digital formats. The Assessors, the Recorder and the Treasurer primarily use these data.

d. Applications

All applications used are on the central server (accessed through ZIM for Windows).

e. Perceived Needs

1) Organizational

There are a lot of interactions between the Recorder, Auditor, and the City and County Assessors in terms of manual updates and record keeping. At least 3 plat books are maintained: the Auditor's official plat book, the County Assessor copy, and the City Assessor has the third copy.

The Auditor's office spends much time looking for copies of documents for the City Assessor as well as for the public. The public is often sent between the Recorder's Office and the Auditor's Office because documents are stored differently between the two offices. To retrieve a document in the Recorder's Office, the person first needs to get the document number from the Auditor's Office, as the Auditor has the cross-reference between the document number and the parcel.

2) Data

The following are considered to be major data needs:
- A digital parcel layer that is continuous in the County is crucial. As well, it needs to be tied to the tax assessment system.
- Cumbersome manual processes are used to determine different boundaries and special district memberships. These include:
  - School districts based on parcel boundaries, including splits.
  - Election district boundaries
  - TIF (Tax Increment Financing) district identifications, which are now manually searched by legal description.
  - SMID (Special Municipality Improvement District) identifications. These are especially difficult when they fall within a TIF.
  - Tax districts. At this time, it is a 9-step process. Automation might alleviate the workload.
- They would like the transfer book to be in a computerized database as these are heavy books and staff incur injuries related to using them. There is an index to the transfer books in a spreadsheet, but it is only used to print out a paper copy.
- More automatic numbering of the City's new parcels would be beneficial.

- Automation of the Homestead Credit system for the City parcels. The City Assessor currently sends the Auditor hardcopies of the information that then has to be entered into the system manually.

3) Technology

The following are considered major needs for technology enhancements:

- Access to the Recorder's Office imaging system to make searching for documents much easier. As well, routing copies of documents could be eliminated if the documents could be sent digitally to the Assessors, who could then print their own copies.
- Giving the Recorder's Office access to the tax system. This would alleviate the public from walking between offices. Now, they have to get the document number from the Auditor to retrieve a document in the Recorder's office. .
- Internet access to tax assessment information as a public service.

4) Other

According to the survey, major impediments to implementing a GIS are:

- Insufficient funding for personnel, equipment and software
- Complexity of developing or managing a GIS
- Lack of coordination within the County

2. County and City Assessors

Interviewees:

> Dale Denklau, County Assessor
> Lew Zabel, County Assessor office
> Ed Vieth, County Assessor office
> Beth Haney, County Clerk's office
> Nick Van Camp, City Assessor
> Cathy Crieghton, Deputy City Assessor
> Katrina Loving, City Assessor Office Manager

Date: June 20th, 2002

a. Organization

Both Assessors' Offices are charged with several administrative and statutory duties. The primary duty and responsibility is to make sure all real property within the assessor's jurisdiction is assessed except where the law provides otherwise. This includes residential, commercial, exempt, industrial and agricultural classes of property.

Real property is revalued every two years. The effective date of the assessment is the first of January of the current year. The Assessor determines either a full or partial value for new construction and improvements depending upon their state of completion on January 1st.

The Scott County Assessor's Office serves all of Scott County except for the City of Davenport. Both offices work with the Recorder, the Auditor's Office, and the Treasurer's Office but very little with each other.

b. Technology

1) Hardware

County: Desktop PCs: 14, Windows 98, 2 less than 3 years old. No connection to City of Davenport.

City: County PCs: 4, Winterms: 8, 1 Compaq PC (1999), 2 Compaq PCs (2001), 3 Compaq PCs (2002), various versions of Windows.

2) Data Storage

The City and County servers host all parcel information. Assessment data is split between servers depending upon the CAMA package used.

3) Access

Cathy has had some ArcInfo training, especially on the edit tools. The City Assessor has one copy of ArcInfo 8.2 provided by the city IMS department and one copy of ArcMap 8.2. The County Assessor has two staff trained in ArcGIS and plans on acquiring ArcView and ArcInfo for future use.

c. Data

1) Data Inputs

Both Offices have parcel identifiers but they are not using the same system. The City's parcel IDs are assigned by the Auditor according to the plat book and lot number while the County Assessor uses a method incorporating the township, range and section.

As well, there are two different tax systems of information. The City has two assessment systems, one for residential properties (custom) and another for commercial properties. City staff (Cathy C. and others) manage their own plat books (as does the Auditor). Cathy modifies the City's GIS parcel layer with any boundary edits and new parcel ID numbers. The City transfers values to the County by "sneaker net" which is slow and manual. The City also has a sketch computer for residential parcels. There are about 1400 new parcel numbers per year due to splits in the City limits.

The County does not have a digital parcel layer but records changes on their set of plats separate from the Auditor's. They input new valuations onto the County's assessment system, which is Vanguards CAMAVision.

As well, there are four sets of plats managed between the City and County (1-Auditor, 1-County Assessor, 1-City Assessor and 1-Davenport Public Works). (The City of Bettendorf also maintains a digital set of parcel maps.) There are three property appraisal systems between the two and they are different systems.

New City aerial photos were flown spring of 2002 and are in the Public Works department. Public Works also enters new plats into the City GIS system.

Data used by the Assessors include: paper-based plat maps, surveys, deeds and aerial maps and digital data from the tax and CAMA systems.

2) Data Outputs

Both the City and County Assessor contribute data to the County system in order to run assessment notices (tax rolls). Valuations are given to the Auditor and Treasurer.

d. Applications

The City has three tax systems. The first is a custom residential property tax system, the second is a commercial property tax system and the third is the residential sketch program from Vanguard. There is also access to an ESRI based GIS system managed by the City's Public Works.

The County uses Vanguard's CAMAVision for tax assessments.

e. Perceived Needs

1) Organizational

The City staff indicated their highest organizational needs as being:
- Better coordination with the County
- Fewer systems for tracking parcels, data entry, and updates

According to the County Assessor survey, major impediments to implementing a GIS are:
- Lack of data standards

- Digital map data that does not exist or is inferior
- Complexity of developing or managing a GIS
- Recruitment and retention of qualified technical staff

2) Data

From the County Assessor's point of view, the following are key issues or needs:
- Incorrect legal descriptions are time consuming for staff (about 500 a year)
- Utilizing the soil survey information for making better assessments
- A consistent digital parcel layer linked to tax information is key need
- Production of maps for field use that have lot size, dimensions, etc.
- Identifying parcels in floodplains, tax districts, etc. including their attributes and surrounding neighborhoods.
- Creation of good data standards

From the City Assessor's point of view, the following are key issues or needs:
- There are too many data systems for tax and parcel information. They are doing both manual and digital updates.
- Zoning layer that is easy to use
- Floodplain layer
- School boundaries, taxing districts, fire districts, historic districts, enterprise zone areas (for grants to improve the area).

3) Technology

At this time there is no technical connection between the City and County system. The County Assessor indicated that they are not connected to the City of Davenport. The City Assessor has the city system and city GIS access but no actual connection between city and county systems. The data must be transferred by disk. The county is also not connected with the City of Bettendorf. The County Assessor would like access to the Bettendorf GIS.

4) Other

Workflow issues, not only between offices but within each office, will need to be thoroughly investigated if a seamless parcel layer is compiled. Each office has different methods for split parcels, different parcel identifiers, and have different cut-off dates for updates and changes. For instance, the County has interpreted they can do splits after February and up to July 1st but the City has interpreted the law as April 15th. Credits and exemptions are also handled differently.

3. Conservation Department

Interviewees: Roger Kean, Conservation Director
   Marc Miller, Operations Manager

Date: June 19th, 2002

a. Organization

The Conservation Department's mission is to improve the quality of life, promote and preserve the health, welfare, and enjoyment for the citizens of Scott County and the general public by acquiring, developing, and preserving the historical, educational, environmental, recreational, and natural resources of the County.

This department coordinates with the Conservation Board, the County Board of Supervisors and the Iowa Department of Natural Resources on its programs and educational objectives. Within the County, they work primarily with the Sheriff, Assessor, and Secondary Roads. There are also various public interest groups for specific park features or special events, such as the Quad-Cities Triathlon.

This department manages several recreational areas (see map) distributed throughout the County, with a staff of 26 FTEs. Primary responsibilities are two-fold: Environmental education and parks/recreational management.
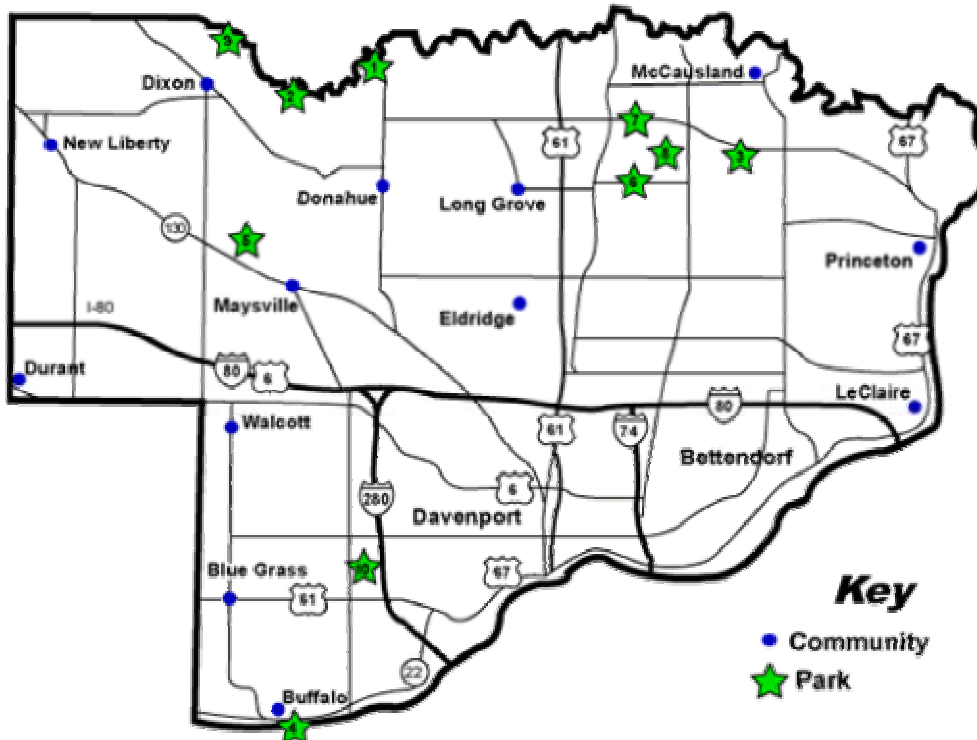
b. Technology

1) Data Storage

They use AutoCAD Lite for maintenance projects. They plan on upgrading to AutoCAD 2002. This department would like the capability to do landscape design (AutoCAD 2002 will allow this).

2) Access

There is limited access to the City of Davenport's law enforcement system; access is only to police records. Once the new County system is ready, this department will utilize it for vehicle and person background checks, along with police report writing and submission.

There are frequent vehicle checks and full-time officers have the NCI checking system in their vehicles.

There is a T1 connection to the administration building and there is fiber throughout the park, 56K dedicated pair to the Internet.

The golf course has a web cam to monitor playing times and movements. Considering that this golf course is a revenue-generating endeavor, pace of play is important for more players onto the course. There is interest in expanding or adding more web cams for the public to view different sites.

c. Data

1) Data Inputs

The majority of data inputs are for primarily internal operations. Their needs are for educational programs, environmental analyses, lake data, and tracking revenue. They also use USGS topographic maps (especially for the contours) NRCS soil maps, and park maps (provided by Bi-State).

2) Data Outputs

This department provides financial data from revenue production, budget, and personnel to other County agencies. They provide reports to the State on the use of their facilities such as well data, testing of public water, sewage handling (monthly and quarterly reports).

d. Applications

The primary unique application the Conservation Department uses to support their operation is called RecTrac, software by Vermont Systems. It is provided to numerous locations in the County. They feel it works well for them, although designed for facility management, not parks. The package records campsite reservations (first come, first serve), cash/credit transactions, golf course fees, and maintenance activities. Any linked location can make a transaction, as well as having real time access to other transactions elsewhere. It also tracks inventories (scanning the merchandise), issues ID cards, and pool and golf passes. There have been several revisions per year, customer service is excellent, and it is customized to their needs. Since there are many seasonal employees per year, training on this system is an issue.

At the County, there is a new property accounting software being installed for inventory control (A and B assets). This is important to this department because they have a large vehicle and equipment inventory.

e. Perceived Needs

1) Organizational

According to the survey, major needs are:
- More funding for personnel
- More funding for equipment/software/training
- More training on GIS concepts, benefits, and creating/managing the data

This department identified the need for a system that provides decision-making capabilities for their facilities (assets, products, planning, developing, and managing) and resources.

2) Data

Since this department regards itself as a benefactor of the countywide GIS, they foresee how they could develop their facilities as GIS data layers. Maps, environmental analyses, water and landscape management, and trail maintenance are activities that a GIS could support. These facilities have their own utilities (electric, water, well, septic) as well as trail networks, lake habitats, and land features.

Establishing data standards is a major need as the source data is too varied for new users.

3) Technology

In the future, there could be web-access for campground reservations although campgrounds are full almost every weekend of the season. Maps on the web would be beneficial.

There are a number of vehicles (about 20) with radios in some of the vehicles. They do not need AVL or, if so, they need to see the benefits against the costs.

4) Other

Overall, this department would like to establish their own GIS with the countywide GIS for infrastructure mapping, having the ability to capitalize on other's data (DNR, USGS, NRCS), and to have the capability to make maps, do watershed analyses, impacts of development (internal and external), and manage habitat.

4. County Administrator

Interviewees: C. Ray Wierson, County Administrator

Date: June 20th, 2002

a. Organization

This office is responsible for the general administration of the County. The Administrator serves as the principal advisor to the County Board of Supervisors in all operational matters. As well, the office submits an annual operating budget, develops capital improvement plans and financing, and reviews and recommends all County operating department considerations. Personnel matters, policy, facility management, and other administrative matters are on the Administrator's responsibility list.

b. Technology

1) Data Storage

2) Access

c. Data

1) Data Inputs

2) Data Outputs

d. Applications

Office applications

e. Perceived Needs

1) Organizational

The County implemented a property tax system managed by an application developer ("God of ZIM") who recently retired and left little documentation. The County is actively searching for a replacement application.

There is much duplication of activities across departments and agencies that could be reduced by automation and a centralized GIS system. As well, reducing the service desk time and phone call workloads is a goal.

Ray feels that if someday in the future the City and County Conference Boards and the Davenport City Council move toward one assessor, it would be forward thinking to base a new GIS system on a parcel identification number (PIN) model that would be used by both assessors. For the GIS, he recommends that having a GIS Coordinator hired with an operational model of distributed expertise across the departments should be explored and a full discussion of who this person would report to (possibly a GIS Board representing users?).

2) Data

Ray thinks it is critical to tie the parcel document numbers to the parcel identifier number. At this time, this is an intensive, manual process.

3) Technology

Ray's usage of the GIS will be to personally have the capability and to have staff members trained to make visualization maps for policy-making board members at their meetings. He anticipates using GIS to make better County decisions. He is a proponent of E-government technology for such transactions such as on-line property tax payments. A pilot study is planned by the County Treasurers' Association to launch this fall.

4) Other

5. Heath Department

Interviewees: Jim Hagerman, Program Development Coordinator
                 Larry Linnenbrink, Environmental Health Coordinator

Date: June 19th, 2002

a. Organization

The Health Department is responsible for many areas of public health as well as for County employee health matters. They have no doctor on-site, something that is different from some other health departments in the country. They are mandated to enforce the health regulations of the state. They have 32 FTEs and 6 contract persons.
Some of their activities include:

- Investigate complaints regarding public health and safety; for example, environmental pollution (the City handles some 500-600 per month and the county handles some 20 per month).
- Childhood Lead poisoning program
- Disease outbreak investigations
- Food service inspections and food borne illness investigations
- Maternal and child health programs
- Educational health programs
- Correctional inmate health
- Non-public school health
- EMT quality checks
- Issues permits for septic, water wells, swimming pools
- Inspections for tattoo & tanning establishments; funeral homes; hotel & motels; and real estate.

b. Technology

1) Data Storage

There are 42 desktop PCs, and most data are stored on the County's central servers. There are no workgroup servers. They are connected to the County network but they are not connected to the City of Davenport's network.

2) Access

The health department has 5 ArcGIS-ArcView installations with floating licenses. They plan on ten more seats. They have received the weeklong training (Part 1 and 2) and they are starting to use it. They want to import their GPS coordinates into the system. Jack Hoskins is using the Iowa DOT centerlines, soil surveys, and USGS aerial photos to assist in this task.

c. Data

1) Data Inputs

There are several centralized databases as well as local Access databases (a total of 14). None of the Access Databases were present 2.5 years ago. These databases are separate, not integrated. The ZIM/DOS databases contain a large amount of data.

- DSA (in Access) - part of the Correctional Management System for the jail's inmates and operations.

- 2 DNR databases (for septic and well information). They are looking at getting GPS locations on old Jordan deep wells that were drilled at the turn of the century some 1500-2000 feet down. It is a construction issue and concern. There are about 130 septic and 50 well inspections every year.
- ZIM/DOS Health database
- IRIS State immunization
- Student health (in Visual Basic) in non-pubic schools
- HIV State database
- County HIV database (in Visual Basic)
- Nuisances (in Access)
- LUST (Access) - There are about 250 leaking underground storage tanks. They would like to geocode them to street addresses. The State's locations are up to one mile off.
- Perc Test (Access) - they want to collect GPS locations
- Grants management (Access)
- Food service inspections (ZIM) and appeals (Access)
- Employee health (Access)
- Public Pool permits & inspections (Access)

2) Data Outputs

There are reports to the State that are required for student and inmate health, EMT quality checks, etc. There are also reports to the DNR for wells and septic systems. Also state reports weekly for food establishment; monthly for lead poisoning and HIV.

d. Applications

The applications are Access databases and ZIM applications on the central servers. See Data section above for list.
There is a pilot program testing automatic input of septic permit information to their system. In the field, the inspector can use GPS on a handheld computer and ArcPad to input their findings.

e. Perceived Needs

1) Organizational

The following were considered to be the highest needs from the interviewees point of view, in order to better use GIS technology.
- Better coordination within the County
- Better coordination between agencies
- Increased GIS expertise
- Increased number of IT staff to provide support
- IT staff need more current IT skills

2) Data

The following are perceived needs:
- Data standards
- Integration of health databases
- Migration of mainframe ZIM data and applications to another platform.
- Digital parcel layer
- Digital address layer
- Complaint tracking system that is accessible to both the County and the City since they both manage complaints and responses.

3) Technology

The Health Department would like to:

- Be connected with the Cities of Davenport and Bettendorf to access building permits so Health staff can address septic and well issues.
- Upgrade their field food service workers so that data input becomes more automatic. At this time, they fill out forms that have to be entered into the databases.
- Investigate ArcPad solutions for other field workers for septic, well, and swimming pool permits.

4) Other

Other needs involve outside agencies such as the State and Medical Records. Since the Health Department is mandated by the State to fill out web-based or manual forms for reporting in a set format, an interface with the County system will be difficult. Additionally, the Health department would like to receive direct information from the clinics about lead poisoning cases. It would be beneficial for the Health department to be more proactive by mapping homes that may have lead paint, rather than after health issues arise. This may be supplemented by appraisal and assessment reports. Local home inspectors may also be able to provide this information.

6. Information Technology Department

Interviewees: Matt Hirst, IT Director
                 Mitch Tollerud, GIS/Webmaster

Date: June 20th, 2002

a. Organization

The County hired RSM McGladrey to do a Technology Assessment Report, which was completed in December 2000. Since then, many of the report recommendations have been followed such as restructuring the department and hiring an IT Director, a Webmaster, and a Help Desk person. In addition, the Department has three programmers (legacy applications) and three network support/administrators. The Department supports approximately 350 desktop computers and over 30 servers.

b. Technology

1) Network Infrastructure

The County has been upgrading its network infrastructure with an eye to the future. Fiber runs between buildings and between departments and the central servers. Other cable runs within buildings range from CAT 5 to CAT 6e. Gigabit speeds are supported as switches have gigabit blades installed. Desktop PCs are connected at 100-megabit speeds. Fiber has also been run to some City buildings, presenting the possibility of linking to City systems and vice versa, where appropriate.

2) Servers

The County computing resources are very centralized with most, if not all, of the important applications and databases being served by a block of servers located in the Computer Room. This arrangement allows for streamlined backups, physical security of the machines and shortened support response times.

The County is running a mixed Novell/Windows 2000 network but is working toward migrating completely to Windows servers. Currently, clients log in to Novell and are then authenticated to Windows 2000.

As recommended in the Technology Assessment Report, the County has invested in a Citrix Metaframe server cluster though it is still in the testing phase. The size of the cluster is quite large, and therefore, the potential for an array of application serving is quite extensive. The plan is to deploy Internet Explorer and Adobe Acrobat first.

c. Data

While the Department stores and manages data for other departments, it has few data needs itself. The County has a few runtime versions of Oracle databases for third party applications. The Department intends new databases to use Microsoft SQL Server.

d. Applications

In the past, all application development was done using ZIM, a 4th generation programming language, used to access a proprietary relational database. There are at least 75 ZIM applications in use at the

County and they have been highly customized to users' needs. It is difficult to access the database from outside applications, so data usually must be dumped to another format before it can be accessed.

At this time there are four concurrent ArcGIS-ArcView floating licenses with plans to purchase more. One training session was provided to staff, taught by an ESRI trainer, for ArcView (Parts 1 and 2). More training is planned for the fall for two days.

e. Perceived Needs

1) Organizational

A GIS system would require at a minimum a GIS Coordinator position created at the County. Additionally, the scope of the GIS development at the County could require a GIS Technician. Given the current organizational structure, these positions would most appropriately be a part of I.T.

Depending on which tax system the County decides to purchase, there will be training needs for current IT staff.

2) Data

Data backups should be centralized to facilitate ease of safeguarding data. This would streamline disaster recovery capabilities of I.T.

Anti-virus protection should be implemented network wide. This should include desktops, servers, firewall, and e-mail scanning.

3) Technology

Network performance monitoring is a necessity to deliver the consistent service level the County requires. This should include server hardware and uptime tracking with notification of service interruptions.

4) Other

Desktop computers are dated. If the transition to Citrix is not completed and computer processing is required at the desktop, PCs will need to be updated.

7. Planning and Development Department

Interviewee: Tim Huey, Director

Date: June 19th, 2002

a. Organization

Planning and Development is responsible for the current and future land uses in all unincorporated areas of Scott County. The County has a comprehensive development plan. Scott County probably has the most restrictive land development regulations in Iowa. Through an intergovernmental 28E agreement, the department also issues building permits for the cities of Dixon, Donahue, LeClaire, McCausland, Panorama Park, Princeton, and Riverdale. The other responsibilities of the department are: administering the rural address system, the sale of tax deed properties and the abatement of noxious weeds (private property), promoting and coordinating economic development and tourism in Scott County, and providing staff assistance to the Planning and Zoning Commission, the Board of Adjustment, and the Building Board of Appeals.

There are 4.33 FTE in this Department. The office handles about 80 to 100 new house permits per year with 80-90% falling in four main geographical areas. Following approval of plats, they are recorded at the Recorder's Office.

For subdivision reviews, Planning sends the plan to the Health Department to review for well and wastewater treatment issues and to the County Engineer for roads and driveways. About 95% of the permits issued in Scott County are for residential single-family homes, including new construction, additions and rehabilitation. Significant contact with other agencies is non-GIS related for tourism, permits, urban planning, and unincorporated areas for rural planning.

See the Rural Address Map for details on grid system for numbering. The Bi-State Regional Commission prepared this map. Information from the County website on the address assignments:

> The Rural Address System was officially implemented in October 1, 1987. The Rural Address System provides an address for all residents and businesses outside of city limits. A house number is given to every building and a street name or number is given to every public and private road in the unincorporated area of Scott County. This was done in the interest of developing uniform addressing for the whole County and to support the 911 emergency phone number program. The addressing system greatly simplifies the process of finding the exact location of residences in case of a fire, sheriff call, or medical emergency. The post office also adopted this addressing system.
>
> The Planning and Development Department is responsible for the implementation of the Rural Address System. Staff assigns addresses to buildings in unincorporated Scott County. The Planning and Development Department also maintains the Rural Address Map for the county.

Other duties of the Planning Department include the tax deed and weed abatement programs. Program descriptions (from the website):

> TAX DEED PROGRAM
>
> The goals of the County's Tax Deed Program are as follows:

- To return tax delinquent properties to the tax roles as soon as possible, thereby generating additional tax revenue and limiting County liability and maintenance costs

- To recover all immediate county costs involved in the maintenance and disposition of tax deed properties

- To effectively complement County and City development needs wherever possible

- To recoup lost taxes, penalties, interest, and liens

- To generate additional revenue for the County through the sale and/or rent of these properties

WEED PROGRAM

In accordance with Chapter 317, Code of Iowa, 1997, Scott County is required to annually adopt a weed destruction program. The weed destruction program establishes the dates by which various weeds must be abated. Failure to comply with due notice of an order to abate can result in the County contracting to have the weeds abated and assessing the property owner for the cost plus an administrative fee.

Each owner and each person in the possession or control of any lands within Scott County shall cut, burn, or otherwise destroy all noxious weeds, as listed below, each year and in such manner as to prevent said weeds from blooming or coming to maturity and as often as necessary to prevent seed production.

b. Technology

1) Data Storage

Most data are stored on the County's centralized servers. Hard copies of all building permits and plats are kept in the office files.

2) Access

ZIM applications are used to access building permits and inspections, tax records (viewing only for tax records), and the addressing system (these need to be tied to the property records).

c. Data

Planning uses aerial photo sheets for its needs. The last ones were taken in April of 1999 at 1"=400' scale (subdivisions are at 1"=200'). There are 130 of the 1:400 scale sheets, each covers 4 square miles. They typically re-fly the County every 6 to 7 years. Western Aeromaps was the contractor for the most recent photos. Planning did the annotation drawing on top of the aerials (student intern) for section lines, township lines. Addresses are updated on the photos. There are also mylar overlays. Planning and Development uses maps produced by the Bi-State Regional Commission.

1) Data Inputs

Planning maintains the zoning map as a manual process. There are about 6-10 rezoning changes per year. To date, no one enters the zoning classification into the tax system though there is a zoning field. Tim is the floodplain manager as well. He scales, by hand, FIRM paper maps to inform landowners. He also uses the aerial photos.

2) Data Outputs

Rural addresses, permits.

d. Applications

There are several ZIM applications such as the building permit application. There are many reports within this application. The application is used to enter new data, search on name, date, address or permit number, print a permit, and produce various reports. Planning often views tax records as part of the permit process.

e. Perceived Needs

1) Organizational

There needs to be better tie-ins with parcels, ownership, and permits. Planning needs to get parcel history as well as a tax history. As well, having two different parcel identifiers between the City and the County is problematic. Some of the highest needs identified in the survey are:

- Better coordination within the County, especially with the Auditor's Office and with access to permits.
- Better coordination with other agencies.

2) Data

Needs identified during the interviews and on the survey are:

- Access to the Recorder's database for deed information is needed.
- Better and easier access to parcel information is sorely needed because of the many public queries his office receives. Tim would like to see a true "one-stop shop." Staff members spend lots of time looking for parcel and ownership information as the public often asks them for all types of information about parcels.
- Good maps for public hearings and display are very important.
- Soils and topography, particularly slope, would be highly beneficial for planning purposes. Contours would help to convince people that their property is in a floodplain.
- Data standards.

3) Technology

A zoning application is needed for mailing addresses to inform owners within 500 feet of a proposed change. At this time, it is a manual process (checking plats at the Assessor's office, reviewing tax records, writing down names and addresses, mailing letters).

8. Recorder's Office

Interviewees: Sue Brewer, Operations Manager
Ed Winborn, Recorder

Date: June 20th, 2002

a. Organization

The Recorder's Office is to maintain official records of documents affecting title to real estate in order to preserve property rights and protect innocent third parties in real estate transactions. As well, the proper recording of other documents is done such as deeds, contracts, mortgages, deaths, births, conservation licensing (fish, boats, etc.). They also provide passport services to the public.

The Auditor approves the legal descriptions before the recording. The Recorder indexes and scans the documents and then sends them back to the Auditor for entry into the plat books and computer tax system.

b. Technology

1) Hardware
Desktop PCs: 17 plus 6 that are view only for public access

2) Data Storage
Currently, the office is using Canonfile to scan the documents into an 8.5 x 14 size. A new system is being implemented, ImageWare from Canon. No hardcopies are kept (no filing cabinets). Microfilm from 1989 thru 1994 has been converted as well.

3) Access
The Office will allow access to their document imaging system. The IT department needs to assign permissions. The Office does not have any access to the City of Davenport.

c. Data

1) Data Inputs
The Recorder's Office processes some 50,000 documents per year (not including vital records) and 15-20% of them are deeds or transfer documents. The Clerk's Office delivers some Change of Title documents.

2) Data Outputs
The County Assessor has access to images. As well, there are six computers in the office to view the documents (if the document number is known). United Title Company receives a disc every day with new documents.

d. Applications

Use the ZIMWin applications to view the documents – called the "recorder's database". One screen shows the document ID, the buyer, seller, legal description, document type, fee, and return to address.

e. Perceived Needs

1) Organizational

The Recorder's Office indicated that the GIS System needs to be coordinated and integrated through out the county. Business processes need to be changed to take advantage of the efficiencies of the new system.

2) Data

The Recorder's Office, on their survey, indicated the following as major issues for the County's GIS:
- Lack of data standards
- Insufficient access to existing data
- Need of digital map data (parcels, in particular)

3) Technology

They would like to see kiosks in the lobby of the Bicentennial Building. Posting data on the Internet will reduce traffic in the office.

4) Other

Integration of systems would provide better customer service. As it is now, the Auditor must approve the documents before they are recorded. Therefore, the customer must travel between both offices. Customers assume that the Recorder indexes by address but they index by name and legal description.

9. Secondary Roads Department

Interviewees: Jon Burgstrum, Assistant Engineer
                 Larry Mattusch, County Engineer

Date: June 19th, 2002

a. Organization

The Secondary Roads Department acts essentially as the County's public works department. It is responsible for the construction and maintenance of the secondary road system. This includes all roads, bridges and culverts not under state jurisdiction and outside the city limits. There are 551 miles of road, 169 of which are paved. There are 113 bridges.

From the County web site:
> Scott County, similar to other counties in the State of Iowa, is required to employ a licensed engineer to be in charge of the construction and maintenance of all roads under the County's jurisdiction.

The County Engineer is hired by the Board of Supervisors. All employees of the Secondary Road Department, including the engineer's staff, are hired by the County Engineer to carry out the duties of the department.

> Funding for the construction and maintenance of Scott County's roads comes from several different sources. Scott County, like other counties in the State of Iowa, operates with revenue from two different funds. They are the Farm-to-Market Fund and the Local Secondary Road Fund. The largest source of money going into these two funds is the Road Use Tax.

Staff members interact with the Recorder's office on right-of-way and property and fence lines and with the Auditor for contracts.

b. Technology

1) Hardware
Total PCs: 10, Windows 95/98, networked, 3 less than 3 years old

2) Data Storage
County servers; local

3) GIS Software
ArcView: 1 current; 2 planned
AutoCAD: 4 seats, 4 planned (AutoCAD 2002 coming soon)

c. Data

1) Data Inputs
Data formats used: shapefiles; AutoCAD; aerial photos

Databases used: Access, Excel

Most data contains a spatial component.

Survey Control network is collected for every section corner, quarter-quarter section, and center of the section. There are some monuments, some elevations, not in lat/long, however. Corners tie into reference points. Information is in books and is not digital.

They use the transportation maps downloaded from the state (lat/long).

Lots of projects in AutoCAD but not tied to a coordinate system.

Plans and certified surveys are kept in books in hardcopy. Considering scanning of old docs.

2) Data Outputs

Updates to secondary roads are provided back to Iowa DOT.

d. Applications

The Department has Cartegraph products for pavement management, bridges, and signs. Cartegraph converted centerlines from the State to Cartegraph format. Staff members are not happy with this product as it is hard to access and update (package won't read old data) and support from the company is poor. They would like to migrate off of it. They use it for signs the most.

They use AutoCAD 2000 for mapping the road system and exchanging files with Iowa DOT. They expect version 2002 soon.

They get a CD from Iowa DOT that is read using ArcView

e. Perceived Needs

1) Organizational

There is very little collaboration needed between the County and the cities.

According to the survey, major impediments to implementing a GIS are:
- Better coordination within the County and with other agencies
- Poor network connections
- Digital map data that does not exist or is inferior
- Complexity of developing or managing a GIS
- Level of accuracy

2) Data
- Digital survey control network that is tied to a grid. It would be helpful to find section corners that get wiped out. Would like to make this information available to others on the Internet.
- Migration of data from Cartegraph into the countywide GIS.
- Incorporation of private roads is a higher need for Planning than for Secondary Roads.
- Orthophotos for rough estimating of distances would be very helpful for quick estimates for projects. Centimeter accuracy for photos would be good.
- County and town boundaries/limits are important for maintenance issues.
- Two-foot contours would be beneficial.
- Soils

- Address lists
- All roads
- The location of utilities in the road right-of-way would be a time savings. Three natural gas pipeline locations are very good but others (storm sewers, phone cables, fiber optic) are not reliable.

3) Technology

This department would like better communication out to the road maintenance shop in Eldridge (6-7 miles) where there are 30 staff members and currently no County network connection. This department could see the value in having AVL eventually, especially for snowplow tracking, blading gravel roads, etc. They do not want this information on the Internet due to the perception that the public would call in more often with comments or complaints.

4) Other

There are three utilities in Scott County. Mid-America is said to have its own parcel layer.

10. Sheriff's Office Emergency Management Agency

Interviewees: Ross Bergen, Emergency Manager (EMA)
Pam Bennett, Civil Records
Terry Glandon, Sheriff's Office
Art Miller, Sheriff's Office

Date: June 19th, 2002

a. Organization

EMA is an office of one staff person, Ross Bergen. A special commission governs EMA and is composed of every mayor in the County, the Sheriff, and a County board member. Its budget is provided through state, county, and private funds. EMA is responsible for planning for natural, technical and manmade disasters. Activities include providing multi-level hazard plans (based on communities), plans for nuclear disaster (nuclear power plant), information dissemination, coordination of schools, and terrorism response. EMA works with the law enforcement departments, all fire departments, EMS, volunteer groups, state and federal agencies.

The Sheriff's Office provides law enforcement and citizen protection. They have a dispatch center that works with the Cities of Davenport and Bettendorf's dispatch centers (the three provide backup to each other). The Sheriff's office works with all police and fire departments in the County as well as with EMA. In addition, they work with the Jail personnel and civil and criminal records staff.

The Sheriff's Office has about 165 people including 2-3 dispatchers working at all times, 43 officers, and some 30 cars. Civil Records handle some 15,000 papers a year and have 4 staff in the office with 2 staff in criminal records.

b. Technology

1) Data Storage

2) Access

There are connections to the City of Davenport for records checks.

c. Data

EMA shares information with several agencies such as federal and state emergency departments as well as those at the County.

1) Data Inputs

MSAG (Master Street Address Guide) updates are done by Entrada (used to be NW Bell). Planning and Development assigns new addresses and informs Art Miller. who then sends the information to Entrada. He also updates the GeoFile (street intersection and street range files). By a paper trail, he informs agencies (EMA, fire, police). The AVL map has only major roads and is not updated.

2) Data Outputs

Accident reporting to the State is currently done using hardcopy reports from the County System. Previously, a terminal interfacing with the Iowa DOT was used but since there was little financial support from the DOT , no interface with local systems, and required double entry, the automated system was dropped two years ago.

There were approximately 30,000 dispatch reports in the first six months of this year; there are 65,000 to 70,000 calls per year. While each call gets a call number, only about 10-15% of the calls need reports written and a report number.

d. Applications

Dispatch currently uses a variety of applications on different terminals (as well as paper records on restraining orders and other papers). CODY will provide integrated applications for CAD and the two records systems. There will be three CAD stations with six screens each.

In the Sheriff's Office, at this time, there are four computer systems that are not integrated; however, several will be soon with new CODY integrated systems.
- CAD – This is the first system to be replaced with CODY.
- AVL - The Automated Vehicle Locating system is up and running using an old streets database from MapInfo. This system is quite old by IT standards as it is based on files from MapInfo purchased two years ago. Updates have been suspended as they are waiting on the County GIS. They would like to interface the AVL system to the new CAD system.
- Civil Records - These records are about any service of papers (levies, subpoenas, divorce papers, evictions, protective orders, etc.) as well as a billing system.
- Records management system - This is for criminal records. The goal is for the staff in squad cars to be able to write reports in their squad cars. The money is appropriated; there are some issues with the City of Davenport, which is currently getting $75,000 a year to process Unix-based information. The DSI jail management system is incorporated.
-

The new CODY CAD system will soon be operational and is located on a centralized Oracle server, ORA1. A module called Civil Process is installed but has not gone live yet. Another module, Record Management, will be purchased once the other systems are running.

The Jail Management system runs on a centralized Oracle server, ORA2. It interfaces with the automatic fingerprint Information system (AFIS) and also with the CODY system.

e. Perceived Needs

1) Organizational

The Sheriff's office ranked the highest needs for:
- More funding for personnel
- More funding for equipment and software
-

As for interactions with other agencies, the Sheriff's Office indicated that communications needed improvement (political and administration). There are issues with different technology and IT systems (e.g., the County has 800 mHz radios and the City still has VHS).

2) Data

The Sheriff's Office considers the following as high needs:
- Data standards

- Digital map data, particularly streets, addresses, and parcels.
- GIS expertise for management of data
- Include beat boundaries and reporting areas in the address systems.

3) Technology

Mapping capabilities are an essential need for both offices. There are also some important needs that the Sheriff's Office has regarding the City of Davenport:

- Better access to the City's records management databases. At this time, and probably into the future, terminal emulation will be the only access. This means a separate login and search will be necessary.
- Dispatch technologies differ. The County's CAD system does not "talk" with the City's CAD system.
- The City wants access to the jail system for data.
- Weapons permits are rather "lost" in the system but are important pieces of information to law officers when responding to calls or serving papers.

The Sheriff's Office believes that with retirements, over the next 3-5 years doors may open for future IT improvements as well as web-based solutions.

4) Other

EMA needs mapping capabilities as they are using old paper maps and a personal Rand McNally digital locator. These are used to make decisions. For instance, nuclear response exercises would be better with digital capabilities instead of the manual process (cutouts and hardcopy maps) currently used.

11.   Treasurer's Office

Interviewee: Craig Hufford, Financial Management Supervisor

Date: June 19th, 2002

a. Organization

The Treasurer's office collects revenues for all County departments, but is primarily responsible for collecting property taxes and motor vehicle fees (which is done for the State). The Financial Management Supervisor assists the Auditor's office in determining the levies and calculating the property tax bills. Upon certification, the Office prints and mails the bills. The Office also handles disbursements and manages the County cash flow, bank accounts, and investments.

The Treasurer's Office has 29 employees, located in the Courthouse and at the Scott County General Store (about 6 staff are in the satellite office).

b. Technology and Applications

1) Data Storage
Centralized County tax system

2) Access
To access the tax system, the Office uses a ZIM application that has been finely adapted to its needs over the years. Xtrieve is used to link the tax system to Platinum, a Windows-based financial package. GL reporting is done using FRX.

c. Data

No spatial data is used by the Office other than addresses. The Office does not use maps of any kind currently.

d. Perceived Needs

1) Organizational
There are no problems or issues regarding workflow, etc. There could be some improvements on the motor vehicle side with the State. Reducing the number of people that come to the Office would have the greatest benefit. To this end, they are starting a pilot project for paying online.

2) Technology
Craig is expecting that any package that they find to replace the current ZIM system will be inferior in functionality and usability to their current application since it has been so highly customized to their needs.