Preliminary Statewide Cost Estimates for Electronic Documentation and Internet Access to Recorder Real Estate Records in Iowa and Observations on Modernization from Stakeholders in Six Iowa Counties *

by

Sandra Charvat Burke and Mark A. Edelman **

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Community Vitality Center

477 Heady Hall
Ames, IA 50011-1070
Phone: 515-294-3000
FAX: 515-294-3838
E-mail: cvc@iastate.edu
Web site: www.cvcia.org

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** Sandra Charvat Burke is a Research Scientist and Mark A. Edelman is Professor of Economics in the Department of Economics at Iowa State University. Both are affiliated with the Community Vitality Center.

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I. Executive Summary

This study was designed to examine the existing level of electronic documentation and internet access for real estate records maintained by county recorders in Iowa, to estimate the incremental costs of information technology for various decentralized and centralized scenarios, and to examine the likely impacts on a cross section of providers and users in counties of differing size and level of technology.

The researchers assisted the Iowa County Recorders Association in conducting a Fall 2002 survey to inventory the level of electronic documentation and web access already available in each county and the costs involved for hardware and software already purchased. This survey provides the following findings:

- **24 (24%) of Iowa's 99 counties have sufficient information technology to maintain a computerized index only. One county in transition from paper to computerization was included in the total of 24 with computerized indexing only.**

- **75 (76%) of Iowa's 99 counties have sufficient information technology to both scan documents and maintain a computerized index. Scanning is required for providing public access to electronic images via the internet.**

- **4 (4%) of Iowa's 99 counties have sufficient information technology to provide searchable databases of documents via an internet web site.**

- **The level of information technology development varies by county size group. All ten large counties with 50,000 or more population are currently scanning documents and three of the four counties with searchable web sites are from this group. Forty-five (79%) of the fifty-seven medium size counties with 12,000 to 49,999 residents are currently scanning documents and one has a searchable web site. Twenty (63%) of 32 small counties with fewer than 12,000 residents are also scanning documents.**

The 2002 survey inventory and costs were used as a basis for developing estimates of incremental costs to analyze four approaches to achieving full electronic documentation and web access in all of Iowa's 99 counties. The four approaches represented a range of options for structuring database and web site management. The options range from the most decentralized as Approach 1 to the most centralized as Approach 4.

- **The lowest cost approach for all counties combined was Approach 3, which meant that county recorders maintain authority and databases in the counties with a central vendor maintaining a statewide mirror image database, storage, and web site capacity. The average incremental cost was $1.83 per document.**

- **The highest cost approach for all counties combined was Approach 4 which meant that county recorders provide electronic documentation and database entry and storage under a state authority, statewide integrated database, and web site system. The average incremental cost was $3.46 per document.**

- **The lowest and highest cost approaches varied by county size group. For the large county group with populations 50,000 and more, Approach 2 showed the lowest incremental costs, and Approach 4 showed the highest costs.**

- **For the small county group with populations of less than 12,000 and the medium county size group, Approach 3 was the lowest cost, but Approach 1 was the highest cost. This means that some degree of centralization for designing and maintaining web access may be helpful in lowering costs for small and medium size counties.**

The second phase of the study was to conduct site visits to six counties to interview targeted groups involved in providing and using county real estate documents, including recorders, other county officials, attorneys, abstractors, realtors, mortgage lenders and others. Two counties of each size group were visited to examine the potential impacts of electronic modernization. The following observations were expressed during the interview sessions with 74 interviewees from the site visits to the six counties.

- **Online systems allow records to be accessed more quickly than when relying on phone calls, faxes, or travel to the courthouse.**

- **Internet sites can be accessed 24 hours a day and 7 days a week compared with standard weekday courthouse hours.**

- **The informational variables regarded as being most useful by a broad range of users of real estate records were: name of the title holder, complete legal descriptions, PIN numbers and/or mapping numbers when applicable, grantors and grantees, book and page numbers, assessed valuations, addresses, tax information, and mortgage releases.**

- **Concerns about privacy issues were expressed, even though the data currently available on assessors, recorders, and treasurers web sites are considered public records. The public may often object to the global access to local property information.**

- **Lack of accuracy on a web site is a potential problem for electronic documentation. Most of the assessors and recorders web sites that are already online carry a disclaimer of accuracy and online searches are not certifiable searches.**

- **When an online system goes down, everyone loses access. Respondents told of significant down time for the online Iowa Court Information System (ICIS).**

- **Once implemented, real estate information would need to be maintained and kept up to date as new data become available. Older documents would not be available online and a dual system, one of paper records and one of electronic records, would result. This would likely increase search time and costs for users.**

- **Once implemented, there would be ongoing web site maintenance and periodic upgrades of software and hardware every five to seven years.**

- **Regarding the creation and responsibility for maintaining a statewide web site for accessing real estate documents, nearly all interview participants (71 out of 74) across**

all locations favored a decentralized approach and expressed significant concerns about the centralized concept and its implementation.

- **The only attribute identified in favor of the centralized approach was the greater potential for a central authority to assure consistency and uniformity in the information that would be made available online from all counties.**

- **Attributes expressed in opposition to having a centralized land records authority in state government were that a state agency would not have local knowledge of land issues and details, would require more time and effort of users in being able to identify and correct errors within documents, and would not be able to respond in a timely manner and as accurately as local people involved in the real estate records.**

- **Participants observed that the centralized approach may add an unnecessary duplication of records, another layer of bureaucracy, and more costs because the local jurisdictions would still need to maintain their own records.**

- **There was little consensus among participants regarding how electronic documentation and online services should be financed. Alternatives identified by participants included subscription fees for access to advanced searches of online data, increased document filing fees, property taxes, and state funding.**

- **There was agreement that state government, regardless of whether the system was centralized or decentralized, would not likely appropriate extra funding for electronic modernization due to current fiscal conditions. Some suggested that subscription fees would discourage use of the electronic system. Others suggested that document fees may somewhat unfairly require those who are unwilling or unable to use the electronic system to help pay for it. Still others suggested that the public can currently search courthouse records on site without extra charges.**

- **Title insurance and implications for the roles and structure of local real estate market participants was discussed during the interviews. Respondents expressed concerns about the potential effect of title insurance on the accuracy, completeness, and quality of land and ownership records and there was no consensus about the impacts of title insurance. Title insurance would likely affect the business roles and relationships among real estate professionals especially abstractors and attorneys.**

- **Some respondents in each of the four counties designated medium or small shared their concerns about county reorganization. Some saw electronic documentation as a possible first step toward consolidation or elimination of the recorder's office. These participants expressed concerns that electronic documentation generated greater potential for the future reconfiguration and elimination of a broader range of courthouse functions in smaller counties.**

- **Some participants observed that Iowa's real estate system is influenced by changes in national banking and mortgage lending practices and institutions. The emergence of internet lending and large banks operating in several states or nationally was viewed as a driving force in electronic documentation. In addition, the development of national secondary markets for mortgages and national title insurance companies is having an impact in Iowa.**

II. Introduction

At the request of the Iowa County Recorders Association in July 2002, the Community Vitality Center (CVC) began a study of the costs and issues related to electronic modernization of county recorder real estate documents. Previous efforts by various groups in Iowa have focused on learning more about electronic documentation, on designing the components of an online document system, and on understanding the policy issues involved. This study represents a continuation of these efforts.

The current interest in electronic documentation follows legislative action by the 2000 General Assembly, which passed the Uniform Electronic Transactions Act (UETA). UETA authorized and established uniform processes for electronic commerce in states that adopt it. The Iowa Legislature also established a Legislative Advisory Committee that filed a report on electronic documentation issues in January 2001.

Further interest in electronic documentation also came in 2000 as a result of the Iowa 2010 report by the Governor's Strategic Planning Council, which noted the importance of electronic government and recommended it as a state goal for the decade. In addition, the Iowa State Bar Association (ISBA) has had an active interest in electronic commerce. In 2002, the ISBA proposed legislation, the Iowa Electronic Recording System (IERS), that focused on a system to make county real estate records available via the internet. The state of Georgia provides one example of this approach.

This CVC study involved two phases. The first phase was to assist the Iowa County Recorders Association in conducting a survey to inventory the level of electronic documentation already available in each county and to identify the costs involved for hardware and software already purchased. This survey has been completed and a cost analysis utilizing the findings is included in this report.

The second phase of the CVC study was to conduct interviews with providers and users during site visits to six counties to examine processes currently used by the recorder's office. In addition, targeted clientele groups were interviewed to determine the potential impacts of electronic modernization. This report includes analysis of the observations, issues, findings, and impacts identified during the site visits to the six counties.

III. Phase One Electronic Documentation Survey and Cost Analysis

A. Recorder Survey Procedures

Phase one of the CVC study consisted of assisting in the design and analysis of a survey of Iowa's county recorders. Questions were included in the survey that asked if the recorder used a computerized index, if documents were scanned, and if the document images were available on a searchable internet site. In addition, the recorders were asked to provide itemized information about the computer hardware used in their offices for

real estate records. For each piece of equipment, the recorder was asked to provide the type of item, whether it was leased or owned, the vendor used, the year it was acquired, the initial cost, and any annual costs associated with the item. A similar set of details was requested for each software package the recorder used for electronic documentation as well as for training expenditures.

The surveys were distributed to the recorders at their Summer School held in August 2002 and they returned them by mail. Eighty-seven of Iowa's 99 recorders returned the surveys through January 2003. A preliminary report of some of the findings was presented to the recorders at their Fall School in November 2002.

Since population size has been found to be an important factor in community analysis, the results for many of the attributes were grouped according to county population. Ten Iowa counties that had 50,000 or more in population in the 2000 Census were included in the "large" category. The 57 counties with populations from 12,000 through 49,999 formed the "medium" group and the 32 remaining counties with fewer than 12,000 residents made up the "small" category.

B. Recorder Survey Results

Of the 87 recorders responding to the survey, 67 (77%) reported that they scanned their documents as well as maintained a computerized index. For the other 20 (33%) recorders who responded but did not scan their documents, all but one already had computerized indexing in place. One last remaining county was in the process of changing from paper indexing to computerization at the time of the survey.

Because the presence of scanning capabilities had important implications for the cost analysis, supplementary information about the technology level of the 12 counties from which the recorder did not respond to the survey was obtained from the Iowa County Recorders Association. In all, 75 (76%) of Iowa's 99 counties utilized both scanning and computerized indexing while 24 (24%) had computerized indexing only. The one county in transition from paper to computerization was included in the total of 24 with computerized indexing only.

Large counties were more likely to be scanning documents than were medium or small ones. All (100 %) of the 10 large counties had scanning capabilities compared with 79 percent (45 of 57) of the medium counties and 62.5 percent (20 of 32) of the small ones (Table 1). The number of counties in each group by population size and scanning capability was used in the cost analysis.

Questions about the presence of a recorder's internet access site were also asked in the survey. Four counties (Clay, Linn, Polk, Story) had a web site at the time of the survey that provided the recorder's computerized index information and images of the scanned documents. As with scanning, the large counties were more likely (3 of 10) to have an active internet site in place than the medium (1 of 57) or small (0 of 32) counties.

That internet access to recorder's documents already existed in four counties was taken into consideration in the cost analysis.

In response to the hardware, software, and training questions in the survey, the recorder's reported detailed information about computers, printers, scanners, servers, work stations, jukeboxes and other optical drive devices, indexing software, scanning software, and training that they had purchased or leased for processing and accessing their real estate records. The initial costs for these items were evaluated and summed for a total capital investment for the current level of electronic documentation and internet access provided by the county recorders. The recorder's reported annual costs were also evaluated and summed to obtain annual maintenance expenditures.

Using the total capital investment figures, an Iowa county averaged $35,880 in prior expenditures for electronic documentation, but the average varied significantly by county size and scanning capability (Table 1). Although a small county averaged $26,920 in capital investments, the large counties had made an average of $67,820 in prior capital purchases. Scanning of documents had a large impact on capital investments. A small county that did not scan averaged $6,140 in prior electronic purchases but that average increased to $34,340 when scanning capability was present. A significant difference in capital investment between scanning and non-scanning counties was present for those of medium size as well. These differences in average expenditures by county size and scanning capability were used in the cost analysis.

Average annual maintenance costs for electronic documentation and internet hardware and software also varied by county size and the presence of scanning. A medium county that did not scan averaged $2,060 in annual maintenance costs for hardware and software compared with $4,480 for medium counties that did scanning (Table 1). The highest annual maintenance expenses came in the large counties with an average of $8,190.

Another issue that was considered in the cost analysis was the number of documents filed by county size. The survey asked the recorders to report the total number of documents filed in their county for several past years, however, the timing of the survey only allowed a request for the first half of 2002. Subsequent to the survey, the Iowa County Recorders Association obtained from each recorder the document filings for all of 2002. Because those data were an update of the most recent information in the survey and were very consistent with what was reported in the survey, the 2002 totals were used in the cost analysis.

The recorders reported receiving 889,369 document filings in 2002. When separated by county size, 443,179 (49.8%) were filed in the 10 large counties, 366,337 (41.2%) in the 57 medium size counties, and 79,853 (8.98%) were received by the 32 small counties. When divided by the number of counties in each category, the large county group averaged 44,318 documents, the medium size group averaged 6,427, and the small county group averaged 2,495 documents (Table 6).

Table 1. Estimated Average Annual Maintenance and Capital Investment Costs for Electronic Documentation Hardware, Software, and Training Per County by Size Category and Presence of Electronic Scanning Capability, 2002.

County Size Category*	Total (Counties)	With Scanning (Counties)	No Scanning (Counties)	Difference
Average Capital Investment				
Large	$67,820 (10)	$67,820 (10)	-- (0)	--
Medium	35,290 (57)	37,120 (45)	$15,060 (12)	$22,060
Small	26,920 (32)	34,340 (20)	6,140 (12)	28,200
All Counties	35,880 (99)	39,860 (75)	9,490 (24)	
Average Annual Maintenance				
Large	$8,190 (10)	$8,190 (10)	-- (0)	
Medium	4,200 (57)	4,480 (45)	$2,060 (12)	$2,420
Small	2,510 (32)	2,700 (20)	1,870 (12)	830
All Counties	4,150 (99)	4,500 (75)	1,960 (24)	

* Large counties include those with 50,000 or more residents; Medium counties are those with 12,000 – 49,999 residents; Small counties are those with fewer than 12,000 residents.
Source: Compiled from Iowa County Recorder Electronic Modernization Survey Data, 2002.

C. Cost Analysis Procedures

This study develops preliminary cost estimates for four different approaches to electronic documentation and internet access. The approaches diverge from each other in various ways, but the most fundamental difference is whether the authority for the documents is retained by the county recorder using a county-level database or whether a statewide database is created with authority for the documents resting with a state agency. In general, the approaches that retain authority in the county are more decentralized than approaches that create a centralized, statewide database.

Several assumptions were made that apply to all four approaches. First, all the approaches build on the inventory of capital investments that have already been made in the counties and the estimates of incremental capital investments necessary to have all counties achieve scanning capability. Documents cannot be viewed on a web site unless they are available as scanned images. Thus, the 24 counties that do not yet scan would need this investment.

Second, since only four recorder web sites are established, internet access is the major component that has yet to be developed and implemented. Because the number of counties with searchable recorder internet sites is small and those counties have taken different approaches to develop their sites, the survey responses did not provide enough information to separately estimate web development costs and maintenance. In order to provide consistency across the cost estimates for the four approaches and to simplify the

estimation process, an engineering approach was used to calculate a set of costs for all 99 counties.

Third, the capital investment in hardware and software for each approach was assumed to have a useful life of 7 years. All capital investment costs were annualized at a discount rate of 5 percent to reflect a government's cost of capital. The first column in the cost analysis tables represents the total annualized incremental technology costs for all 99 counties combined if they had the technology capabilities indicated for that approach. The second column in the tables represents the estimated annualized incremental costs needed for the counties that do not presently have the hardware, software, or maintenance capacity necessary for that approach.

Fourth, all approaches assume that staffing levels at the county recorders' offices remain unchanged from the existing number of employees. This is based on the observations and interviews from the site visits during phase two of this project. Recorders and assessors who had already established internet web sites reported little change in staffing, either decreases or increases (see discussion for phase two).

Fifth, the incremental costs estimated for each approach only include the added costs from comparing existing electronic documentation systems upgraded to scanning with systems designed for internet access. The incremental costs do not include full costs for administration, staff, facilities, non-electronic equipment, utilities, or costs associated with user access to public information. The estimated costs per document in Table 6 only represent the incremental costs for electronic documentation and internet access and exclude current county-level staff, administration, facility, and other costs.

Finally, none of the approaches includes cost calculations for variations in the internet readiness of the courthouses and administrative buildings. In the survey, the recorders were asked about what internet infrastructure was available in their buildings and important differences among the counties were reported. In addition, any necessary upgrades at the courthouses may depend on the approach taken for electronic documentation. While one approach may work well with high-speed telephone or wireless internet service, another may necessitate fiber optic access at each county location. Such courthouse cost issues must be considered for any given approach to electronic documentation, but were beyond the scope of this study.

The four approaches and the assumptions used to define each approach were developed based on the recorder survey findings, interviews with a cross section of providers and users from site visits in six counties (see phase two), a previous study conducted by the Iowa Department of Information Technology, and researcher perceptions after consultations with hardware and software vendors, the Iowa County Recorders Association Executive Committee, and the Iowa State Bar Association Task Force. It is recognized that there are not just four approaches to electronic documentation and web access and the four scenarios are selected as benchmarks for comparison.

D. Cost Analysis Results

1. Initial Annualized Incremental Costs

The cost analysis for each approach begins with the average incremental capital investment costs and average annual maintenance expenditures that were calculated from the responses to the recorders survey (see Table 1 above). The average costs by county size and scanning capability provide the basis for estimating the annualized incremental capital investment, annual maintenance, and total annualized incremental costs that form the total investment if all 99 counties were using computerized indexing and scanning.

Using the survey average capital investment of $67,820 for each of the 10 large counties, $37,120 for each medium county, and $34,340 for each small county, the capital investment for hardware and software totals $3,892,920 and provides an annualized capital cost of $660,266 (Tables 2-5, column 1, top half). The average annual maintenance figures from the survey were $8,190 for the large county group, $4,480 for the medium counties, and $2,700 for the small counties. The annual incremental maintenance costs calculated by county size totaled $423,660. When the annualized capital cost and the annual maintenance cost are summed, the total annualized incremental cost for electronic documentation if all counties were scanning is $1,083,926.

Column two (top half, Tables 2-5) presents the remaining estimated incremental costs to bring all counties up to the scanning level. These figures are based on the survey results that found significant differences in costs between counties that scan and those that don't (see Table 1 above). The average hardware and software investment difference between medium counties that scanned and those that didn't was $22,060. For small counties, those that scanned averaged $28,200 more than those not scanning. When the remaining incremental costs were calculated for the 24 counties that did not scan, the result was $603,120. This provided an annualized cost of $102,293. That figure, added to the estimated remaining annual maintenance of $39,000, resulted in an estimated remaining incremental annualized cost of $141,293 to provide all the remaining counties with scanning capability.

The remaining annualized cost in column two represents 13 percent of the total investment required for electronic documentation and scanning capability, thus the counties have already provided 87 percent of the initial investment needed of the foundation for internet access. These total annualized costs for electronic documentation comprise the top half of Tables 2 through 5 and are identical. They represent a starting point for internet access capability. A basic assumption of this cost analysis is that all counties must be scanning in order to have internet access to document images.

Table 2. Preliminary Estimates of Incremental Electronic Documentation and Internet Web Site Costs for Iowa — Approach 1: Each County Does Its Own: County Maintains Authority, Database, and Web Site; No External Host or Statewide Internet Links, 2002*

Item	Estimated Total Incremental Costs for 99 Counties Combined	Estimated Incremental Costs for Remaining Counties
Electronic Documentation		
Capital Investment in Hardware & Software		
10 large counties @ $67,820	678,200	
57 medium counties @ $37,120	2,115,840	
12 med. remaining counties @ $22,060		264,720
32 small counties @ $34,340	1,098,880	
12 small remaining counties @ $28,200		338,400
Subtotal	3,892,920	603,120
Annualized Capital Cost (7yrs @ 5%)	660,266	102,293
Annual Maintenance Costs		
10 large counties @ $8,190	81,900	
57 medium counties @ $4,480	255,360	
12 med. remaining counties @ $2,420		29,040
32 small counties @ $2,700	86,400	
12 small remaining counties @ $830		9,960
Subtotal	423,660	39,000
Total Annualized Costs	1,083,926	141,293
Internet Web Site Development		
Capital Investment & Design		
99 counties @ $27,000	2,673,000	
95 counties without web @ $27,000		2,565,000
Subtotal	2,673,000	2,565,000
Annualized Capital Costs (7yrs @ 5%)	453,360	435,036
Annual Web Site Maintenance		
99 counties @ $12,000	1,188,000	
95 counties without web @ $12,000		1,140,000
Subtotal	1,188,000	1,140,000
Total Annualized Costs	1,641,360	1,575,036
Combined Annualized Electronic Documentation and Web Site Costs	2,725,286	1,716,329
Prel. Initial Investment/County	66,322	
Prel. Annual Maintenance Cost/County	16,279	
Prel. Annualized Total Cost/County	27,528	

* Incremental costs only include the added costs and/or savings by moving from a base case paper documentation system to an electronic documentation system with internet access. Incremental costs do not include full costs for administration, staff, facilities, other office equipment, utilities, or user costs associated with access to public information.

Table 3. Preliminary Estimates of Incremental Electronic Documentation and Internet Web Site Costs for Iowa— Approach 2: Each County Maintains Authority and Database with Web Hosting by Vendor and Statewide Web Page with Links to County Web Sites, 2002*

Item	Estimated Total Incremental Costs for 99 Counties Combined	Estimated Incremental Costs for Remaining Counties
Electronic Documentation		
Capital Investment in Hardware & Software		
10 large counties @ $67,820	678,200	
57 medium counties @ $37,120	2,115,840	
12 med. remaining counties @ $22,060		264,720
32 small counties @ $34,340	1,098,880	
12 small remaining counties @ $28,200		338,400
Subtotal	3,892,920	603,120
Annualized Capital Cost (7yrs @ 5%)	660,266	102,293
Annual Maintenance Costs		
10 large counties @ $8,190	81,900	
57 medium counties @ $4,480	255,360	
12 med. remaining counties @ $2,420		29,040
32 small counties @ $2,700	86,400	
12 small remaining counties @ $830		9,960
Subtotal	423,660	39,000
Total Annualized Costs	1,083,926	141,293
Internet Web Site Development Capital Investment & Design		
99 counties @ $13,000	1,287,000	
95 counties without web @ $13,000		1,235,000
1 linked web site @ $10,000	10,000	10,000
Subtotal	1,297,000	1,245,000
Annualized Capital Costs (7yrs @ 5%)	219,980	211,161
Annual Web Site Maintenance		
99 counties @ $6,000	594,000	
95 counties without web @ $6,000		570,000
1 linked web site @ $5,000	5,000	5,000
Subtotal	599,000	575,000
Total Annualized Costs	818,980	786,161
Combined Annualized Electronic Documentation and Web Site Costs	1,902,906	927,454
Prel. Initial Investment/County	52,423	
Prel. Annual Maintenance Cost/County	10,330	
Prel. Annualized Total Cost/County	19,221	

* Incremental costs only include the added costs and/or savings by moving from a base case paper documentation system to an electronic documentation system with internet access. Incremental costs do not include full costs for administration, staff, facilities, other office equipment, utilities, or user costs associated with access to public information.

Table 4. Preliminary Estimates of Incremental Electronic Documentation and Internet Web Site Costs for Iowa— Approach 3: County Maintains Authority and Database with Central Statewide Mirror Image Database Storage and Web Site, 2002*

Item	Estimated Total Incremental Costs for 99 Counties Combined	Estimated Incremental Costs for Remaining Counties
Electronic Documentation		
Capital Investment in Hardware & Software		
10 large counties @ $67,820	678,200	
57 medium counties @ $37,120	2,115,840	
12 med. remaining counties @ $22,060		264,720
32 small counties @ $34,340	1,098,880	
12 small remaining counties @ $28,200		338,400
Subtotal	3,892,920	603,120
Annualized Capital Cost (7yrs @ 5%)	660,266	102,293
Annual Maintenance Costs		
10 large counties @ $8,190	81,900	
57 medium counties @ $4,480	255,360	
12 med. remaining counties @ $2,420		29,040
32 small counties @ $2,700	86,400	
12 small remaining counties @ $830		9,960
Subtotal	423,660	39,000
Total Annualized Costs	1,083,926	141,293
Internet Web Site Development Capital Investment & Design		
99 counties @ $16,000	1,584,000	
95 counties without web @ $16,000		1,520,000
Web site with database @ $300,000	300,000	300,000
Subtotal	1,884,000	1,820,000
Annualized Capital Costs (7yrs @ 5%)	319,539	308,685
Annual Web Site Maintenance		
4 ftes @ $50,000	200,000	200,000
Other @ $20,000	20,000	20,000
Subtotal	220,000	220,000
Total Annualized Costs	539,539	528,685
Combined Annualized Electronic Documentation and Web Site Costs	1,623,465	669,978
Prel. Initial Investment/County	58,353	
Prel. Annual Maintenance Cost/County	6,502	
Prel. Annualized Total Cost/County	16,399	

* Incremental costs only include the added costs and/or savings by moving from a base case paper documentation system to an electronic documentation system with internet access. Incremental costs do not include full costs for administration, staff, facilities, other office equipment, utilities, or user costs associated with access to public information.

Table 5. Preliminary Estimates of Incremental Electronic Documentation and Internet Web Site Costs for Iowa— Approach 4: County Does Electronic Documentation, Database Entry and Storage under Centralized State Authority, Database, and Web Site System, 2002*

Item	Estimated Total Incremental Costs for 99 Counties Combined	Estimated Incremental Costs for Remaining Counties
Electronic Documentation		
Capital Investment in Hardware & Software		
10 large counties @ $67,820	678,200	
57 medium counties @ $37,120	2,115,840	
12 med. remaining counties @ $22,060		264,720
32 small counties @ $34,340	1,098,880	
12 small remaining counties @ $28,200		338,400
Subtotal	3,892,920	603,120
Annualized Capital Cost (7yrs @ 5%)	660,266	102,293
Annual Maintenance Costs		
10 large counties @ $8,190	81,900	
57 medium counties @ $4,480	255,360	
12 med. remaining counties @ $2,420		29,040
32 small counties @ $2,700	86,400	
12 small remaining counties @ $830		9,960
Subtotal	423,660	39,000
Total Annualized Costs	1,083,926	141,293
Internet Web Site Development Capital Investment & Design		
99 counties @ $31,000	3,069,000	
95 counties without web @ $31,000		2,945,000
Standards development @ $300,000	300,000	300,000
Database software, hardware @ $3,200,000	3,200,000	3,200,000
Subtotal	6,569,000	6,445,000
Annualized Capital Costs (7yrs @ 5%)	1,114,148	1,093,116
Annual Web Site Maintenance		
19 ftes @ $35,000 - $75,000	825,000	825,000
Other @ $55,000	55,000	55,000
Subtotal	880,000	880,000
Total Annualized Costs	1,994,148	1,973,116
Combined Annualized Electronic Documentation and Web Site Costs	3,078,074	2,114,409
Prel. Initial Investment/County	105,676	
Prel. Annual Maintenance Cost/County	13,168	
Prel. Annualized Total Cost/County	31,092	

* Incremental costs only include the added costs and/or savings by moving from a base case paper documentation system to an electronic documentation system with internet access. Incremental costs do not include full costs for administration, staff, facilities, other office equipment, utilities, or user costs associated with access to public information.

2. Approach 1: Counties Do Own Documents and Web Development

Internet access for Approach 1 assumes that each county designs and maintains a separate and individual internet site from internal resources (Table 2, bottom half). Approach 1 assumes that each county maintains its own database, retains official authority over its own documents, provides its own internal web support, and that there are no linked or centralized web sites. Approach 1 uses a figure of $27,000 for internet implementation for each county which includes estimates for software, servers, firewalls, and other investments needed. Multiplying $27,000 by 99 counties shows the capital investment required for internet development under Approach 1 totals $2,673,000. On an annualized basis, this expense is $453,360 (Table 2, column 1, bottom half).

In addition to capital investment, each county would incur an estimated annual web site maintenance cost of $12,000 which totals to $1,188,000 for the 99 counties. The total annual maintenance cost and the annualized capital cost sums to $1,641,360 and is the additional annual amount needed for internet web site development and maintenance under Approach 1. The combined 99 county annualized electronic documentation and web costs for Approach 1 totals $2,725,286, which averages $27,528 per county. The initial investment cost per county for Approach 1 is $66,322 and the annual maintenance cost per county is $16,279.

Because only four counties already have web sites, nearly all of the internet web capital investment would remain to be done under Approach 1 (Table 2, column 2, bottom half). The estimated new capital investment for 95 counties without web sites totals $2,565,000, which results in an annualized amount of $435,036. The annualized figure along with additional annual maintenance for 95 counties of $1,140,000 sums to $1,575,036 of incremental costs for the remaining counties without web access under Approach 1. This figure indicates that 96 percent of the cost for internet web site development and annual maintenance remains to be done under Approach 1.

3. Approach 2: Counties Do Own Documents with Web Hosting Linked

Approach 2 is similar to Approach 1 in regard to recorder authority and maintenance of a county-level database but instead of individual web development and internal support for web site maintenance, the county contracts with an external vendor for hosting and maintaining the web site (Table 3, bottom half). Approach 2 also includes the development of a statewide web page with links to each county web site. Capital investment for internet implementation for each county is estimated to be $13,000 under Approach 2, an amount that includes a software upgrade and an equipment expense. Approach 2, however, also includes a linked web site with an additional estimated capital expense of $10,000. The web site investment cost along with the costs for all 99 counties totals $1,297,000 and provides an incremental annualized capital cost of $219,980 (Table 3, column1, bottom half).

Web hosting by a vendor is estimated to cost each county $6,000 annually and an additional annual maintenance fee of $5,000 is included for the linked web site hosting.

These annual web-hosting expenses would total $599,000 for all 99 counties. This figure, when added to the annualized capital cost, brings the annualized total incremental cost for web development under Approach 2 to $818,980. When this web development cost was summed with the electronic documentation cost, the 99 county combined annualized incremental electronic documentation and web cost for Approach 2 totaled $1,902,906 and averaged $19,221 per county. Under Approach 2, the initial investment cost per county is $52,423 and the annual maintenance cost per county is $10,330.

For Approach 2, most of internet access development would remain to be done (Table 3, column 2, bottom half). The remaining capital expenses for the 95 counties without web sites plus the linked web site cost total $1,245,000 and result in a remaining annualized figure of $211,161. Including annual maintenance along with the annualized capital cost brings the remaining incremental cost for web development to $786,161.

4. Approach 3: Counties Do Own Documents with Integrated Web Site

The third approach to be examined differs in that it includes the development of an additional database capability that is not present in approaches 1 or 2 (Table 4, bottom half). Approach 3 retains county recorder authority for documents and provides a county-level database, but adds the development and maintenance of a single statewide web site searchable by county that uses a mirror-image database of each county's information. County-level capital investment is estimated at $16,000 to provide software, hardware, and linkage to the centralized database. Web site capital investment for software, hardware, and database for a centrally provided web site is estimated at $300,000 and, when added to the capital investment for 99 counties, gives a total incremental capital investment of $1,884,000 under Approach 3. The annualized incremental capital investment for web development is $319,539.

The additional database capability of Approach 3 involves staffing at the web hosting location, so an estimated 4 information technology (IT) FTEs at $50,000 each are included. The staff cost, along with an additional $20,000 annual maintenance cost, brings the total annual maintenance cost for internet development in Approach 3 to $220,000. Therefore, the total annualized incremental cost for web development and maintenance is $539,539. The sum of the annualized incremental cost for electronic documentation and the cost for web and database access is $1,623,465, which averages to $16,399 per county. For this approach, the initial investment per county is $58,353 and the annual maintenance cost per county is $6,502.

Relatively little investment in web site development for Approach 3 has been accomplished to date. The annualized incremental capital costs remaining are $308,685 plus the entire annual maintenance cost of $220,000 (Table 4, column 2, bottom half).

5. Approach 4: Counties Integrate Documents in State Database and Web Site

Approach 4 includes database and authority concepts that are different from the previous three plans. In this approach, a state-level, integrated database is developed that

merges the documents from all the counties together in a searchable, web based system that is common among all counties (Table 5, bottom half). Although the county recorders scan and enter the documents into the system, the official database is located in a state government agency or official statewide authority over the documents.

Capital investment under Approach 4 includes an estimated $300,000 to develop indexing and scanning standards and $31,000 per county for hardware and software upgrades and new input hardware and software. For the 99 counties, the capital investment would be $3,069,000. The centralized, state-level database development, software, and hardware costs are estimated to be $3,200,000. This provides a total incremental capital investment for web access of $6,569,000. The annualized capital cost of that amount is $1,114,148.

Approach 4 would involve an estimated 19 people in a state staff that would include 6 IT staff, 10 "help desk" personnel, 1 administrative head, and 2 assistant administrators with total annual salaries of $825,000. An additional $55,000 in other maintenance costs brings the annual total for database and web site maintenance to $880,000. Those costs summed with the annualized capital cost produces a total incremental annualized cost for Approach 4 of $1,994,148 for web access with a state-level database. The combined annualized incremental cost for 99 counties for documentation and web site costs under Approach 4 is estimated to be $3,078,074, which averages $31,092 per county. The initial investment cost per county is $105,676 and the annual maintenance cost per county is $13,168 under this approach. As with the previous three plans, little of the incremental annualized cost for the web site and database would already be invested. Total annualized incremental costs remaining under Approach 4 is $1,973,116 (Table 5, column 2, bottom half).

6. Approach Comparisons and Per Document Costs

Using the survey average capital investment in hardware, software, and maintenance (see Table 1 above), average incremental costs per county were developed for the state as a whole and for each county size group (Table 6). The 2002 Survey Information Technology Investment represents the incremental costs for electronic documentation and web development, including scanning, without scanning, and web capability, that was present at the time of the survey. Although the state averaged $10,191 in incremental investment per county, the average investment varied by county size group. The large counties had an incremental investment of $24,682, the medium group's was $9,770, and the small county group's was $6,419 (Table 6).

The average incremental investment per document by county size group was calculated by dividing the average incremental investment per county by the average documents per county in 2002 for each size group (Table 6). The average incremental cost per document, based on the level of electronic documentation at the time of the survey, averaged $1.13 for the state, $0.56 for the large county group, $1.52 for the medium counties, and $2.57 for the small counties. Thus, the cost per document based

on current county investment in information technology was lowest for the large county group and highest for the small county group.

The same series of calculations was carried out for each web site and internet access approach considered. Since the approach scenarios involved higher levels of investment and maintenance beyond the levels reported in the survey, the estimated per county and per document costs were higher for the Approaches than those reported for current levels of IT investment.

For Approach 1, the annualized incremental cost per county was $27,528, but varied from $25,103 for small counties to $36,272 for large counties (Table 6). Based on the 2002 average document filings for each county group, the cost per document for electronic documentation and internet access under Approach 1 would be $10.06 for small counties, $4.25 for medium counties, and $0.82 for large counties. Although large counties average more in incremental costs per county, the large volume of documents processed produces a low per document cost. Under Approach 1, all county groups would experience an increase in per document costs from their current level, but small counties would be especially impacted. While large county costs per document would increase by $0.26, the increase for small counties would be $7.49.

Under Approach 2, the incremental costs per county are lower than under Approach 1 for the state and for each county group as well. For this approach the state average incremental cost per county would be $19,221 but would vary from $16,748 for the small county group to $28,231 for the large county group (Table 6). Per document costs are lower than with Approach 1 as well, but the small county group would still have the highest per document cost ($6.71) of the three groups. The increase in per document costs over the current level for the small group would be $4.14.

With Approach 3, the incremental cost per county is lower than Approach 2 for the state figure and for the small and medium county groups as well. However, the large county group would experience an average incremental cost higher than under Approach 2 but lower than with Approach 1 (Table 6). The higher incremental cost per county for the large group is due to the allocation of the centralized costs to the county groups according to the volume of documents. Approach 3 generates a state average cost per document of $1.83 with the small county average being $4.81, the medium county average at $2.40, and that for the large county group at $0.74.

Approach 4, with the statewide database and the centralized authority generates an average cost per county of $31,092, the highest state average of the 4 approaches. The incremental cost per county for the large county group is $98,337 and ranges down to the small county group's figure of $17,917 (Table 6). For the small and medium groups, the incremental cost per document would be lower than under approach 1 but higher than either approach 2 or 3. In contrast, approach 4 would give the highest per document charge ($2.22) of any approach to the large group.

Table 6. Preliminary Estimate of Electronic Documentation and Web Access Incremental Costs per County and per Document, Excludes Current Labor, Admin., & Other Costs *

Item	Small County Average (32)	Medium County Average (57)	Large County Average (10)	State Average
2002 Survey Information Technology Investment **				
Incremental Costs/ County	$6,419	$9,770	$24,682	$10,191
2002 Documents/ County	2,495	6,427	44,318	8,984
2002 Costs/ Document	$2.57	$1.52	$0.56	$1.13
Approach 1: Each County Does Its Own: County Maintains Authority, Databases, and Web Site with No External Hosting or Statewide Internet Links				
Incremental Costs/ County	$25,103	$27,355	$36,272	$27,528
2002 Documents/ County	2,495	6,427	44,318	8,984
2002 Costs/ Document	$10.06	$4.25	$0.82	$3.06
Approach 2: Each County Maintains Authority and Databases with Web Hosting by Vendor and Statewide Web Page with Links to County Web Sites ***				
Incremental Costs/ County	$16,748	$19,029	$28,231	$19,221
2002 Documents/ County	2,495	6,427	44,318	8,984
2002 Costs/ Document	$6.71	$2.96	$0.64	$2.14
Approach 3: County Maintains Authority and Databases with Central Statewide Mirror Image Database Storage and Web Site ***				
Incremental Costs/ County	$11,998	$15,447	$33,118	$16,399
2002 Documents/ County	2,495	6,427	44,318	8,984
2002 Costs/ Document	$4.81	$2.40	$0.74	$1.83
Approach 4: County Does Electronic Documentation, Database Entry and Storage under Centralized State Authority, Database, and Web Site System ***				
Incremental Costs/ County	$17,917	$26,685	$98,337	$31,092
2002 Documents/ County	2,495	6,427	44,318	8,984
2002 Costs/ Document	$7.18	$4.15	$2.22	$3.46

* Incremental costs only include the added costs and/or savings by moving from a base case paper documentation system to an electronic documentation system with internet access. Incremental costs do not include full costs for administration, staff, facilities, non electronic office equipment, utilities, or user costs associated with access to public information.
** Annualized average investment in hardware, software and maintenance by all counties in size group based on 2002 survey. Includes counties with and without scanning and web capability.
*** Assumes centralized costs are apportioned to counties according to volume of documents.

In summary, the lowest cost approach for all counties combined was Approach 3, where county recorders maintain authority and databases in the counties with a central vendor maintaining a statewide mirror-image database, storage and web site. The average incremental cost was $1.83 per document.

The highest cost approach for all counties combined was Approach 4 in which county recorders provide electronic documentation and database entry and storage under a centralized state authority database and web site system. The average incremental cost was $3.46 per document.

For individual county size groups, the lowest and highest cost approaches varied. For the large county group with 50,000 or more residents, Approach 2 showed the lowest incremental costs, and Approach 4 showed the highest costs. For the small county group with populations of less than 12,000 and the medium county size group, Approach 3 was the lowest cost, but Approach 1 was the highest cost. This means that some degree of centralization for designing and maintaining web access is particularly helpful in lowering costs for small and medium size counties.

IV. Phase Two County Site Visits and Observations

A. Procedures

The six counties visited were selected based on population size, degree of electronic documentation already present in the county recorder's office, and geographic distribution. Counties were arrayed by population size into three groups as small, medium, or large. The small category was defined as less than 12,000, large was 50,000 or more, and medium was 12,000 to 49,999. The county data collected as part of the phase one survey was reviewed to determine the degree of electronic documentation as reported by the recorders. Within each population category, two counties were selected, one with a relatively advanced capacity for electronic documentation and the other using less electronic and more traditional paper documentation practices. Geographic distribution of the counties in Iowa was also considered in the selection process. The county recorders were then contacted to schedule the site visits. The six counties visited were Adair, Cedar, Clay, Dubuque, Linn, and Osceola. The visits took place between November 26th and December 11th of 2002.

With the assistance of local officials, the researchers scheduled interviews with several target groups of information providers and real estate document users in each county. Target groups in each county included (1) the recorder and staff, (2) other county officials providing and using real estate records such as auditors, assessors, and information technology staff, and (3) external user groups associated with real estate including attorneys, abstractors, mortgage lenders, and realtors. The target groups were selected because the responses to the surveys and discussions with several recorders and attorneys indicated the identified target groups were key stakeholders in the real estate transaction process. In general, each type of target group was interviewed separately to

facilitate communication and confidentiality of responses. In all, a total of 74 persons participated in the interviews.

In preparation for the interviews, several relevant topics and questions were identified to assure consistency in the discussions across the target groups and the counties. These topics included the respondent's current use of real estate records, use of electronic documents, and use of internet real estate information where web sites had already been developed. Questions were asked about the consequences and impacts of electronic documentation on office procedures, usefulness of electronic information, financing of electronic documentation and online systems, and willingness to pay various subscription fee levels for information access or online services. Additional questions focused on probable consequences and preferences regarding proposals for centralized or decentralized systems of online records. The interviews were conducted in a manner that allowed participants to discuss additional topics and concerns regarding electronic documentation or internet access that they initiated as well as questions framed by the researchers.

In this report, findings from the interviews of each target group are reported first. These sections outline each group's relationship to and use of real estate records and electronic documentation based on participant responses during the interviews.

The views expressed by the interviewees on various issues and topics surrounding electronic recording and use are reported second. These observations include those regarding electronic documentation systems, centralized and decentralized electronic documentation, financing and staffing for electronic documentation, title insurance in Iowa, and consolidation among Iowa's counties.

B. Findings from Target Groups

Separate interview sessions were conducted with six target groups. The target groups included recorders, other county officials, abstractors, attorneys, and other real estate professionals including realtors, appraisers, surveyors, and mortgage lenders.

1. Recorders and Real Estate Documents

Recorders are responsible for the official documents that relate to real estate ownership and the transactions involved in buying and selling real estate. These documents are used by other county offices in the local government property tax process and by private citizens and professionals who are involved in real estate and financial transactions. Recorders also register powers of attorney, military service records, affidavits, and many other types of documents. In addition, recorders handle birth and death records, issue licenses for hunting and fishing, and register boats, snowmobiles, and ATVs.

Real estate documents presented to the recorders office are processed in a series of steps. Although the process and flow varies among counties, in general, documents

are reviewed, given a date and time, assigned a document number, entered into the recorder's computerized index with a specific book and page number, copied, filed in storage format, and originals returned to the originator of the document. Recorder fees are based on a document charge and a per page charge. Paper copies may be made for other county officials and/or abstractors.

In many cases, deeds are sent to the auditor for review and to receive a parcel identification number (PIN) before being returned to the recorder and officially recorded. In other cases, the recorder's office officially records real estate deeds before a copy is sent to the auditor. It is the auditor's office that, in turn, informs the assessor's office and treasurer's office of the change in ownership for property tax purposes.

Findings from the phase one survey along with supplemental information from the Iowa County Recorders Association indicate that all of Iowa's recorders have implemented a computerized indexing system. Depending on the type of document and the software system used, the index data may include the document number, book and page number, names of the grantor and grantee, a legal description (which may be shortened), a PIN number for those documents that have a geographic referent, and other information as well. For 24 of the 99 county recorders, the computerized index is the highest level of electronic documentation in their office. Two of the counties visited by the researchers did not go beyond computerized indexing.

If scanning of real estate documents is done by the recorder's office, it takes place after the entry is made into the index. The scanned image file is then stored. Some offices that scan may store paper copies of the documents, but others do not. Some recorders microfilm the documents as a permanent storage method.

Four of the six sites visited by the researchers have implemented scanning processes for new documents as a method of permanent storage. Seventy-five of Iowa's recorders scan their documents, but only a few recorders (4) statewide have developed internet sites that provide access to index information and scanned document images. Two of the counties visited by the researchers have recorder web sites.

2. Assessors, Auditors, Treasurers, and GIS

County auditors, assessors, and treasurers perform important duties regarding real estate records, particularly as they are used for local property tax purposes. The assessor determines the value of all the real property in the county and maintains detailed records on the buildings, use, improvements, and assessed value of each parcel.

A number of assessors across the state are already providing information to the public on internet sites. The interviews provided reports of dramatic reductions (one by 85% and another by 2/3) in phone calls to the assessor's office after their data became available online. Staff reductions, in general, did not take place. Some assessors did report that they were able to shift an employee from clerical functions to appraisal

functions. The assessor's data, especially the assessed valuations, were found during the interviews to have heavy use by private sector real estate professionals.

Once property valuations are determined by the assessor, the data (often in electronic file form) are given to the auditor who applies the tax rate and sends billing information to the county treasurer. It is the treasurer who then bills the property owners and collects the taxes. The auditor's office is one of the most diversified in county government handling accounting, payroll, elections, and tax records. The auditor's office is usually where the real estate transfer books are maintained.

Parcel and tax information for three different fiscal years are often handled at the same time. The treasurers are collecting tax revenues for the current fiscal year, as auditors are figuring taxes for the next fiscal year, and assessors are estimating property values that will be used in the fiscal year after that. Most counties will already have hardware and software packages that coordinate the functions of the assessor, auditor, and treasurer and the recorder's index is often included in these packages.

Some county officials reported working with the same software and/or hardware vendor for 10 to 15 years. Small to medium size counties may have computer services provided to all offices through one central mainframe computer. Since county officials are working with three different fiscal/tax years at the same time, there is additional software and system complexity to assure that the trail of ownership coincides with the appropriate tax collection year. A different tax year may mean different assessments, parcel numbers, owners, and legal descriptions are being used at the same time.

Some counties have begun mapping projects, geographic information systems (GIS), to provide electronic mapping data and to assist in the management of the property tax system. Aerial photography may be the first step in developing a GIS system followed by revising the parcel numbering system into a map numbering system with geographic referents. Two counties that were visited had an operational GIS. Respondents in these counties reported that the new numbering system was time consuming to develop and implement and replaced previous parcel numbering systems when finished. Some GIS projects and staff were located in the auditor's office but also involved the assessor's office as well. Several reported that the mapping project and parcel renumbering was coordinated within the timeframe scheduled for the assessor's property revaluation cycle. In one case, the mapping system development and renumbering system was conducted under contract by a private vendor.

3. Abstractors

Abstractors play a major role in the land title and transfer process in Iowa. They are contacted when real estate purchase agreements are being processed and finalized to review the abstracts for the real estate parcels in the agreement and bring them up to date. In their work, they review deeds, mortgages, contracts, liens, tax and court judgments, and any other records that may affect the ownership and transfer of property. Many of the abstractors interviewed said that they maintain their own detailed tract system of

documents going back more than 40 years. Abstractors must also follow standards in order to certify that the updated abstracts are correct for at least the past 40 years and they bear some financial liability if they are not. Because the abstractor's tract system is often so complete, a few abstractors reported that it serves as a crosscheck for the county's records. There are usually relatively few abstractors in a county; some have just one.

Several abstractors reported that they purchase scanned document images from county recorders, but nearly all said that they get paper copies daily of every document processed at the county recorders office. Several abstractors reported that the turn around time for getting scanned images was usually longer than getting the paper copies. A number of abstractors said they maintained a computerized index of their documents as well as the paper copies.

Abstractors reported that for their document work they need to be able to access names, legal descriptions, grantors and grantees, book and page numbers, and parcel identification numbers (PINs). Abstractors reported that they continually find errors and problems with documents presented to them. One estimated that perhaps as many as 50% of the documents had small problems and another 10% of them had major problems. Another estimated that 70% of documents had to be worked on before they could be filed and recorded. A typical abstracting fee might run $100 - $175.

4. Realtors, Appraisers, Surveyors, and Mortgage Lenders

Realtors have an integral role in real estate transactions. They list and show properties, serve as an agent for negotiations between buyers and sellers, and often handle closings of property transactions. The realtors interviewed reported heavy use of records from assessors, treasurers, and, to some extent, recorders. Realtors in counties without internet sites phoned, faxed, and made trips to the courthouse to get the information they needed for real estate listings. The realtors utilized the web daily in counties where data were online, especially the assessor and treasurer data. Because realtors often work in the evenings and on weekends, one of the most useful aspects they reported for online data was the ability to access it outside of courthouse hours.

Many realtors reported working primarily in just one county, but the appraisers and surveyors reported working in several. Those who worked across counties expressed interest in having all counties online with web sites that gave standardized and consistent information. As it is now, they report that each county often handles their records and information in different ways from other counties without the standardization they preferred.

Once buyers and sellers have agreed on a purchase price, the buyer typically borrows money and mortgages the property. In some cases, lenders conduct the closings, particularly in cases of mortgage refinancing. Several said they did not usually search directly for the recorder's documents but that they relied heavily on the abstractors or the attorney's title opinion for purposes of evaluating credit decisions. Another mortgage lender, however, reported using a recorder's web site 10-15 times per day, which gave

significant savings in time from phone calls and in costs from faxes. Most lenders reported that they did business in at least several counties.

Lenders report that the secondary mortgage market has had a large impact on mortgage practices in recent years. Regulations may require lenders to send the original paper documents when selling a mortgage to the secondary market. Although borrowers that are pre-approved may be able to have a transaction and loan processed in 30 days, it is common to allow 45 to 60 days to process many sales. One lender said that because there are many steps and many people involved in processing a loan such as appraisals, inspections, and title abstracting and transfer, electronic real estate records would help to speed up only one part of the process.

5. Attorneys

Although attorneys may have a number of roles in real estate transfers, one of their main activities is providing and interpreting title opinions regarding ownership. In some cases, attorneys may conduct closings of real estate transactions and have staff who file documents. The attorneys reported heavy use of the complete legal description for a property and noted that an abbreviated description or use of a parcel number is not legally valid for most of their work. Most attorneys reported that they did legal work in more than one county.

Many of the attorneys interviewed did not do much direct research in the courthouse but relied instead on abstractors for obtaining documents and doing searches. One attorney reported that lien searches and such could be done online, but it was cheaper to have an abstractor do the search and provide certification. In contrast, two attorneys who were especially involved in real estate work, one who owned an escrow company and another with an abstract company, reported using recorders' records heavily. One of these attorneys used online real estate information such as legal descriptions, assessors' data, and mortgage releases as much as 25 times a day. Another attorney, located in a community away from the county seat, expressed strong interest in electronic access to real estate documents.

C. Observations Regarding Electronic Documentation Systems

During the course of the interviews, the respondents expressed a variety of ideas, issues, and concerns regarding the uses, costs, implementation strategies, perceived problems, and probable consequences of electronic documentation systems. The observations that follow represent topics discussed in several of the target groups across the counties and did not apply to only one group of users. These comments and discussions that took place across several interview sessions have been integrated and reported here.

1. Uses of and Components of Electronic Documentation Systems

While those interviewed expressed varying uses of real estate information, several key items from public documents were consistently identified by most groups as being especially important for their work. These included the name of the title holder, complete legal descriptions, grantors and grantees, book and page numbers, parcel identification or mapping numbers, assessed valuations, addresses, tax information, and mortgage releases. In order for electronic documentation and online systems to meet the needs of a broad range of real estate record users, these items would need to be included in the information provided. Most of the interviewees reported they couldn't use or didn't trust summaries of these items and, when deeds are involved, the professionals interviewed often expressed a need to see the entire deed.

Several interviewees expressed the view that online systems provide data that can be accessed much more quickly than when relying on phone calls, faxes, or travel to the courthouse. One escrow officer said that it could take 20 minutes to call, have the information looked up, and then get a call back but it took only seconds to pull things up on the web. A realtor in an office located 15 minutes away from the courthouse said it could easily take an hour to come in, look things up, and then get back to the office.

Many respondents said that one useful feature of online systems was that an internet site can be accessed 24 hours a day and 7 days a week compared with standard weekday courthouse hours. Interviewees said that such access facilitated the ability to work in the evening and on weekends.

Distance from the courthouse influenced respondent views of online systems. Persons whose office was within a block or two of the courthouse expressed less interest in online system access than those who were farther away. As an example, of two persons in the same profession in the same town who were interviewed, the one less than a block from the courthouse did not use the online recorder's data very much while the other, who was 10 blocks away, used it many times a day.

2. Parcel Identification Numbers and Alphabetizing Systems

In the course of the interviews, the participants raised issues of internet searching and the variations in numbering and alphabetizing systems that could occur. Several of the county officials interviewed, talked about how their county used and assigned parcel numbers, especially with regard to splits and consolidations of parcels. In some counties, when a parcel split took place, the old parcel number was completely retired and two new numbers were issued. Other counties reported that they kept the old parcel number with the largest part of the split or with the piece that contained the buildings and then assigned new numbers to the other pieces. A parcel could have several numbers for varying purposes and local numbering systems may have gone through several changes.

Some officials reported their experiences with parcel numbering as the county transitioned to a GIS system. The numbering systems were changed so that each parcel's

number had a geographic referent. These changes took time to plan and carry out, some as long as two years, and sometimes both the new GIS numbers and the old parcel numbering system were used together for a period of time to smooth the transition.

Realtors and lenders in one county talked about alphabetizing issues and difficulties that arise in computer searches. They note that spaces between names can cause difficulties in searching an index, as well as names beginning with Mc, Mac, and MC. A local example they gave was that Sioux County drops the use of Van and Vander at the beginning of last names, but includes them as second search items. Such differences add complexity to electronic searches, especially for external users who are unfamiliar with local procedures.

3. Privacy and Internet Security

Even though the data currently available on assessors', recorders', and treasurers' web sites are considered public records, several concerns were expressed about privacy issues. A number of the county officials, attorneys and others reported that some members of the public often object to the global access to local property information. In addition, there are identity theft and security issues with revealing Social Security Numbers, signatures, and military information. An attorney noted the likelihood of increasing federal regulations regarding personal information in electronic form and mentioned the Health Insurance Portability and Accountability Act (HIPAA) as an example.

Because of privacy issues, some assessor, auditor, and recorder web sites shield names. In such cases, it was reported that phone calls were not reduced if users still had to call in for a name. As more items are shielded for privacy, it was observed that there might be a tradeoff with less noticeable efficiency, uses, and impacts from electronic documentation.

General internet security and protection against hackers was mentioned by many of those interviewed. One assessor had estimated that the cost to replace the county's data would be $2.5 million and would not risk the potential for file corruption by allowing people to view the original files online.

Even though electronic signatures are not currently used, respondents expressed concerns about fraud with them if they become acceptable. Other issues that were raised about signatures were that mortgage lenders wanted original signatures on their documents for secondary markets. Official documents for recording are to have original signatures and one recorder reported refusing documents without original signatures.

4. Reliability and Accuracy of Information and Systems

Even though electronic systems can reduce paper--a useful attribute mentioned by some participants--many of those interviewed wanted to have hard copies kept of all documents. For example, several abstractors and attorneys were not comfortable relying

only on the image files in counties where documents were scanned. Several respondents had concerns about the quality of scanned images, the reliability of storage media for the image files, and pages being lost during scanning. There were others, however, who had full confidence in the current performance of scanned images and the image storage process.

Lack of accuracy on a web site was mentioned as a potential problem for electronic documentation. The participants noted that among the assessors and recorders web sites that are already online, most, if not all, carry a disclaimer of accuracy. Abstractors reported that searches online are not currently considered to be the equivalent of going to the recorder's office and are not certifiable searches.

Interviewees discussed the need for frequent electronic data backup and off-site storage for extra security. Several of the counties visited had vendors that provided off-site storage of electronic documents for security. Three respondents said that microfilm was considered the best medium for long-term preservation. One county has a safe with special characteristics just for electronic media storage.

Several participants noted that when an online system goes down, everyone loses access. Respondents told of significant down time for the online Iowa Court Information System (ICIS). They thought that if a real estate documents internet site went down as much as had been the case with ICIS, work wouldn't get done and real estate closings would be delayed. Some said that if paper copies of documents were also available, business could still be done even without the electronic access.

The possibility of completely electron filings and recordings in the future was perceived as another source of potential inaccuracy. One respondent would not want to allow "just anyone" to record something because errors were often made in the documents. Additionally, concern was raised that electronic filing might "short change" the usual review made of documents before recording. Some interviewees suggested that mistakes were growing because everyone is more in a hurry.

5. Information and System Maintenance and Updates

Some of those interviewed noted the need, once implemented, to keep the real estate information maintained and up to date. They gave examples of web sites where new data were not put online as soon as they were available and said they could not trust those web sites to be the source of current information. If not updated, fewer people would use online systems, regardless of the costs to build them.

Other respondents mentioned the need to scan documents from recent years and to make available the older documents as well. Although documents regarding current titleholders would be online, much less information on the history of each parcel would be available unless back-scanning was conducted. Many said that a dual system of records would need to be maintained in order to allow access to records not scanned or

entered into the computerized index. Some expressed the view that requiring searches of both electronic and paper systems could increase time and costs.

Technology continues to change and most participants thought that after the initial purchases were made, there would be periodic upgrade costs for software and hardware. External users of the system would also likely have maintenance and upgrade costs. Storage media also become outdated and one interviewee used the example of an 8-track music tape to show an obsolete medium that can no longer be accessed.

6. Other Observations about Electronic Documentation Systems

There was a broad consensus that having a real person available to answer questions and help users remains very important. Respondents said even if all data were available online, those who are unfamiliar with real estate records or who don't have access to the internet will still have to call or go to the courthouse. With data online, the user doesn't get the personal contact and expertise that comes from a phone call or a visit to the office. Several county officials and others reported that one consequence of going online was decreased interaction with the public and with real estate professionals.

In general, realtors, mortgage lenders, and many attorneys did not express concerns that electronic documentation would negatively affect their profession or their own businesses. Several abstractors, however, thought that their future business volume would decline if clients and the general public gained broad access to real estate documents via the internet. For example, one abstractor commented that attorneys and lenders would access deed and mortgage lien information directly from the internet instead of requesting searches by abstractors. Several attorneys and lenders indicated they didn't believe abstractors would be eliminated or experience a significant decline in business because of electronic documentation. In their view, abstractors would continue to be used for the important search functions that are essential for real estate transactions. A few suggested that there may be some decline in non-essential search inquiries, however.

Iowa's real estate system is being influenced by changes in national banking and mortgage lending practices and institutions. Several recorders and several attorneys viewed the emergence of large banks operating in several states and/or nationally as a driving force in electronic documentation. In addition, the development of national secondary markets for mortgages and national title insurance is having an impact in Iowa as well. Increasingly, local people can gain access to mortgages and banking services via the internet. Several respondents, however, thought that these financial web sites facilitated out-of-county and out-of-state transactions, but did not benefit locals as much.

D. Centralized versus Decentralized Online Access to Real Estate Documents

As part of the interviews, all the groups were asked for their views regarding the structure of online electronic access to documents. The questions on system structure were included because proposals that have previously been put forth regarding the

development of electronic documentation have taken different approaches to the structure of a statewide access system and internet site.

One of the proposals would create an Iowa internet site with a statewide electronic database of real estate documents. This proposal would institute a new centralized authority in state government--such as in the Office of the Secretary of State--that would have legal authority over managing and maintaining the statewide electronic real estate document index and the official documents of record. The central authority would be responsible for the statewide online system to search, access, and examine the index and the documents. The review and entry of documents into the centralized database would continue to be accomplished by the county recorder of the county where the real estate was located, but the official document of record would be located in the centralized system.

An alternative proposal for statewide internet access would take a decentralized approach and link the electronic documents from each individual county's database into a common web site. The authority for the official documents would be retained within each county, as is now the case.

During the interviews, the two approaches to electronic documentation were outlined for each target group. Each group was then asked for their views on each approach including implementation issues, benefits, other possible consequences, and their preferences. The respondent comments were integrated and are reported here.

From the interviews, only one attribute was identified in support of the centralized approach. The participants thought that the centralized approach would create greater consistency and uniformity in the information from all counties that would be made available to online users. A number of respondents whose work extended across county lines were especially interested in web access to similar data for all counties.

The prospect for uniformity, however, was often not sufficient to overcome the objections to the centralized system that most respondents expressed. Only a few interview participants (3 out of 74) across all locations favored the centralized approach. In all other cases, people providing views expressed concerns about the centralized concept and the potential impacts of its implementation.

Key objections to the centralized approach revolved around respondents' views that a state agency (1) would not have local knowledge of land issues and details, (2) would not be able to identify and correct errors and difficulties in documents, and (3) would not be able to respond as timely and as accurately as local people could. In addition, those interviewed (1) preferred not to jeopardize the quality perceived to be present in their own county records, (2) did not think a state agency was as responsive to their needs as was a local official, and (3) were uncertain about whether they could trust a centralized system of real estate documents.

Factors cited as generating the lack of confidence in a centralized approach were the experiences related by several participants about their use of the Iowa Court Information System (ICIS) and also the state's assumption of records and recording of child support payments. The respondents supplied these comments unsolicited as examples of state initiatives that resulted in inconsistent, inadequate, and unsatisfactory performance and service.

Respondents said that the online ICIS system was frequently down, that judgments were not entered in a timely fashion, that records and cases were missing, and that judgments and other entries were sometimes not accurate. One attorney said that it was, "bad when you lose local control," and that when they centralized the child support system they, "attempted to fix something that wasn't broke." Another attorney noted that Illinois, which had also gone to a centralized child support system, had gone back to local collection.

One statewide online system that was viewed relatively positively and was mentioned by respondents as an example of something that generally worked well was the Iowa Secretary of State's web site for filing and viewing Uniform Commercial Code (UCC) documents. While online filing of UCC documents was viewed favorably by these respondents, one noted the sheer volume of real estate records was much higher than the UCC filings. Some expressed doubt about the state's capacity and willingness to assume the proposed statewide responsibility for real estate records.

Another concern expressed by some participants was the potential for disruption and postponement of real estate transactions statewide if the centralized system went offline unexpectedly. In addition to the outage problems for ICIS noted above, one assessor said that occasionally the state license plate system goes down and county treasurers cannot issue plates when it is unavailable.

An additional objection mentioned by some of the interviewees was that the centralized proposal would potentially add an unnecessary duplication of records, another layer of bureaucracy, and more costs. These respondents said that the local jurisdictions would still need to keep their own records and that the centralized system would duplicate that which also existed on a county's own system. As the state assumed additional functions currently performed by county government, staff would need to be added to a state agency. Some thought this would be difficult to accomplish under current fiscal circumstances.

Several participants said that the decentralized system could provide good performance at less expense because significant investments in electronic documentation have already been made in most counties. In addition, local services may be provided at more affordable prices because of lower labor costs. A realtor pointed out that there are currently 10-15 individual web sites for assessors that are working well. An auditor noted that with the investment by many counties in electronic access to documents, that counties were already ahead of the state initiatives.

E. Financing and Staffing for Electronic Documentation

Each private sector target group was asked about their willingness to pay various levels of subscription fees for information access or online services for electronic documentation. Additionally, most respondents, including those in county government, provided spontaneous comments about other aspects of financing the system including document fees, property taxes, state funding, and impacts on local county budgets and staffing.

In contrast to the nearly unanimous opinion that a decentralized system would be preferred to a centralized one, little consensus emerged from those interviewed about how to finance electronic documentation. A number of respondents thought that those who used the electronic documentation system should be the ones to pay for it. One item that most agreed on, however, was that state government, regardless of whether it was a centralized or decentralized system, would not likely provide extra funding for electronic modernization due to current fiscal conditions.

Subscription fees were thought to be a feasible way to finance electronic documentation by several attorneys, realtors, mortgage lenders, and abstractors. These respondents generally indicated that they would analyze their own individual and professional situations and usage to determine whether subscription fees were worth the benefits they would receive from the system. When specific fee amounts were mentioned, most of these respondents thought that $200 per year would be a reasonable cost to pay, but $2,000 per year was too high. Clay County, which already has recorder documents online, charges a fee of $10/person/month ($120/year) for access to their scanned deeds.

Several respondents with offices very near a courthouse thought they might not use an online system because they already had convenient access. Others that had relatively little volume in direct use of recorders documents also thought they might not pay a subscription fee. Two of the abstractors interviewed were already paying their county recorder for document image files, but most abstractors were relying on paper copies even when documents were scanned in their county and image files were available. A realtor, mortgage lender, and an attorney said that any costs or fees they incurred would likely get passed on to their customers.

Another approach identified to pay for electronic documentation was increased document filing fees. Two abstractors said they preferred this method to pay for the system. Others objected to an increase in document filing fees because they thought the fees were high already. Several recorders noted that there was an increasing length in documents, especially mortgages, as more regional and national lenders and secondary markets participate in filings. One recorder said that a mortgage that had been filed recently from a large bank for a $68,000 residential property was 15 pages long and had a $75 filing fee. An attorney thought that higher filing fees reduced the right of the public to file documents.

Some of those interviewed noted that the public could currently search courthouse records on site without extra charges beyond the amount which property taxes provided to the county recorder's office. One auditor said that since help from the county offices was now provided at no extra charge by phone or walk-in, that the public would also expect an online site to be provided with no extra charge as well.

Opinions about using property taxes to pay for electronic documentation varied considerably. An attorney, a county supervisor, and a realtor thought that the public would not want to raise property taxes to pay for the system. Yet another attorney said that using property taxes would be appropriate as it was just the cost of doing business. An assessor who thought that persons outside the county would be the main users of an online system did not want to spend local funds from property taxes to pay for services provided to outsiders.

It was reported in the interviews that many assessors who currently had their information on web sites were funding their systems through property taxes. Access to these sites was provided without subscription fees and at no extra charge to the public. One assessor thought that the public expected the online information to be free and another reported that the assessor's governance board in that county would not allow a subscriber fee.

It is not just the state government that has budget issues, but counties are experiencing revenue concerns as well. One recorder said that it would be difficult to ask the county supervisors for $5,000 let alone the $50,000 that might be needed to get documents online. Two assessors reported costs of $8,000 to $10,000 annually to maintain their web sites. An unanticipated consequence of electronic documentation would be the loss in recorder revenue that comes from copying and faxing fees. One recorder said they did a lot of certified copies and in one large county the assessor reported revenue of $15,000 to $18,000 annually from copying fees.

The general consensus from recorders, assessors, and auditors who already had information on web sites was that staff numbers in their offices were not reduced when they went online. Although one recorder reported having about the same number of phone calls after data were online, some assessors reported a dramatic reduction in phone and walk-in requests. In these cases, staff responsibilities were shifted to conducting appraisals and managing assessment records. Several counties had added a position specifically to manage and maintain their GIS systems. The consensus of interview participants suggests that any cost savings in staff time generated from electronic documentation would be small and not sufficient to finance the system or its maintenance.

As a whole, respondents were concerned about how electronic documentation would be financed, especially since there currently are revenue pressures for both the state and the counties. Multiple methods of financing were suggested by participants, but there was disagreement about the preferred approach and no single method was acceptable to all.

F. Issues Regarding Title Insurance in Iowa

Although it was not a specific focus of the interviews, the topic of title insurance and its implications for the real estate documentation system was mentioned by many participants. Iowa is the only state in the nation that does not require the use of title insurance but relies on abstract updating standards and title opinions to manage real estate title transfers and defects. Those interviewed expressed mixed opinions about the possible use of title insurance in Iowa.

An important concern that respondents expressed about title insurance was its potential effect on the accuracy, completeness, and quality of land and ownership records. Several respondents mentioned that Iowa has a reputation for the cleanest land records of any state. One abstractor thought the Iowa system was working fine and did not need to be changed. A mortgage lender said he would not want to lose the accuracy that the state now has with the abstract and title opinion system. A general concern was that the use of title insurance in Iowa would potentially result in more errors and less attention to how land documents were written and whether they were up to date.

Mixed opinions were expressed about the cost of using title insurance compared with the current abstracting and title opinion system. Among those interviewed, there was no consensus about the cost impacts of title insurance. Some respondents expressed a belief that title insurance would be more expensive for consumers in both the short and long run. An attorney said that abstractor fees would likely be small compared with title insurance charges. One mortgage lender expressed the view that real estate buyers could pay a small amount now to keep the abstract up to date or pay much larger amounts in insurance, attorney, and litigation costs if the state went to title insurance. On the other hand, another mortgage lender reported that a banking trade association has said that title insurance would be less expensive for the consumer. Others suggested that having title insurance might help to simplify, standardize, and potentially speed up real estate transactions.

How title insurance in Iowa would impact the roles and work of abstractors and attorneys also generated comments from those interviewed. Several attorneys expressed concerns that title insurance would potentially eliminate some of their title opinion work. One escrow officer reported that in title insurance states, abstractors sold title insurance and were considered to be title insurance agents. One abstractor said that if title insurance came to Iowa they would likely sell it. Several other abstractors, however, saw title insurance as lessening the demand for their work and possibly putting them out of business. One respondent thought that national title insurance companies would come in and buy out local abstractors

One participant from an escrow company had previously worked in other states in title insurance companies and offered comments about how the systems using title insurance differed. One observation was that abstracting and legal functions were combined in a title company that did the research and sold title insurance. Although the searching process remained largely the same, the review of the title and the decision

process was done within the title insurance company with in-house attorneys. While the respondent did not think jobs were necessarily lost, business roles and relationships were shifted.

Even though title insurance is present in a state, some areas may still use an abstract system in much the way they always have. A realtor from northwest Iowa reported that rural areas of South Dakota and Minnesota still used an abstract system even though both of those states have title insurance. The realtor expressed the view that the dual system possibly resulted from the relatively lower volume of transactions in rural counties and that title insurance companies were more interested in locating in higher volume areas. Finally, another realtor asked why Iowa would be the only state not to use title insurance since it was the accepted practice in all the other states.

As with the issues surrounding electronic documentation, several of those interviewed thought that title insurance issues in Iowa were being influenced by the emergence of large banks that operated in several states as well as by national title insurance companies. One realtor thought that title insurance would make it easier for out-of-state mortgage lenders to process Iowa transactions because they would not have to do business differently from what they currently do in other states. In two locations, respondents said that some multi-state banks are already purchasing title insurance for Iowa real estate transactions, but they are not directly charging consumers. The banks' corporate offices may require such actions so their procedures are consistent but it potentially represents a duplication of costs. However, an attorney questioned the need for expanded title insurance in Iowa as the Iowa Title Guaranty had very few claims and said that 95% of local land transactions did not even use Iowa Title Guaranty.

G. Issues Regarding County Consolidation

A second issue that emerged spontaneously during the interview sessions was the elimination of county offices, courthouses, and eventual county consolidation. Some participants saw electronic documentation as a first step toward consolidation or elimination of the recorder's office. One recorder said that the concept of regional recording centers had been discussed in view of the low volume of document recordings in the smaller counties. This would potentially involve bringing all local historical real estate documents to the regional location so that searches would not have to be conducted in two locations.

Others expressed the view that electronic documentation would facilitate future reconfiguration and elimination of a broad range of courthouse functions in smaller counties. Some interviewees in each of the four counties designated medium or small shared these concerns. As one respondent stated, "They're after our courthouse." It was not just county officials who expressed these views, but attorneys, abstractors, mortgage lenders, and realtors as well. These respondents did not think that bigger was always better and they viewed larger entities as unresponsive to rural communities and citizens.