



# COMMONWEALTH of VIRGINIA

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The Honorable John H. Chichester  
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The Honorable Stanley C. Walker  
Co-Chair, Senate Finance Committee

On behalf of the Land Records Management Task Force, I am pleased to submit to you the enclosed *Final Report on Modernizing Land Records in Virginia*. This report is submitted pursuant to §14.1-125.2 of the *Code of Virginia*, as amended.

The enclosed report contains recommendations for improving the format and content of land records, defines the need for the development of a land records architecture to address technology needs in Circuit Court Clerks' offices, and provides a comprehensive plan for the future automation of land records in the Commonwealth. The report also contains recommendations concerning user fees for accessing land records information and for allocating funds from the Technology Trust Fund.

The Task Force respectfully requests your assistance in implementing the recommendations and the comprehensive plan for modernizing land records contained in this report.

Respectfully,

A handwritten signature in cursive script that reads "Jack Kennedy, Jr.".

J. Jack Kennedy, Jr.  
Chair

Enclosure

**MODERNIZING  
LAND  
RECORDS  
IN VIRGINIA**

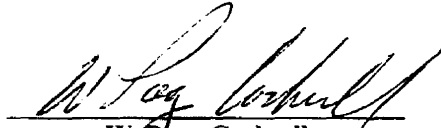
*Commonwealth of  
Virginia*

**Land Records  
Management  
Task Force**

**FINAL REPORT**

January 1, 1998

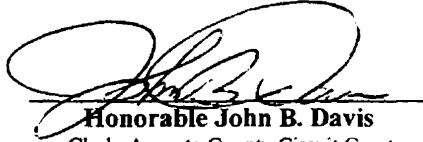
# Land Records Management Task Force



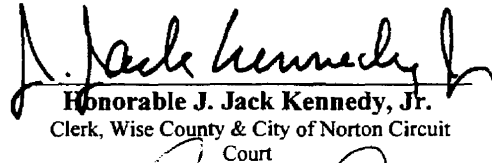
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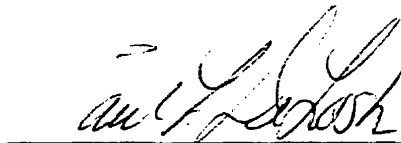
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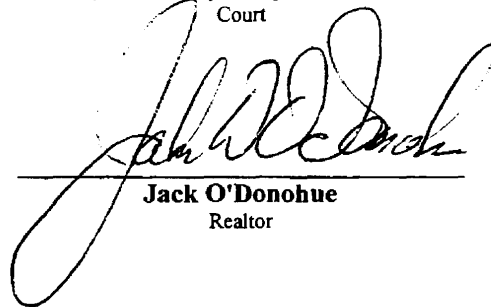
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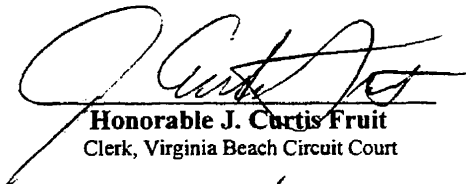
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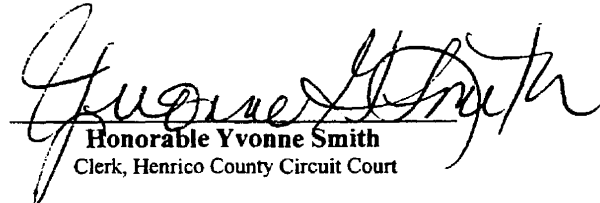
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## EXECUTIVE SUMMARY

The 1997 General Assembly passed House Bill 2579 that among other things, directs the creation of a Land Records Management Task Force (Task Force) to address the impediments identified in "*The Feasibility of Modernizing Land Records in Virginia*," report developed by the Joint Legislative Audit and Review Commission (JLARC) in 1995. Impediments identified in that report include the lack of standards for indexing, content, and automation of land records, and the Commonwealth's limited funding approach for modernization efforts. The JLARC report also recommended that a comprehensive, carefully planned approach for the modernization of land records be developed. The Task Force, as recommended by JLARC, was established in June 1997.

### INTERIM REPORT

The Task Force submitted an Interim Report to the Governor and Chairmen of the House Appropriations and Senate Finance Committees on September 1, 1997. The Interim Report defined the concept of land-records management and provided a strategic plan for modernizing land records in Virginia. There was insufficient time from the inception of the Task Force until the due date of the Interim Report to develop recommendations regarding the format, content and technology standards for land records as directed in House Bill 2579.

### Concept of Land Records Management

Land information is a vital asset that supports many governmental and non-governmental activities. Much of the land data collected and maintained by local governments are generated from land parcel transactions, building permits, zoning and subdivision reviews, voter registration, police and fire protection and locality taxation functions.

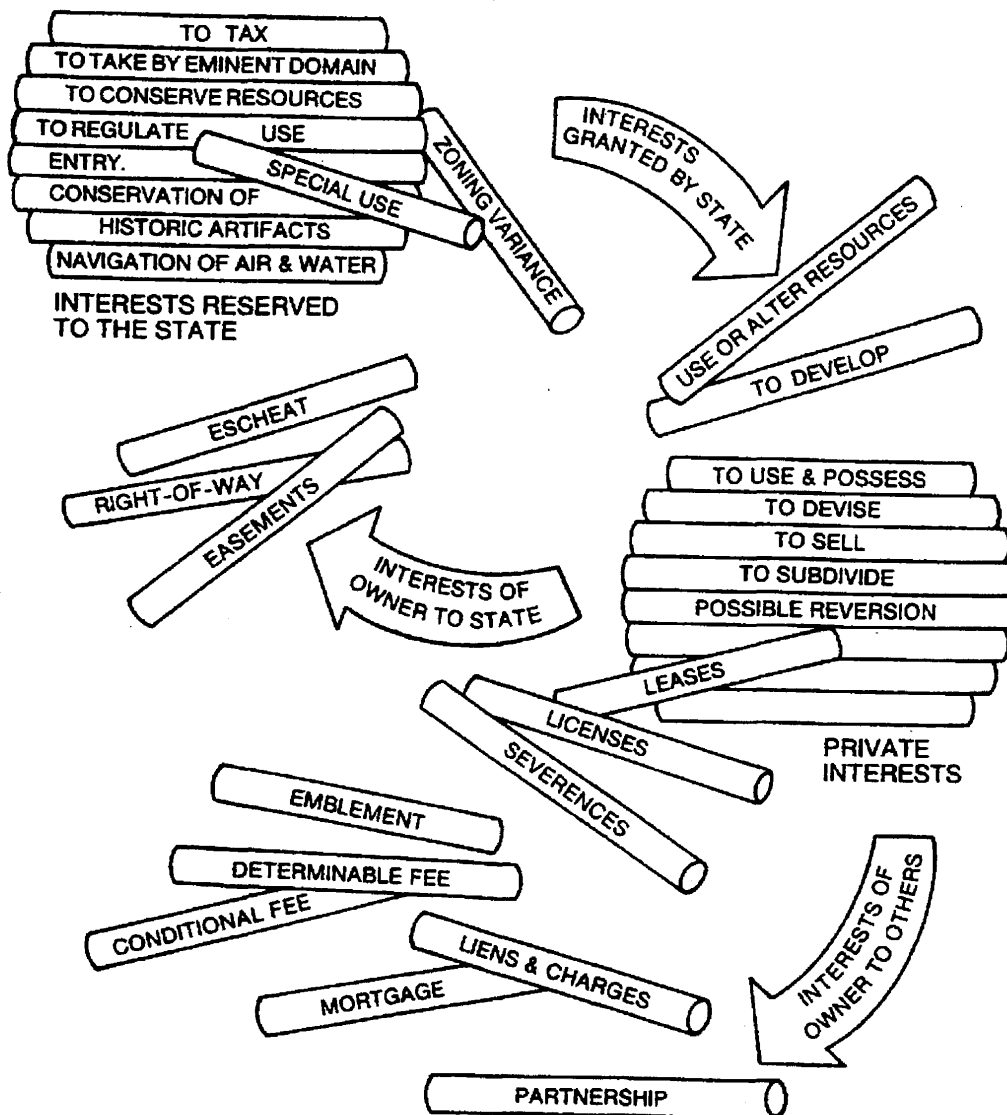
Figure 1 is illustrative of the various public and private ownership and use interests associated with land and provides some insight into the kinds of information that must be managed and addressed in modern land records systems.

### Land Records Management Definition

The Task Force has defined land records management as the uniform indexing and preservation of the instruments and data relating to land integrated with local and state geographic information systems (GIS) layered data, assessment information, and other public records relating to the land and made available to the public.

This broad definition encompasses all land records including ownership rights and interests, land record instruments recorded in the Clerks' offices, and all other information related to the land that is contained in public records.

Figure 1 - Land Rights or Interests



**Strategic Plan for Modernizing Land Records**

Efforts to develop a modern land records management system in the Commonwealth must address all land records on the State's land base while eliminating many of the shortcomings found in current procedures and systems used to manage such information.

The Task Force published a strategic plan for modernizing land records in Virginia as part of its Interim Report. The Strategic Plan encompasses the definition of land records management and identifies four goals with corresponding objectives that, when fully implemented, will provide Virginia citizens with a modern land records management system



## **FINAL REPORT**

House Bill 2579 also directed the Task Force to provide a final report that includes an inventory of automated land-records technology in Circuit Court Clerks' offices, recommendations for the future automation of land records in individual Circuit Court Clerks' offices, recommended policies for the Compensation Board to follow in allocating funds appropriated from the Technology Trust Fund, and recommendations regarding user fees charged for access to land records. In addition, this report includes recommendations regarding the format, content and technology standards for land records that were not completed in time to be included in the Interim Report.

This report contains the Task Force's comprehensive plan for modernizing land records in individual Clerks' offices and providing remote access to land records throughout the Commonwealth. This plan defines a system to provide statewide remote access to land records in sufficient detail to determine the compatibility of any Clerk's proposed technology improvements with such a plan.

### **FORMAT AND CONTENT OF LAND RECORDS**

The Task Force, through the adoption of the Strategic Plan, identified several objectives that relate to the content and format of land records including: consistent indexing of land record instruments recorded in Circuit Court Clerks' offices, accessing and using automated index information, integration of all land records, and needed improvements in land records to support the development of local government geographic information systems.

#### **Indexing Standards**

A significant portion of the Task Force's efforts were directed toward developing a set of Indexing Standards. However, the time allotted for developing and finalizing those land records indexing standards has been insufficient. A copy of the draft indexing standards, as of the date of this report, is included as Attachment A. The Task Force has identified the tasks that need to be completed to finalize the indexing standards for statewide use by late fall 1998 and recommends legislative action for the 1999 General Assembly session to require the use of the final indexing standards on a statewide basis beginning January 1, 2000.

#### **Cover Sheet**

The Task Force also developed a Land Records Cover Sheet that provides several key enhancements for automating land records management. These enhancements include providing a uniform and consistent form for indexing land record instruments and other information that may be used with technology such as optical character recognition (OCR).

The Task Force recommends the General Assembly take appropriate legislative action during the 1998 session that provides all Circuit Court Clerks the option of requiring the use of the cover sheet (when finalized) on all land record instruments filed for recording after July 1, 1998. The Task Force has identified the tasks that need to be completed to finalize the land

records cover sheet and recommends legislative action be taken in the 1999 General Assembly session that will mandate the use of the final cover sheet in all clerks offices, starting no later than July 1, 2000.

### **Electronic Filing of Land Record Instruments**

Providing a local government option to require the electronic submission of all land record instruments for recordation in a digital format has the capability of significantly reducing the time and cost required to file, index and process land record instruments and other court documents.

However, the ability to define all appropriate standards and formats needed to implement this objective are somewhat limited because of lack of documented success stories and universally accepted standards. It is the view of the Task Force that having more than one pilot program will be beneficial in developing standards and determining "what works best."

The Task Force recommends the General Assembly consider amending Section 17-83.1:1 et seq., of the *Code of Virginia*, to extend the pilot for electronic filing for five years. The Task Force also recommends that other Clerks' Offices be permitted to pilot electronic filing. In addition several minor changes to Section 17-83.1:1 et seq., will be required.

### **State Plane Coordinate System and Parcel Identification Numbers**

Goal 4 of the Strategic Plan is to provide a "uniform content and format of land records that promotes their usefulness in integrated local government information systems, eliminates duplication of information, and promotes data sharing and electronic access." This report contains several local government recommendations relating to improving the content and format of land records information in their jurisdictions.

The Task Force identified a unique parcel identification number as a common key that can be used to access land records information in Clerks' offices and offices of other local and state governmental organizations that maintain information related to a parcel of land. To ensure the development and use of that common key:

- The Task Force recommends the General Assembly enact appropriate legislation to require the use of a unique parcel identification number on all land record instruments filed for recording in a Circuit Court Clerk's office, starting January 1, 2000.
- In the interim, the Task Force recommends the General Assembly take appropriate legislative action to amend Section 17-79.3 of the *Code of Virginia*, to permit all Clerks to require the use of unique parcel identification numbers on land record instruments filed for recording.

### **LAND RECORDS ARCHITECTURE**

The land records architecture required to support the goals and objectives defined in the

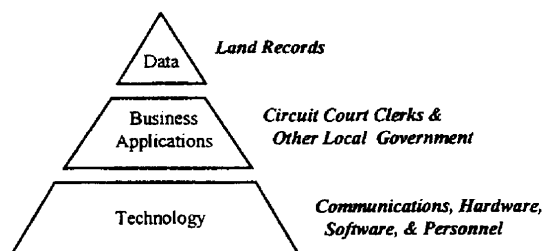
Strategic Plan must address the data needs, business applications and the underlying information technology resources.

Information technology resources, such as telecommunications, computers, routers, modems, database management systems, operating systems, web browsers, other support software products and information technology personnel, are required to support the business applications.

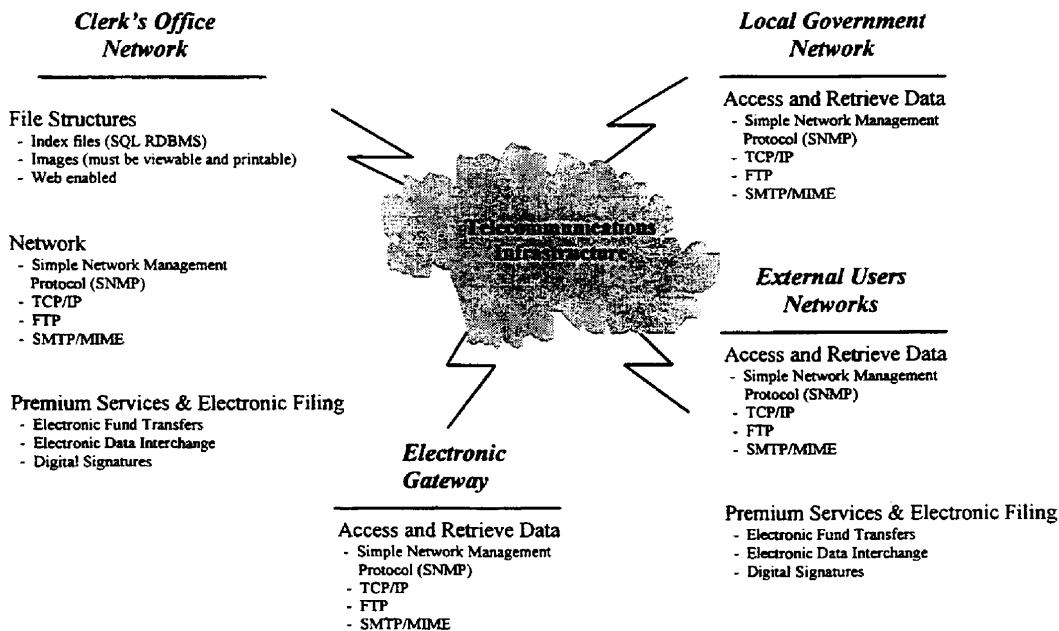
The technology architecture part of the model as shown in Figure 7 must be based on a minimum set of standards to ensure all interested parties are fully able to participate and communicate by electronic means.

These minimum standards must address internal requirements within each network or user computing environment and the external telecommunications infrastructure requirements that permit external users to retrieve from or send information to another network or user.

**Figure 4**  
**Land Records Architecture Model**



**Figure 7**  
**Standards Based Technology Architecture**



The Task Force recommends the General Assembly consider directing the Compensation Board and the Council on Information Management monitor new and emerging standards and

technologies and review and modify as necessary the technology architecture portion of the Land Records Architecture on an annual basis. This must include the development of appropriate recommendations and standards for premium services and electronic filing of land record instruments. The General Assembly should consider providing the appropriate level of General Fund resources necessary to accomplish this recommendation.

## **COMPREHENSIVE PLAN FOR THE FUTURE AUTOMATION OF LAND RECORDS**

The comprehensive plan for the future automation of land records in the Commonwealth is presented in two parts, the tactical plan for the Commonwealth and tactical plans for individual Clerk's offices.

### **State-Level Tactical Plan for Modernizing Land Records in Virginia**

The State-Level Tactical Plan identifies the tasks and activities, including applicable timelines that are necessary for implementing the goals and objectives defined in the Strategic Plan for Modernizing Land Records in the Commonwealth. State-level milestones for implementing the comprehensive plan are shown on Figure 8.

### **Long Term Funding Needs For Implementing the Five Year Planning Horizon**

The Task Force has not been able to determine a reasonable estimate of the costs required to implement the goals and objectives defined in the Strategic Plan. However, the Task Force recognizes that significant funding mechanisms will be required for the development and maintenance of automated systems that support land record indexes, onsite and remote access to land record indexes, imaging of land record instruments, onsite and remote access to land record instruments, conversion of manually maintained indexes, integration of land records information, and access to land records in other local government organizations. The Task Force recommends legislation for action by the 1998 General Assembly that will extend the \$3 fee currently collected on all recorded documents pursuant to Section 14.1-125.2 of the *Code of Virginia* for an additional two years.

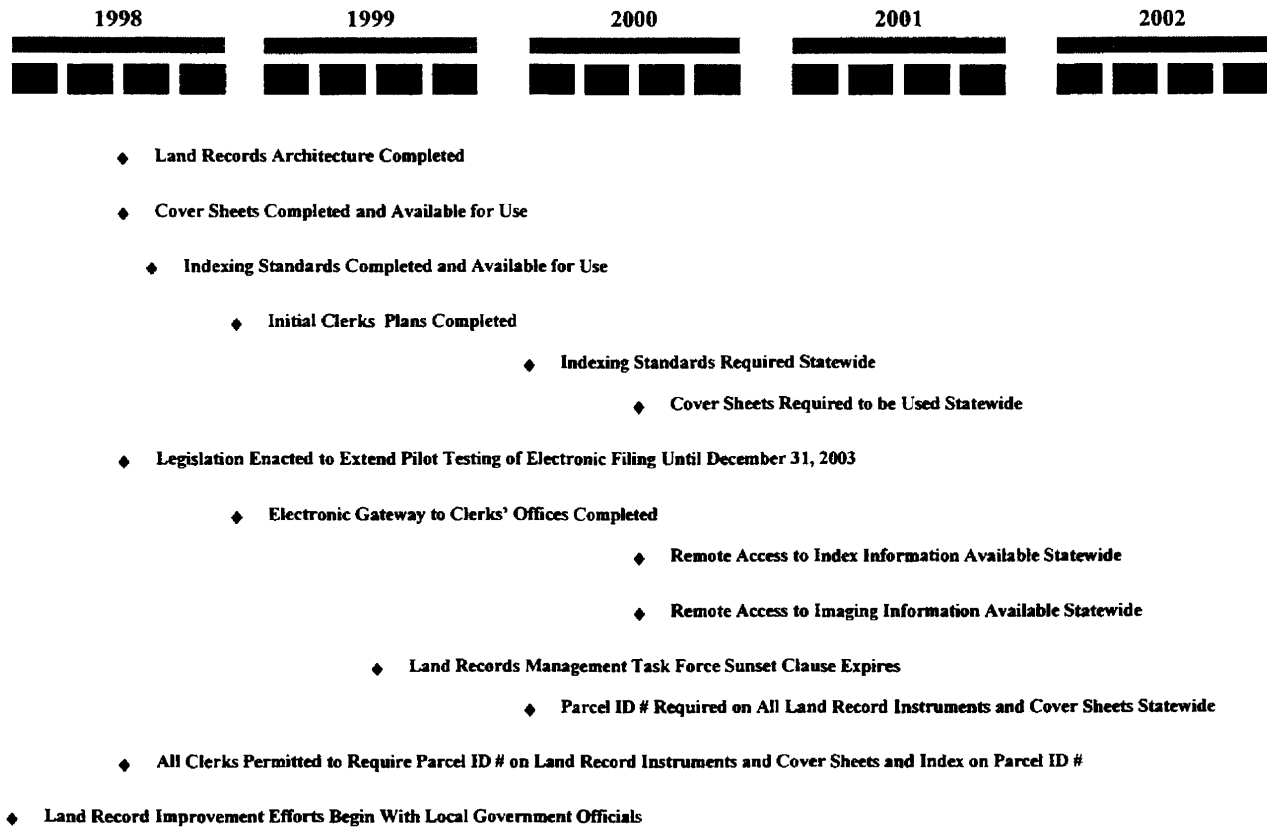
The Task Force, through the comprehensive planning process has established a means for determining the long-term funding needs for implementing the Strategic Plan. It is planned for this information to be provided to the Governor and the Chairmen of the Senate Finance and House Appropriation Committees with recommendations on the future long-term funding needs for modernizing land records in the Commonwealth.

### **Clerks' Tactical Plans for Modernizing Land Records**

The Clerks' Tactical Plan identifies the tasks and activities, including applicable timelines that are necessary for developing and implementing a plan that meets the goals and objectives defined in the Strategic Plan. This report identifies the minimum areas that must be addressed in each Clerk's plan, the goals and objectives that must be addressed in priority order, minimum standards of service, and established time lines for each of the seven identified priorities.

Figure 8

## State-Level Five Year Planning Horizon



### Goals and Objectives for Clerks' Plans

The following goals and objectives are provided in a priority order that is consistent with the State-Level Plan. It is expected that higher priorities should be in progress or completed prior to attempting to implement lower priorities.

1. Participate in the statewide electronic gateway process.
2. Automated land records indexing system.
  - Implement approved Standards for Indexing Land Record Instruments.
  - Implement approved Land Records Cover Sheet.
  - Implement the use of Parcel Identification Numbers.
  - Index land record instruments by Parcel Identification Numbers.
3. Onsite and remote access to automated land records indexing system.

4. Automated land record instruments imaging system.
5. Onsite and remote access to automated land record instruments imaging system.
6. Ensure land records maintained in an electronic format by local government entities are available and accessible as determined by the local government in accordance with State law.
7. Provide capabilities for submitting land record instruments for recording electronically.

### **SUMMARY RECOMMENDATION**

The Land Records Management Task Force has accomplished a great deal in the short time it has been in existence; however, it has also documented additional efforts and tasks that must be accomplished over the next several years to implement the Strategic Plan for Modernizing Land Records.

Key tasks that must be completed include: finalizing the land records indexing standards and the land records cover sheet, developing a business data model and minimal business applications specifications to complete the Land Records Architecture Model, evaluating Clerks' plans to develop accurate estimates of the long term funding needs required to implement the Strategic Plan, and developing proposed legislation for action by the General Assembly that is consistent with the time schedules presented in this report.

The Task Force recommends the General Assembly consider enacting legislation that continues the Land Records Management Task Force through June 30, 1999, in its present form and with its present members. The Task Force recommends the General Assembly consider enacting this legislation as emergency legislation, to ensure the continued active participation of the current members of the Task Force and to maintain the scheduled time frames contained in this report.

The General Assembly may also wish to consider adding a member to the Task Force from the Virginia State Bar as a voting member.

The General Assembly may also wish to require the Task Force to submit an interim report on January 1, 1999, and a final report on July 1, 1999, to the Governor and the Chairmen of the House Appropriations and Senate Finance Committees. At a minimum, these reports should address progress to date in completing those unfinished tasks identified in this report and the status of implementing the comprehensive plan on a statewide basis.

## SECTION I

### INTRODUCTION

#### BACKGROUND

The Joint Legislative Audit and Review Commission (JLARC) was directed by the 1995 General Assembly to conduct an analysis of the need, feasibility, costs, and advisability of modernizing land records in the Commonwealth. In its study report, "*The Feasibility of Modernizing Land Records in Virginia*," completed in January 1997, JLARC concluded that the modernization of land records in the Commonwealth is feasible and would be beneficial.

The JLARC report listed a number of impediments that must be properly addressed to ensure any modernization effort is successful and cost effective. These impediments include the lack of standards for indexing, content, and automation of land records, and the Commonwealth's limited funding approach for modernization efforts. The JLARC report also recommended that a comprehensive, carefully planned approach for the modernization of land records be developed. To that end, JLARC recommended an intergovernmental task force could be useful in developing recommended statutory standards and encouraging a more coordinated and conceptually sound approach for the modernization of land records.

The 1997 General Assembly passed House Bill 2579 that among other things, directs the creation of a Land Records Management Task Force (Task Force) to address the impediments identified in the JLARC report and develop a comprehensive planned approach for the modernization of land records in the Commonwealth. The legislation directed the Director of the Council on Information Management to establish the Task Force to develop plans to upgrade land records management in the Commonwealth. The Task Force was directed to provide an interim report by September 1, 1997, and a final report by January 1, 1998 to the Governor and Chairmen of the House Appropriations and Senate Finance Committees.

#### Interim Report

The Task Force's Interim Report was submitted to the Governor and Chairmen of the House Appropriations and Senate Finance Committees on September 1, 1997. The Interim Report defined the concept of land-records management and provided a strategic plan for modernizing land records in Virginia. There was insufficient time from the inception of the Task Force until the due date of the Interim Report to develop recommendations regarding the format, content and technology standards for land records as directed in House Bill 2579. Subcommittees were formed to develop those recommendations for inclusion in the Task Force's Final Report.

## **Final Report**

House Bill 2579 directs the Task Force to provide a final report that includes an inventory of automated land-records technology in Circuit Court Clerks' offices, recommendations for the future automation of land records in individual Circuit Court Clerks' offices, recommended policies for the Compensation Board to follow in allocating funds appropriated from the Technology Trust Fund, and recommendations regarding user fees charged for access to land records. In addition, this report will include recommendations regarding the format, content and technology standards for land records that were not completed in time to be included in the Interim Report.

The final report will also contain the Task Force's comprehensive plan to modernize land records in individual Clerks' offices and provide remote access to land records throughout the Commonwealth. This plan will define a system to provide statewide remote access to land records in sufficient detail to determine the compatibility of any Clerk's proposed technology improvements with such a plan.

## **CONCEPT OF LAND RECORDS MANAGEMENT**

Land information is a vital asset that supports many governmental and non-governmental activities. Much of the data maintained and used by localities in the Commonwealth in providing services to citizens is related to land, since many services are provided to residents at individual land parcels or addresses. Such data are generated from land parcel transactions, building permits, zoning and subdivision reviews, voter registration, police and fire protection and locality taxation functions.

Land records--including deeds, deeds of trust, maps, and plats--are a subset of land information data. Land records are being used increasingly by various departments and divisions within local governments to coordinate planning efforts, monitor zoning restrictions, provide accurate information to the tax assessor's office, and modify land parcel models being developed for automated land information or geographic information systems.

### **Land Records Interests, Rights and Problems**

It is estimated that more than 85 percent of the services provided by local government relate to a parcel of land, to its location, characteristics, and value, to restrictions on its use and to claims on its resources.

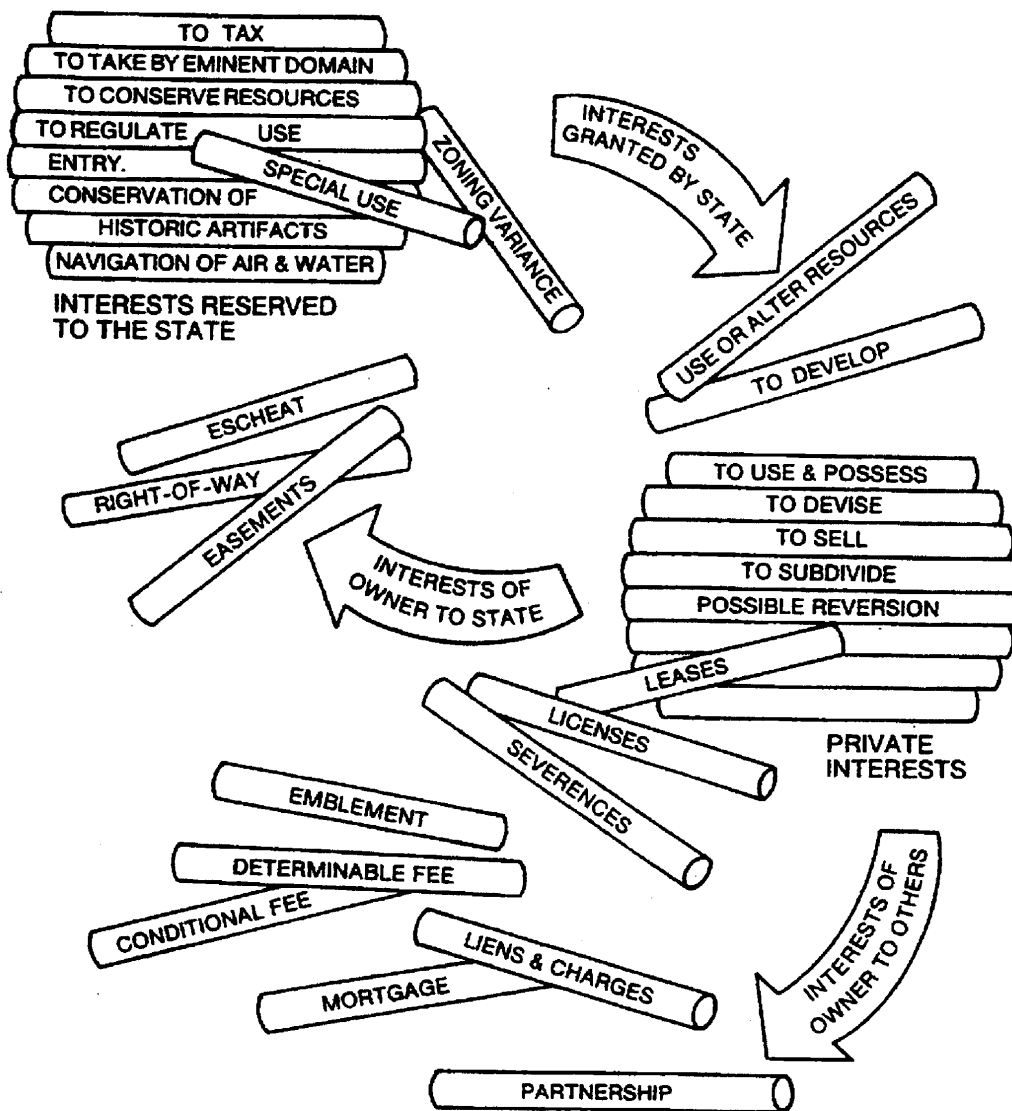
Figure 1 is illustrative of the various public and private ownership and use interests associated with land and provides some insight into the kinds of information that must be managed and addressed in modern land records systems. Today the number and variety of interests in land is considerable. Traditionally, the largest and best recognized collection of privately held rights were those associated with private land ownership. Overriding those interests are public interests, such as the right to tax, the right to navigate, the right of eminent domain, and the more recently emerging rights to limit the use of land in order to protect the common health, safety and welfare of citizens.



Through the years, local government agencies have developed all kinds of numbering schemes, procedures and systems to help manage and retrieve information and records about land including manual and automated systems for land record instruments, images, reports, maps, cross-indexing catalogs, log books and chronological file structures. As a result, most land record systems serve a single purpose and support the objectives of a single governmental entity.

A modern land records system should record the nature and extent of all public and private land rights and interests, and provide the capability to retrieve information about these interests for any land area.

Figure 1 - Land Rights or Interests<sup>1</sup>



<sup>1</sup> Multipurpose Land Information Systems, THE GUIDEBOOK, The Federal Geodetic Control Committee, 1989, p. 4-3.

## Land Records Management Definition

The Task Force has defined land records management as the uniform indexing and preservation of the instruments and data relating to land integrated with local and state geographic information systems (GIS) layered data, assessment information, and other public records relating to the land and made available to the public.

This broad definition encompasses all land records including ownership rights and interests, land record instruments recorded in the Clerks' offices, and all other information related to the land that is contained in public records.

## STRATEGIC PLAN FOR MODERNIZING LAND RECORDS

Efforts to develop a modern land records management system in the Commonwealth must address all land records on the State's land base while eliminating many of the shortcomings found in current procedures and systems used to manage such information.

The Task Force recognizes the need to develop a comprehensive plan for the statewide improvement of land records and their corresponding management while being cognizant of the disparity of requirements, use and needs from the smallest to the largest Virginia local government. Accordingly, the Task Force published a strategic plan for modernizing land records in Virginia as part of its Interim Report.

The Strategic Plan encompasses the definition of land records management and identifies four goals with corresponding objectives, that when fully implemented will provide Virginia citizens with a modern land records management system.

**Uniform  
standardized  
indexing and  
automation procedures that  
support statewide electronic  
remote access to those land  
record indexes maintained  
by Clerks of Court.**

**Goal 1**

**Objective A:** *Adoption of a statewide indexing standard by the General Assembly.*

**Objective B:** *Provide education programs relating to the timely implementation of the uniform indexing standard.*

**Objective C:** *Ensure the statewide indexing standard is easily adaptable to electronic remote access using contemporary browser software.*

**Objective D:** *Adoption of a mandatory land records cover sheet that includes the minimum uniform fields for indexing land records.*

**Objective E:** *Provide through legislative action a local government option to require the electronic submission of all land instruments for recordation in a digital format.*

**Objective F:** *Provide minimum automated on-line indexing systems in each of the Circuit Court Clerk Record Rooms.*

**Objective G:** *Provide remote access capabilities to the automated on-line indexing systems in each of the Circuit Court Clerk offices.*

**Enhanced electronic remote access to land records maintained by Circuit Court Clerks and the departments of local government.**

**Goal 2**

**Objective A:** *Require Circuit Court Clerks' plans for the modernization of land records address the integration of those land records maintained by other local government organizations within the Clerk's jurisdiction to qualify courts for technology grant assistance.*

**Objective B:** *Address Code changes relating to fees.*

**Objective C:** *Provide a technology architecture that supports the use of contemporary browser software to enable greater numbers of the*

*general public to access land records through the use of individually owned, remote personal computers.*

**Objective D:** *Provide the appropriate level of funding for the electronic back file data needs of Circuit Court Clerks in the future.*

**Objective E:** *Provide an electronic gateway for Circuit Court Clerk Offices for use in obtaining remote or on-site access to land records.*

**Objective F:** *Ensure that a continued effort to automate and provide remote access to land records preserves the integrity and preservation of records and meets the requirements of the Privacy Protection Act of 1976.*

**Objective G:** *Provide automated systems accessible on-site and from remote sites that are capable of accepting, storing and retrieving images of land record instruments recorded in each of the Circuit Court Clerk offices.*

**Forge consensus between the Circuit Court Clerks and the users of their land records information (lawyers, surveyors, Realtors (trade-marked name), bankers, title abstractors, journalists, local government organizations and the general public) to ensure automation efforts in the Circuit Court Clerk offices are mutually beneficial.**

**Goal 3**

**Objective A:** *Build consensus among Court Clerks and land record users behind a carefully crafted legislative agenda whereby all interests are advanced from the local level to achieve electronic remote access to each Circuit Court Clerk's land records.*

**Objective B:** *Accelerate the development of modern land records systems that are integrated with local government GIS through the use of statewide uniform standards and statewide funding programs.*

**Objective C:** *Improve land records management efficiency and access to land records through appropriate deployment of technology primarily at the local level.*

**Objective D:** *Create funding mechanisms and/or programs to implement land records improvement and management.*

**Objective E:** *Coordinate with Virginia governmental entities to ensure ease of future land records to GIS integration and standards development.*

**Uniform content and format of land records that promotes their usefulness in integrated local government information systems, eliminates duplication of information, and promotes data sharing and electronic access.**

**Goal 4**

**Objective A:** *Ensure all local governments use a unique parcel identification numbering (PIN) system for all parcel related land records.*

**Objective B:** *Encourage local governments to require all subdivision plats or site plans be referenced to the Virginia Coordinate System of 1983.*

**Objective C:** *Encourage local governments to require all land instruments reference a plat map or site plan that is tied to the Virginia Coordinate System of 1983.*

**Objective D:** *Ensure land records maintained by local government entities are available and accessible.*

## FORMAT OF THIS REPORT

Section I provides background information on preceding efforts leading up to this Final Report on modernizing land records in Virginia. It includes the definition of the concept of land records management and the strategic plan for modernizing land records that have been carried forward from the Task Force's Interim Report.

Section II addresses those objectives in the Strategic Plan for Modernizing Land Records relating to the format and content of land records in the Commonwealth. It recommends the use of a standard cover sheet when filing land record instruments for recording and the mandated use of land records indexing standards. It also provides recommended changes to the format, content and functional processing of those records necessary to modernize land records management.

Section III defines a land records architecture model that includes three basic components; a data architecture, a business applications architecture, and the underlying technology architecture. The technology architecture component of the model provides technology related recommendations to support land records modernization efforts in the Commonwealth.

Section IV provides the comprehensive plan for modernizing land records management in the Commonwealth.

Section V provides the Task Force's findings and specific recommendations relating to policies for allocating funds from the Technology Trust Fund, long term funding for implementing the Strategic Plan, and user fee charges associated with accessing and retrieving land records information.

Section VI provides information on the status of automated land records technology in Circuit Court Clerks' offices.

Section VII provides the Task Force's summary recommendations.

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## SECTION II

# FORMAT AND CONTENT OF LAND RECORDS

The Task Force, through the adoption of the Strategic Plan for Modernizing Land Records in the Commonwealth, identified several objectives that relate to the content and format of land records including: consistent indexing of land record instruments recorded in Circuit Court Clerks' offices, accessing and using automated index information, integration of all land records, and needed improvements in land records to support the development of local government geographic information systems.

### INDEXING OF LAND RECORD INSTRUMENTS

#### Land Records Indexing Standards

The Joint Legislative Audit and Review Commission (JLARC) 1997 report, "The Feasibility of Modernizing Land Records in Virginia," identifies the need for standards by which circuit court clerks are bound when indexing land records. In an era when land records indexes were handwritten or typed, this practice might only have been a minor inconvenience to those who were required to use these indexes.

One clerk may index the "Commonwealth of Virginia" under the letters "CO" for Commonwealth. Another may choose to use "VA" or "VI," for Virginia. Still another may opt for "ST," for State. Often these local standards were established scores, or even hundreds of years earlier, by a former clerk, and have simply been followed by each succeeding clerk. Given the lack of standards, someone doing research in a given Clerk's office therefore needed to learn how that office indexed its records, and then always follow that convention.

Two recent phenomena dictate that these indexing practices be standardized. First, title companies, attorneys, surveyors and engineers, Realtors, bank personnel, and others who need to use these indexes in the normal course of their business, now find it necessary to do research in many Clerks' offices around the Commonwealth, instead of just one or two. It is extremely difficult to learn all of these local idiosyncrasies.

Secondly, the advent of automation, though a boon to both the indexer and the researcher, does require that the person using the index use the *exact same name* as was used by the indexer. Someone searching for the name "John W. Smith" would need to know, for example, whether or not the indexer used a period after the initial "W." To search for a name without inputting the name exactly as was done by the indexer, may make it impossible to find that entry.

Given these facts, and in keeping with the spirit of the aforementioned JLARC recommendations, the Land Records Management Task Force has directed a significant

portion of its efforts in the development and adoption of a set of Indexing Standards. However, the time allotted for developing and finalizing a set of land records indexing standards has been insufficient. A copy of the draft indexing standards, as of the date of this report, is included as Attachment A.

***The Task Force recommends the draft indexing standards contained in Appendix A be accepted as substantially complete land records indexing standards for use statewide subject to completing the activities identified below.***

***The Task Force recommends the General Assembly take the necessary actions to permit the following activities to be accomplished to finalize the draft indexing standards:***

- At this point in time there has been little or no dialogue with the vendors who are providing automated services to circuit court clerks within the Commonwealth of Virginia. There are two private company vendors, plus the Office of the Executive Secretary (MIS) of the Supreme Court of Virginia, and several localities who are providing these services. These local governments and vendors must be given the opportunity to review copies of the draft standards contained in this report and to advise the Commonwealth regarding their ability to comply with the indexing standards.
- The Commonwealth should review several functioning automated land records management systems from other states where the issues of uniform indexing standards and remote access have been addressed. These reviews are essential for identifying best practices and lessons learned to ensure the indexing standards are adequate and implementable. Travel to other states, or inviting managers from other states with automated land records management systems to visit Virginia will require funds for travel expense reimbursement. ***The Task Force recommends that any such expenses incurred, be paid from the \$1 portion of the Technology Trust Fund provided in § 14.1-125.2. Prior to any out of state travel by any Task Force member, however, the Compensation Board will need to approve such expenses.***

***The Task Force recommends that the General Assembly consider incorporating the land records indexing standards, by reference, into legislation which requires every circuit court clerk in Virginia to index all land records in accordance with these Standards, beginning January 1, 2000.***

The Task Force recognizes that even after land records indexing standards are finalized, formally adopted, and mandated to be used statewide, the need exists to monitor their use and make necessary changes from time to time. The Task Force recommends that the long-term oversight of these standards should be provided by a committee of circuit court clerks and that committee share responsibility for training in the use of these standards with the Office of the Executive Secretary of the Virginia Supreme Court and the Compensation Board.

***Indexing Standards Time-Lines***

The Task Force developed the following time frames for completing all efforts associated with finalizing the indexing standards, training users, implementing the indexing standards on a statewide basis, and maintaining the standards over time.

- Present draft standards to the Governor and the Chairmen of the House Appropriations and Senate Finance Committees as part of the Task Force's Final Report on January 1, 1998.
- Distribute copies of the draft standards to all vendors in January 1998. Vendors will be requested to report by April 1, 1998, on their ability and willingness to comply with these standards. Vendors will be requested to include in their report a statement regarding the time necessary for them to implement the standards.
- Reviews of similar systems in other states shall be completed and a report on the findings, lessons learned and best practices shall be prepared by June 1, 1998.
- Based on the vendor reports, the reviews of similar systems in other states, and input from circuit court clerks, the draft indexing standards will be finalized and formally adopted for use statewide by October 31, 1998.
- Proposed legislation will be prepared for the 1999 General Assembly session which requires the use of the adopted land records indexing standards.
- Proposed legislation will be prepared for the 1999 General Assembly session which establishes a committee of circuit court clerks for the purpose of monitoring and making appropriate changes to the adopted Land Records Indexing Standards and to be responsible for the initial education and training of court clerks concerning the use of these standards. This should be accomplished during the 1999 General Assembly session.
- In cooperation with offices of the Office of the Executive Secretary of the Virginia Supreme Court and the Compensation Board, opportunities for educational programs on the use of the Indexing Standards will be provided for Circuit Court Clerks by December 31, 1999.

If resources are allocated to complete the above actions in the specified time frames, land records indexing standards will be in place, training on their use will be completed, and the use of the indexing standards will be required for all documents recorded after January 1, 2000.

**COVER SHEET FOR RECORDING LAND RECORD INSTRUMENTS**

The use of a standardized cover sheet provides several key enhancements for automating land records management. First, when used in conjunction with the land record indexing standards, it encourages those who prepare the documents to conform to those standards.

Second, the work of personnel in the offices of Circuit Court Clerks will be greatly simplified by being able to work from a uniform and consistent form. They will not have to read the entire document in order to capture bookkeeping or recording information. This will speed up the recording process appreciably. Finally, in those Clerks' offices who choose to use Optical Character Recognition (OCR) technology, personnel in a Clerk's office can scan these documents and capture much of the bookkeeping and indexing information electronically, thereby eliminating data entry of the information into the automated index and creating an even greater time savings.

Although various kinds of records are considered "land records" in this report, the cover sheet defined in this section is to be used *only* with those instruments recorded in the deed books. Clerks of court will be expected to adhere to the Land Records Indexing Standards when indexing such items as judgments, financing statements and estate matters, but no cover sheet will be required when submitting these matters to the clerk for processing.

The Task Force proposes legislation allowing circuit court clerks to require the use of cover sheets for the recordation of all land records instruments. If a cover sheet is required, the liability for incorrect information should be placed on the preparer. The Clerk should be allowed to index from the cover sheet without being held liable for indexing errors where the information on the cover sheet is different from the information on the document.

The Task Force realizes that information needed or required in some jurisdictions may be different from the information needed or required in other jurisdictions. As with many of the issues facing the Circuit Court Clerks' offices, one size does not fit all, without overburdening or severely restricting the flexibility of smaller or larger Clerks' offices.

Figures 2 and 3 display the draft cover sheets as developed by the Task Force as of the date of this Final Report. The information shown on Figure 2 provides the capability of handling most land record instruments filed for recording in the Clerk's office. Figure 3 is a continuation page to the cover sheet to address additional indexing needs beyond those that can be completed on the fixed one page format shown in Figure 2. The Task Force recognizes that additional work must be completed on these draft cover sheets before they can or should be used on a statewide basis. Detailed instructions on completing the forms must be developed, including defining required and optional fields. In addition, it will be necessary to ensure that the information contained on the draft cover sheets meet the business data and applications needs of the Clerks. The Task Force believes all efforts to complete the draft cover sheets, including the development of appropriate instructions for their use, should be able to be completed by the end of September 1998.

***The Task Force recommends the Compensation Board and the Council on Information Management ensure that the business data model recommended for development in the Land Records Architecture section of this report includes all appropriate information contained on the cover sheets as shown in Figure 2 and Figure 3.***



**Figure 2**

Instrument Control Number	Book #	Page #
<input type="text"/>	<input type="text"/>	<input type="text"/>

**Commonwealth of Virginia  
Land Records Cover Sheet**

Date of Instrument  City/County

Instrument Type:

**Names to be Indexed**

*Name Type	(last name)	(first name)	(middle name or initial)	(suffix)

Grantee Address

Consideration  Grantor Tax Exemption   
 Grantee Tax Exemption

Assumption Balance  Existing Debt

Prior Deed Recorded At  Percentage In This Jurisdiction

Parcel Identification No. (PIN)

Tax Map Number (if different than PIN)

Short Property Description

Instrument Prepared By

Recording Paid For By

Return Recording To   
 (Name)  
  
 (Address)  
  
 (City, State, Zip)

*\*Name Type - Grantor, Grantee, Trustee, etc., exact name type codes to be determined*

Figure 3

### Commonwealth of Virginia Land Records Cover Sheet

**Instrument Control Number**      **Book #**      **Page #**

**Date of Instrument**      **City/County**

**Instrument Type:**

**Names to be Indexed**

*Name Type	(last name)	(first name)	(middle name or initial)	(suffix)

*\*Name Type - Grantor, Grantee, Trustee, etc., exact name type codes to be determined*

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***The Task Force recommends the Compensation Board, with assistance from the Supreme Court of Virginia and the Council on Information Management, contract for professional services to complete the cover sheet formats, develop detailed user instructions for filling out the forms, and develop minimal business application specifications for their implementation statewide.***

***The Task Force recommends the General Assembly take appropriate legislative action during the 1998 session that provides all Circuit Court Clerks the option of requiring the use of the cover sheet (substantially as defined in Figures 2 and 3, and when finalized by the Task Force) on all land record instruments filed for recording after July 1, 1998.***

In addition, proposed legislative changes, similar to those listed below, will need to be prepared for the 1999 General Assembly session that will mandate the use of the final cover sheet in all clerks offices, hopefully starting no later than July 1, 2000.

*The Task Force recommends the General Assembly enact the following legislation concerning the land records cover sheet legislation:*

*Section 17-79.4. Requirement of land records cover sheet form. Any writing presented to the clerk of a circuit court for recordation shall be accompanied by a land records cover sheet form. The land records cover sheet form shall be used for indexing and collection of recordation tax information. The land records cover sheet form shall contain at a minimum, the names of all grantors and grantees; the type of instrument; the consideration and any exemption codes; prior deed book and page reference, as required by law; a brief legal description; a unique parcel identification number as defined by the local government, the grantees' address; and the name of the preparer, if prepared in the Commonwealth of Virginia.*

*The land records cover sheet form may be recorded with the instrument, but shall not be considered an additional page pursuant to § 14.1-112(2).*

*The clerk and any employee of the clerk who indexes the instrument according to the information provided on the land records cover sheet form shall be held harmless for the errors and/or omissions of the preparer of the land records cover sheet form.*

For informational purposes, statutory requirements for the aforementioned required information are as follows:

- Grantor/grantee names must be in the first paragraph, § 17-60;

- Exemption code must be stated, § 17-59(iii);
- Preparer of document stated, § 17-59;
- Grantee or business address required, § 17-59;
- Tax map number, § 17-79.3.
- Stating the consideration is implied in § 58.1-801, et. seq.;
- Instrument type and brief legal are not statutorily required, but currently provided in most Clerks' office indexes.

The Task Force recommends that the committee of Circuit Court Clerks (previous recommendation for the 1999 General Assembly session) be charged with the responsibility for the initial education and training of Circuit Court Clerks concerning the use of the cover sheet and for monitoring and making all appropriate changes to the Land Records Cover Sheet.

## **ELECTRONIC FILING OF LAND RECORD INSTRUMENTS**

Electronic filing of court-related documents is in its infancy. Issues related to security, authenticity and electronic signatures must be resolved. A number of state courts have begun to implement electronic filing systems, including Utah, Georgia and Florida. The federal courts have also experimented with electronic filing.

The approaches taken have varied from jurisdiction to jurisdiction. Most projects are in their early stages; however, several of the "pioneers" such as Prince George's County, Maryland, have experienced significant problems. Prince George's County entered into a public-private partnership. The cost of providing the service to the lawyers and title companies by the private partner was too expensive for most users.

Electronic commerce via credit cards, bank wire transfers, on-line stock trading, etc., has opened the potential for changing the way courts do business. The Strategic Plan's objective of providing a local government option to require the electronic submission of all land record instruments for recordation in a digital format has the capability of significantly reducing the time and cost required to file, index and process land record instruments and other court documents. Electronic filing should not be viewed as a revenue source, but as a source of efficiency and cost avoidance.

However, the ability to define all appropriate standards and formats needed to implement this objective are somewhat limited because of the lack of documented success stories and universally accepted standards, as well as potentially high cost issues as documented above. It is the view of the Task Force that having more than one pilot program will be beneficial in developing standards and determining "what works best." It is anticipated that the Council on Information Management will continue to work on issues related to electronic commerce in

the normal course of its business and will be able to serve as a resource to pilot courts. In order to help develop successful applications that have the potential to be implemented statewide:

**The Task Force recommends that Section 17-83.1:1 et seq., of the Code of Virginia, be extended for five years. The Task Force also recommends that other Clerks' Offices be permitted to pilot electronic filing. The Task Force recommends minor changes to Section 17-83.1:1 et seq., as follows:**

- **Add the following language at the end of § 17-83.1:1: "Filing of data in the form of digital electronic signals may be transmitted via a network, such as the Internet."**
- **Amend § 17-83.1:2 to state, "The Clerk of a Circuit Court may establish a system for electronic filing of documents. Any Clerk using funds from the technology trust fund § 14.1-125.2 of the Code of Virginia to establish electronic filing system must submit a plan for implementation to the Council of Information Management, for technical review, unless the Clerk uses a system developed or authorized by the Supreme Court of Virginia. Once established, federal, state, and local governmental entities, or political subdivisions thereof, and quasi-governmental agencies, corporations, and authorities, including but not limited to Fannie Mae, Freddie Mac, and VHDA, may electronically file land records, instruments, judgments, and UCC financing statements; and any papers in a civil or criminal action which may be approved by the Rules of the Supreme Court. The place of filing is the receiving station designated by the circuit court clerk to which electronic information is transmitted."**
- **Add language to § 17-83.1:3(B) to the last sentence so as to read: "Data must be distributed or transmitted from or through the medium of direct computer transmission or via a network, microfilm, magnetic tape or disk, or optical disks, or CD ROM."**
- **Add electronic signature or unique secure electronic identification to the first sentence of § 17-83.1:4, so as to read: "If the sender of an electronically filed document files an affidavit of authenticity along with the electronic filing and the electronic filing bears a facsimile printing of the required signature, electronic signature or unique electronic identification, any statutory requirement for an original signature shall be deemed to be satisfied."**

## STATE PLANE COORDINATE SYSTEM AND PARCEL IDENTIFICATION NUMBERS

Goal 4 of the Strategic Plan to Modernize Land Records in Virginia is to provide a "uniform content and format of land records that promotes their usefulness in integrated local government information systems, eliminates duplication of information, and promotes data

sharing and electronic access.” This section of the report addresses several areas of improvement necessary to reach that goal and its specified objectives.

**Objective B – Encourage local governments to require all subdivision plats or site plans be referenced to the Virginia Coordinate System of 1983.** Currently there is no requirement in the *Code of Virginia* requiring plats and site plans be referenced to the State Plane Coordinate System, using the 1983 datum. In addition, in many rural local governments the local geodetic control system has insufficient monuments in the network to support requiring references to the State Plane Coordinate System/1983. Referencing plats and site plans to the State Plane Coordinate System has become a requirement for localities that currently have accurate parcel based geographic information systems (GIS). In the future, localities that have not developed parcel based GIS will have to address the means of tying their plats and site plans to the State Plane Coordinate System in order to develop accurate mapping capabilities.

In 1994, the “National Geodetic Survey” completed the “Virginia High Accuracy Reference Network (HARN).” This network offers the users of global positioning system (GPS) technology a statewide system of geodetic control stations. Each station is referenced and documented to allow easy recovery. Grid values are published for each station on the Virginia State Plane Coordinate System of 1983. These values and the frequency of the monuments (50K or less) allow the calibration and reconciliation of local control networks using GPS. In effect, GPS and the Virginia HARN can be used as a substitute for a highly accurate local government geodetic control network.

***The Task Force recommends that local governments that do not require plats and site plans be referenced to the State Plane Coordinate System/1983, consider requiring references to the State Plane Coordinate System/1983 on plats and site plans as soon as possible. When required by a local government, this action will begin improving the quality of their land records and prepare them for future conversion to an accurate parcel base geographic information system.***

***The Task Force recommends that local governments that have local geodetic control networks with an insufficient number of monuments, consider taking action to require the use of GPS technology and the Virginia HARN to develop accurate information for referencing the State Plane Coordinate System/1983 on plats and site plans.***

**Objective A – Ensure all local governments use a unique parcel identification numbering (PIN) system for all parcel related land records.**

In the Interim Plan, the Task Force defined land records management as the uniform indexing and preservation of the instruments and data relating to land integrated with local and state geographic information systems (GIS) layered data, assessment information, and other public records relating to the land and made available to the public.

This broad definition encompasses all land records including ownership rights and interests, land record instruments recorded in the Clerks' offices, and all other information related to the land that is contained in public records. The parcel is the common denominator that crosses all organizations that process or store land records information at the local government level. Many organizations within local government have different schemes for identifying the parcel within their automated and manual systems (tax number ID, subdivision, block #, lot #, etc.). In order to effectively accomplish **Objective D – Ensure land records maintained by local government entities are available and accessible**, a common scheme must be developed and used as a key for accessing automated land records in various local governmental organizations.

***The Task Force recommends all local governments take appropriate action to define a common parcel identification numbering scheme and require the use of a parcel's PIN on all land record documents and as appropriate in manual and automated systems. The defined PIN scheme should provide unique parcel identification numbers for all parcels within the local government.***

***For localities which have not developed a unique parcel identification numbering scheme, the Task Force recommends the use of the parcel centroid scheme using the Virginia State Plane Coordinate System/1983 (SPCS/83). This scheme uses the parcel's coordinates referenced to the SPCS/83 to calculate the center of the parcel to create a unique parcel identification number.***

***The Task Force recommends the General Assembly enact appropriate legislation to require the use of a unique parcel identification number on all land record instruments filed for recording in a Circuit Court Clerk's office, starting January 1, 2000.***

***In the interim, the Task Force recommends an approach which would amend Section 17-79.3 of the Code of Virginia, to permit all Clerks to require a PIN (as mentioned earlier, only 16 Clerks are authorized to require PIN's under the current statute).***

***The Task Force recommends that Section 17-79.3 of the Code of Virginia be amended as follows:***

***The Clerk of any circuit court may require that any deed or other instrument conveying or relating to an interest in real property bear in the left margin of the first page of the deed or other instrument or on the corresponding cover sheet, the tax map reference number or numbers and/or the parcel identification number (PIN) or numbers, of the affected parcel or parcels. Upon admitting the deed or other instrument to record, the clerk may, in addition to any other indexing required by law; index the deed or other***

***instrument by the tax map reference number or numbers; by the parcel identification number or numbers.***

If the local governments take action to require references to the State Plane Coordinate System/1983 on plats and site plans over the next several years, the Task Force's recommendation requiring the use of a unique parcel identification number on all land record instruments filed for recording by Circuit Court Clerks beginning January 1, 2000, will accomplish **Objective C – Encourage local governments to require all land instruments reference a plat map or site plan that is tied to the Virginia Coordinate System of 1983**, for those land records in the Clerks' offices.



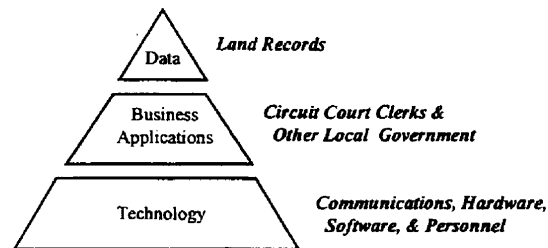
## SECTION III

# LAND RECORDS ARCHITECTURE

The land records architecture required to support the goals and objectives defined in the Task Force's strategic plan for modernizing land records in the Commonwealth must address the data needs, business applications and the underlying information technology resources. Figure 4 shows the architecture model for land records management in the Commonwealth.

Land records data must support the needs of the Clerks' office, other local government departments, and the legal and informational needs of those parties outside of government. Figure 5 provides a list of the document types that include or use the data. The minimal data or information architecture to support the comprehensive plan for modernizing land records in Virginia must be developed as part of the development of a business data model and applications design effort.

**Figure 4**  
**Land Records Architecture Model**



For the purposes of this report, the business applications shown in Figure 6 for the Clerks' offices and other local government offices must be supported. A minimal set of design specifications for these systems should be developed and used as a starting point for the implementation of the various applications.

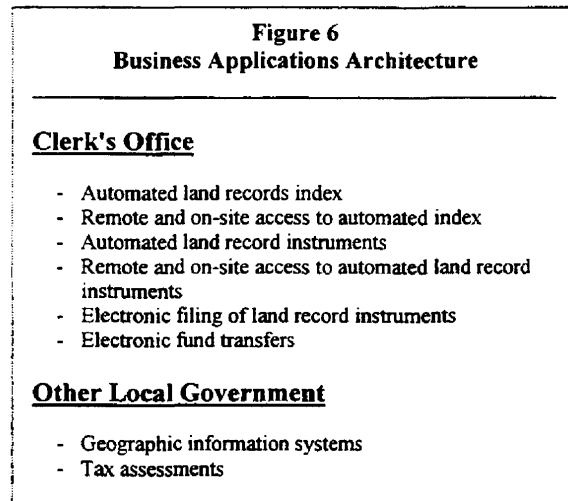
<b>Figure 5</b> <b>Information Architecture Document Types</b>
<b><u>Clerk's Office</u></b>
<ul style="list-style-type: none"> <li>- Land Records Cover Sheet content</li> <li>- Automated Index content</li> <li>- Land record instruments content by type of document</li> <li>- Content and format for electronic filing of land record instruments</li> <li>- Content and format for electronic fund transfers</li> </ul>
<b><u>Other Local Government</u></b>
<ul style="list-style-type: none"> <li>- Right of way and easements</li> <li>- Tax assessments</li> <li>- Zoning and land use</li> <li>- Public utilities</li> </ul>

Information technology resources, such as telecommunications, computers, routers, modems, database management systems, operating systems, web browsers, other support software products and information technology personnel, are required to support the business applications. The technology architecture part of the model as shown in Figure 7 must be based on a minimum set of standards to ensure all

interested parties are fully able to participate and communicate by electronic means.

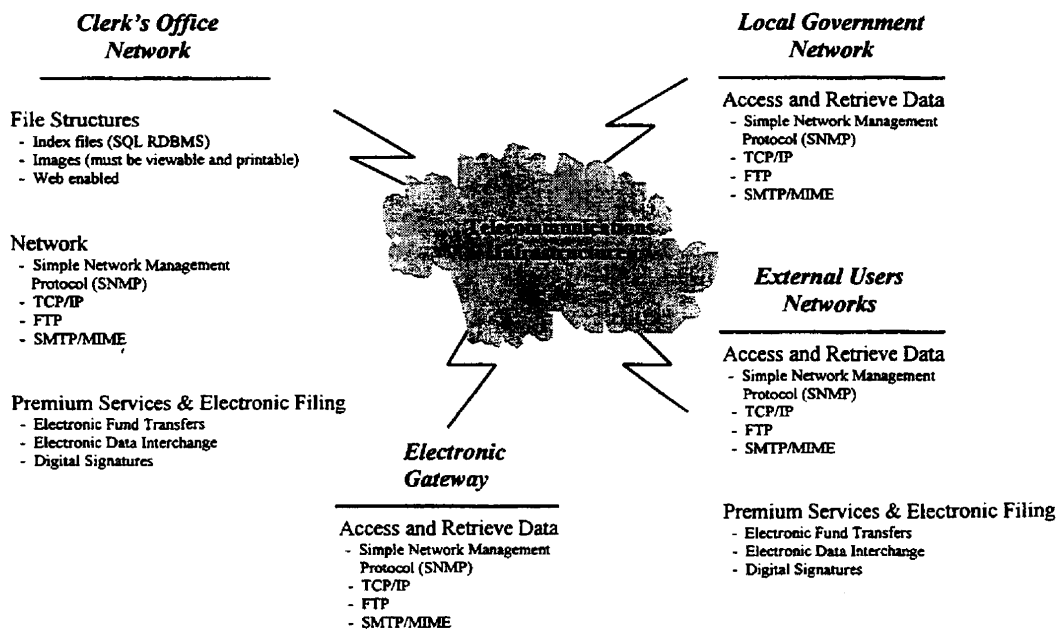
These minimum standards must address internal requirements within each network or user computing environment and the external telecommunications infrastructure requirements that permit external users to retrieve from or send information to another network or user.

This section defines those minimal standards required to develop land records management systems and electronic networks in the Circuit Court Clerks' offices. These standards are based on recognized standards that support connectivity, interoperability and data sharing between the holders of land record information, land records users, and other interested parties both within and outside of government.



**The Task Force recommends that the General Assembly consider directing the Compensation Board, with assistance from the Council on Information Management, contract for the appropriate professional services to define the minimum business data model and develop the minimal business application specifications.**

**Figure 7**  
**Standards Based Technology Architecture**



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## CLERK'S OFFICE NETWORK STANDARDS

The standards and recommendations on file structures, networks, and premium services and electronic filing are applicable when developing new solutions, including converting from one solution to a different solution.

The standards and recommendations contained in this section of the report are not intended to force a Circuit Court Clerk to change an existing system, even when upgrading that system. However, it is strongly recommended that Clerks, whenever possible, implement the standards and recommendations when upgrading existing systems.

### File Structures

*Indexing Files* - When developing a new or converting an existing automated land records indexing system, Circuit Court Clerks should only implement solutions whose filing structures are maintained on a database that meets the Structured Query Language (SQL) relational database management system (RDBMS) standard specifications. Whenever possible, implementations should avoid using vendor proprietary extensions to the SQL/RDBMS specifications.

*Image Files* - Currently, there are several competing imaging standard file structures. From the land records modernization effort point of view, it is only important that the user be able to view and print copies of images through a web browser. Therefore, when developing a new or converting an existing automated imaging system that contains images of land record instruments filed in a Clerk's office, the imaging solution must support viewing and printing from a contemporary Internet Web browser. At a minimum, print capabilities must support printing to 8.5 x 14 inch paper.

This recommendation is based on only providing users with the ability to view and print copies of images. Should the need arise to permit users to save a copy of a viewed image in their computing environment, the imaging file structure used in each individual Clerk's imaging system becomes an issue that will need to be resolved.

*Web Enabled* - When providing remote access to and retrieval of information contained in automated land records indexing and/or image files, Clerks must implement solutions that are compatible with contemporary Internet Web browsers.

### Network

Circuit Court Clerks should plan for and implement network solutions that, at a minimum, support the following Internet protocol standards: Transmission Control/Internet Protocol (TCP/IP), Simple Network Management Protocol (SNMP), Simple Mail Transport Protocol/Multipurpose Internet Mail Extensions (SMTP/MIME), and the File Transport Protocol (FTP). The Internet Standard that identifies the current Official Internet Protocol Standards is published as a new Request for Comments (RFC) document on a quarterly basis. Circuit Court Clerks should only consider using Internet protocols that have been assigned a standardization state of "standard" or "draft standard" with an assigned status of

"recommended." RFC's defining Official Internet Protocols can be obtained through the Internet by accessing the following source:

<http://ds.internic.net/ds/dspg01.html>

When acquiring new network solutions or upgrading an existing local area network, it is recommended that only those solutions that are capable of supporting or being upgraded to support the above Internet protocol standards be considered. These solutions are essential to ensure long-term connectivity and interoperability with others within the corresponding local government and all external users of land records information.

### **Premium Services and Electronic Filing**

Prior to implementing premium services (fees for access and retrieval of data) and permitting other than pilot tests for electronic filing of land record instruments, certain standards for electronic fund transfers, electronic data interchange and digital signatures must be established. Efforts are underway by the Council on Information Management to establish digital signature standards by September 1, 1998.

### **LOCAL GOVERNMENT NETWORK STANDARDS**

For those local governments that are developing new networks or have existing networks that do not support the recommended "network" standards for the Clerk's office, management may want to ensure that any new networks or upgrades to existing networks support or are capable of being upgraded to support the recommended standards. Access to and retrieval of automated land records data from the Clerks' offices over the long run will require all external users (including local governments) have computing environments that support the recommended standards.

### **EXTERNAL USER NETWORK STANDARDS**

#### **Regular Access and Inquiries**

Access to and retrieval of automated land records data from the Clerks' offices over the long run will require external users to have computing environments that support the recommended "network" standards for the Clerk's office.

#### **Premium Services and Electronic Filing**

External users opting to subscribe to premium services offered by one or more Circuit Court Clerks or their selected service provider will need to procure products that support those standards adopted by the Circuit Court Clerk or the service provider.

External users participating in electronic filing pilots will need to procure products that support those standards adopted by the Circuit Court Clerk conducting the pilot test.

**ELECTRONIC GATEWAY**

One of the objectives for modernizing land records in the Commonwealth is to provide a single electronic gateway to the 121 Circuit Court Clerks' offices. The service provider of this electronic gateway must support those recommended "network" standards for the Clerk's office.

***The Task Force recommends the General Assembly consider directing the Compensation Board and the Council on Information Management monitor new and emerging standards and technologies and review and modify as necessary the technology architecture portion of the Land Records Architecture on an annual basis. This must include the development of appropriate recommendations and standards for premium services and electronic filing of land record instruments. The General Assembly should consider providing the appropriate level of General Fund resources necessary to accomplish this recommendation.***

## SECTION IV

# COMPREHENSIVE PLAN FOR THE FUTURE AUTOMATION OF LAND RECORDS

The comprehensive plan for the future automation of land records in the Commonwealth is presented in this section in two parts, the tactical plan for the Commonwealth and tactical plans for individual Clerk's offices.

### TACTICAL PLAN FOR MODERNIZING LAND RECORDS IN VIRGINIA

The State-Level Tactical Plan identifies the tasks and activities, including applicable timelines that are necessary for implementing the goals and objectives defined in the Strategic Plan for Modernizing Land Records in the Commonwealth.

<b>GOAL 1</b>	<b><u>Tasks/Activities</u></b>	<b><u>Timeline</u></b>
<b><i>Uniform standardized indexing and automation procedures that support statewide electronic remote access to those land record indexes maintained by Clerks of Court.</i></b>	<ul style="list-style-type: none"> <li>Task Force finalizes the draft land records indexing standards (Appendix A).</li> </ul>	By October 31, 1998
	<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that mandates the use of the Land Records Indexing Standards for indexing all land record instruments filed for recording in the Circuit Court Clerks' offices beginning January 1, 2000.</li> </ul>	December 1998, for 1999 session
	<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that establishes a committee of circuit court clerks that are charged with the responsibility of ongoing maintenance and changes to the Land Records Indexing Standards and the Land Records Cover Sheets and the initial education and training of Circuit Court Clerks in their use.</li> </ul>	December 1998, for 1999 session
	<ul style="list-style-type: none"> <li>Finalize Land Records Cover Sheets (Figures 2 &amp; 3).</li> </ul>	By August 1, 1998
	<ul style="list-style-type: none"> <li>Ensure Land Records Architecture Data Model includes information contained on the land records cover sheet.</li> </ul>	By June 30, 1998
	<p style="margin-left: 40px;">Compensation Board, with assistance from the Supreme Court of Virginia and the Council on Information Management, contracts for professional services to complete the cover sheet, develop user instructions for their use, and develop appropriate business application specifications.</p> <p style="margin-left: 40px;">Contract work complete:</p>	By March 15, 1998  July 31, 1998

**Goal 1 (continued)**

<ul style="list-style-type: none"> <li>Task Force reviews and accepts finalized draft land records indexing standards and land records cover sheet.</li> </ul>	<p>November 1998</p>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that provides all Circuit Court Clerks the option of requiring the use of the cover sheet on all land record instruments filed for recording after July 1, 1998.</li> </ul>	<p>January 1998. for 1998 session</p>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that requires all Circuit Court Clerks use the accepted cover sheet with all land record instruments filed for recording after July 1, 2000.</li> </ul>	<p>December 1998. for 1999 session</p>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action to amend Virginia Code §17-83.1:1 to expand and extend the pilot use of electronic filing of land instruments to include Fairfax, Wise, and any other county or city expressing specific interest. The sunset provision should be extended to December 31, 2003.</li> </ul>	<p>January 1998 for 1998 session</p>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly to add the following language at the end of §17-83.1:1: "Filing of data in the form of digital electronic signals may be transmitted via a network, such as the Internet."</li> </ul>	<p>January 1998 for 1998 session</p>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly to amend § 17-83.1:2 to state, "The Clerk of a Circuit Court may establish a system for electronic filing of documents. Any Clerk using funds from the Technology Trust Fund §14.1-125.2 of the <i>Code of Virginia</i> to establish electronic filing system must submit a plan for implementation to the Council on Information Management, for technical review, unless the Clerk uses a system developed or authorized by the Supreme Court of Virginia. Once established, federal, state, and local governmental entities, or political subdivisions thereof, and quasi-governmental agencies, corporations, and authorities, including but not limited to Fannie Mae, Freddie Mac, and VHDA, may electronically file land records, instruments, judgments, and UCC financing statements; and any papers in a civil or criminal action which may be approved by the Rules of the Supreme Court. The place of filing is the receiving station designated by the circuit court clerk to which electronic information is transmitted."</li> </ul>	<p>January 1998 for 1998 session</p>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly to add language to §17-83.1:3(B) to the last sentence so as to read: "Data must be distributed or transmitted from or through the medium of direct computer transmission or via a network, microfilm,</li> </ul>	<p>January 1998 for 1998 session</p>

**Goal 1 (continued)**

magnetic tape <u>or disk</u> , or optical disks, or CD ROM.”	
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly to add electronic signature or unique secure electronic identification to the first sentence of §17-83.1:4, so as to read: “If the sender of an electronically filed document files an affidavit of authenticity along with the electronic filing and the electronic filing bears a facsimile printing of the required signature, <u>electronic signature or unique electronic identification</u>, any statutory requirement for an original signature shall be deemed to be satisfied.”</li> </ul>	January 1998 for 1998 session

**GOAL 2**

*Enhanced electronic remote access to land records maintained by Circuit Court Clerks and the departments of local government.*

<u>Tasks/Activities</u>	<u>Timeline</u>
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that provides all Circuit Court Clerks the discretion of providing premium onsite and remote access to land records information beginning July 1, 1998.</li> </ul>	January 1998. for 1998 session
<ul style="list-style-type: none"> <li>The Compensation Board, beginning May 1, 1998, should consider enhancements to existing automated land records systems that lead to or provide remote access capabilities to land records information as a budget item under §14.1-125.2 C (iii).</li> </ul>	May 1, 1998
<ul style="list-style-type: none"> <li>Task Force, with assistance from the Compensation Board and the Council on Information Management, shall work with an appropriate service provider(s) to establish an electronic gateway to all 121 Circuit Court Clerks in the Commonwealth. This gateway, to be completed by December 31, 1998, will provide a single doorway, accessible via the Internet, for determining how to access land records information in Clerks’ offices, or for linking directly to automated files maintained by Clerks’ offices.</li> </ul>	December 31, 1998
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that requires all Circuit Court Clerks with automated land records indexing systems provide remote access to that information beginning July 1, 2000.</li> </ul>	June 1999, for 2000 session
<ul style="list-style-type: none"> <li>Task Force prepares proposed legislation for General Assembly action that requires all Circuit Court Clerks with automated land records imaging systems provide remote access to that information beginning July 1, 2000.</li> </ul>	June 1999, for 2000 session



**GOAL 3**

*Forge consensus between the Circuit Court Clerks and the users of their land records information to ensure automation efforts in the Circuit Court Clerk offices are beneficial.*

<u>Tasks/Activities</u>	<u>Timeline</u>
<ul style="list-style-type: none"> <li>The Task Force, with assistance from the Compensation Board and the Supreme Court of Virginia, should urge Circuit Court Clerks to communicate with the local bar association, Realtor association, surveyors, the financial institutions, and the general public to build local user groups and interest in electronic remote data access.</li> </ul>	Beginning January 1, 1998
<ul style="list-style-type: none"> <li>The Task Force, with assistance from the Council on Information Management, should urge Circuit Court Clerks to communicate with local government constitutional officers on the development and integration of GIS with the land record data stored in the automated Circuit Court Clerks' systems.</li> </ul>	Beginning January 1, 1998
<ul style="list-style-type: none"> <li>The Task Force, with assistance from the Council on Information Management, should work with the Circuit Court Clerks and Commissioners of the Revenue Associations to establish an education program on the development of local GIS.</li> </ul>	Beginning January 1, 1998
<ul style="list-style-type: none"> <li>The Task Force prepares proposed legislation for General Assembly action to amend Virginia Code Section 14.1-125.2 by emergency legislation to continue the Virginia Land Records Management Task Force, as duly constituted, until June 30, 1999, for the purpose of evaluating the implementation of the Strategic and Tactical Plans and to make necessary further recommendation to the 1999 and 2000 General Assembly sessions.</li> </ul>	January 1998, for 1998 session

**GOAL 4**

*Uniform content and format of land records that promotes their usefulness in integrated local government information systems, eliminates duplication of information, and promotes data sharing and electronic access.*

<u>Tasks/Activities</u>	<u>Timeline</u>
<ul style="list-style-type: none"> <li>The Task Force prepares proposed legislation for General Assembly action to require the use of a unique parcel identification number on all land record instruments filed for recording in a Circuit Court Clerk's office, starting January 1, 2000.</li> </ul>	November 1998, for 1999 session
<ul style="list-style-type: none"> <li>The Task Force prepares proposed legislation for General Assembly action to amend §17-79.3 of the <i>Code of Virginia</i>, to permit all Clerks to require a unique parcel identification number on all documents, including the cover sheet filed for recording in a Circuit Court Clerk's office. This change also must permit the Clerk to index the filed instruments by tax map number and/or parcel identification number.</li> </ul>	January 1998, for 1998 session

**Goal 4 (continued)**

<ul style="list-style-type: none"> <li>• The Task Force, with assistance from the Virginia Geographic Information Network Division of the Council on Information Management, will work with appropriate local government officials to implement the following:             <ul style="list-style-type: none"> <li>- The Task Force recommends that local governments that do not require plats and site plans be referenced to the State Plane Coordinate System/1983, consider requiring references to the State Plane Coordinate System/1983 on plats and site plans as soon as possible. When required by a local government, this action will begin improving the quality of their land records and prepare them for future conversion to an accurate parcel base geographic information system.</li> <li>- <i>The Task Force recommends that local governments that have local geodetic control networks with an insufficient number of monuments, consider taking action to require the use of GPS technology and the Virginia HARN to develop accurate information for referencing the State Plane Coordinate System/1983 on plats and site plans.</i></li> <li>- The Task Force recommends all local governments take appropriate action to define a common parcel identification numbering scheme and require the use of a parcel's PIN on all land record documents and as appropriate in manual and automated systems. The defined PIN scheme should provide unique parcel identification numbers for all parcels within the local government.</li> <li>- For localities which have not developed a unique parcel identification numbering scheme, the Task Force recommends the use of the parcel centroid scheme using the Virginia State Plane Coordinate System/1983 (SPCS/83). This scheme uses the parcel's coordinates referenced to the SPCS/83 to calculate the center of the parcel to create a unique parcel identification number.</li> </ul> </li> </ul>	<p>Beginning January 1, 1998</p>
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**Long Term Funding Needs For Implementing the Five Year Planning Horizon**

The Task Force has not been able to determine a reasonable estimate of the costs required to implement the goals and objectives defined in the Strategic Plan for Modernizing Land Records in the Commonwealth. However, the Task Force recognizes that significant funding mechanisms will be required for the development and maintenance of automated systems that support land record indexes, onsite and remote access to land record indexes, imaging of land record instruments, onsite and remote access to land record instruments, conversion of manually maintained indexes, integration of land records information, and access to land records in other local government organizations. The Task Force is preparing recommended legislation for action by the 1998 General Assembly that will extend the \$3 fee currently collected on all recorded documents pursuant to §14.1-125.2 of the *Code of Virginia* for an additional two years. Given the plans contained in this section, future funding requirements can be determined and addressed by the General Assembly. The Task Force, prior to July 1, 1999, will provide the Governor and the Chairmen of the Senate Finance and House Appropriation Committees with recommendations on the future long-term funding needs for modernizing land records in the Commonwealth.

Figure 8

### State-Level Five Year Planning Horizon



- ◆ Land Records Architecture Completed
- ◆ Cover Sheets Completed and Available for Use
- ◆ Indexing Standards Completed and Available for Use
  - ◆ Initial Clerks Plans Completed
  - ◆ Indexing Standards Required Statewide
    - ◆ Cover Sheets Required to be Used Statewide
- ◆ Legislation Enacted to Extend Pilot Testing of Electronic Filing Until December 31, 2003
  - ◆ Electronic Gateway to Clerks' Offices Completed
    - ◆ Remote Access to Index Information Available Statewide
    - ◆ Remote Access to Imaging Information Available Statewide
  - ◆ Land Records Management Task Force Sunset Clause Expires
    - ◆ Parcel ID # Required on All Land Record Instruments and Cover Sheets Statewide
- ◆ All Clerks Permitted to Require Parcel ID # on Land Record Instruments and Cover Sheets and Index on Parcel ID #
- ◆ Land Record Improvement Efforts Begin With Local Government Officials

## CLERKS' TACTICAL PLANS FOR MODERNIZING LAND RECORDS

The Clerks' Tactical Plan identifies the tasks and activities, including applicable timelines that are necessary for developing and implementing a plan, that meets the goals and objectives defined in the Strategic Plan for Modernizing Land Records in the Commonwealth.

### Tactical Plan Development

Each Clerk's Plan must, at a minimum, provide:

- An overview of the current status of automation within the office.
- An overview of the status for achieving each goal and objective defined below. This should include defining needed updates to existing systems and technology and new systems. This overview must fully consider and address all requirements specified in Section III-Land Records Architecture of this report.
- A long-term (5-year) plan for achieving the goals and objectives defined below.
- A short-term (1-2 year) implementation plan with cost estimates for consideration for funding from the Technology Trust Fund.

Initial Plans should be developed and submitted to the Compensation Board and the Council on Information Management during 1998. Based on the State-Level Plan, Clerks can begin the planning process in the May-June 1998 time frame and should submit completed plans as soon as they are available, but no later than December 31, 1998. Updates to the initial plans should be submitted as needed or every two years (changes in short-term implementation plan and cost estimates), whichever comes sooner.

### Priority Goals and Objectives

*The following goals and objectives are provided in a priority order that is consistent with the State-Level Plan. It is expected that higher priorities should be in progress or completed prior to attempting to implement lower priorities.*

1. Participate in the statewide electronic gateway process.
2. Automated land records indexing system.
  - Implement approved Standards for Indexing Land Record Instruments.
  - Implement approved Land Records Cover Sheet.
  - Implement the use of Parcel Identification Numbers.
  - Index land record instruments by Parcel Identification Numbers.
3. Onsite and remote access to automated land records indexing system.

4. Automated land record instruments imaging system.
5. Onsite and remote access to automated land record instruments imaging system.
6. Ensure land records maintained in an electronic format by local government entities are available and accessible as determined by the local government in accordance with State law.
7. Provide capabilities for submitting land record instruments for recording electronically.

### **Minimum Standards of Service**

Each local Circuit Court Clerk's Office is unique inasmuch as each will differ in its present level of automation. The following minimum standards of service that are compatible with implementing the above seven (7) priorities shall be met to be eligible for funding from the Technology Trust Fund.

- Each Circuit Court Clerk's Land Record's Division must have a computer system and the appropriate software to create on-line indices of those records relating to the local land. Each system should be equipped with an adequate number of terminals that are freely accessible by the public.
- Remote access to the indices of the land records requires the local installation of modem(s) and dedicated telephone line service. Users should be provided the appropriate access number, password, and software requirements.
- The Circuit Court Clerk should promote remote access to the potential user groups and build a "local community of interest" in remote land record access for subsequent premium services.
- Land record instruments should be either scanned or imaged until digital filing technology becomes a more practicable means of recordation. Each imaging system must include an adequate number of freely accessible terminals for on-site viewing. Each imaged land instrument shall be linked with the appropriate reference in the digital index.
- Premium remote access shall require TIFF image instruments to be converted to JPEG so as to enable a more rapid Internet access to a database of imaged instruments.
- Ultimately, each Circuit Court Clerk's Office shall be linked through a common gateway in an open standards environment where both the land instrument indices and images may be accessed and viewed remotely.
- Data availability enhancements shall include, where applicable, data linkage to related land record information such as real estate assessment data and various layers of

Geographic Information System (GIS) data accessible using the Internet to a direct dial modem.

- Backfile data conversion may be cost prohibitive and difficult. Nonetheless, each Circuit Court Clerk's Office shall evaluate its capability to backfile any digitized data into its automated land record systems.

### **Implementation Time Line**

The implementation time line for the above priorities for each clerk shall be different depending on their current automation status, the number of improvements needed to make existing automated systems compatible with the requirements of the document, the number of new automated systems and technology required, and the adequacy of available funding.

- Priority 1: Shall be completed by the end of 1998.
- Priority 2: It is expected that all clerks should have automated land record indexing systems by July 1, 2000.
- Priority 3: All clerks that have automated land record indexing systems on July 1, 2000, shall provide onsite and remote access to that information.
- Priority 4: No time line has been established for statewide implementation.
- Priority 5: All clerks that have automated land record imaging systems on July 1, 2000, shall provide onsite and remote access to that information for free or for a fee as established by the Clerk.
- Priority 6: A unique parcel identification numbers (PIN) will serve as the common key to access parcel information in all local government automated land record systems and many manual systems. A unique PIN shall be required on all land record instruments and cover sheets beginning January 1, 2000. Access to this common key will open the doors for accessing information in other systems, either by accessing those systems, or providing direct links to those systems through automated interfaces in the Clerk's office.
- Priority 7: No time line established. However, this report recommends legislation be enacted to permit several pilot tests over the next several years to define appropriate standards and technology that can be used to implement this priority on a statewide basis.

## SECTION V

# POLICIES FOR ALLOCATING FUNDS FROM THE TECHNOLOGY TRUST FUND AND USER FEES FOR ACCESSING LAND RECORDS INFORMATION

After careful review and analysis, the Task Force, through its Funding and Fee Allocation Subcommittee, could not determine a reasonable estimate of the costs required to implement the goals and objectives defined in the Strategic Plan for Modernizing Land Records in the Commonwealth. The JLARC report and House Bill 2579 recognized the need for a comprehensive plan to be used for guiding the modernization of land records in Virginia. Section IV of this report provides that plan and identifies all the needed tasks and activities required to accomplish the goals and objectives identified in the Strategic Plan.

The key to establishing reasonable estimates of the funding required to accomplish these goals and objectives is the development and analysis of individual Clerk's plans that are compatible with the comprehensive plan. As identified in this report, there are various tasks that must be accomplished before individual plans for Circuit Court Clerks' offices can be developed. Currently, the Task Force recognizes that significant funding mechanisms will be required for the development and maintenance of automated systems that support land record indexes, onsite and remote access to land record indexes, imaging of land record instruments, onsite and remote access to land record instruments, conversion of manually maintained indexes, integration of land records information, and access to land records in other local government organizations. Presently, a \$3 fee is collected on all recorded documents pursuant to Section 14.1-125.2 of the *Code of Virginia*. This fee should be continued for the next three years and then be revisited by the General Assembly in relation to the needs and implementation progress of the Clerks' offices. The fee could then be adjusted and increased or decreased in relation to the remaining needs to be implemented.

***The Task Force recommends the General Assembly consider reenacting the provision of §14.1-125.2 of the Code of Virginia to extend the \$3 Technology Trust Fund Fee until June 30, 2000. Over the next two years, more accurate information from the Clerks' plans will be available that can be used to define the long-range funding needs for modernizing land records in the Commonwealth. Alternatives for meeting those funding needs will be evaluated at that time and appropriate recommendations for meeting these funding needs should be provided to the General Assembly for the 2000 session.***

The Task Force has developed an inventory of technology in each Clerk's office that will serve as a first step in the long term planning process. That inventory is addressed in the next section, with the detailed inventory contained in Appendix B. Based on the inventory, many clerks have current land records indexed in electronic format. Some offices also provide remote access to these indexes. To provide remote access to all land records ever recorded in the Clerks' offices would be a laudable goal to achieve. Land records are defined as the books and indexes to all records contained in the deed books, will/probate books, judgments, and judgment lien docket books, and financing statement records (UCC's). A more realistic goal may be to find a point that most current users of the offices would benefit from without having to appropriate the enormous amounts of money to convert all existing records to digital format. The Task Force recommends a time frame of 20 years be considered and included, at the option of each clerk, in individual plans for modernizing land record information.

Various clerks have requested a detailed study that will develop a plan for improving land records in their offices. Based on the comprehensive plan, these studies should be completed by the end of 1998.

***The Task Force recommends the General Assembly consider directing the Compensation Board, with assistance from the Council on Information Management, contract with one or more vendors to conduct the requested studies and prepare corresponding plans. The contracting effort cannot start prior to July 31, 1998 and should be able to be completed within a six-month time frame. Additionally, the Task Force recommends that at a minimum, each Clerk's plan must provide an implementation schedule and address needs for hardware, software and automated data conversion, including the need and/or desire for up to a 20-year index data backfile conversion of manual records.***

All plans developed through the studies contracted for by the Compensation Board should continue to be approved by the Council on Information Management to assure compliance with the recommendations of the Land Records Management Task Force.

The need for access to general information that the general public may desire versus the need for a professional user of the records is one that each clerk will need to decide on a local basis. Likewise, the need to have some information available at no cost to the general public versus the need to charge a fee for a more premium service is one that each clerk will need to decide based on the demands of the public and the professional office users.

***The Task Force recommends the General Assembly consider changing §14.1-118.1 of the Code of Virginia to allow each clerk the discretion of providing premium onsite and remote access to land records information.***

**§14.1-118.1**

***Same; for providing remote access to certain records***



**Any clerk who provides remote access, including internet access, to nonconfidential court records or other records pursuant to §§17-59.2 and 17-59.3 may ~~shall~~ charge a fee established by the clerk ~~agency of the county, city or town providing computer support in order~~ to cover the operational expenses of such computer support, including, but not limited to, maintenance, enhancements, upgrades and future replacement. Such fee may be assessed for each inquiry or upon actual connect time. Such fee shall be charged each user and paid to the Clerk's office. Furthermore, the clerk may charge a Clerk's fee not to exceed twenty-five dollars per month. Each clerk may contract with another service provider to maintain their automated land records information, provide remote access to those records, and as appropriate, collect and pay to the clerk all fees established by the clerk for access to that information.**

Providing remote access using contemporary web browsers to those automated records maintained in Clerks' offices is a key objective of two of the goals defined in the Strategic Plan for Modernizing Land Records.

**The Task Force recommends that the Compensation Board, to promote the remote access of land records, consider enhancements to existing automated land records systems as a budget item under §14.1-125.2 C. (iii).**

## SECTION VI

# INVENTORY OF AUTOMATED LAND RECORDS TECHNOLOGY IN CIRCUIT COURT CLERKS' OFFICES

The 1997 General Assembly directed the Land Records Management Task Force to include an inventory of automated land records technology in the Circuit Court Clerks' offices in its final report. The Task Force created an Inventory Subcommittee and directed it to develop the inventory information. A survey was developed and delivered to each of the 121 clerks offices within the Commonwealth to determine what technology and applications were currently in use in each Clerk's office.

The survey focused on the following topics:

- System utilized for indexing land records; records indexed on automated systems;
- Automated system used to store images of land records; records stored on optical systems;
- Remote access to automated records; and
- Hardware used for automated land-record systems.

The following summary information was developed using the information from the surveys:

- Of the 121 Clerks' offices within the Commonwealth:
  - 116 responded to the survey; and
  - 5 did not respond to the survey (Buchanan, Charlotte, King William, Russell, Scott).
- Of the 116 that responded to the survey:
  - 114 have some form of automated indexing system and 16 of those are providing remote access to indexes of such records;
  - 19 have images of land records in a retrievable automated format; and
  - 2 are not using any form of automated land-records technology (Highland, Radford).

## LAND RECORD INDEXING SYSTEMS

The following is a summary of the systems used for indexing land record instruments:

Supreme Court	Cott	Logan Systems	Locally Developed	Manual
55	33	18	8	2

16 of the 114 automated courts are providing *remote access* to land record indexes.

- 14 are through the Supreme Court's system.
- 2 are through local systems.

The following is a summary depicting the records which have been indexed for the 114 clerks offices that are using automated land-record indexing systems.

Deeds	Wills	Judgments	Financing Statements	Plats
114 of 114	72 of 114	89 of 114	82 of 114	72 of 114

## LAND RECORD INSTRUMENTS IMAGING SYSTEMS

The following is a summary of the automated systems used for the 19 clerks offices that have images of land records in a retrievable automated format:

Supreme Court	Cott	Logan Systems	Locally Developed
12	0	3	4

Only Stafford is providing *remote access* to images.

The following is a summary depicting the records which have been scanned for the 19 Clerks' offices using an optical/imaging retrieval system.

Deeds	Wills	Judgments	Financing Statements	Plats
19 of 19	11 of 19	10 of 19	6 of 19	0 of 19

## INVENTORY DETAILED INFORMATION

Detailed information collected through the Task Force's survey process are contained in Attachment B.

## SECTION VII

### SUMMARY RECOMMENDATIONS

The Land Records Management Task Force has accomplished a great deal in the short time it has been in existence; however, it has also documented additional efforts and tasks that must be accomplished over the next several years to implement the Strategic Plan for Modernizing Land Records in the Commonwealth.

Key tasks documented in this report that must be completed include: finalizing the land records indexing standards and the land records cover sheet, developing a business data model and minimal business applications specifications to complete the Land Records Architecture Model, evaluating Clerks' plans to develop accurate estimates of the long-term funding needs required to implement the Strategic Plan, and developing proposed legislation for action by the General Assembly that is consistent with the time schedules presented in this report.

***In order to complete those key tasks in the time frames specified in this report, the Task Force recommends the General Assembly consider enacting legislation that continues the Land Records Management Task Force through June 30, 1999, in its present form and with its present members. The General Assembly may also wish to consider adding a member from the Virginia State Bar as a voting member to the Task Force. The General Assembly may also wish to enact this legislation as emergency legislation, to ensure the continued active participation of the current members of the Task Force and to maintain the scheduled time frames contained in this report. The General Assembly may wish to require the Task Force to submit an interim report on January 1, 1999, and a final report on July 1, 1999, to the Governor and the Chairmen of the House Appropriations and Senate Finance Committees. At a minimum, these reports should address progress to date in completing those unfinished tasks identified in this report and the status of implementing the comprehensive plan on a statewide basis.***

If appropriate resources, including extending the life of the Task Force, are allocated, Circuit Court Clerks will have approved plans for modernizing land records, the land records cover sheet will be in place and being used on a statewide basis, land records indexing standards will be in place, training on the indexing standards use will be completed, and the use of the indexing standards will be required for all documents recorded after January 1, 2000.

**ATTACHMENT A**

**COMMONWEALTH OF VIRGINIA**

**DRAFT  
STANDARDS  
FOR  
INDEXING LAND RECORD  
INSTRUMENTS**

## PREFACE

This document has been developed to provide Circuit Court Clerks with a set of standards to facilitate consistent automated indexing of land records and other instruments filed for recording in their offices. These standards will address all documents recorded after their full implementation date, currently scheduled for January 1, 2000. They may not apply to documents recorded prior to that time.

This standard provides rules for what gets indexed, how it gets indexed, the format of entries for the automated index, and appropriate definitions and valid abbreviations (see Appendices B, C and D) for use in indexing instruments.

The standard was written to provide consistency in developing the indexing information for entry into an automated index system. It does not attempt to address individual automated indexing systems requirements, but assumes that system inputs mechanisms will be appropriately configured or altered to accept indexing information developed using this standard.

Placing index information in its correct position on the input mechanism (worksheet, data entry screen, land records cover sheet, etc.) of the automated indexing system is the responsibility of the person developing the land records cover sheet or directly entering the data via a data entry screen.

When submitting a document to be recorded in the deed books, it will be the responsibility of the preparer of the document to fill out the Land Records Cover Sheet. This Cover Sheet is only required for those documents recorded in the deed books. Clerks will follow the indexing standards when indexing judgments, financing statements and estate matters, but no cover sheet will be required.

Persons who want to use the index to find an instrument already recorded can get an overview of the indexing system by reading Sections 1 through 4. Persons recording and indexing instruments will be concerned primarily with Sections 5 and 6, which describe the process for preparing name information for entry into the automated indexing system.

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## 1.00 APPLICATION OF THESE INDEXING RULES

### 1.01 Where

These rules apply to those offices of the Clerks of Circuit Courts in the Commonwealth of Virginia which use electronic media for indexing land record instruments.

Instruments, which were recorded and indexed prior to the adoption of these rules, probably will not conform to these standards. This nonconformity may continue even though, after the effective date of these standards, such records may have been taken from an obsolete indexing system, reformatted, and merged into the database with current recordings.

### 1.02 Posting of These Rules

- a) All such clerks shall have the full printed text of these standards conveniently available to any user who may need to refer to them. The date of adoption of these standards shall be clearly displayed.
- b) The clerk should also provide a local guide listing the various series of records available in his office with the dates of those records and with directions on where to find them.
- c) The clerk should provide directions for use of any public use machines, including explanations of the data fields that appear on each screen.

## 2.00 FINDING NAMES IN THE ELECTRONIC INDEX

### 2.01 Grouping of Names

- a) The electronic indexing system may produce names from various series of records (deeds, wills, judgments, etc.) in the same merged list, or the individual series may be produced separately. Grantors may be merged with grantees, or they may be listed separately. Human names may be merged with non-human names, or they may be separate.

Note: Most local indexing systems allow the user to choose any of the above group options.

- b) All such lists produced shall be in telephone book style listing, i.e., continuous alphabetical listing. The alphabetical subsections indexing system (e.g. pages for Ba, Bi, Bl, etc.) and/or "Family" index system (e.g., pages for Smith, Jones, Black, etc.) shall not be used. Set outs (e.g. CHURCH, LODGE, etc) shall not be used.

### 2.02 How Names Are Expressed in Machine Language

- a) Human names will be comprised of just the 26 letters of the English alphabet and only in capitals. The surname will appear first. It shall consist of just one continuous string of letters. The surname will be followed by one or more given names or initials separated by blank spaces. Suffixes, when applicable, are displayed at the end of the name.



- b) Non-human names will consist of the 26 capital letters in English, ten numeral digits, the ampersand symbol (&) when used to represent the word "and", and the slash symbol (/) when used in numeral fractions or in dates. Non-human names may have multiple words separated by blank spaces.
- c) Abbreviations are not created in the indexing process. Names too long to fit in the space available in the name field are truncated at the end of the available space; however, space is reserved at the end for suffixes. The name field will hold at least 50 characters. Names which appear on the land records cover sheet or in the source document in abbreviated form remain in that form after being indexed and are not expanded into a full word. Most punctuation, special characters and some blank spaces will have been removed in accordance with the conventions for formatting names as described in Section 6.00.

### 3.00 INDEX SYSTEM DATA

#### 3.01 Data Fields

- a) The following index data fields will be found in the index: Indexed Party, Date Recorded, Reverse Party, Instrument Type, Reference to Book & Page or Instrument Number, Description, and also Parcel Identification Number in those localities where it is presently being used.
- b) As a local option, the clerk may include additional fields as needed. When this is done a clear illustration will be found as a local addendum to these standards.
- c) The data may appear on the system screen in any order; however, written instructions and explanations are available for all local variations.

#### 3.02 Description of the Data Fields

- a) *Indexed Party:* For a human name, the Indexed Party is listed by the entire surname or last name first, followed by the full and complete given name(s). For a non-human name, the entire name (subject to name field size limitation) will be listed beginning with the first word of the name. (However, see 6.05a concerning "The" when it is the first word of a non-human name). The surname might be grouped with given names ascending alphabetically underneath, and business names might be listed once for numerous entries. If the Indexed Party is acting as a trustee or other designated status for another party, the trustee or other designated status is treated as a suffix (see Section 5.01d). A minimum of 50 characters is displayed for the indexed party name.

The different parts of a human name (surname, given name and suffix) taken from the source document may be entered into the automated index via separate fields or in a single field separated by special characters or codes. Likewise they may be stored in the automated index as separate fields or in a single field separated by special characters or codes. However, the method of entry and storage will not be apparent to the user looking at the display screen.

- b) *Date Recorded:* Date Recorded is the date that the document was recorded in the clerk's office. The date is in numeric form and is in the order of two-digit month (followed by a slash [/], two-digit day (followed by a slash [/], and four-digit year.
- c) *Reverse Party:* For a human name, the Reverse Party is listed either as the entire surname first, followed by the full and complete given name(s); or full and complete given name(s) first followed by the entire surname. For a non-human name, the name is the entire name (subject to name field size limitation) beginning with the first word of the name. (However, see 6.05a concerning "The" when it is the first word of a non-human name). When a document contains two or more names which could comprise the Reverse Party of the index, any of the names might be used as the Reverse Party in the automated index. If the Reverse Party is acting as a trustee or designated representative for another party, the trustee or other designated status is treated as a suffix (see Section in 5.01d). A minimum of 50 characters is displayed for the reverse party name.

The different parts of a human name (surname, given name and suffix) taken from the source document may be entered into the automated index via separate fields or in a single field separated by special characters or codes. Likewise they may be stored in the automated index as separate fields or in a single field separated by special characters or codes. However, the method of entry and storage will not be apparent to the user looking at the display screen.

- d) *Type:* The type field contains the type of document that is indexed. The type of document is abbreviated according to the codes for Instrument Type in Appendix B.
- e) *Reference:* The Reference field gives the document number or the book and page location of a document or plat.
- f) *Description:* The Description field contains a brief identification or description of the property or the instrument. Depending on the type of document, this description can describe a property, be a reference to a book/page or instrument number, be a local property tax number, or state the intent of the document. When describing a property, the description is not a full and legal description of the property, but is used only for document identification purposes.
- g) *PIN:* The parcel identification number (PIN) is a unique parcel identifier as specified by the local government in conjunction with a geographic information system or other property identification system. If the local government does not use the PIN system, the PIN field will be left blank. However, space is allotted in the automated indexing system for the addition of PIN numbers at a later time.

## 4.00 ALPHABETIZING RULES

### 4.01 Basic Alphabetizing Procedures

- a) *Alphabet:* All names are arranged alphabetically according to the order of ASCII standards with the English alphabet. Umlauts, accents, dieresis and other diacritical marks in other languages

are not used.

- b) *Word by word*: All entries shall be arranged word by word, alphabetizing character by character within the word. Alphabetizing shall begin with the first character of the first word and end with the last character of the last word. The principle of "nothing before something" shall be applied, considering the space between words a "nothing." Thus, a single letter or shorter word precedes a longer word beginning with the same letter or letters. When two or more entries begin with the same word, the entry will be arranged by the first different word.

Example: AD VIDEO  
ADAM INSTRUMENT INC  
ADAMS BILT CO  
ADAMS BILT LOT CO  
ADAMS GERALD R  
ADAMSON HARRY T  
ADVENT SPEAKERS INC

- c) *Human Names*: Human names shall be alphabetized on the basis of the surname followed by the given name(s).

Example: SMITH JAMES  
SMITH JOHN  
SMITH JOHN E  
SMITH JOHN W  
SMYTH JOHN D  
SMYTH JOHN J  
SMYTH JOHN L  
SMYTH JOHN LAR

- d) *Non-human Names*: Non-human and/or corporate entries shall be arranged word by word, alphabetized character by character, within the word(s). Alphabetizing shall begin with the first word of a non-human or corporate name, then go to the next word, etc., ending with the last character of a non-human or corporate name. A number, single letter, initial, or grouping of letters can be the first word of a non-human or corporate name.

Example: WINSTON ROOF AND PORCH CO  
WINSTON ROOF AND SIDING INC  
WINSTON ROOFING AND GUTTERING CO  
WINSTON ROOFING CO

- e) *Numbers*: Arabic numerals shall be used for numeric numbers. For the purposes of alphabetizing/sorting, a number consisting of one or more numerals shall be considered as a word.

Example: 2 GUYS CO  
23 STREET INC  
4 PENNIES INC  
40 THIEVES MARKET  
401 AMOCO FOOD MARKET  
4TH STREET OYSTER BAR INC

## 4.02 Sorting Order for Index

The location of an entry in the index shall be determined by the following hierarchical sorting order:

- a) *Human Name Section:*
  - 1) Last name or surname ascending alphabetically.
  - 2) Given names ascending alphabetically.
  - 3) Trustee or other designated status.
  - 4) Date - ascending (in a continuous listing of names in the index); however where multiple instruments are displayed on the screen or printed under a single name in the index, some local systems might provide an option for reverse order to list the most recent recording first.
  
- b) *Non-Human Section:*
  - 1) All words or abbreviated words in the name ascending alphabetically.
  - 2) Trustee or other designated status - no status then alphabetical status.
  - 3) Date - ascending (in a continuous listing of names in the index); however where multiple instruments are displayed on the screen or printed under a single name in the index, some local systems might provide an option for reverse order to list the most recent recording first.
  
- c) Human and non-human names may be merged in the same listing as stated in Section 2.01.

## 5.00 SELECTION OF NAMES FROM THE SOURCE DOCUMENT FOR INDEXING

Recorded instruments are located by the names that are indexed. In some future time, land records might be indexed by Parcel Identification Numbers (PIN). At the present time, the names of the parties affected by the recorded instrument are the key to finding the instrument in the land records, so it is important that a systematic method of entering names into the index is established and routinely followed. The rules that govern that selection process are covered in this section.

### 5.01 General Rules for Selecting Names

- a) *Names of Parties Affected:* The names of parties participating in, or directly affected by, an instrument should be entered into the automated index.

Other names, which may be found in the property description, may not be directly affected and would not need to be indexed. A person can be a party to an instrument without signing the instrument.

- b) *Names of "Others"*: The full name of each party affected by an instrument shall be indexed, and the name of each such party shall be entered in such a manner as to ensure its proper alphabetical location in the automated Index. Notations or abbreviations such as "et al.", "and others", "and wife", "et ux.", "and husband", etc. shall not be used in the Index. Those other names, when known and where they have equal status, shall be entered as full and separate names.
  
- c) *Some names that do not need to be indexed*:
  - 1) The name of a beneficiary of a deed of trust need not be indexed when the first named trustee is indexed (see Virginia Code § 17-79).
  - 2) On a deed of trust, if more than one trustee is named, only the first needs to be indexed.
  - 3) Certificates filed pursuant to the Uniform Limited Partnership Act are to be indexed only in the names of the partnership and of the general partners rather than in the name of each limited partner.
  - 4) When an indexed party is a corporation or a limited liability company, the name of the corporation or the name of the limited liability company shall be indexed. The names of the officers or managers shall not be indexed.
  - 5) Names of persons acting in the capacity of power of attorney do not need to be indexed, however the name of the principal party must be indexed. The attorney-in-fact is, himself, a principal in those instruments granting or removing power of attorney.
  - 6) Names of persons signing for governmental agencies do not need to be indexed. Only the agency names are entered.
  
- d) *Names of trustee or other persons with designated status*: All documents being conveyed by a Trustee, Commissioner, or other person with a designated status, shall be indexed in the name of the parties for whom the trustee, etc. is acting, as well as in the name of the person with the designated status. See Appendix D for standard abbreviations of designated status. The designated status abbreviation shall be displayed in the index as an extension of the last given name of a human name and as an extension of the non-human name. Names of persons acting in the capacity of power of attorney do not need to be indexed.

Example: Name provided: Richard M Stewart, Trustee

STEWART RICHARD M  
STEWART RICHARD M TR  
STEWART ROBERT MICHAEL

STEWART RICHARD M  
STEWART RICHARD MICHAEL  
STEWART TR RICHARD M

*INCORRECT (Status after surname)*

Note: When the reverse party is listed with the given name first (see Section 3.02 c), the designated status should appear after the surname just as any other suffix.

Name provided: Stewart Banking & Trust Company, Trustees  
STEWART ADCOCK PLUMBING SUPPLY  
STEWART BANKING & TRUST COMPANY TR  
STEWART CONSOLIDATED MTG TR

- e) *Names of designated Spouse*: The names of a husband and wife, when both are parties to an instrument, shall be listed separately and indexed as separate names. The two names shall not appear on the same line in the index.

Example: John L. Smith and Jane Ann Smith, husband and wife

SMITH IVAN A  
SMITH JANE ANN  
SMITH JOHN L  
SMITH JOHN T

SMITH IVAN A  
SMITH JANE ANN JOHN L            *INCORRECT*  
SMITH JOHN L JANE ANN           *INCORRECT*  
SMITH JOHN T

- f) *Parties With More Than One Name*: When a name, as it appears in the source document, makes reference to an additional name through terms such as also known as, formerly, formerly known as, etc. or through the use of parentheses, both names shall be indexed separately without being referenced to each other.

Example: Name provided: Jane Smith (formerly Jane Simpson)

SMITH IVAN A  
SMITH JANE  
SMITH JOHN T  
also  
SIMPSON AUSTON J  
SIMPSON JANE  
SIMPSON MARK O

Example: Name provided - Bar BQ House of Cary Inc.  
(formerly Tom's Bar BQ Inc.)

BABS PANCAKE HOUSE INC  
BAR BQ HOUSE OF CARY INC  
BARBS HOUSE OF CURLS  
also  
TOMPKINS ASSOC INC  
TOMS BAR BQ INC  
TONS OF FUN CO

- g) *Surnames In Parentheses*: A human name containing a surname in parentheses before or after the surname [e.g., Jane Ann (Smith) Simpson, Jane Ann Simpson (Smith)] shall be indexed twice using two different surnames. When indexing the surname, the alternate surname in parentheses shall be considered and alphabetized as the last given name only if it appears as a middle name. When indexing the surname in parentheses, the surname shall be dropped.

Example: Name provided: Jane Ann (Smith) Simpson  
SMITH IVAN A  
SMITH JANE ANN  
SMITH JOHN T  
also  
SIMPSON AUSTON J  
SIMPSON JANE ANN SMITH  
SIMPSON MARK O

- h) *Estate names*: The human name contained within the estate name shall be indexed as a human name with a suffix extension depicting the estate status.

Example: Name provided: The Estate of John Smith  
index as: SMITH JOHN EST

- i) *Names of deceased persons*: When indexing the name of a person who is stated to be deceased, add a suffix extension depicting that status.

Example: Name provided: Henry Jones, who died May 17, 1993  
index as: JONES HENRY DECD

- j) *Names of heirs*: When indexing a person's name and that person is identified as an heir, index it as a name of any other human still living.

Example: Name provided: John W. Davis, Heir  
index as: DAVIS JOHN W

- k) *Government names*: No document shall be indexed in the name of the individual who signed on behalf of any government, or any agency or unit of government, i.e., the administrator, trustee, state director, agent, etc. Each document will be indexed in the name of the governmental unit as it appears in the source document. When an organizational hierarchy of unit or agency names appears, each governmental unit or agency shall be indexed. When a unit or agency of government is acting for the government (United States of America, Commonwealth of Virginia, County, or City/Town) and if the identify of the government is clearly stated, the document shall be indexed under the name of the government and also the unit or agency name. Indexing procedures for Non-Human/Corporate Names shall apply to government units and agencies unless otherwise noted.

Example: United States of America  
by \_\_\_\_\_  
President  
Index as: UNITED STATES OF AMERICA

Example: United States of America  
Farmers Home Administration  
Department of Agriculture  
by \_\_\_\_\_  
State Director  
Index as: UNITED STATES OF AMERICA  
FARMERS HOME ADMINISTRATION  
DEPARTMENT OF AGRICULTURE

Example: Farmers Home Administration

Department of Agriculture  
by \_\_\_\_\_  
State Director  
Index as: FARMERS HOME ADMINISTRATION  
DEPARTMENT OF AGRICULTURE

Example: United States of America  
United States Forest Service  
by \_\_\_\_\_  
Director  
Index as: UNITED STATES OF AMERICA  
UNITED STATES FOREST SERVICE

Example: U. S. National Weather Service  
by \_\_\_\_\_  
Director  
Index as: US NATIONAL WEATHER SERVICE

I) *Names of subdivisions and other land plats:*

- 1) The owner(s) of the property shown on the plat shall be indexed as the grantor(s) of the plat.
- 2) The plat title, shown in the property designation portion of the plat, shall also be indexed as a grantor of the plat.
- 3) Descriptive plat title. When the plat title is descriptive (i.e., name of subdivision, name of property, etc.), the plat title shall be considered as a non-human name.

Example: Plat Title: Singing Oaks Subdivision  
SIENFELD PROPERTIES INC  
SINGING OAKS SUBDIVISION  
SINGLETON TOWNHOMES

Plat Title: Singing Oaks, Part II  
SIENFELD PROPERTIES INC  
SINGING OAKS PART II  
SINGLETON TOWNHOMES

SIENFELD PROPERTIES INC  
SINGING OAKS SUBDIVISION PART II  
SINGLETON TOWNHOMES

*INCORRECT*

- 4) Plat title showing ownership. When the plat title shows ownership, usually through references such as "Farm of [name of owner]", "Land of [name of owner]", "Property of [name of owner]", "[name of owner] Farm", "[name of owner] Property", etc., the plat title shall be indexed by the name of the owner.

Example: Plat Title: Nat T. Magnum Farm  
MAGNUM ALBERT CARL  
MAGNUM NAT T  
MANION ROBERT L



NANNIES UNLIMITED INC  
NAT T MAGNUM FARM  
NATURAL POWER INC

*INCORRECT*

Plat Title: Farm of Nat T. Magnum  
MAGNUM ALBERT CARL  
MAGNUM NAT T  
MANION ROBERT L

FARLOW FARMS INC  
FARM OF NAT T MAGNUM  
FARMER JOES MARKET

*INCORRECT*

Plat Title: Property of Nat T. Magnum Inc.  
NANNIES UNLIMITED INC  
NAT T MAGNUM INC  
NATURAL POWER INC

MAGNUM ALBERT CARL  
MAGNUM NAT T INC PROPERTY OF  
MANION ROBERT L

*INCORRECT*

- 5) Maps Attached to Documents: A map or plat that is attached to or is a part of a document shall be considered as part of the document and does not need to be indexed as a separate map or plat; however, in addition to the general Index, the clerk may maintain a separate index of maps and plats and/or condominium plans and plats.
- m) *Names of condominium plats and plans:*
- 1) Condominium plans and plats shall be indexed in the real property index.
  - 2) If the condominium declaration is being recorded with the condominium plat, all persons signing the condominium declaration as well as the name of the condominium shall be indexed as grantors of the condominium plat or plan.
  - 3) The name of the condominium shall be considered as a non-human name.
  - 4) If the condominium declaration has been recorded, and if a reference to the book and page, or instrument number, of that recording is listed on the condominium plat, the clerk may show that reference in the description field.
  - 5) Condominium Declarations: If the condominium plat has been recorded, and if a reference to the book and page of that recording is listed in the condominium declaration, the clerk may list that reference in the description field.

## 5.02 Selection of Names from Specific Types of Instruments

The following is a general guide to the selection of names from some of the most common types of land records. Often, however, an instrument will have some complexity which affects other parties. The name of any party who is directly affected by an instrument should be indexed.

Type of Instrument	Names to be Indexed	
a) Agreement	grantors:	property owners relinquishing interest
	grantees:	parties gaining interest
b) Assignment of Deed of Trust	grantors:	property owners assignor
	grantees:	assignee
c) Certificate of Satisfaction	grantors:	property owners trustee
	grantees:	none
d) Certificate of Take	grantors:	property owners
	grantees:	Commonwealth Transportation Commr.
e) Commencement of Bankruptcy	grantors:	debtor
	grantees:	trustee in bankruptcy
f) Conditional Septic Tank Permit	grantors:	property owners
	grantees:	property owners Health Department
g) Condominium Instrument	grantors:	property owners condominium name
	grantees:	property owners condominium name
h) Contract	grantors:	property owners
	grantees:	parties purchasing interest
i) Deed of Assumption	grantors:	sellers purchasers note holder, if he signs
	grantees:	purchaser trustee if named
j) Deed of Bargain and Sale	grantors:	sellers
	grantees:	purchasers

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k)	Deed of Easement/Right of Way	grantors: grantees:	property owners parties who gain use of land
l)	Deed of Exchange	grantors: grantees:	all parties conveying interest all parties receiving interest
m)	Deed of Gift	grantors: grantees:	givers recipients
n)	Deed of Partition	grantors: grantees:	all parties all parties
o)	Deed of Release	grantors:  grantees:	property owners trustee note holder, if he signs property owners
p)	Deed of Trust	grantees: grantees:	property owners first named trustee or beneficiary
q)	Deed with Vender's Lien	grantors: grantees:	all parties all parties
r)	Discharge of Debtor	grantors: grantees:	bankrupt parties bankrupt parties
s)	Disclaimer	grantors: grantees:	parties disclaiming interest parties affected
t)	Homestead Deed	grantors: grantees:	property owners property owners
u)	Lease	grantors: grantees:	property owner / lessor lessee
v)	Marriage License	grantors:  grantees:	old name new name old name new name
w)	Name Change	grantors: grantees:	old name new name
x)	Notice of Lis Pendens	grantors: grantees:	property owners plaintiff

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y)	Notice of Mechanic's Lien	grantors:	property owners contractor
		grantees:	subcontractor contractor
z)	Option	grantors:	property owners parties acquiring rights
		grantees:	property owners parties acquiring rights
aa)	Plat	grantors:	property owners subdivision name
		grantees:	property owners subdivision name
bb)	Power of Attorney	grantors:	principals
		grantees:	agents
cc)	Restrictive Covenants	grantors:	property owners subdivision name
		grantees:	property owners subdivision name
dd)	Revocation of Power of Attorney	grantors:	principals agents
		grantees:	principals agents
ee)	Special Commissioner's Deed	grantors:	property owners losing interest heirs/ deceased/ persons under disability other owners of record special commissioners
		grantees:	purchasers
ff)	Subordination Agreement	grantors:	property owners beneficiary of prior deed of trust trustee of prior deed of trust
		grantees:	new beneficiaries new trustee
gg)	Substitution of Trustee	grantors:	property owners prior trustees note holders
		grantees:	new trustees
hh)	Tax Deed	grantors:	delinquent tax payer/property owners locality/Commonwealth/IRS

		grantees:	special commissioners purchasers
ii)	Trust Agreement	grantors: grantees:	creator/trustor trustees name of trust beneficiaries
jj)	Trustee's Deed on Foreclosure	grantors: grantees:	property owners in default trustees purchasers

## 6.00 FORMATTING OF THE NAMES FOR PLACEMENT IN THE INDEX

### 6.01 The Need for Formatting

The process of formatting names, in most cases, is routine. The main rules to remember are to use all capital letters, no punctuation and, for human names, the last name is indexed before the given name. Unfortunately, numerous rules are still needed to govern the formatting of the few remaining "special" types of names. These rules are necessary because some names might appear on different documents in different formats. Spellings are not to be changed in the indexing process; however, if these special names were always entered just as they appeared, the sorting process would place them in different locations in the Index. All users of the Index benefit when the same name is always placed in the same location.

Some automated indexing systems may require the use of punctuation or special characters as field separators during the data entry process. However such punctuation or special characters will not appear in the automated index.

### 6.02 Capital Letters

All entries in the Index shall be listed in capital letters. In a machine sort, a lower case letter is a different character than the corresponding upper case letter.

Example: SMITH JAMES  
SMITH JOHN  
SMITH JOHN E

Smith James  
Smith John  
Smith John E

*ALL INCORRECT* (Not in all capital letters)

### 6.03 Truncation and Abbreviation

As nearly as possible, names shall be placed in the index using the same spelling as appears in the source document. Abbreviations shall not be used except as they may appear in the name provided in the source document. Words too long to fit in the available space of the name field shall be truncated when the end of the name field is reached. Where a full name exceeds the available space, and a suffix (including any designated status extension) is part of that name, the truncation

will occur at the place which still leaves room to place the suffix extension on the end of the truncated name. Standard abbreviations shall be used for designated status extensions such as TR for Trustee, etc. (see Appendix D). Abbreviations may be used for property descriptions (see Appendix C). Standard abbreviations shall be used for instrument types (see Appendix B).

#### 6.04 Human Names

- a) *Signature Convention*: It shall be assumed that all names in the source document are in the United States signature convention of given name(s) followed by surname, unless a comma is found appended to the first appearing name, indicating that it is a surname which has been placed before the given name.
- b) *Surname*: For the purposes of alphabetizing in the index, the surname shall be one word. If the surname in the source document contains blank spaces, apostrophes, hyphens, etc., the blank spaces, apostrophes, hyphens, etc. shall be dropped and ignored to form one continuous string of characters.
  - 1) *Prefix*: A name with a prefix is one that begins with a separately written particle consisting of an article (e.g., La Crosse, L'Estrange), a preposition (e.g., De Morgan), a combination of a preposition and an article (e.g., Del Mar, Van der Veer), or a term which originally expressed relationship (e.g., Ap Richard, O'Brien), with or without a space, hyphen, or apostrophe between the prefix and the name. For alphabetizing and indexing, the prefix and the name shall be considered as one name and shall not contain blank spaces, apostrophes, etc.

Examples: Name provided: Anthony La Vopa  
LAVOIE EDWARD  
LAVOPA ANTHONY  
LAW CHARLES

Name provided: Catherine O'Brien  
OBREMSKI JAMES O  
OBRIEN CATHERINE  
OBRIST BARBARA

Name provided: Carl Van Cott  
VANCO HELEN  
VANCOTT CARL  
VANCROFT WILLIAM A

VAN

COTT CARL  
JOHN

*INCORRECT* (Indexed only on prefix)

VANALSTINE LAWRENCE

- 2) *M', Mc, Mac*: Names beginning with the prefixes M', Mc, or Mac shall be arranged alphabetically according to the order of the alphabet and in the same manner as with any other name. No special section or location shall be developed for these prefixes.

Example: Name provided: John Mac Donald  
MABRY CARRIE R  
MACATEE PAUL L

MACDONALD JOHN  
MACEDA NILA

MABRY CARRIE R  
MAC DONALD JOHN  
MACATEE PAUL L  
MACEDA NILA

INCORRECT (Indexed only on prefix)

- 3) Compound Surname: A compound surname is a name consisting of two or more separate words or names which are separated by a hyphen or a space. For purposes of indexing alphabetically, hyphens and spaces shall always be dropped from compound surnames and the surname shall be unified into one word.

Example: Name provided: Jane Smith-Simpson  
SMITH YVONNE A  
SMITHSIMPSON JANE  
SMITHSON LISA C

- 4) If it is unknown or unclear if a name is the last given name or is part of a multi-name surname, the name may be treated as the last given name and also as a part of a multi-name surname.

Example: Name provided: Johnny Mack Intosh  
INTEMANN ALFRED W  
INTOSH JOHNNY MACK  
IORFIDO B L  
also  
MACINTOSH JAMES A  
MACKINTOSH JOHNNY  
MACKO ROBERT L

- 5) Human names containing Saint, St or St. shall not be converted into their abbreviated or full form. Punctuation shall be eliminated and spaces closed.

Examples: Name provided:	Index as:
Barry <u>Saint Leger</u>	SAINTLEGER BARRY
Louis Stephen <u>Saint Laurent</u>	SAINTLAURENT LOUIS STEPHEN
Camille <u>Saint-Saëns</u>	SAINTSAENS CAMILLE
Charles <u>Sainte-Beuve</u>	SAINTEBEUVE CHARLES
David <u>St John</u>	STJOHN DAVID
Ruth <u>St. Denis</u>	STDENIS RUTH
Saint Clair <u>Waldheim</u>	WALDHEIM SAINTCLAIR

- c) **Given Names:** Given names will appear in the automated index in the order of last name, first given name (first name) or initial, second given name (middle name) or initial, etc. An initial shall be considered as a given name, and a space shall separate given names and initials that are given names. Commas will not appear in the index list to separate given names from surnames. Any word following the first word (the surname) in the index will be a given name. Periods shall not be used with initials or any other abbreviation. In a special case, the title Mrs. may be considered as a given name (Rule 6.04 c 2).

Example: Name provided: Robert M Stewart  
STEWART R M

STEWART RICHARD M  
STEWART ROBERT M  
STEWART ROBERT MICHAEL

- 1) Where punctuation appears in a given name, the punctuation shall be removed and the space created thereby shall be closed. Pre-existing spaces are normally preserved, but see exception above for Saint St or St.

Example: Name Provided:	Index as:
Jo-Ann Taylor	TAYLOR JOANN
Ty-Anthony Jones	JONES TYANTHONY
O'Neal White	WHITE ONEAL
Billy Joe Kerns	KERNS BILLY JOE

- 2) Titles: All titles such as Reverend, Bishop, Dr., Major, Mr. Ms., Mrs, etc. shall be omitted from the listing. However, when a document or instrument contains the name of a female using only the title Mrs. and her surname (e.g., Mrs. Smith) or the title Mrs. and her husband's given name and surname, the title Mrs. shall be retained. The title Mrs. shall be considered as the given name if none other is provided. If the husband's first name is provided the title Mrs. shall be considered as a suffix.

Example: Name provided: Mrs John Smith	
SMITH JOHN	
SMITH JOHN A	
SMITH JOHN MRS	
SMITH LEON	
SMITH PAUL	
SMITH JOHN	
SMITH JOHN A	
SMITH LEON	
SMITH MRS JOHN	INCORRECT (Indexed on title)
SMITH PAUL	

Name provided: Mrs Smith	
SMITH LEON	
SMITH MRS	
SMITH PAUL	

Note: If the given name of an individual is "Major", "Captain", "Sarge", etc., this rule does not apply.

- 3) Suffix: As the names are displayed, a suffix denoting lineage such as Junior, Jr., Sr., II, III, etc. will appear after the last given name except when the reverse party is listed with the given name first (see Section 3.02 c) the suffix will appear after the surname. No punctuation will appear before the suffix in the automated index.

Example: Name provided: William John Smith, III	
SMITH WILLIAM J	
SMITH WILLIAM JOHN II	
SMITH WILLIAM JOHN III	
SMITH WILLIAM MARK	



- 4) Professional Titles: Professional certifications or degrees showing a certain level or type of education such as CPA, DDS, and MD, shall not be indexed as part of a human name. If it is unclear whether such document names are human or non-human, the names shall be indexed as a human name without the title and as a non-human name with the title, but without the punctuation.

Example: Name provided: John Smith, CPA  
SMITH JOHN (indexed as human name)  
also  
JOHN SMITH CPA (indexed as a business)

### 6.05 Non-Human/Corporate Names

- a) *"The"*: Non-human and corporate names beginning with the article "The" shall not be indexed under the word "The". The first letter, number etc., immediately following the word "The" shall be used to begin the indexing. When the first word is "The", the word "The" shall be dropped.

Example: Name provided: The Word Publishers Inc.  
WORD POWER INC  
WORD PUBLISHERS INC  
WORDPERFECT CORP

- b) *Human Name/Initials*: The names or words in a non-human entry shall not be reversed even when the non-human entry contains a human name/initials.

Example: Name provided: Carl Magnum Inc  
CARL JONES INC  
CARL MAGNUM INC  
CATS MEOW CORP  
  
MAGIC MAID INC  
MAGNUM CARL INC                      *INCORRECT* (Human name portion reversed)  
MAGNUM ELECTRIC CO

- c) *Numbers*:

- 1) When the first word of a non-human name is a number and the number is spelled (e.g., six), the number shall be treated as a word,

Example: Name provided: Five Points Inc  
FIVE POINTS INC (Not 5 POINTS INC)  
FIX IT RIGHT CO

2 GUYS INC  
5 POINTS INC                      *INCORRECT* (Word converted to a numeral)  
5 STRIKE CO

- 2) When the first word of a non-human name is a number and the number is in numeric form (e.g., 6), the number shall be placed in alphanumeric character sequence in the index as it appears on the document.

Example: Name provided: 2 Guys Inc  
2 GALS INC  
2 GUYS INC (Not TWO GUYS INC)  
5 STRIKE CO

TWO GUYS INC  
TYLER HOUSE INC

*INCORRECT* (Numeral converted to word)

- 3) When a non-human name contains a fraction in numeric form, the numerator and the denominator of the fraction shall be separated by a slash (/) with no space on either side of the slash. If a whole number is associated with the fraction, a space shall separate the whole number from the fraction.

Example: Name provided: 7 1/2 PERCENT SOLUTION CO  
7 1/2 PERCENT SOLUTION CO  
7 COME 11 INC  
72 LUMBER CO

- 4) When an ordinal number is in numeric form, a space shall not separate the numeral from the ordinal suffix.

Example: Name: 4TH STREET OYSTER BAR INC  
(Not 4 TH STREET OYSTER BAR INC)

4 PENNIES INC  
40 THIEVES MARKET  
4TH STREET OYSTER BAR INC

- 5) When a non-human name contains a series of two (2) or more single numerals, no space shall separate the single numerals. The series of two (2) or more single numerals shall be combined until the series is broken by a word containing two or more letters or by a number containing two (2) or more numerals.

Example: Name provided: 1 2 3 Go Inc.  
1 WAY HOME INC  
123 GO INC (Not 1 2 3 GO INC)  
2 GUYS CO

1 2 3 GO INC  
1 WAY HOME INC  
GUYS CO

*INCORRECT* (Spacing between characters)

Name provided: 2 4 T Brunch Club Inc.  
2 GUYS CO  
24T BRUNCH CLUB INC (Not 2 4 T BRUNCH CLUB INC)  
4 PENNIES INC

2 4 T BRUNCH CLUB INC  
2 GUYS CO  
4 PENNIES INC

*INCORRECT* (Spacing between characters)

- 6) Roman numerals: For purposes of alphabetizing/sorting, Roman numerals shall be considered as alphabetic characters and not numbers. A Roman number shall be considered as an alphabetical word.

Example: Name provided: VIII Division Survivors Fund  
VIDEOFONICS INC  
VIII DIVISION SURVIVORS FUND  
VINYL WHOLESALE SUPPLY CO

8 BALL INC  
8 DIVISION SURVIVORS FUND            *INCORRECT* (Roman numeral converted)  
99 WAYS INC

EIGHT AND FIVE INC  
EIGHT DIVISION SURVIVORS FUND       *INCORRECT* (Roman numeral converted)  
EILER INSTITUTE INC

- d) Non-human names containing Mount, Mt, Saint or St shall not be converted into their abbreviated or full form. Such words shall be entered into the automated index as they appear in the source document

Example: Name provided: Mount Olive Baptist Church  
MOUNT OLIVE APPLIANCE INC  
MOUNT OLIVE BAPTIST CHURCH  
MOUNT OLIVE RADIO SUPPLY

MT HERMAN METHODIST CHURCH  
MT OLIVE BAPTIST CHURCH               *INCORRECT* (Full word abbreviated)  
MT PLEASANT BAPTIST CHURCH

Name provided: St. Joseph Hospital  
ST CROIX TANNING CENTRE INC  
ST JOSEPH HOSPITAL  
ST MARKS CHURCH

SAINT JAMES BAPTIST CHURCH  
SAINT JOSEPH HOSPITAL                 *INCORRECT* (Converted to full word)  
SAINT MATTHEW BAPTIST CHURCH

- e) *Initials, Letters, and Acronyms:*

- 1) When a non-human name contains a human surname and two (2) or more human given name initials, no space shall separate an initial from another given name initial. A space shall separate a single initial or a series of two (2) or more given name initials from a given name or the surname.

Example: Name provided: C C Magnum Inc  
CATS MEOW CORP  
CC MAGNUM INC  
CEASE H CLYMER INC

C C MAGNUM INC                         *INCORRECT* (Spacing between initials)  
CA JONES INC  
CATS MEOW CORP

Name provided: A James Smith Inc  
A CATS MEOW CORP  
A JAMES SMITH INC  
ABES AUTO INC

ABES AUTO INC  
AJAMES SMITH INC  
APPLE JUICE BUYERS INC

*INCORRECT* (Incorrect spacing)

Name provided: Nat T Jones Inc  
NANNIES UNLIMITED INC  
NAT T JONES INC  
NATURAL POWER INC

NANNIES UNLIMITED INC  
NAT TJONES INC  
NATURAL POWER INC

*INCORRECT* (Incorrect spacing)

- 2) When a non-human name contains a series of two (2) or more single characters (characters may be letters, abbreviations, symbols, or numerals), no space shall separate the single characters until the series is broken by a word containing two or more characters. A word is defined as two or more characters that appear together without spaces. See Rule 6.05 e 3 for special rules for ampersand.

Example: Name provided: A & E Associates indexed as A&E ASSOCIATES

Name provided: A T & T indexed as AT&T

Name provided: N C S U Boosters Club Inc indexed as  
NCSU BOOSTERS CLUB INC

NAZARETH HOUSE INC  
NCSU BOOSTERS CLUB INC  
NETWORKS INC

N C S U BOOSTERS CLUB INC  
NA JONES INC  
NAMS WAREHOUSE CO

*INCORRECT* (Spaces between letters)

Name provided: Bar B Q House Inc  
BABS PANCAKE HOUSE INC  
BAR BQ HOUSE INC  
BARBS HOUSE OF CURLS

BABS PANCAKE HOUSE INC  
BAR B Q HOUSE INC  
BARBS HOUSE OF CURLS

*INCORRECT* (Spaces between letters)

- 3) When a non-human name contains an ampersand that is not preceded and followed by single characters a space shall appear before and after the ampersand.

Example: Name provided: Johnny C. & Others, Inc.

Index as: JOHNNY C & OTHERS INC

Name provided: 9 & Co. Index as: 9 & CO

Name provided: A & E Indexed as A&E (& is between single characters)

- 4) When a non-human name contains a single character and a number separated by a special character, the special character shall be dropped and no space shall separate the character from the number.

Example: Name provided: A-1 Auto Sales Inc  
A1 AUTO SALES INC  
AA ELECTROSTATIC CO  
BOBS AUTO INC

A 1 AUTO SALES INC                    *INCORRECT* (Space between A and 1)  
A CUT ABOVE HAIR CARE INC  
AA ELECTROSTATIC CO

Name provided: A/1 And A/2 Dance Studio Inc  
A1 AND A2 DANCE STUDIO INC  
AA ELECTROSTATIC CO  
BOBS AUTO INC

A 1 AND A 2 DANCE STUDIO INC                    *INCORRECT* (Space between characters)  
A DOGS LIFE RESORT INC  
AA ELECTROSTATIC CO

- 5) When a non-human name contains or is an acronym containing single letters, no space shall separate the letters in the acronym.

Example: Name provided: N A T O Suppliers Inc  
NANNIES UNLIMITED INC  
NATO SUPPLIERS INC  
NATURAL POWER INC

N A T O SUPPLIERS INC                    *INCORRECT* (Space between characters)  
NA SMITH INC  
NABISCO INC

Name provided: CAT Inc  
CASTON MOTOR COMPANY INC  
CAT INC  
CATAWBA TIMBER CO

CAMDEN INVESTMENT INC  
CAMERON AVIATION TECHNOLOGY INC                    *INCORRECT* (Acronym spelled out)  
CAMP OMNI INC

- f) *Punctuation:* Punctuation such as hyphen, apostrophe, comma, colon, semi-colon, parentheses, quotation marks, brackets, or period shall not be used for non-human names.

- 1) When a non-human name contains words separated by a comma, period, colon, or semi-colon the punctuation shall be dropped.

Example: Name provided: Jones, Smith, Ramsey, and Associates  
JONES SMITH CONSTRUCTION CO  
JONES SMITH RAMSEY AND ASSOCIATES  
JONES TREE SERVICE INC

Name provided: R.O.A.R. Corporation

ROANOKE MEMORIAL HOSPITAL  
ROAR CORPORATION  
ROBARGE, HENRY J

R HILL CONSULTANTS  
R O A R CORPORATION/INCORRECT (see 6.05 e 2 and e 5)  
RAAB JOHN B

Name provided: Bankers Trust : California  
Indexed as BANKERS TRUST CALIFORNIA

- 2) When a non-human name contains an apostrophe, the apostrophe shall be dropped. If the apostrophe is between two letters, no space shall separate the letters.

Example: Name provided: Tom's Peanut Co  
TOMPKINS ASSOC INC  
TOMS PEANUT CO  
TONS OF FUN CO

- 3) When a non-human name, not covered by 6.05 e 4, contains two words separated by punctuation such as a hyphen (-) or a slash (/), the punctuation shall be dropped. A space shall separate the two words.

Example: Name provided: Jones-Smith Construction Co  
JONES INSURANCE CO  
JONES SMITH CONSTRUCTION CO  
JONES TREE SERVICE INC

JONES TREE SERVICE INC  
JONESSMITH CONSTRUCTION CO                    *INCORRECT* (Incorrect spacing)  
JONFEL CORP

Name provided: Barclays/American Mortgage Corp  
BARCALOUNGER SALES INC  
BARCLAYS AMERICAN MORTGAGE CORP  
BARHAM CONSTRUCTION CO

BARCALOUNGER SALES INC  
BARCLAYSAMERICAN MORTGAGE CORP                    *INCORRECT* (Incorrect Spacing)  
BARHAM CONSTRUCTION CO

Note how this differs from human names (Section 6.04 b 3) where punctuation and spaces are removed and the parts of the human surname are unified. And this also differs from the non-human names containing single characters (Section 6.05 e 4) as opposed to full words separated by punctuation in non-human names described in this Section.

- 4) Quotation marks, brackets, and parentheses shall be dropped from non-human names.

Example: Name provided: Nationsbank (Virginia)  
Indexed as NATIONSBANK VIRGINIA

g) *Human Name Prefixes:*

- 1) When a non-human name contains a human surname with a separately written prefix (e.g., Van Pell Shoes Inc.), the prefix and the surname shall each be considered as a separate word.

Example: Name provided: Van Pell Shoes Inc  
VALLEY FORGE CORP  
VAN PELL SHOES INC  
VANTAGE PROPERTIES INC

VALLEY FORGE CORP  
VANPELL SHOES INC  
VANTAGE PROPERTIES INC

*INCORRECT* (Space removed)

Name provided: Mac Donald Tire Co  
MABRY SUPPLY  
MAC DONALD TIRE CO  
MACATEE RADIO  
MACEDA CAFE

MABRY SUPPLY  
MACATEE RADIO  
MACDONALD TIRE CO  
MACEDA CAFE

*INCORRECT* (Space removed)

- 2) When a non-human name contains a human surname with a prefix written as part of the surname (e.g., LaVopa Supply Co.), the prefix/surname shall be considered as one word.

Example: Name provided: LaVopa Supply Co.  
LAVINDERS INC  
LAVOPA SUPPLY CO  
LAWN BARBER INC

LA SMITH INC  
LA VOPA SUPPLY CO  
LACOCK SHOE INC

*INCORRECT* (Space inserted)

Name provided: MacDonald Tool Co  
MABRY SUPPLY  
MACATEE PILINGS  
MACDONALD TOOL CO  
MACEDA CAFE

MABRY SUPPLY  
MAC DONALD TOOL CO  
MACATEE PILINGS  
MACEDA CAFE

*INCORRECT* (Space inserted)

h) *Symbols:*

- 1) The following characters and symbols shall be used for indexing and sorting non-human names:

English alphabet letters (capitals only)  
Arabic numerals  
& (for the word "and")  
/ (for fractions and dates)

If a non-human name contains a character or symbol not listed above, the symbol shall be dropped.

Example: Name provided: 360° Communications  
Index as: 360 COMMUNICATIONS

Name provided: 7½ % Solution Co. (see Rule 6.05 c 3 for similar example)  
Index as: 7 1/2 SOLUTION CO

Note: Fractions should not be represented by a lone special character, e.g. ½.

- 2) Non-human names that contain symbols shall be indexed without the special characters and might thereby lose their unique identity in the index.

Example: Names provided: TGIF! and TGIF?: In the unlikely event that two different such firms exist, both will appear as TGIF in the index. The record searcher will have to look at the source documents to sort out one from the other.



## APPENDIX A

### DEFINITIONS

#### Human names

For indexing purposes human names are names of individual human beings. Human names are not associated with or used in the names of businesses or other entities.

#### Examples:

JOHNSON K B  
SMITH JOHN W  
SMITH ROBERT W EST  
SMITH WILLIAM B

#### Non-human names

Non-Human names are names of corporations, partnerships, limited partnerships, general partnerships, proprietorships, other entities such as but not limited to, government agencies, churches, schools, charitable organizations, etc.

#### Examples:

JOHN W SMITH IRREVOCABLE TRUST  
KB JOHNSON OIL CO INC

When the indexer can not determine whether a name is a human or non-human name, the name shall be indexed as a human name and shall also be indexed as a non-human name.

Reserved for Additional Definitions:

## APPENDIX B

### INSTRUMENT TYPE ABBREVIATIONS

#### FINANCING STATEMENTS

<u>Type</u>	<u>Abbreviation</u>
Amendment	AMEND
Assignment	ASSIGN
Continuation	CONT
Original	ORIG
Other	OTHER
Partial Release	PART
Termination	TERM

#### JUDGMENTS

<u>Type</u>	<u>Abbreviation</u>
Judgments	JD

#### LAND RECORDS

<u>Type</u>	<u>Abbreviation</u>
Affidavit	AF
Agreement	AGMT
Amendment	AMEND
Assignment	ASSIGN
Certificate	CERT
Contract	CONT
Correction	COR
Declaration	DECL
Dedication	DED
Deed	DEED
Deed of Trust	DOT
Easement-Right of Way	ESMT
Grant	GRANT
Homestead	HMSTD
Lease	LEASE
Lien	LIEN
Notice	NOTICE

**LAND RECORDS** continued

<u>Type</u>	<u>Abbreviation</u>
Option	OPTION
Order-Decree	ORDER
Other	OTHER
Power of Attorney	PA
Permit	PERMIT
Plat-Map	PLAT
Partial Release	PREL
Release	REL
Restrictions	RESTR
Revocation	REVOC
Subordination	SUBDN
Substitution of Trustee	SUB TR

**MARRIAGE LICENSE**

<u>Type</u>	<u>Abbreviation</u>
Marriage License	ML

**WILLS AND ESTATES**

<u>Type</u>	<u>Abbreviation</u>
Affidavit	AF
Affidavit of Notice	AFN
Bond	BOND
Claim	CLAIM
Disclaimer	DISC
Inventory	INV
List of Heirs	LH
Other	OTHER
Settlement	SETTLE
Will	WILL

## APPENDIX C

### PROPERTY DESCRIPTION ABBREVIATIONS

<u>Word</u>	<u>Abbreviation</u>
Acre	AC
And	&
Avenue	AVE
Block	BLK
Book	BK
Boulevard	BLVD
Building	BLDG
Circle	CIR
Company	CO
Condominium	CONDO
County	CNTY
Court	CT
Development	DEV
Division	DIV
Easement	ESMT
East	E
Estate	EST
Extension	EXT
Heights	HGTS
Highway	HWY
Mount	MT
Mountain	MTN
North	N
Number	#
Part	PT
Phase	PH
Place	PL
Property	PROP
Right of Way	R/W
Road	RD
Section	SEC
South	S
Square Feet	SQFT
Street	ST
West	W

## APPENDIX D

### TRUSTEE AND OTHER DESIGNATED STATUS ABBREVIATIONS

<u>Title</u>	<u>Abbreviation</u>
Administrator	ADMN
Administratrix	ADMN
Commissioner	COMR
Co-Executor	EXOR
Co-Trustee	TR
Custodian	CUST
Deceased	DECD
Estate	EST
Executor	EXOR
Executrix	EXOR
Guardian	GDN
Partner	PTNR
Receiver	RCVR
Special Commissioner	SPL COMR
Substitute Trustee	SUB TR
Successor Trustee	SUC TR
Trustee	TR

**ATTACHMENT B**

**COMMONWEALTH OF VIRGINIA**

**INVENTORY OF AUTOMATED LAND  
RECORDS TECHNOLOGY IN CIRCUIT COURT  
CLERKS' OFFICES**

APPENDIX B

INVENTORY OF AUTOMATED LAND RECORDS TECHNOLOGY IN CIRCUIT COURT CLERKS' OFFICES

CLERK'S OFFICE	AUTOMATED INDEXING (System Utilized)	INSTRUMENTS INDEXED						SYSTEM UNIT(S) Processor/Server		ACCESS Terminals/PC's		PRINTERS	
		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty
		Since											
Accomack + #	Supreme Court	Nov-92	Jan-94	Oct-91	Jan-94	Jan-97	Nov-92	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/96	1	Hew.Pack Quietjet 2228A	1
										Hew.Pack 700/92	4	Hew.Pack Laserjet IIID	1
Albemarle	Cott	Jan-82	Jan-94	Nov-90	Jan-86	**	**	Hew.Pack 918LX	1	Hew.Pack 1064	8	Hew.Pack 475LPM	1
												Okidata 395	1
Alexandria	Supreme Court	Oct-93	Jan-86	Jul-86	Jul-85	Jul-83	**	Hew.Pack 9000 (A2433A)	1	Hew.Pack 700/96	2	Hew.Pack Laserjet 4si	1
												Hew.Pack Quietjet 2228A	1
Alleghany	Supreme Court	Jan-97	Jan-97	Jan-97	Jan-97	Jan-97	Jan-97	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5L	1
												Hew.Pack Laserjet 5si	1
Amelia	Logan Systems	Jan-84	**	**	**	**	**	Access-exj800i	1	N/A		Hew.Pack Laserjet II	1
Amherst	Cott							Laser 286/2	1	N/A		Okidata microline 393	1
Appomattox	Cott	Jan-73	**	**	**	**	Jan-73	Hew.Packard Vectra 486	1	N/A		Okidata 4226/302	1
Arlington*#	Local	Jul-91	Jan-97	Jan-95	Jul-97	**	**	Indexing and Imaging					
	Note: Converting index information from 1951 (previous vendor)							File Server:					
								Cmpaq ProSignia Pnt/60Mhz	1	IBM 466 DX2/SP	4		
								HP 120 T JukeBox-88 platter	1	IBM 433 SX/SI	2		
								Scanner Workstation:	1	IBM 466 DX2/SP	6	Hew.Pack Laserjet 4	1
								Kodk Imglink Micmger-990S	1	Notes:			
								BarCode Server:	1	IBM 17 pt. Touch Sem Dsply	5		
								Compaq Prolinea 486DX/50	1	LsrDX 17" Hi-res Ctr Mntor	4		
								Print Server:		Comerstone 150 dpi 19" mono	1	Hew.Pack Laserjet 4si	1
								Compaq Prolinea 486DX/50	1				
								Fax Server:					
								Compaq Prolinea 486SX/33	1				
Augusta +	Supreme Court	Jan-92	Jul-94	Jan-91	Jul-94	Aug-92	**	Hew.Pack 9000 (A1703A)	1	Hew.Pack 70/92	8	Hew.Pack Laserjet IIID	1
												Hew.Pack Quietjet	1
Bath	Logan Systems	Jan-72	Jan-72	**	**	**	**	Tx Instr.-Prof. CompBasic 286	1	N/A		Omni800-880DP	1
Bedford*+	Supreme Court	Jan-93	Jan-94	Jan-92	Jan-94	Jan-94	**	Indexing and Imaging:					
								Hew.Pack 9000 (A1703A)	1	IBM Pentium P166	4	Hew.Pack Quietjet	1
								Hew.Pack JukeBox (C1708T)	1	Hew.Pack 700/92	5	Hew.Pack Laserjet IIID	1
								Fujitsu Scanner (M3096+)	1	Notes:		Hew.Pack Laserjet IIIsi	1
										Comerstone Monitors	4		
Bland	Local	Jan-84	**	**	**	**	**	IBM PS2 - 486	1	N/A		Hew.Pack Laserjet IIID	1
Botetourt	Supreme Court	Jul-91	Mar-94	Jul-91	May-94	Jul-91	Jul-91	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	5	Hew.Pack Laserjet IIID	1
												Hew.Pack Quietjet	1
Bristol	Cott	Jul-74	**	Jan-89	Jan-90	Jan-89	**	Hew.Pack Vectra 486	1	N/A		Hew.Pack Laserjet 4plus	1

\* Courts with images in a retrievable format + Courts providing remote access - indexes # Localities that have implemented a GIS

APPENDIX B

INVENTORY OF AUTOMATED LAND RECORDS TECHNOLOGY IN CIRCUIT COURT CLERKS' OFFICES

CLERK'S OFFICE	AUTOMATED INDEXING (System Utilized)	INSTRUMENTS INDEXED						SYSTEM UNIT(S) Processor/Server		ACCESS Terminals/PC's		PRINTERS		
		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty	
		Since:												
Brunswick	Supreme Court	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1	
												Hew.Pack Quietjet	1	
Buchanan		Failed to respond to survey												
Buckingham	Cott	Jan-73	**	**	**	**	**	Hew.Pack Vectra-VL2-486	1	N/A		Hew.Pack Laserjet 5	1	
Buena Vista	Supreme Court	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96		Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	3	Hew.Pack Laserjet 4si	1	
Campbell	Supreme Court	Jan-94	**	Jan-96	Oct-95	**	**	Hew.Pack 9000 (A2433A)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet IIID	1	
												Hew.Pack Quietjet	1	
Caroline#	Logan Systems							IBM PC 386	1	N/A		Hew.Pack Laserjet III	1	
Carroll	Logan Systems	Jan-85	**	Jan-85	**	**	**	DTK Pentium	1	N/A		Hew.Pack Laserjet III	1	
Charles City#	Logan Systems	Jan-91	Jan-91	**	**	**	**	N/A		N/A		N/A		
Charlotte		Failed to respond to survey												
Charlottesville*	Logan Systems	Jan-68	**	Nov-90	Jan-91	Jan-85	**	Indexing and Imaging: Note: Scanning outsourced	1	DTK Pentium 133	1	Hew.Pack Laserjet 4	2	
								DTK Pentium 133						
Chesapeake*	Logan Systems	Jan-84	Jan-95	Jan-87	Jan-97	Jan-95	Jan-88	Indexing and Imaging:		DTK 386	4	Hew.Pack Laserjet III	3	
								DTK Pentium 133	1			Hew.Pack Laserjet IIID	1	
								Fujitsu Scanner (M3096Eplus)	1			Hew.Pack Laserjet 5	1	
Chesterfield*#	Logan Systems	Jan-67	Jul-94	Jul-89	Jul-89	Jan-95	Jul-67	Indexing and Imaging:						
								IBM OS/2	1	IMB PC	4			
								IBM PC	6	LM300	6	Hew.Pack	6	
								Fujitsu Scanner	1					
Clarke#	Logan Systems	Jan-84	**	**	**	**	**	AGI PC	1	N/A		Hew.Pack Laserjet III	1	
Clifton Forge	Cott	Jan-93	**	**	**	**	Jan-97	Hew.Pack Vectra VE 4/100	1	N/A		Hew.Pack Laserjet 5P	1	
Colonial Hgts	Logan Systems	Jan-90	**	**	**	**	Jan-90	TIX 6450G	1	N/A		Hew.Pack Laserjet III	1	
Craig	Local	Jan-84	Jan-84	**	**	**	**	Alton 2000	1	N/A		Okidata 400	1	
Culpeper	Supreme Court	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1	
												Hew.Pack Laserjet 5L	1	
Cumberland	Logan Systems	Jan-93	**	**	**	**	Jan-93	Everex Tempo 386/33	1	N/A		Hew.Pack Laserjet III	1	
Danville*+	Supreme Court	Jan-93	Jan-89	Jan-90	Jan-93	Jan-93	Jan-93	Indexing and Imaging:						
								Hew.Pack 9000 (A1703A)	1	IBM Pentium P166	5	Hew.Pack Quietjet	1	
								Hew.Pack JukeBox (C110B)	1	Hew.Pack 700/92	5	Hew.Pack Laserjet IIID	1	
								Fujitsu Scanner (M3096E)	1	Note:		Hew.Pack Laserjet ivsi	1	
								Fujitsu Scanner (M3096EX)	1	Comerstone Monitors	5			
Dickenson	Cott	Jan-86	**	Nov-86	Nov-86	Nov-86	**	Hew.Pack Vectra 486	1	N/A		Hew.Pack Laserjet 5P	1	

\* Courts with images in a retrievable format    + Courts providing remote access - indexes    # Localities that have implemented a GIS



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CLERK'S OFFICE	AUTOMATED INDEXING (System Utilized)	INSTRUMENTS INDEXED						SYSTEM UNIT(S) Processor/Server		ACCESS Terminals/PC's		PRINTERS	
		Deeds	Wills	Judgmts	Fin Stmt	Marr Lic	Plats	Type	Qty	Type	Qty	Type	Qty
		Since:											
Dinwiddie	Cott	Oct-84	**	**	**	**	**	Hew.Pack Vectra 486	1	N/A		Hew.Pack Laserjet II	1
Essex	Cott	Jan-87	**	**	**	**	**	Hew.Pack Vectra 486	1	N/A		Hew.Pack Laserjet 5P	1
Fairfax*+ #	Local	Jan-97	**	Jan-85	**	**	**	Indexing and Imaging:					
								IBM RS 6000	1	IBM 330/350 Pentium	17	Hew.Pack 5si	6
								IBM RS 6000(Image JukeBox Server)	3	IBM 330 P75 P100	24		
								Bell Howell 3368 Scanner w/imprinter	3				
								Fujitsu scanner IPT flatbed	2				
Fauquier#	Cott	Jan-70	Jul-91	Jan-84	Jan-88	Jan-90	Jan-70	Hew.Pack 3000	1	Hew.Pack 700/96	2	420 LPM Printer	1
										Hew.Pack 700/92	6	Okidata	1
Floyd*+	Supreme Court	Jan-94	Jan-94	Jan-94	Jan-94	Jan-94	Jan-94	Indexing and Imaging:					
								Hew.Pack 9000 (A2433A)	1	IBM Pentium P166	4	Hew.Pack Quietjet	1
								Hew.Pack JukeBox (C110B)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet IIIsi	1
								Fujitsu Scanner (M3096EX)	1	Note:			
									1	Comerstone Monitors	4		
Fluvanna	Logan Systems	Jan-85	**	**	**	**	**	AGI 1800C	1	N/A		Hew.Pack Laserjet II	1
Franklin	Supreme Court	Jan-93	Jan-93	Jan-93	Jan-93	Jan-93	Jan-93	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	2	Hew.Pack Laserjet IIID	1
												Hew.Pack Quietjet	1
Frederick#	Supreme Court	Jan-92	Jan-94	Jan-92	Jan-97	Jan-92	**	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	6	Hew.Pack Laserjet IIID	1
										IBM 6587-9BT	1	Hew.Pack Quietjet	1
Fredericksbg	Supreme Court	Nov-93	Jan-94	Nov-93	May-94	Jan-95	Jan-96	Hew.Pack 9000 (A2445A)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet IIID	1
												Hew.Pack Quietjet	1
Giles	Local	Jan-77	**	Jan-92	**	**	Feb-26	Compudyne 386	1	N/A		Hew.Pack Laserjet 4si	1
Gloucester*#	Supreme Court	Sep-94	Sep-94	Sep-94	Sep-94	Sep-94	**	Indexing and Imaging:					
								Hew.Pack 9000 (A2433A)	1	IBM Pentium P166	4	Hew.Pack Quietjet Plus	1
								Hew.Pack JukeBox (C110B)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1
								Fujitsu Scanner (M3096EX)	1	Note:			
										Comerstone Monitors	4		
Goochland	Supreme Court	Jul-94	Jul-94	Jul-95	Jul-95	**	Jul-94	Hew.Pack 9000 (A2433A)	1	Hew.Pack 700/92	2	Hew.Pack Laserjet 4si	1
										Hew.Pack 700/96	3	Hew.Pack Quietjet	1
Grayson	Logan Systems	Jul-84	**	Jan-85	Apr-89	Jan-89	**	IBM 386 AT	1	N/A		Hew.Pack Laserjet II	1
Greene	Cott	Jan-80	**	**	**	**	**	Hew.Pack Vectra 486	1	N/A		Hew.Pack Laserjet 5P	1
Greenville	Cott							Hew.Pack 3000 (D3502A)	1			Hew.Pack Laserjet 5	1
Halifax	Supreme Court	Oct-96	Oct-96	Oct-96	Oct-96	Oct-96	Oct-96	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5si	1
												Hew.Pack Laserjet 5L	1

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		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty
		Since:											
Hampton#	Cott	Jan-91	Jan-91	Jan-91	Jan-91	Jan-91	Jan-91	Hew.Pack 3000 (927LX)	1	Hew.Pack 2392A	5	Hew.Pack Laserjet III	1
												Okidata 393P	1
Hanover	Cott	May-76	**	**	Jun-92	**	Jan-81	Hew.Pack 3000 (A1770A)	1	Hew.Pack 700/96	3	Hew.Pack Laserjet IIID	3
												Okidata microline	1
Henrico	Local	May-89	**	May-89	**	**	May-89	Unisys Sys. 80 - Mod8	1	Unisys 4252	4	Sperry Dot Matrix	1
										Unisys 3206	1	Hew. Pack Laserjet 5	1
										Unisys 4332	3	Hew.Pack Laserjet 5p	1
												Unisys Dot Matrix	1
												Hew.Pack Laserjet III	1
Henry	Supreme Court	Jan-97	Jan-97	Jan-97	Jan-97	Jan-97	Jan-97	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5L	1
												Hew.Pack Laserjet 5si	1
Highland	NONE - manual												
Hopewell	Cott	Oct-84	**	**	**	**		Laser 286	1	N/A		Hew.Pack Laserjet 5P	1
Isle of Wight*	Supreme Court	Jan-93	Jan-93	Jan-93	Jan-93	Jan-93	Jan-93	<b>Indexing and Imaging:</b>					
								Hew.Pack 9000 (A1703A)	1	IBM Pentium P166	4	Hew.Pack Quietjet	1
								Hew.Pack JukeBox (C110B)	1	Hew.Pack 700/92	6	Hew.Pack Laserjet IIID	1
								Fujitsu Scanner (M3096E)	1	Note:			
										Cornerstone Monitors	4		
James City*#	Supreme Court	Jul-93	Jul-94	Jul-93	Jul-93	Jul-93	**	<b>Indexing and Imaging:</b>					
Williamsburg								Hew.Pack 9000 (A1703A)	1	IBM Pentium P166	5	Hew.Pack Quietjet	2
								Hew.Pack JukeBox (C110B)	1	Hew.Pack 700/92	9		
								Fujitsu Scanner (M3096EX)	2	Note:			
										Cornerstone Monitors	5		
King & Qn	Supreme Court	Aug-95	Aug-95	Aug-95	Aug-95	Aug-95	Aug-95	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1
King George	Supreme Court	Jul-97	**	Jul-97	**	Jul-97	Jul-97	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5L	1
												Hew.Pack Laserjet 5si	1
King William	Cott	Failed to respond to survey						Hew.Pack Vectra 486	1	N/A		Okidata 395	1
Lancaster	Supreme Court	May-97	May-97	May-97	May-97	May-97	May-97	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5L	1
												Hew.Pack Laserjet 5si	1
Lee	Supreme Court	Jun-95	Jan-93	Sep-85	Jan-95	Jan-96	Jun-95	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1
Loudoun#	Supreme Court	Jul-95	Jul-95	Jul-95	Jul-95	Jul-95	Jul-95	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	8	Hew.Pack Laserjet 4si	1
Louisa	Cott	Jan-84	**	**	**	**	Jan-84	Hew.Pack 3000 (32536AR)	1	Hew. Pack C1001G	4	Hew.Pack Laserjet II	2

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		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty
		Since:											
Lunenburg	Cott	Jan-88	**	**	**	**	**	Hew.Pack Vectra VL2	1	N/A		Hew.Pack Laserjet 5P	1
Lynchburg	Supreme Court	Jul-93	Jul-93	Jul-93	Jul-93	Jul-93	**	Hew.Pack 9000	1	Hew.Pack 700/92	2	Hew.Pack Laserjet 5L	2
										Hew.Pack 700/96	5	Hew.Pack Laserjet IID	1
												Hew.Pack Quietjet	1
Madison	Supreme Court	Jul-91	**	Jan-95	Jan-95	Jan-90	Jul-91	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	4	Hew.Pack Laserjet IID	1
												Hew.Pack Quietjet	1
Martinsville#	Supreme Court	Jul-94	Dec-90	Jul-94	Jul-94	Jan-94	Aug-42	Hew.Pack 9000 (A2433A)	1	Hew.Pack 700/96	3	Hew.Pack Laserjet 4si	1
										IBM PS2 (8557)	2	Hew.Pack Deskjet 500	1
Mathews	Cott							Hew.Pack Vectra VL2	1	N/A		Hew.Pack Laserjet	1
Mecklenburg	Supreme Court	Jan-93	Jan-94	Jan-89	Jan-94	Jan-93	Jan-93	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	5	Hew.Pack Laserjet IID	1
												Hew.Pack Quietjet	1
Middlesex	Cott	Jul-77					Jul-77	Hew.Pack Vectra VL2	1	N/A		Okidata microline 393P	1
Montgomery	Cott	Jan-67	Sep-93	Jan-94	Jan-93	Jan-95	Jan-67	Hew.Pack 3000	1	Hew.Pack 700/92	6	Hew.Pack Laserjet	1
												Okidata microline 395	1
Nelson+	Supreme Court	Jul-93	Jul-93	Jul-93	Jul-94	Jul-93	Jul-93	Hew.Pack 9000	1	Hew.Pack 700/96	3	Hew.Pack Laserjet IID	1
												Hew.Pack Quietjet	1
New Kent#	Logan Systems	Apr-84	**	Jan-93	Jan-93	Jan-94	Apr-84	IBM 386	1	N/A		Hew.Pack Laserjet III	1
Nwport Nws+#	Local	Jul-82	Jan-88	Jul-90	Jul-91	Jan-00	Jan-00	IBM 3472	1	Telex 078	10	N/A	
Norfolk	Supreme Court	Mar-93	Mar-93	Mar-93	Mar-93	Mar-93	Mar-93	Hew.Pack 9000 (A1703)	1	Hew.Pack 700/92	13	Hew.Pack Laserjet IIIsi	2
												Hew.Pack Quietjet	2
Northampton+	Supreme Court	Jul-97	Jul-97	Jul-97	Jul-97	Jul-97	Jul-97	Hew.Pack 9000	1	Hew.Pack 700/96	3	Hew.Pack Laserjet 5si	1
												Hew.Pack Quietjet	1
Nrthumberln	Cott	Jan-97	**	**	**	**	**	Hew.Pack Vectra 48625L	1	N/A		Hew.Pack Laserjet 5P	1
Nottoway	Cott	Jan-75	**	Jan-97	**	**	Jan-75	Hew.Pack Vectra VL2	1	N/A		Hew.Pack Laserjet 5P	1
Orange	Supreme Court	Jul-95	Jul-95	Jul-95	Jul-95	Jul-95	Jul-95	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 4si	1
												Hew.Pack Quietjet	1
Page	Logan Systems	Jul-84	**	**	**	**	Jul-84	TTX 386SX	1	N/A		Hew.Pack Laserjet II	1
Patrick	Cott	Jul-68	**	**	**	**	**	Hew.Pack Vectra VE	1	N/A		Hew.Pack Laserjet 5P	1
Petersbg	Logan Systems	Jan-86	**	Jan-90	Jan-90	Jan-90	**	Hew.Pack 3000	1	TTX 386	1	Hew.Pack Laserjet II	2
Pittsylvania	Supreme Court	Jan-95	Jan-95	Jan-95	Jan-95	Jan-95	Jan-95	Hew.Pack 9000 (A2433A)	1	Hew.Pack 700/96	3	Hew.Pack Laserjet 4si	1
												Hew.Pack Deskjet	1
Portsmouth	Cott	Jun-91	Feb-96	Jun-91	Jun-91	Jun-91	**	Hew.Pack 3000 (918LX)	1	Hew.Pack C1064G	3	Hew.Pack Laserjet	1
										Hew.Pack C1001G	5	Okidata microline 393P	1
Powhatan	Cott	Jul-84	**	**	**	**	**	Hew.Pack Vectra 486	1	N/A		Hew.Pack Laserjet 5P	1
Prince Edw	Cott							Hew.Pack DC502A	1	N/A		Hew.Pack Laserjet 5P	1
Prince Gg	Supreme Court	Apr-96	**	Apr-96	Apr-96	**	Apr-96	Hew.Pack 9000	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 5si	1

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		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty	
		Since:												
<b>Prince Wm#</b>	Cott		Jan-89	Jan-89	Jan-86	May-83	Jun-86	Hew.Pack 3000	1	Hew.Pack 700/92	2	Hew.Pack 2934A	2	
										IBM Comptble PC (vaious)	7			
										Hew.Pack 2392A	12			
<b>Pulaski#</b>	Supreme Court	Nov-95	Nov-95	Nov-95	Nov-95	Nov-95	Nov-95	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1	
												Hew.Pack Laserjet 5L	1	
<b>Radford Rpphnock</b>	NONE - manual Supreme Court	Nov-95	Nov-95	Nov-95	Nov-95	Nov-95	Nov-95	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 4si	1	
												Hew.Pack Deskjet	1	
<b>Richmnd City**</b>	Supreme Court	Sep-93	Jan-95	Sep-93	Sep-93	Jan-94	Sep-93	<b>Indexing and Imaging:</b>						
							subdivions	Hew.Pack 9000 (A2433A)	1	IBM Pentium P166	5	Hew.Pack Quietjet	1	
								Hew.Pack JukeBox (C110B)	1	Hew.Pack 700/96	11	Hew.Pack Laserjet 4si	3	
								Fujitsu Scanner (M3096EX)	2	IBM PS2 Ultimate	2	Hew.Pack Laserjet 4P	3	
										IBM PS 2 (GSLC2)	2	Hew.Pack Laserjet 4	1	
										IBM M/T 6887 VA6	1			
										Note:				
										Comerstone Monitors	5			
<b>Ric County</b>	Cott	Jul-90	**	**	**	**	Jul-90	Hew.Pack Vectra	1	N/A		Hew.Pack Laserjet 4P	1	
<b>Roanke City*</b>	Supreme Court	Sep-91	Jun-93	Apr-92	Jun-93	Sep-91	**	<b>Indexing and Imaging:</b>						
								Hew.Pack 9000 (A1703A)	1	IBM Pentium P166	4	Hew.Pack Laserjet IIIsi	1	
								Hew.Pack JukeBox (C110G)	1	Hew.Pack 700/92	6	Hew.Pack Laserjet IID	1	
								Fujitsu Scanner (M3096EX)	1	Note:		Hew.Pack Laserjet 5L	2	
										Comerstone Monitors	4			
<b>Roanke Cnty#</b>	Cott	Jul-68	Jan-94	Jul-68	Jul-89	Jan-40	**	IBM PC 586 (6587-9BT)	1	IBM PS2 (8556-059)	1	Hew.Pack Laserjet 5	1	
												Hew.Pack Laserjet III	1	
<b>Rockbridge+</b>	Supreme Court	Jul-92	Jan-93	Jul-92	Jan-94	Jul-92	Jul-92	Hew.Pack 9000	1	Hew.Pack 700/92	3	Hew.Pack Laserjet IID	1	
												Hew.Pack Quietjet	1	
<b>Rockingham**</b>	Local	Jan-82	Jan-94	Jan-94	**	Jan-94	**	<b>Indexing and Imaging:</b>						
								IBM Comp 486-66	2	Meridian Pentium 200	18	Hew.Pack Laserjet 5	2	
								Hew.Pack JukeBox (330FX)	1	IBM Comp 486-33	3	IBM Laser 4019	2	
								Bell & Howell Scanner (880D)	2	IBM Comp 486-66	7	IBM Proprinter	1	
												Okidata microline	1	
<b>Russell</b>		Failed to respond to survey												
<b>Salem#</b>	Supreme Court	Jan-92	May-92	May-92	Apr-94	May-92	Jan-92	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	4	Hew.Pack Laserjet IID	1	
												Hew.Pack Quietjet	1	
<b>Scott</b>		Failed to respond to survey												
<b>Shenandoah</b>	Cott	Jul-75	Jan-93	May-93	May-93	Jan-94	**	Hew.Pack 3000 (918LX)	1	Hew.Pack 700/92	6	Hew.Pack Laserjet III	1	
												Hew.Pack 2563B	1	

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		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty
		Since:											
<b>Smyth+</b>	Supreme Court	Jan-90	May-94	Jan-89	Jan-91	Jul-93	Jan-90	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	4	Hew.Pack Laserjet IID	1
										Hew.Pack 700/96	1	Hew.Pack Quietjet	1
<b>Southampton</b>	Supreme Court	Jul-96	Jul-96	Jul-96	Jul-96	Jul-96	Jul-96	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	4	Hew.Pack Laserjet 5si	1
												Hew.Pack Laserjet 5L	1
<b>Spotsylvania</b>	Supreme Court	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96	Jan-96	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	10	Hew.Pack Laserjet 4si	1
												Hew.Pack Laserjet 5L	1
<b>Stafford*</b>	Supreme Court	Jul-94	Jul-94	Jul-94	Jul-94	Jul-94	Jul-94	<b>Indexing and Imaging:</b>	1	Hew.Pack 700/96	7	Hew.Pack Laserjet 4si	1
								Hew.Pack 9000 (A2433A)				Hew.Pack Deskjet 500	1
<b>Staunton+</b>	Supreme Court	Jul-92	Feb-94	Jul-92	May-94	Aug-92	**	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	4	Hew.Pack Laserjet IID	1
												Hew.Pack Deskjet 520	1
<b>Suffolk</b>	Cott	Jan-89	**	Sep-87	Sep-87	Apr-88	Jan-94	Hew.Pack Vectra VE 4/100	1	Hew.Pack 1024	1	Hew.Pack Laserjet III	1
<b>Surry</b>	Logan Systems	Jan-84	**	**	**	**	**	IBM Comp-AT286 PC	1	N/A		Hew.Pack Laserjet II	1
<b>Sussex</b>	Logan Systems	Jan-80	**	**	**	**	**	Evervision PC	1	N/A		Hew.Pack Laserjet II	1
<b>Tazewell*+</b>	Supreme Court	Dec-88	Jan-93	Jan-93	Jan-87	Jan-84	**	<b>Indexing and Imaging:</b>					
								Hew.Pack 9000 (A1703A)	1	IBM Pentium P166	4	Hew.Pack Laserjet IID	1
								Hew.Pack JukeBox (C1100B)	1	Hew.Pack 700/92	4	Hew.Pack Quietjet	1
								Fujitsu Scanner (M3096EX)	1	Note:			
										Comerstone Monitors	4		
<b>Va Beach#</b>	Cott	Jan-90	Jan-86	Jan-72	Jan-86	Mar-81	Jan-90	Hew.Pack 3000 (937)	1	Hew.Pack 700/96	17	Hew.Pack 2354A	1
										Hew.Pack 2392A	7	Hew.Pack 2563A	1
												Okidata M395	1
												Okidata M320	1
<b>Warren*+</b>	Supreme Court	Jan-94	Jan-94	Jan-94	Jan-90	Jan-94	Jan-94	<b>Indexing and Imaging:</b>					
								Hew.Pack 9000 (A2433A)	1	IBM Pentium P166	4	Hew.Pack Laserjet 4si	1
								Hew.Pack JukeBox (C1100A)	1	Hew.Pack 700/96	7	Hew.Pack Deskjet 500	1
								Fujitsu Scanner (M3096EX)	1	Note:			
										Comerstone Monitors	4		
<b>Washington</b>	Supreme Court	Aug-96	Jul-97	Aug-96	Aug-96	Jan-97	Jan-97	Hew.Pack 9000 (A2938AW)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5si	1
												Hew.Pack Laserjet 5L	1
<b>Wayboro</b>	Supreme Court	Jul-92	Jan-94	Jul-92	Jul-92	Jul-92	**	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	4	Hew.Pack Laserjet IID	1
												Hew.Pack Quietjet	1
<b>WstmrInd</b>	Cott	Jan-87	Jan-87	**	**	**	**	Vectra VE 4/100	1	N/A		Hew.Pack Laserjet II	1
<b>Winchstr</b>	Supreme Court	Jan-92	Dec-93	Jan-92	Jan-94	Jan-92	**	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	4	Hew.Pack Laserjet IID	1
												Hew.Pack Quietjet	1
<b>Wise*+</b>	Supreme Court	Jan-96	Jan-94	Jan-79	Jan-95	Dec-95	**	<b>Indexing and Imaging:</b>					
								Hew.Pack 9000 (A2438AW)	1	IBM Pentium P166	4	Hew.Pack Laserjet 5si	1

\* Courts with images in a retrievable format + Courts providing remote access - indexes # Localities that have implemented a GIS

APPENDIX B

INVENTORY OF AUTOMATED LAND RECORDS TECHNOLOGY IN CIRCUIT COURT CLERKS' OFFICES

CLERK'S OFFICE	AUTOMATED INDEXING (System Utilized)	INSTRUMENTS INDEXED						SYSTEM UNIT(S) Processor/Server		ACCESS Terminals/PC's		PRINTERS	
		Deeds	Wills	Judgmts	Fin Stmt	Marr.Lic	Plats	Type	Qty	Type	Qty	Type	Qty
		Since:											
								Hew.Pack JukeBox (C1100G)	1	Hew.Pack 700/96	5	Hew.Pack Laserjet 5L	1
								Fujitsu Scanner (M3096EX)	1	Note:			
										Cornerstone Monitors	4		
Wythe*	Supreme Court	Jan-95	Jan-95	Jan-95	Jan-95	Jan-95	**	Indexing and Imaging:					
								Hew.Pack 9000 (A2438AW)	1	IBM Pentium P166	4	Hew.Pack Laserjet 4si	1
								Hew.Pack JukeBox (C1100G)	1	Hew.Pack 700/96	4	Hew.Pack Deskjet	1
								Fujitsu Scanner (M3096)	1	Note:			
										Cornerstone Monitors	4		
York#	Supreme Court	Jul-92	Jan-94	Jul-92	Jan-95	Jan-93	Jan-94	Hew.Pack 9000 (A1703A)	1	Hew.Pack 700/92	5	Hew.Pack Laserjet IIIsi	1
												Hew.Pack Quietjet	1

\* Courts with images in a retrievable format

+ Courts providing remote access - indexes

# Localities that have implemented a GIS