



March 24, 2008

To: Scott County Board of Supervisors

From: Ray Weiser, GIS Coordinator
Scott County GIS Steering Committee
Scott County Parcel Management Committee

Re: GeoAnalytics Parcel Management and Re-engineering Project

GeoAnalytics was contracted by Scott County in 2002 to analyze and complete a comprehensive study for the implementation of an enterprise geographic information system (GIS). That effort was coordinated by the GIS Steering Committee comprised of representatives from all stake holder offices and departments at Scott County.

The resulting Strategic Plan is a road map which outlines a series of projects and initiatives that support the development and maintenance of the county's enterprise GIS system. This road map identifies a number of duplicative processes and other inefficiencies in parcel management and maintenance. These issues exist within Scott County government as well as between the County and the Cities of Davenport and Bettendorf. A proposed, but very basic, parcel process re-engineering was described in the conceptual design portion of the Strategic Plan.

As part of the migration from a manual parcel mapping process to a digital mapping process, the county secured professional services to review and redesign of the parcel information management process. Specifically, the Parcel Management Re-engineering project includes a review and recommendations on workflow, staffing, data custodian policies, and parcel identifiers.

The attached Executive Summary provides an overview of the main project findings and recommendations. The GIS Steering Committee and Parcel Management Committee respectfully recommend approval of these findings and recommendations of the Parcel Management and Re-engineering Project.

Sincerely,

Scott County GIS Steering Committee
Scott County Parcel Management Committee
(Committee Members displayed on next page)

Encl: Executive Summary



Scott County GIS Steering Committee Members
 Scott County Parcel Management Committee Members

Full Name	Title	Agency	Department/Office
Pam Bennett	Office Supervisor	Scott County	Sheriff
Ross Bergen	EMA Coordinator	Scott County	Emergency Management Agency
Jon Burgstrum	Engineer	Scott County	Secondary Roads
Cathy Creighton	Deputy Assessor	City of Davenport	Assessor
Dale Denklaue	Assessor	Scott County	Assessor
Dave Donovan	Director	Scott County	Facility and Support Services
Kathy Hinrichs	Tax Deputy	Scott County	Auditor
Matt Hirst	Director	Scott County	Information Technology
Timothy Huey	Director	Scott County	Planning and Development
Craig Hufford	Treasurer/Financial Management Supervisor	Scott County	Treasurer
Gloria Isham	Chief Public Safety Dispatcher	Scott County	Sheriff
Kevin James	GIS Analyst	City of Davenport	Information Technology
Kevin Lannan	Engineering Technician	City of Bettendorf	Public Works
Larry Linnenbrink	Environmental Health Coordinator	Scott County	Health
Lisa Miller	Manager	Bi-State Regional Planning Commission	Data-Graphics
Marc Miller	Operations Manager	Scott County	Conservation
Wes Rostenbach	Accounting and Tax Manager	Scott County	Auditor
Mitch Tollerud	Webmaster	Scott County	Information Technology
Rita Vargas	Recorder	Scott County	Recorder
Ray Weiser	GIS Coordinator	Scott County	Information Technology
Lew Zabel	Chief Deputy Assessor	Scott County	Assessor
Larry Barker	Director	Scott County	Health
Sue Brewer	Operations Manager	Scott County	Recorder

A Report in Support of Re-Engineering the Parcel Information Management Process For Scott County, Iowa

A. Executive Summary

1. Project Overview

This project is part of Scott County's effort to develop a multi-purpose, enterprise geographic information system (EGIS) to support county operations and the delivery of public information and services. As part of this effort, the County initiated and executed this project to review and redesign the parcel information maintenance and management processes. The scope of this project included a review and recommendations on workflow, staffing, data custodian policies, and parcel identifiers. Another dimension of the project, parcel geodatabase design review, will be completed when the parcel conversion process is further advanced.

2. Key Findings

Scott County is in the process of making a transition from a largely manual mapping system to an enterprise geographic information system. While there will be many benefits of the EGIS, this transition will affect many business systems and business practices throughout the County. Most notably among those affected workflows and business systems that touch parcel mapping and related parcel information. This transition also affords the County the opportunity to improve, if not reengineer, affected business processes and to integrate other business systems in ways that further automation and deliver more comprehensive information for decision making.

a. Parcel Maintenance Workflow

Parcel maintenance in Scott County is comprised of the following tasks: legal description review, plat book updates, existing parcel updates (ownership transfer only) and new parcel updates (splits/combines and subdivisions). These tasks are performed in a combination of manual and automated systems in the Scott County Auditor and Assessor's Offices.

For many technical, cultural, and traditional reasons, parcel maintenance in Scott County has evolved to be a very complex workflow. The division of responsibilities across departments, a lack of technology, and the methods used to organize and manage parcel information has caused this complexity. For example, because of manual processes and incompatible systems, there are a number of redundant activities and inefficiencies. (See Figure 1: Current Parcel Maintenance Workflow, on page 8, below for a visualization of the processes)

However in anticipation of greater automation, systemization, and the desire of County departments to find ways to refine and improve these business processes, much of the complexity can be removed from parcel management workflows.

b. Staffing Review

Two staff positions related to parcel maintenance and the enterprise GIS program were reviewed to identify required resources and position duties and qualifications. The first position is the GIS Analyst position in the Department of Information Technology, GIS Division and the Parcel Maintenance Technician position in the Auditor's Office. An extensive analysis of the current and future demands on GIS staff was conducted, including an assessment of skills, capacity, roles, and responsibilities.

The County's enterprise GIS implementation has evolved to a next stage: technology has been installed, data has been acquired, and applications have been deployed. This has placed new and evolving roles for the County's GIS Coordinator's time. It is clear, and County leadership has acknowledged, that additional staff resources are needed to maintain, customize and enhance what is already operational. The GIS Analyst position fills some of these emerging demands.

The Parcel Maintenance Technician position previously performed manual plat drafting, maintaining the plat book and developing parcel information related to subdivisions in the City of Davenport. At the same time, the Auditor's Office has the same (or increasing) volume of work whether data is maintained on paper maps or in computer databases. Their tools may change but the type and volume of work does not change because of the method used to perform the work. Thus, the Auditor Parcel Maintenance Technician remains critical to the day-to-day operations of that office.

c. Enterprise Data Maintenance Policies

Scott County has adopted two key strategies: First is to centralize enterprise system administration and management; Second is to decentralize operations, including relying on those data custodians with the mandates and responsibilities to build and maintain those enterprise data that are within their domains.

This kind of enterprise data management is facilitated by the establishment of policies that identify data custodians, and clarify maintenance responsibilities and performance measures. An enterprise data custodian policy serves as the guiding instrument for data maintenance agreements which are established for individual datasets.

To date, Scott County has not adopted explicit and specific policies to carry out these strategies. This part of the project provides an analysis of needs, forms and templates, and a set of recommendations.

d. Parcel Identifier Reconciliation

A parcel identifier (PID or PIN) acts as the primary relational key or linkage in databases and computer systems that manage real property information. Tax, appraisal, assessment, and other land records management systems use a PIN to uniquely identify parcels of land as divided by ownership, title interests and taxation districts. Simply, PIN's are an essential way people and systems name and, in turn, communicate and manage parcel related information. As part of the automation and

modernization process, parcel identification becomes even more critical to the integration of the County's business systems.

In this phase of the project the existing parcel numbering scheme of the County, its municipalities, the State, and other best practices were reviewed and documented. Key findings of the review of standards and best practice guidelines suggest that parcel identifiers should be unique, simple to use and easily understood, flexible and adaptable to the changing landscape and business need, permanent, accessible for use, and economic to implement and maintain.

3. Recommendations and County Action

Following review of each area, a set of recommendations were made and presented to the Scott County GIS Steering Committee. In turn the Committee approved the following recommendations and action items:

a. Parcel Maintenance and Workflow

After consideration, the Committee approved a new workflow process that has been graphically depicted in Figure 6 on page 29 below. Key features of the workflow redesign include the following.

- Maintain parcels by transaction rather than by location or type of update. In addition:
 - Strive for and establish expectation of currency of parcel changes within several days of recording
 - Establish separate maintenance and publication schedules
- Consolidate parcel maintenance duties in a single department to reduce or eliminate duplicate parcel maintenance effort. In addition, to:
 - Reduce or eliminate separate map and non-map maintenance tasks; and
 - Automate plat book production
- Improve system integration and management by maintaining parcel information once and, in turn, publishing that information to multiple systems. To achieve this objective, the County will move towards implementation of data repository as envisioned in the original strategic plan.
- Encourage online access to recorded document images by county staff to reduce document copying, eliminate documenting routing
- Acquire large-format scanner for recording and, in turn, scan large documents (e.g., survey plats) at full size for improved legibility. In addition, the County will:
 - Investigate (and where appropriate acquire) county office needs for large-format printing/plotting; and
 - Investigate and work toward future digital plat submission and recording option
- Maximize resources across Scott County region by encouraging the cities of Davenport and Bettendorf to use County-maintained parcel maps and databases. In addition, the County will provide online access to data for municipalities (parcel maps, aerial photography, imaged surveys and plats, etc).

b. Staffing Review

It was recommended that both the Parcel Maintenance Technician and GIS Analyst positions be filled at a full-time equivalent level. The County has already moved forward with these positions.

c. Enterprise Data Maintenance Policies

It was recommended that the County identify custodians for key enterprise datasets, and that maintenance, or service level agreements, be implemented when multiple stakeholders are dependent on the quality and timeliness of the data. Such policies should be documented and applied consistently to GIS and non-GIS data and across all county departments. Appendix D provides background information on policies including several examples of custodial and maintenance agreements.

The Scott County Iowa GIS Steering Committee supports the concept of data custodianship, in particular to aid in the management of enterprise-level datasets such as parcel information. The Committee is undertaking the following activities:

- Determine the scope and level of formality required to support effective enterprise data management, including which datasets would be included and the terms of agreements?
- Establish a process for approving and maintaining custodian agreements. It was recommended that the County use digital orthophotography to establish and test process proposed agreements and to then apply those lessons to parcel or other datasets.

d. Parcel Identifier Reconciliation

It was recommended to and approved by the Committee that an enhanced version of the existing Scott County parcel identifier be adopted for countywide use. Enhancements include using fully expressed township, range and section values, and support a county code prefix for external data sharing purposes. The new parcel numbering standard shall, at a minimum, conform to the following:

ttrrss**qq**xxx where:

- tt** = township
- rr** = range
- ss** = section number
- qq** = quarter-quarter section
- xxx** = lot number or unique parcel number

Example:

T77N R2E S6 SW1/4 NE1/4, parcel 104

Internal county use: 77020631104

External use: 8277020631104

Subsequent to review and discussion of project findings and recommendations, the Scott County Iowa GIS Steering Committee approved the following additional parcel identifier recommendations and action items:

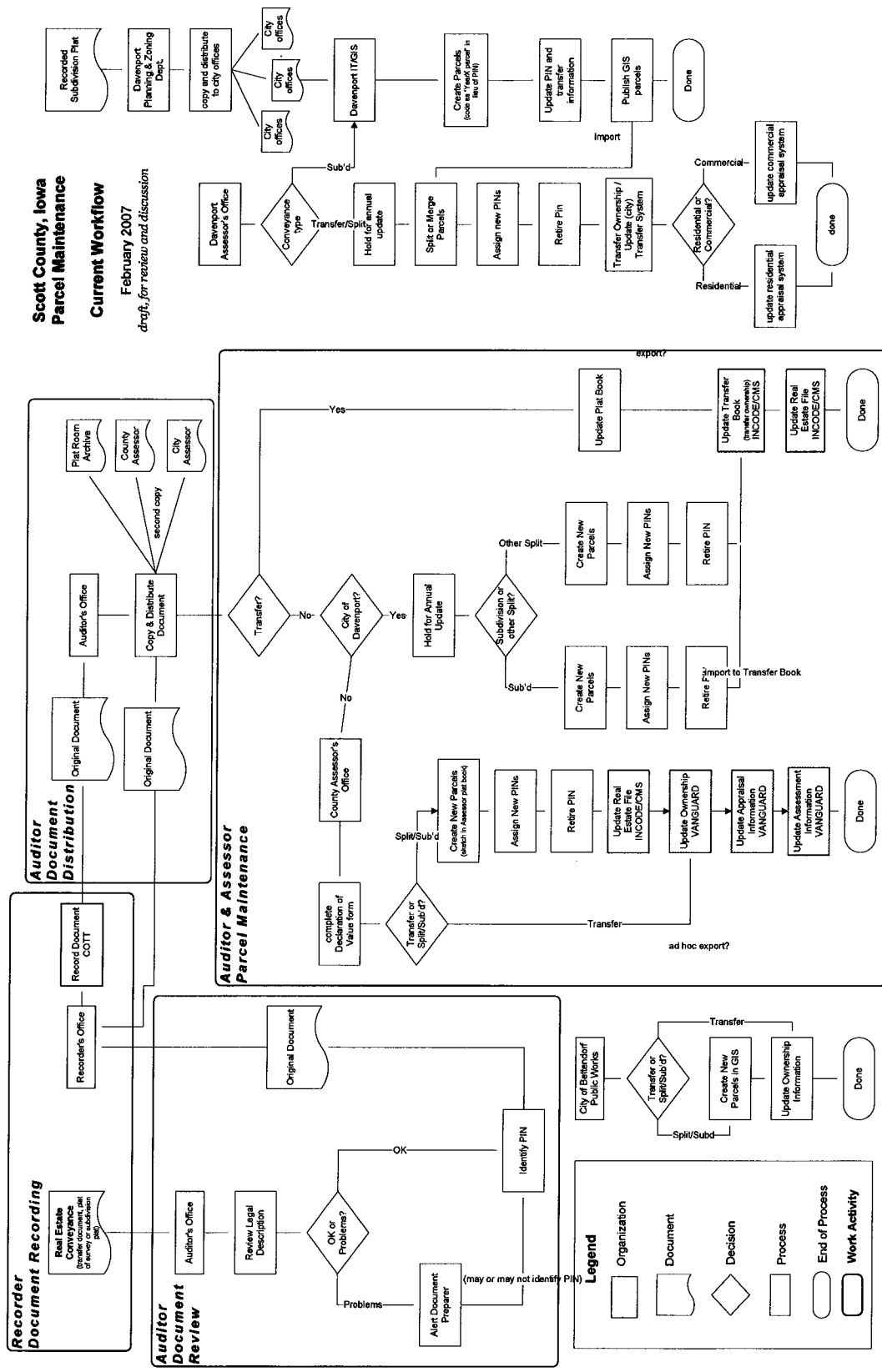
- Develop new countywide parcel identifier based on PLSS-referencing
 - Maintain PLSS-referencing
 - use fully expressed (two digit) townships and ranges
 - develop new ¼ ¼ section coding
 - Investigate and where appropriate adopt subd/blk/lot (subdivision, block, lot) referencing
 - Investigate and where appropriate adopt standard parent-child referencing
 - Support new state requirement for DOR code and FIPS code
- Maintain cross-reference to legacy PIN information
 - Manage multiple PIN requirements via crosswalk table

e. Enterprise Data Repository

As identified in the Scott County *EGIS Strategic Plan*, a central component of the EGIS system will be a formal Enterprise Data Repository (EDR). The repository provides a warehouse of all critical County GIS and other enterprise information in an environment that can be readily accessed and used by a wide variety of decision-support systems. The repository does not represent a single database, but a conceptual container where spatial and non-spatial data can be stored.

It was recommended and the Committee reaffirmed and approved further development of an EDR for the County. The EDR would automate a number of processes and simplify the publication of GIS and non-GIS data from department systems to the EDR. As part of this, the County will work with its other business system vendors to maximize system integration and data sharing.

Figure 1: Current Parcel Maintenance Workflow



Scott County, Iowa Parcel Maintenance Current Workflow
February 2007
draft, for review and discussion

Figure 3: Proposed Parcel Maintenance Workflow

