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## Data Processing Analysis and Recommendations for Hall County Nebraska

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DATA PROCESSING ANALYSIS AND RECOMMENDATIONS  
FOR HALL COUNTY, NEBRASKA

By  
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and  
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June, 1984

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DATA PROCESSING ANALYSIS AND RECOMMENDATIONS  
FOR HALL COUNTY, NEBRASKA

I. Introduction

This report presents an analysis with recommendations regarding the data processing needs of Hall County, Nebraska. It was undertaken pursuant to an agreement dated October, 1983 between the Center for Applied Urban Research of the University of Nebraska at Omaha and the Hall County Board of Supervisors.

This report reviews the current state of data processing in Hall County government, the county's information management data processing needs, and the applicability of computer technology to these needs. It also presents a recommended configuration and cost for a computer system to meet these needs.

Recent advances in technology have brought computers within the reach of many local governments in America. These advances have substantially reduced the cost of computer systems and have also allowed local government personnel who are not data processing experts to use computers effectively with little additional training.

The first advance has been the tremendous reduction in the physical size and cost of computers coupled with

dramatic increases in their functional capabilities. Second, the current generation of application programming or software available to local governments is characterized by flexibility and "user-friendliness." That is, the programming is designed for interactive use on video terminals by personnel with little or no knowledge of computer technology or programming.

One result of these changes is that local governments today can acquire and use computer systems to aid in performing everyday activities and can do so with a high degree of confidence and at a relatively low cost.

## II. Acquiring the Technology

Regardless of the type of hardware, a computer system should be viewed as a tool to be used just like any other piece of office equipment. It is an integral part of the work routine, just like the typewriter, the calculator, or the filing cabinet.

### A. Considerations

Computers are technically feasible in almost all organizations. Technical feasibility, however, is often less important to local governments than several other considerations.

\* Cost. Cost is perhaps the best understood and most definitive means of determining the feasibility of any new system. Is the new system more or less expensive than



current methods? Although cost may be the best understood criterion for determining feasibility, accurate cost estimates are often difficult to obtain, especially in cities with limited current data processing capability.

A word of caution is in order here. Few local governments that implement computer technology can expect to reduce overall costs. Thus, a strict cost justification for a data processing system may be impossible. At best, a local government can anticipate cost displacement (e.g., the moving of costs from one place in the budget to another) or cost avoidance (e.g., the use of more efficient technology to prevent, avoid, or move into the future costs that would otherwise occur).

\* Ease of Operation. Some computer systems can be operated only by technically trained personnel. A factor in favor of the current technology, especially the present generation of mini- and microcomputers, is that in many cases local government personnel who are not trained in the technology can easily operate these systems, and a technical staff of programmers is not required.

\* Available Programming. The availability of proven, easy-to-use software or programming to make a computer system do what a local government wants, when it wants, and how it wants is crucial to system feasibility. Without adequate software, a computer is only an expensive box that

fulfills no useful purpose. Software is available in most functional areas of local government from a variety of sources.

\* Growth. An important factor in the feasibility of a data processing system is the extent to which it can grow to meet future requirements. Not only should the system be capable of accepting more sophisticated uses, but it should also accommodate normal growth in activities.

\* Staff Considerations. The degree of acceptance of computer technology within a local government is a significant consideration in system feasibility. Support for computerization, competence in key positions that will rely on computer technology, aptitude for using automated equipment, and interest or enthusiasm for automation are most important to the effective implementation of a computer system in local government.

\* Political Feasibility. Finally, political feasibility is probably the most difficult factor to deal with and the single most critical element in the success of computerization in a local government. Political feasibility means the extent to which local elected officials and administrators understand and support the need for an electronic data processing system. In the absence of such support, a local government would be well advised not to proceed with system procurement. On the other hand, the

support of these persons can help immeasurably to ensure smooth system acquisition, installation, and operation.

#### B. Next Steps

Hall County is in a favorable position regarding implementation of a computer system or acquisition of enhanced data processing capabilities for at least two reasons.

First, several of the county's offices and departments have partially automated their functions through the use of in-house computer equipment or an external service bureau. Functions currently partially automated include the clerk's payroll function, the treasurer's financial management and accounting function, the property file in the register of deeds office, the clerk of district court's child support record keeping function, and word processing by the county attorney's office. Second, through these efforts to automate, a number of county offices and departments (non-users as well as users) have become familiar with automated data processing and have positive attitudes toward its implementation.

Given Hall County's experience to date, officials must review the above considerations and determine both the need for and feasibility of acquiring a new system(s) or enhancing existing automated technology. A systematic procurement plan should be adopted. Such a plan should include the following steps:

1. A data processing requirements analysis and feasibility study should be undertaken. For Hall County, this report represents such a study.
2. Shortly after review of this report by county officials, they should decide whether to pursue acquisition of a computer system based on the recommendations contained in this report.
3. If the county decides to pursue acquisition of a system, a Request for Proposal (RFP) to meet the requirements identified in this study will be developed and submitted to data processing vendors.
4. Proposals received by the county will be evaluated and a selection made of two or three finalists for additional consideration.
5. County officials will be asked to approve the selection of finalists and to authorize further evaluation of these proposals, including visits to local governments having systems installed by the finalists.
6. Site visits and detailed evaluations of the finalists' proposals will be made and a system vendor selected.
7. A contract will be negotiated with the vendor selected.
8. Finally, system installation, testing, and acceptance will complete the procurement plan.

This procurement plan is recommended for use by Hall County as a method proven effective for computer system acquisition in numerous local governments throughout the country.

### III. Current Data Processing in Hall County

One of the first and most important steps in determining the feasibility of an automated data system for Hall County is to understand the current status of data processing.

The current level of data processing in an organization, whether manual or automated, is an indicator of that organization's need for improved technology. It also provides insight into potential problems that may arise with implementation of newer technology. A review of an organization's data processing operation allows the development of a cost analysis that can be used, in part, to suggest whether new or enhanced data processing capabilities are justifiable.

The following pages present a brief description of current data processing activity in Hall County. The discussion is organized by county office, functional area, and extent of automation. Interviews with county officers and department heads revealed that various offices have taken different approaches to and are at different stages in automating their data processing functions.

## A. Individual County Offices

### 1. County Register of Deeds

The county register of deeds office has incorporated the use of in-house automated data processing in her operations. The register of deeds owns and operates an Apple IIe microcomputer with 12 MB of hard disk storage. The system was purchased in 1982 for approximately \$6,000. The system uses a commercially available data base software package (DB Master from Stoneware) to operate its in-house file of property titles. The individual records are constructed to include a reference number, name of owner, address of property, and legal description of property, and the records are set up with cross referencing between record items. At the time of this writing 21,500 records out of a total of 23,000 records had been entered on the in-house microcomputer.

The register of deeds office houses information on the 25,000 to 30,000 land parcels in Hall County. The office houses more than one million records, dating from 1964, dealing with the legal titles of all real estate. The office records approximately 450 documents each month. Records are stored on microfilm and originals are returned to the owners.

The sources of these data are mortgage and deed contracts, and the main users of this information are the county assessor and the public, including builders and

realtors. The office reports to the State of Nebraska once per month but seldom reports to other agencies.

The main goal of automated data processing as expressed by the register of deeds is the more rapid access of records.

## 2. County Assessor

The county assessor's office handles the appraisal and tax assessment of all real property in the county and of personal property, including motor vehicles, boats, farm equipment, etc.

The assessor's office keeps in excess of 23,000 real property records on hand (land parcels rather than individual lots) and processes 120 new or revised records each month. Records are categorized by function into five classes--agriculture, residential, commercial, industrial, and suburban. Records are maintained for 100 years by statute, but most record references are made over a shorter period--real estate records back to 1930 and appraisals back to 1969. Reappraisals are required every second year, and revised record formats have been mandated in 1977, 1981, and during the most recent 1983 appraisal.

The office prepares the real property tax roll which is forwarded to the treasurer's office for tax billing. The tax roll includes such information as an owner, address, school district, and assessed value of each property parcel.

The assessor also maintains a personal property file of over 54,200 records. These include predominantly motor vehicles (including mobile homes, boats and motors, airplanes, and automobiles and trucks) but also business furniture and fixtures and leased land improvements. Personal property records are kept for 10 years. For the approximately 50,000 motor vehicles, the assessor prepares a tax roll and handles the billings for motor vehicle taxes and registration; payments go to the treasurer's office.

The assessor's office reports to the Hall County Board and is required to report to the State of Nebraska at least once per year. Its staff also provides data through inquiries at a rate of approximately 20 per day to realtors, bankers, the public, and other local public offices. Its operations are integrally tied to the operations of both the register of deeds and treasurer.

All assessor records are currently hand processed by 12 full-time staff who share duties but are primarily assigned to a specific type of record keeping, either personal property or real estate. The task which the assessor viewed as benefiting most from automation would be an automated tax list for office record keeping. The assessor was not enthusiastic about the possibilities for automation. Concern was expressed about the transition process from manual to automated record keeping, the benefits to the public, and the working relationship between the several county offices.



### 3. County Treasurer

The Hall County treasurer's office recently acquired a Burroughs B-21 microcomputer. The B-21 replaced a dated posting machine and is being leased for approximately \$700 per month for 10 months with a purchase option at the end of the period. The B-21 provides a general ledger for total funds with end-of-month reports but cannot report the funds by district. The system also reports daily, but not monthly, receipts for real estate, personal property, motor vehicle taxes, sales tax, and drivers' licenses.

The county treasurer's office is primarily responsible for issuing tax statements each year and collecting revenues. The office processes real estate (real property) tax billings by parcel, personal property tax billings by item (mostly motor vehicles), auto license fees, and various other county billings, such as ambulance services and liquor license fees. Real property (real estate) record volume consists of a new tax roll of approximately 24,000 parcels each year and 10 to 20 tax roll corrections each month. Personal property records number 3,500 to 4,000, and auto license fees are computed from approximately 55,000 motor vehicle registrations. In addition, the treasurer's office processes drivers' licenses.

All records including tax statements are prepared and maintained manually. Tax rates are applied to the property valuations (from the assessor's office), bills prepared,

billings mailed, and payments accepted by mail or over-the-counter. Real property billings are prepared once per year and payments are due by the end of each year. Personal property billings are prepared twice per year, payments are due upon billing (November 1 and June 1), and payment is considered delinquent one month after billing. Payments are delinquent for up to one-third of both types of billings. Distress warrants are issued for payment after one year delinquency on personal property and after two years on real property.

Records are processed by 13 full-time staff people, although five to eight additional personnel are employed during peak collections periods. The treasurer's office deals most closely with the assessor's office, although it also interacts regularly with other county offices and public agencies. Banks and realtors regularly use its records.

The treasurer's office viewed automated data processing as most useful to its billing and collection functions and also in its other financial management activities. It viewed automation's greatest value as its potential for increased speed and efficiency. The treasurer would also like to use automation for planning--to generate reports of actual, estimated, and projected tax revenues by user several times per year.

#### 4. County Clerk

The clerk is the chief budget officer and handles the county's budgeting and financial management, payroll, and personnel management functions. The Hall County clerk manages an annual budget of nearly \$10 million, \$4.5 million of which is in tax dollars. The clerk uses a cash accounting system in place for approximately 18 years, without revenue or expenditure forecasting. Budgeting is manual, and reports are issued to the county board quarterly, to the State of Nebraska annually, and to county departments monthly.

The county clerk also manages the county's payroll for its 225 employees--200 full-time and 25 temporary or part-time. Records for such aspects of payroll as vacation and sick leave are handled by the individual county department heads. The department heads report these items to the clerk's office.

A service bureau (Countryman and Associates located in Grand Island) is employed to issue payroll checks and reports, but in-house record keeping is done manually. Cost of the service bureau for payroll functions varies with the workload but averages \$200 per month and is paid bi-monthly. (During 1983 costs totaled \$1,500.) Payroll data are recorded manually on standardized forms which are forwarded to the service bureau and batch processed once per month. The service bureau provides the county with printed checks

and several reports (an accounting sheet, pay/retirement match sheet, W-2 report, and year-end report by quarter). A one- to three-month time-lag occurs in posting of payroll records against the accounts payable ledger and against departmental budgets. The payroll system does not automatically interface with or update the general ledger accounting system or other financial management subsystems.

Personnel record keeping is currently managed by each individual department and is not linked to the payroll system. The county clerk does maintain a W-4 master tax records file for all county personnel. However, the W-4 file is maintained manually and updated only occasionally.

The county clerk would like to automate its budgeting and bookkeeping functions and integrate these with an automated payroll system. The clerk is also aware of the potential problems inherent in implementing an automated data processing system, particularly the start-up costs in time and money.

#### 5. County Sheriff

The county sheriff's office is Hall County's principal law enforcement agency. Its duties include operation of the county jail, control of all county prisoners, serving papers of the courts, handling of mental complaints, collection of taxes on distress warrants, serving county court warrants, operation of emergency rescue teams (two), serving as the county's coroner, and enforcement of display of

mobile home taxation stickers.

The sheriff's office is fully manned (24 hours per day) and operates with 50 personnel (17 deputies, 22 corrections officers, seven office support personnel, two part-time nurses, and two clerks). It also operates 17 police cruisers and one rescue vehicle.

The Hall County sheriff's office operates the third largest county jail in Nebraska. It is a regional facility, and inmates may serve up to one year. The maximum design population is 120 inmates. The daily inmate population varied from 35 to 108 during 1982, with an average of approximately 60. The office processes approximately 2,500 inmates per year.

During 1982, the sheriff's office handled nearly 2,400 complaints, 1,400 arrests, 903 criminal cases, 261 felony/misdemeanors, approximately 7,800 court papers served, 679 warrants executed, and 148 traffic accidents investigated. Incidents increased by 35 percent from 1981 to 1983.

All record keeping in the sheriff's office is accomplished by hand. Records of all incidents must be kept for five years according to Nebraska law, and records are being created at a rate of 5,000 per month or 60,000 per year. The sheriff expressed his concern over the overwhelming increase in record keeping for his clerks and

an inability to retrieve records quickly and accurately. He stated that the automation of his record keeping and data processing activities is "overdue."

The sheriff desires an automated, integrated system for data retrieval, cross-referencing, information management, and documentation (because of legal liability). He also desires a direct interactive hook-up with the NCIC network for warrants. The NCIC system is currently tied to the communications/civil defense office. The sheriff's main concern with automation is the confidentiality of information, particularly for the security of criminal history files (required by law), and he would require the provision of a separate records system for criminal investigation.

The sheriff has attended several seminars on automated criminal justice systems and is interested in an investigatory system comparable to the Douglas County system. The Douglas County sheriff's office uses an Apple II+ system with 48K and two floppy disk drives. The system is used for storage and retrieval of records, including suspect, booking, vehicle, and other reports. A comparable available system today would be an Apple IIe with 64K, two floppy disk drives, and an 80 cps printer at a cost of \$2,500. However, such a system would be inadequate to perform the sheriff's functions as described in this report.

## 6. Communications/Civil Defense Office

The office of communication/civil defense functions as a joint city/county dispatcher for most local public safety forces, including three law enforcement agencies, two ambulance agencies, and six fire fighting departments. It also serves as a resource center for emergency preparedness and planning (an enhanced function since the 1980 tornadoes).

The office's communications function includes the forwarding of approximately 2,300 calls per day to the appropriate public safety office. Current staffing is at 11 personnel--eight in communications and three in civil defense. Full staffing would include two additional personnel. There are two to three personnel on duty at all times.

Record keeping in this office consists of information on all dispatched calls. The office also keeps a duplicate copy of auto registrations at hand for the sheriff and police patrols who call in to C/CD for vehicle verification, particularly after 5 p.m. when other offices close. The C/CD director expressed interest in being able to access various city and county records for his operations if automated including license plate and drivers' license information from the county offices and warrant information from the sheriff's office. He would also like to be tied into the NCIC network.

The director of the office of communication/civil defense is very supportive of automated data processing. He has considered implementing his own microcomputer system and is supportive of automation in both the City of Grand Island and Hall County offices. His priorities include compatibility between systems, data retrieval capabilities, and word processing (in order of concern). This office would not be a primary user--it would not input information; it would draw unrestricted information from other system users. The principal need is for inquiry capability into license plate, vehicle I.D., and auto registration files in order to provide information to the public safety forces upon request.

#### 7. County Highway Department

The Hall County highway department is responsible for the construction and maintenance of county roads and bridges, of subdivision streets beyond the city's two-mile jurisdiction, and of streets in the county's three villages. Its records include 800 miles of county roads (125 miles paved) and 65 miles of subdivision streets and properties. Of the 34 personnel in the department, seven deal with record keeping. All records are gathered and maintained by highway department staff members, including the county building inspector, and record keeping includes project cost accounting, scheduling, and equipment management.



The highway department reports quarterly to the county board and annually by statute to the State of Nebraska with one- and six-year plans. Information on file is also reported to the Federal Highway Administration and occasionally to the public. Reports include road inventories, sign inventories, bridge inspections, equipment inventories, traffic control and accident inventories, and a complaint tracking system.

Automated data processing for the department consists of using output from the state's list of activities in order to prioritize and schedule work. The department would like to have an in-house automated capability (for scheduling, inventory, and planning), compatible with other county systems. The director would like to microfilm all records and is currently considering acquisition of an in-house microcomputer system comparable to that operated by the Lancaster County highway department office. The Lancaster County system is an IBM PC XT with 10MB hard disk storage which cost approximately \$4,300 (under state discount) and is used for financial management purposes. Such a system would be used by the Hall County highway department for cost accounting, including projections, inventory and bridge inspection.

#### 8. Clerk of District Court

The clerk of the district court has the responsibility for maintenance of all district court records including

civil and criminal case records and the receipting and reimbursement of all child support and alimony. In addition, he is responsible for the selection and organization of juries.

This office currently has automation of child support records provided by a service bureau, Countryman and Associates. The service bureau charges the clerk's office \$4,000 annually for production of a list of names of persons certified as over 30 days delinquent in payment of child support and the processing of child support checks. An additional cost is the \$480 paid to a bank annually for check reconciliation.

All other functions are currently carried out manually by five staff members. The nature and volume of these tasks are such that they could be carried out in a more efficient and timely manner by a computer. This is especially true in regard to recent child support legislation which requires accrual of interest (compounded daily) on delinquent child support payments. With existing personnel the clerk's office is unable to comply completely with this legal requirement.

The clerk of the district court strongly desires the introduction of an automated system. He indicates that his staff is in favor of automation and foresees no problems with regard to the automation of his office. He would like to see the existing system automated and stated that his

first priority is the automation of all child support records. With the legal requirement for daily compounding of interest on delinquent child support payments, this automation is especially important. In addition, he feels the case management records need to be automated. Should the clerk of district court automate, he may be able to recoup costs by as much as 70 percent from federal and state programs.

#### 9. County Attorney's Office

The county attorney's office acts as both civil and criminal attorney within Hall County and the City of Grand Island. The responsibilities of this office include prosecution, review of police and state patrol reports, and filing of charges in city and county courts. In addition, this office maintains a file of check payments received by merchants and returned because of insufficient funds.

The office's staff includes six attorneys and five full-time and three part-time secretaries. According to the county attorney the office currently is understaffed.

The only automation this office currently has is limited word processing. This function is performed on an Apple III, purchased in fiscal 1982-83 for \$5,000 and currently covered by a hardware maintenance contract for \$500 annually.

All personnel in the county attorney's office are favorable toward automation, and thus no problems are anticipated in the process. The first priority is for

additional word processing; second is filing and criminal case management, as well as the ability to access child support records in the clerk of district court's office. The attorney should also find inquiry into the sheriff's records (criminal history files) useful.

Automation of child support records, maintained in the clerk of district court's office, appears to be eligible for up to 70 percent reimbursement from state and federal public welfare departments. Since hardware, software, and other related supplies and personnel are eligible for this reimbursement, the possibility exists that child support functions in both the clerk of district court's and county attorney's offices could be at least partially reimbursed by federal and state funds.

The third priority for automation is the investigation and resolution of bad checks. This department desires to automate bookkeeping and have the ability to identify repeat offenders. The existing system will need to be upgraded before automation begins, however. Since many of these records are confidential, security is a major concern of this office.

#### 10. Election Commissioner

This office is responsible for registration of new voters and administration of elections and is staffed by one part-time worker and the commissioner. Currently, voting and tabulation of ballots is automated using the

punch card system. The office has two CES ballot counters purchased in 1978 for a total cost of \$42,000. In addition, 255 voting machines were purchased that same year for a total of \$68,000, and 50 voting demonstrator machines were purchased for \$3,500. Voting demonstrator machines are used to teach the use of the voting machines. In addition, the office owns a crimper which assembles ballots and cost \$1,200 initially. All of this equipment, purchased in 1978, is still under warranty and thus involves no maintenance costs.

This office is in favor of further automation and foresees no problems. The generation and maintenance of an automated voter list is the office's top priority.

#### B. Synopsis of Current Data Processing

Figure 1 summarizes current automation by the Hall County offices interviewed. A total of \$11,000 has been expended on equipment for automation to date (not including the election commissioner's automated system). In addition, \$15,780 is expended annually on equipment maintenance, totaling \$78,900 over five years.

FIGURE 1

## SUMMARY OF CURRENT AUTOMATION AND COSTS

| <u>Office</u>                | <u>Current Automation</u>                   |  |  | <u>Automation Being Actively Considered</u> |  |
|------------------------------|---|--|--|---|--|
|                              | <u>Equipment/Service</u>                    | <u>Costs</u>   | <u>Automated Functions</u>                             | <u>Equipment/Service</u>                    | <u>Costs</u>   |
| Clerk                        | Service Bureau<br>(Countryman & Associates) | @ \$2,400/year   | Payroll (partial)                                      |   |  |
| Assessor                     |   |  | None   |   |  |
| Treasurer                    | Burroughs B-21                              | \$8,400/year<br>(leasing fee)  | Financial Management (partial)<br>Accounting (partial) |   |  |
| Register of Deeds            | Apple IIe                                   | \$6,000<br>(purchase price)  | Property File<br>(Data Base Management)                |   |  |
| Sheriff                      |   |  | None   | Apple III                                   |  |
| Highway Dept.                |   |  | None   | IBM PC XT                                   | \$4,300  |
| Communications/Civil Defense |   |  | None   |   |  |
| Clerk of District Court      | Service Bureau<br>(Countryman & Associates) | \$4,000/year   | Child Support Records                                  |   |  |
|                              | Local Bank                                  | \$480/year   | Check Reconciliation                                   |   |  |
| Attorney                     | Apple III                                   | \$5,000<br>(purchase price)<br>\$500 (annual<br>maintenance)   | Word Processing  | Additional Hardware                         | \$ unknown   |
| Election Commissioner        | CES system                                  | \$114,700<br>(purchase price)  | Voter Registration<br>Ballot Tabulation                |   |  |
| Cumulative                   | 1 service bureau and<br>4 separate systems  | \$11,000 in equip.<br>purchase costs<br>(plus \$114,700<br>for the CES<br>voting system)<br>and<br>\$15,780 annual<br>costs (or \$78,900<br>over five years) |  |   | Equipment<br>purchase costs<br>and possible<br>annual<br>maintenance<br>costs. |

#### IV. Applications to Consider for Automation

##### A. Introduction

Automated data processing in Hall County is in its infancy. A number of officers are considering or are actively using a service bureau or electronic equipment to automate their data processing. However, efforts at automation have been uncoordinated, unsystematic, and therefore inefficient to date.

The lack of coordination means that what is done in one office may have to be manually processed or processed on a different machine in a different office. This leads to duplication of effort, redundancy of filing and record keeping systems, and reduction of overall efficiency. The unsystematic nature of efforts to automate data processing means that some functions are automated while some other, equally important, functions are not. For example, the automation of payroll records but not personnel records would be less than systematic and is inefficient.

These inefficiencies are costly in the long run, and they preclude the integration of principal functions and data bases of key county offices.

The current generation of data processing technology, including both micro- or minicomputers, permits and encourages functional and data base integration and allows for the performance of multiple functions by multiple users. For example, the county treasurer could create a motor vehicle registration file and allow the sheriff access to this file

(for inquiry purposes but not for purposes of entering or changing records) via a terminal in that office. Similarly, the work of the register of deeds, assessor, treasurer, and clerk could be integrated and streamlined using modern technology. This would involve the activities of tax assessment, tax roll preparation, tax billing and collection, tax disbursement, and financial accounting. In each of these cases, more than one person in more than one county office could perform a variety of functions simultaneously on the system and not interfere with the activities of others.

Hall County should consider a system that is:  
Transaction oriented--When a transaction such as updating the accounts receivable file is made by the county treasurer, the system accepts the transaction and automatically updates all affected ledgers and funds. This would, for example, permit automatic tax receipt distribution to the proper funds and accounts upon the entry of tax receipts into the system and would also provide for an audit trail of these transactions.

On-line--Computer terminals and printers in the various offices would be physically connected, thus providing instant access to the system by all users.

Real time--Processing on the system occurs at the time a user begins to work at a terminal. There would be no need to create punch cards or other input type documents to run through the system at a later time.



Multi-user and multiprogramming--Several persons in different offices could perform different functions on the system at the same time.

The system should also allow users to undertake unique inquiries and generate unique reports using English-like commands.

With these system requirements in mind, the following functional areas should be considered for automation in Hall County using either a distributed network of microcomputers or a single multi-user, multiprogramming minicomputer with terminals and printers in all relevant offices.

B. Applications by Office

1. County Clerk

- a. Integrated financial management system, including the following elements:
  - general ledger accounting
  - budgetary accounting
  - vendor accounting
  - accounts payable
  - miscellaneous accounts receivable
  - miscellaneous billings
- b. Payroll system
- c. Personnel system
- d. Motor vehicle titles

2. County Treasurer

- a. Integrated financial management system, including the following elements:

- general ledger accounting
- accounts receivable
- b. Tax billing and collection system, including the following elements:
  - tax statement preparation
  - tax collection and reconciliation
  - tax distribution
  - special assessment billing and collections
  - delinquent tax list and statements
- c. Motor vehicle registration and tax billings and collections
- d. Drivers' license system

3. County Assessor

- a. Real property file including the following categories of properties
  - agricultural
  - residential
  - commercial
  - industrial
  - suburban
  - exempt
  - required reports

(This file should contain all records on real property now maintained by the assessor. Its value would be to reduce substantially the person hours required to create, maintain, and change those records.)

- b. Personal property tax assessments
- c. Real property tax assessments

- d. Tax assessment valuation change notices
- e. Motor vehicle tax assessments

4. Register of Deeds

Deed and document indexing system--cross-indexing

(This file should contain all title and deed records now maintained by the register of deeds. Minimally, each record must include: reference number, name of owner, address of property, and legal description. Its value would be to reduce substantially the person hours required to create, maintain, and change records.)

5. Sheriff

- a. Master name index
- b. Incident reporting
- c. Accident reporting
- d. Arrests and booking
- e. Basic records
  - Officer reports
  - Resource allocation and control
  - Performance evaluation
  - Training
- f. Crime and activity statistics
  - Crime analysis
  - Required reports (state and federal)
- g. Jail records
- h. Fines and forfeiture collections and accounting  
    sement
- i. Warrants and subpoenas
- j. Motor vehicle registration file (inquiry only)

6. Highway Department (on separate microcomputer)
  - a. Road inventory file
  - b. Sign inventory file
  - c. Bridge inventory file
  - d. Traffic accident file
  - e. Equipment inventory and management
  - f. Scheduling
7. Communication/Civil Defense

Inquiry to motor vehicle registration/license plate file
8. County Attorney
  - a. Word processing and report generation
  - b. Accounts receivable/financial management (for child support payments file)
  - c. Inquiry capability (to sheriff's records and to clerk of district court's records on a single computer system)
9. Clerk of District Court
  - a. Accounts receivable/financial management (for child support and alimony records, including delinquencies and resulting interest)
  - b. Case management for court scheduling
10. Election Commissioner

Voter registration file

## V. Alternative Configurations and Estimated Costs

Four separate alternatives for automated data processing are offered here in order to provide Hall County with a wide range of alternatives. The alternatives increase in cost with their comprehensiveness and complexity (in order of Alternatives #1 through #4). While the more comprehensive and complex systems are more costly, they offer longer term and more integrated solutions to Hall County's data processing needs.

### A. Summary of Alternatives

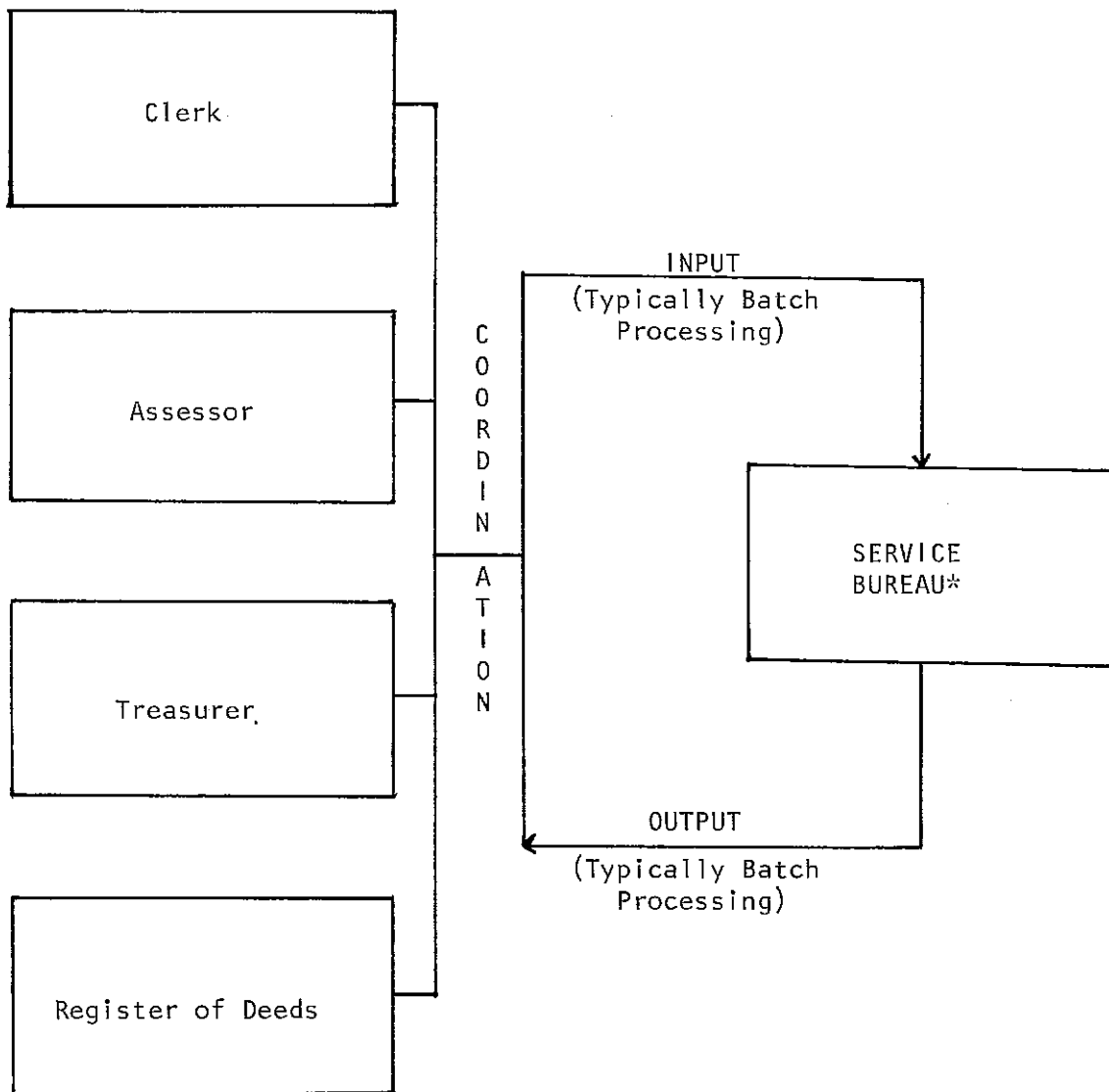
1. Alternative #1 - Service Bureau  
(assessor, treasurer, and clerk)      \$ indeterminate
2. Alternative #2 - Single Minicomputer  
(clerk, assessor, treasurer,      \$303,000 - 384,000  
register of deeds)
3. Alternative #3 - Single Minicomputer  
(clerk, assessor, treasurer,      \$343,800 - 538,260  
register of deeds, sheriff  
communications/civil defense,  
attorney, clerk of courts,  
election commissioner, highway  
department)
4. Alternative #4 - Multiple Computer Systems  
  
First system--minicomputer      \$253,750 - 397,500  
(clerk, assessor, treasurer,  
register of deeds, and election  
commissioner)

|   |                       |
|---|-----------------------|
| Second System - Minicomputer:<br>sheriff                  | \$ 80,625 - \$149,250 |
| Third System - Microcomputer:<br>attorney                 | \$ 18,000 - 36,000    |
| Fourth System - Microcomputer:<br>clerk of district court | \$ 18,000 - 36,000    |
| Fifth System - Microcomputer:<br>highway department       | \$ 8,000 - 17,000     |
| TOTAL OF FIVE SYSTEMS                                     | \$378,375 - \$635,750 |

B. Alternative #1 - Service Bureau

Alternative #1 would involve the performance by a service bureau of all functions specified for the clerk, assessor, treasurer, and register of deeds. The service bureau should provide interactive, rather than batch, processing, and all functions should be integrated. The Nebraska Department of Revenue currently provides services for county assessor and treasurer functions, and other vendors offer a limited range of services. The consultants know of no current vendor services, however, that currently provide a complete range of functions to county government.

Alternative #1 - Employ Service Bureau for  
Data Processing



\*Service is typically established on a regular schedule with a time lag between input and output and processing in a batch mode. Interactive processing may also be available.

C. Alternative #2 - Single Minicomputer System for Four Offices

Alternative #2 would involve a centralized minicomputer system located in the County Administration Building serving the immediate needs of the offices of county clerk, county assessor, county treasurer, and county register of deeds. Terminals and printers would be located in each major county office, as well as at each office's counter on the first floor. The main memory and storage units would be placed under the operational supervision of one of the four offices. A single office should be identified by the Board of Supervisors for location and supervision of the central computer (CPU, disk drive, and system printer) prior to acquisition. Although the county's data base would be integrated and centralized on this system, each office would have complete control (through security restrictions) over its own files and records. This alternative would allow the immediate automation of four offices focused on the financial management of county government. It provides a solution at lesser cost while allowing for later expansions of automation to other functions.

1. Hardware by Office

a. Central computer

Central processing unit (CPU) - 3 to 4 MB of  
memory  
Memory unit (disk drive) - 500 MB of storage  
System printer - 300 lpm

Estimated Cost: \$125,000 to 150,000



b. County Clerk

4 terminals: 2 on second floor in main office  
area

1 matrix printer (200 cps): in first floor  
collections area

Estimated cost: \$6,500 to 7,500

c. County Assessor

5 terminals: 1 on second floor for the assessor  
3 on second floor in main office  
area

1 on first floor at collections  
window

(ability to move one terminal from  
upstairs to downstairs collections  
area during peak periods)

2 receipt printers: 1 on second floor at col-  
lections window

1 on first floor at collections  
window

Estimated cost: \$7,000 to 8,000

d. County Treasurer

7 terminals: 1 on second floor for the  
treasurer

4 on second floor in main office  
area

2 on first floor at collections  
window

2 receipt printers: 1 on second floor office at  
collections window

1 on first floor at collections  
window

Estimated cost: \$9,000 to 10,000

e. County Register of Deeds

2 terminals: in second floor office area

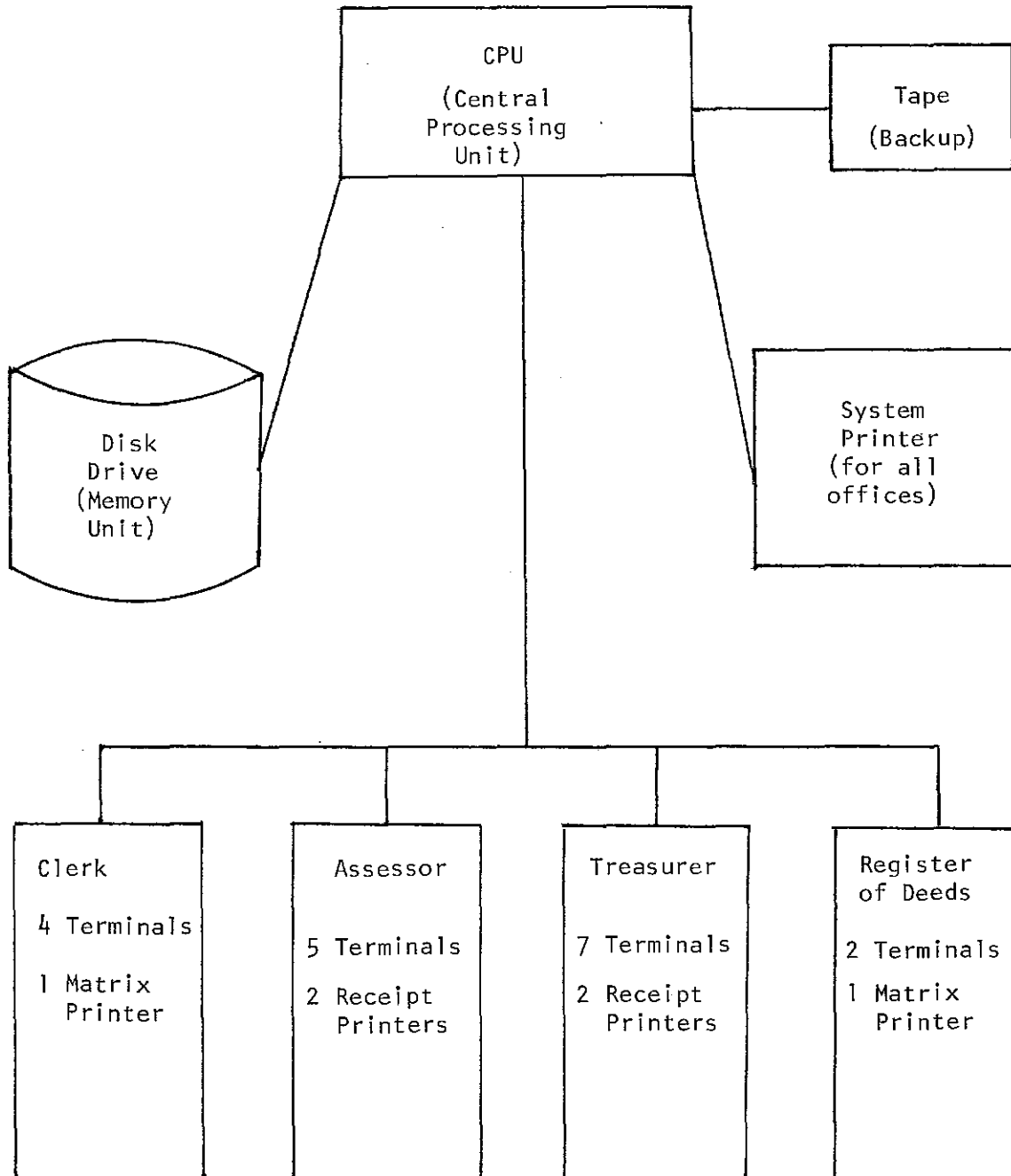
1 matrix printer (200 cps): in second floor  
office area

Estimated cost: \$4,500 to 5,500

2. Summary of Estimated Costs

| <u>Hardware (Equipment)</u>                                      | <u>Low</u>    | <u>High</u>   |
|--|---------------|---------------|
| Central computer   | \$125,000     | \$150,000     |
| Clerk  | 6,500         | 7,500         |
| Assessor   | 7,000         | 8,000         |
| Treasurer  | 9,000         | 10,000        |
| Register of deeds  | <u>4,500</u>  | <u>5,500</u>  |
| Subtotal   | \$152,000     | \$181,000     |
| Hardware maintenace (10<br>percent annually over<br>five years)  | <u>76,000</u> | <u>90,500</u> |
| Subtotal   | 228,000       | 271,500       |
| Software (Programming)   | 50,000        | 75,000        |
| Software maintenance (10<br>percent annually over<br>five years) | <u>25,000</u> | <u>37,500</u> |
| TOTAL  | \$303,000     | \$384,000     |

Alternative #2 - Single Minicomputer System  
in County Administration Building for Clerk,  
Assessor, Treasurer, and Register of Deeds



D. Alternative #3 - Single Minicomputer System for All Offices

Alternative #3 would involve a centralized minicomputer system which would serve 10 separate county offices/departments. It would be located in the County Administration Building. Although the county's data base would be centralized through the main memory and storage units located in the Administration Building, each department would be able to access and process records through terminals located in their respective offices. Each office would have complete control (through security restrictions) over its own files and records. Such an extensive system may require a full-time data processing coordinator, not added to the costs of the system here.

The county clerk, assessor, treasurer, register of deeds, and election commissioner would each be hard-wired to the main memory and storage units because they are located physically in the same facility, the Administration Building. The county sheriff would access the system through a dedicated telephone line connecting the Safety Center to the Administration Building (located one city block apart). Other offices would access the system through non-dedicated telephone connections via modems. The highway department, as an exception, would be able to access the main minicomputer system as needed but would operate on its

own microcomputer system (compatible with the main minicomputer system). In addition, the sheriff's office would require a tie-in to the minicomputer and a separate, compatible microcomputer for storage and retrieval of criminal investigation files.

1. Hardware by Office

a. Central computer

Central processing unit (CPU) - 4 to 5 MB of memory  
Memory unit (disk drive) - 750 MB of storage  
System printer - 300 lpm

Estimated cost: \$150,000 to 175,000

b. County Clerk

(As in Alternative #2)

c. County Assessor

(As in Alternative #2)

d. County Treasurer

(As in Alternative #2)

e. County Register of Deeds

(As in Alternative #2)

f. County Sheriff

4 terminals  
1 matrix printer (200 cps)  
1 dedicated line (\$40 installation and \$25/month use charge)  
1 microcomputer with letter quality printer (for criminal investigation files)

Estimated cost: \$13,040 to 14,040 (with 5 years dedicated line)

g. Communications/Civil Defense Office

3 terminals  
3 modems  
1 matrix printer

Estimated cost: \$5,850 to \$6,900, plus communications costs

h. County Attorney

- 3 terminals
- 3 modems
- 1 matrix printer

Estimated cost: \$5,850 to \$6,900, plus communications costs

i. Clerk of District Court

- 3 terminals
- 3 modems
- 1 matrix printer

Estimated cost: \$5,850 to \$6,900, plus communications costs

j. Election Commissioner

- 1 terminal (hard-wired)

Estimated cost: \$1,000

k. Highway Department

- 1 microcomputer
- 1 modem
- 1 matrix printer

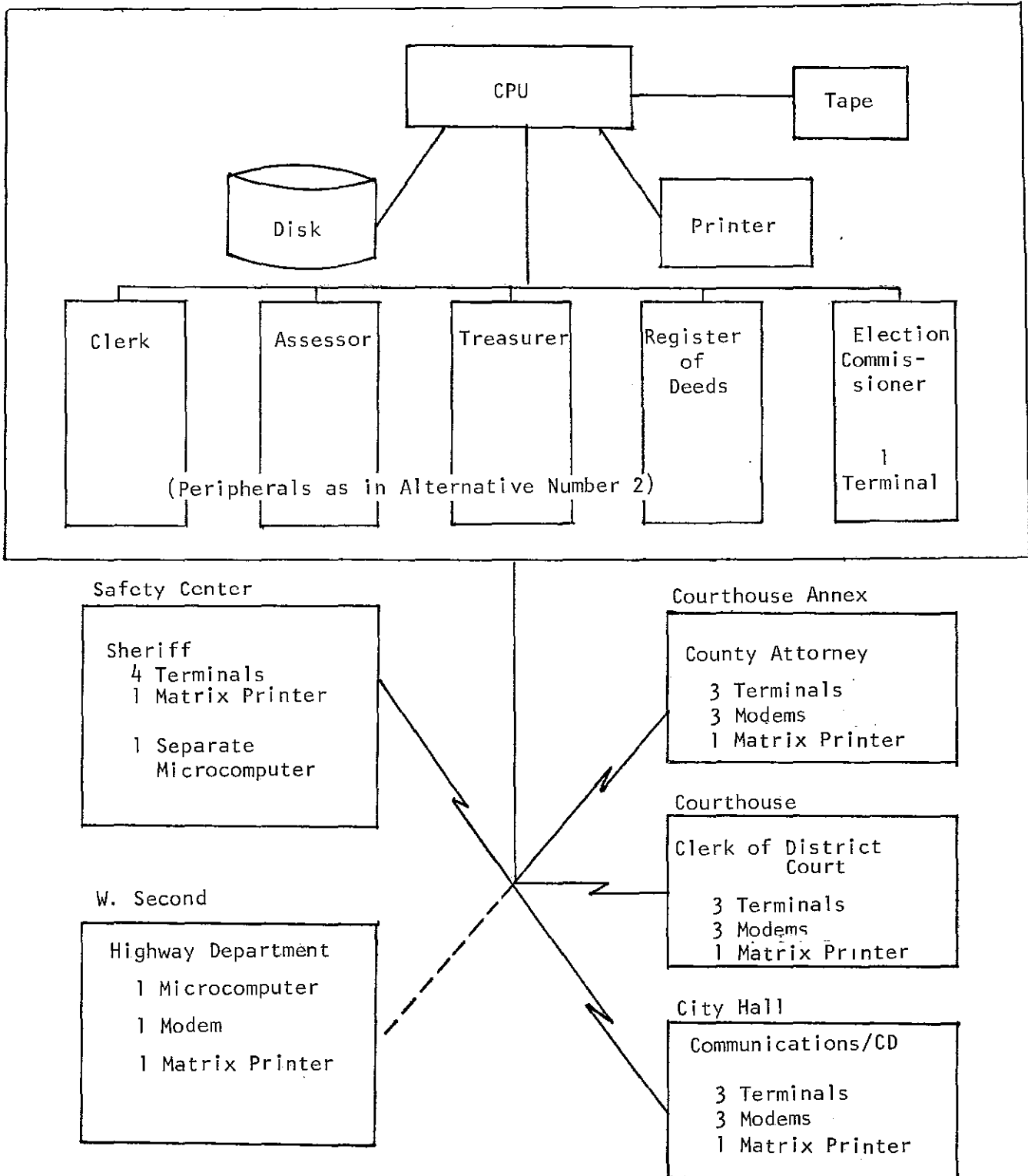
Estimated cost: \$6,450 to \$7,100

2. Summary of Estimated CostsHardware (Equipment)

|  | <u>Low</u>    | <u>High</u>    |
|--|---------------|----------------|
| Central Computer   | \$150,000     | \$175,000      |
| Clerk  | 6,500         | 7,500          |
| Assessor   | 7,000         | 8,000          |
| Treasurer  | 9,000         | 10,000         |
| Register of Deeds  | 4,500         | 5,500          |
| Sheriff  | 13,040        | 14,040         |
| Communications/CD  | 5,850         | 6,900          |
| Attorney   | 5,850         | 6,900          |
| Clerk of Courts  | 5,850         | 6,900          |
| Election Commissioner  | 1,000         | 1,000          |
| Highway Department   | <u>6,450</u>  | <u>7,100</u>   |
| Subtotal   | \$215,040     | \$248,840      |
| Hardware maintenance (5-10<br>percent annually over<br>five years) | <u>53,760</u> | <u>124,420</u> |
| Subtotal   | 268,800       | 373,260        |
| Software (programming)   | 60,000        | 110,000        |
| Software maintenance (5-10<br>percent annually over<br>five years) | <u>15,000</u> | <u>55,000</u>  |
| TOTAL  | \$343,800     | \$538,260      |

Alternative #3 - Single Minicomputer  
System for All Offices\*

County Administration Building



\* Central system located in the County Administration Building with dedicated telephone line to the sheriff and modem connect capabilities to other offices. The Apple IIe currently used by the register of deeds may be transferred to the sheriff's office.



E. Alternative #4 - Multiple Computer Systems for All Offices

This alternative would involve the acquisition of up to five separate but possibly compatible computer systems. The first system, a minicomputer, would be housed in the County Administration Building; it would serve the clerk, assessor, treasurer, register of deeds, and election commissioner via hard wire connections. The second system, a minicomputer, would serve the sheriff's office. The third, fourth, and fifth systems, each microcomputers, would serve the county attorney, clerk of district court, and highway department, respectively.

These separate systems could be acquired at once or could be phased in one or more at a time. This alternative is the least integrated, and most complex solution, and is costly. However, it does provide a decentralized alternative to a single integrated system.

1. First System - minicomputer

a. Hardware by office

1. Central computer  
(As in Alternative #2)
2. County Clerk  
(As in Alternatives #2 & #3)
3. County Assessor  
(As in Alternatives #2 & #3)
4. County Treasurer  
(As in Alternatives #2 & #3)

5. County Register of Deeds  
(As in Alternatives #2 & #3)

6. Election Commissioner  
(As in Alternative #3)

b. Summary of Estimated Costs

| <u>Hardware (Equipment)</u>  | <u>Low</u>    | <u>High</u>   |
|--|---------------|---------------|
| Central Computer   | \$125,000     | \$150,000     |
| Clerk  | 6,500         | 7,500         |
| Assessor   | 7,000         | 8,000         |
| Treasurer  | 9,000         | 10,000        |
| Register of Deeds  | 4,500         | 5,500         |
| Election Commissioner  | <u>1,000</u>  | <u>1,000</u>  |
| Subtotal   | \$153,000     | \$182,000     |
| Hardware maintenance (5-10<br>percent annually over<br>five years) | <u>38,250</u> | <u>91,000</u> |
| Subtotal   | 191,250       | 273,000       |
| Software (programming)   | 50,000        | 83,000        |
| Software maintenance (5-10<br>percent annually over<br>five years) | <u>12,500</u> | <u>41,500</u> |
| TOTAL  | \$253,750     | \$397,500     |

2. Second System - Minicomputer for Sheriff

a. Hardware (Equipment)

1. Central Computer

Central processing unit (CPU) - 256 to  
512K of memory  
Memory unit (disk drive) 50 MB of storage  
System printer - 200 lpm

Estimated cost: \$48,000 to 72,000

## 2. Peripherals

4 terminals  
1 matrix printer

Estimated cost: \$6,500 to 7,500

| b. <u>Summary of Estimated Costs</u>                         | <u>Low</u>   | <u>High</u>   |
|--|--------------|---------------|
| Hardware   | \$ 54,500    | \$ 79,500     |
| Hardware maintenance (5-10 percent annually over five years) | 13,625       | 39,750        |
| Software   | 10,000       | to 20,000     |
| Software maintenance (5-10 percent annually over five years) | <u>2,500</u> | <u>10,000</u> |
| TOTAL  | \$ 80,625    | \$149,250     |

3. Third System - Microcomputer for County Attorneya. Hardware (Equipment)

3 work stations  
1 hard disk  
1 matrix printer

| b. <u>Summary of Estimated Costs</u> | <u>Low</u>   | <u>High</u>  |
|--------------------------------------|--------------|--------------|
| Hardware                             | \$ 14,000    | \$ 26,000    |
| Hardware maintenance (on hard disk)  | 1,000        | 3,000        |
| Software                             | <u>3,000</u> | <u>7,000</u> |
| TOTAL                                | \$ 18,000    | \$ 36,000    |

4. Fourth System - Microcomputer for Clerk of District Courta. Hardware (Equipment)

3 work stations  
1 hard disk  
1 matrix printer

| b. <u>Summary of Estimated Costs</u> | <u>Low</u>   | <u>High</u>  |
|--------------------------------------|--------------|--------------|
| Hardware                             | \$ 14,000    | \$ 26,000    |
| Hardware maintenance on hard disk    | 1,000        | 3,000        |
| Software                             | <u>3,000</u> | <u>7,000</u> |
| TOTAL                                | \$ 18,000    | \$ 36,000    |

5. Fifth System - Microcomputer for Highway Departmenta. Hardware (Equipment)

1 work station  
1 matrix printer

b. Summary of Estimated Costs

|          | <u>Low</u>   | <u>High</u>  |
|----------|--------------|--------------|
| Hardware | \$ 5,000     | \$ 10,000    |
| Software | <u>3,000</u> | <u>7,000</u> |
| TOTAL    | \$ 8,000     | \$ 17,000    |

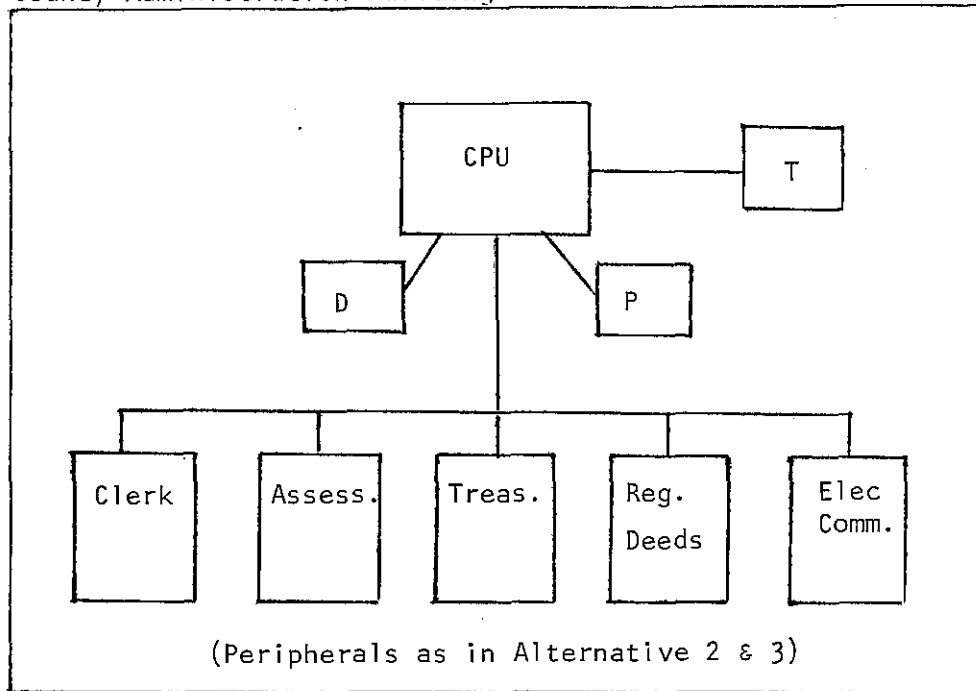
6. Total of 5 Systems

|          | <u>Low</u>   | <u>High</u>   |
|----------|--------------|---------------|
| System 1 | \$253,750    | \$397,500     |
| System 2 | 80,625       | 149,250       |
| System 3 | 18,000       | 36,000        |
| System 4 | 18,000       | 36,000        |
| System 5 | <u>8,000</u> | <u>17,000</u> |
| TOTAL    | \$378,375    | \$635,750     |

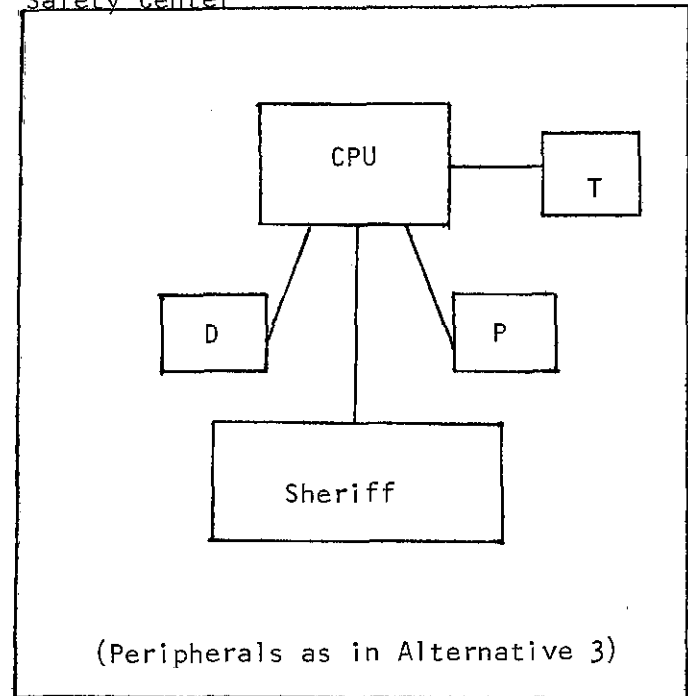
FIGURE 5

Alternative #4 - Multiple Computer  
Systems for All Offices\*

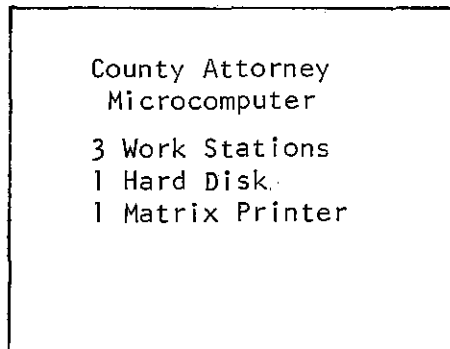
County Administration Building



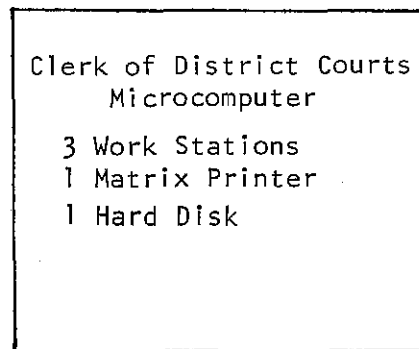
Safety Center



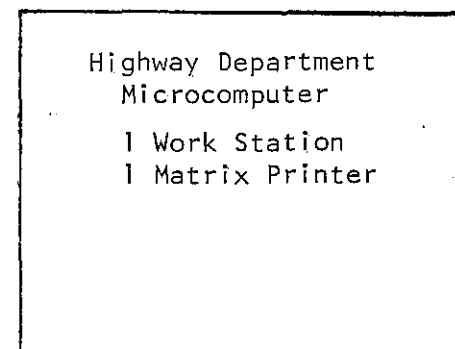
Courthouse Annex



Courthouse



W. Second



\*Possible communications capabilities among the five systems

## VI. Alternative Methods of Acquiring Computer Technology

### A. Basic Alternatives

Hall County can acquire the required computer technology by three basic alternative methods. This is so whether the county chooses a micro- or minicomputer based system. These alternatives are:

1. Rely on outside service bureaus for data processing. These agencies can be used to provide either batch or on-line data processing services.

2. Acquire in-house computer hardware and hire technically qualified programmer-analyst staff to develop application software (programming) for the system.

3. Acquire a fully programmed and supported system, including both in-house computer hardware and custom modified application software, to meet the county requirements. Such a system would be operated by existing county personnel.

### B. Evaluation of Alternatives

#### 1. Service Bureaus

The county may wish to pursue this alternative as one option for automated data processing although the consultants know of no service bureau in Nebraska offering complete county governmental service and support.

##### a. Advantages

- Software and hardware are owned and maintained by

the service bureau.

- A highly qualified staff is available in certain functional areas.
- The transition to automation from current operations would be relatively easy.

b. Disadvantages

- Communication breakdowns and attendant costs can occur.
- Communication costs can be high, especially if an on-line service bureau is used.
- Available expertise at the service bureau is limited should the county wish to initiate more sophisticated data processing systems and capabilities.
- Scheduling difficulties may occur.
- Service bureau software may not provide much flexibility.
- The opportunity for expansion is limited and may involve high costs.
- The physical location of a service bureau may be a limitation.

2. In-house Hardware/In-house Software Development

This alternative is not deemed acceptable for the following reasons:

- The length of time necessary to create the

required software would be excessive.

- The personnel and cost requirements of in-house software development and support are excessive.
- The limited availability of qualified programmer/analysts with experience in county government means that the county would have difficulty hiring and retaining a staff of qualified programmers.

This alternative would take too long, cost too much, and involve too much risk for a small local government to implement a data processing system.

### 3. Fully Programmed and Supported System

This alternative appears to be the most promising option for meeting the requirements of Hall County for data processing.

#### a. Advantages

- The county owns and controls its own system.
- Considerable expansion capability exists--both of hardware and application software elements.
- The software is tested and reliable and modified by the vendor to meet the county's specific requirements.
- The system can be operated easily by existing personnel.
- It provides for a relatively easy transition from current methods and systems to more modern



technologies and capabilities.

- The vendor is fully responsible for system installation and performance per the county's specifications for the life of the system.

b. Disadvantages

- Certain problems are associated with ownership and control of a computer system, including system depreciation and obsolescence, equipment failure, and use scheduling.
- Unanticipated vendor problems can occur.
- Personnel issues can exist involving both training of personnel and personnel fear of or opposition to a system.
- If the system has multiple users (e.g., several city departments), potential management, use, and scheduling problems can arise.

C. Recommendation

This study recommends that a Request for Proposal (RFP) be developed to solicit proposals primarily from vendors offering fully programmed and supported systems based on minicomputer technology, using either Alternative #2 or #3. However, proposals from service bureaus could be solicited should county officials deem the attempt worthwhile. Consideration of system development, or acquisition using Alternative #4, is not recommended.

ADDENDUM  
to  
Data Processing Analysis and Recommendations  
for Hall County, Nebraska

## Introduction

The Center for Applied Urban Research (CAUR) presented the results of its data processing analysis to the Hall County Board in February, 1984. Following presentation of the draft report, CAUR was asked to interview several additional officials concerning their data processing needs and desires. This addendum contains the additional information and the impacts it might have on overall automation in Hall County.

Officials interviewed for the follow-up analysis included two District Court judges, two County Court judges and their staff, and the chief of the probation office.

## I. Current Functions and Data Processing

### A. District Court Judges

The jurisdiction of District Court judges includes civil cases involving more than \$10,000, criminal cases involving felonies, appeals from County Court, review of all County Court cases, real estate title litigation, and dissolution of marriages. The guide for annual caseload per judge is 400 to 600 cases. The two District 11 judges handled 548 cases in 1981 and 754 cases in 1982. The caseload, frequency of court meetings, and length of sessions all vary widely from time period to time period.

The two judges each have a court reporter and share a secretary/bailiff. The judges rely heavily on the clerk of District Court for all record keeping, including docketing, collections, and other office management tasks. The court reporter handles the judges' calendar. The judges deal primarily with active case files, and all of those records are maintained manually.

The judges must report monthly to the Supreme Court on all cases under consideration for more than 90 days. Several monthly and annual reports are also required.

The District Court judges are supportive of automation for Hall County and for the clerk of

District Court. However, they have no immediate desire for access to that automation.

The automated functions that might prove relevant to the judges eventually are case management (including case histories), scheduling, word processing (for required reports), and inquiry capability to other offices as well as to the clerk of District Court.

#### B. County Court Judges

The jurisdiction of County Court judges includes civil cases up to \$10,000, criminal cases involving misdemeanors, first hearings on felonies, all traffic and vehicular ordinance violations, probate, estate administration, guardianship, all juvenile cases, eminent domain, landlord-tenant litigation, and small claims. The caseload varies from 15,000 to 16,000 new cases per year with traffic violations constituting the largest share (approximately 1,000 per month). Cases may extend from a few days to over one year. Approximately \$2.5 million is collected by the jurisdiction each year as the result of court decisions.

The County Court office includes two judges, one associate judge/clerk of court, one deputy clerk/bookkeeper, two stenographer/reporters, and five record clerks who each currently handle records for a separate jurisdictional area.

Record keeping is completely manual using a file card system. The judges feel the need for additional personnel because of the volume of record keeping.

Required monthly reports include a summary of cases, financial accounting of collections to the city, county, and state; juvenile status; foster care review; "funds for pardons"; advisement reports, and expense accounts. In addition, annual reports are required of pending cases and "seven year-funds." The judges are very anxious to automate their offices. The automated functions that may benefit them are accounting (accounts receivable), case management, docket/scheduling, word processing (for required reports), and inquiry capabilities.

#### C. Probation Office

The probation office is responsible for a broad range of duties, including presentence investigations, monitoring those on probation, handling transfer requests, testing (risk and needs assessments), collections for child support, restitution and court/attorney fees, investigations into juvenile and runaway cases, and victim reports. The average monthly caseload is around 900 to 1,000 active cases. Inactive cases, which by law must be kept on file for 15 years, total approximately 5,500.

The office includes the director, five probation officers, three secretaries, and up to two interns. Record keeping is completely manual. A central file system has been implemented recently, and the director has begun to examine the possibilities of automation.

Required reports include individuals on probation by officer and office, financial reports by category of collections, victims, juveniles and runaway counts, and investigations.

The director and staff are supportive of automating their operations. The priority areas for automation are data base management/case control, accounting (accounts receivable), word processing (for reports), and inquiry to or data sharing capabilities with other offices.

## II. Applications to Consider

### A. District Court Judges

None is recommended at this time. Eventual communications with the clerk of District Court could provide inquiry capabilities to judges from that office.

### B. County Court Judges

1. Word processing and report generation.
2. Accounts receivable/financial management (for collections, particularly child support payments)

3. Case management/scheduling

This may be as simple as a data base management program or more likely a set of programs focusing on docketing, scheduling, and case management.

4. Inquiry to other offices.

C. Probation Office

1. Word processing and report generation
2. Accounts receivable (for collections)
3. Case management/control
4. Eventual inquiry to other offices

To repeat an earlier caution: inquiry capabilities require compatibility of systems in various offices, and to minimize the cost of interoffice communicability such potential should be investigated prior to acquisition in any one office system.

### III. Alternative Configurations and Estimated Costs

The alternatives available to the county judges and probation office for automation are essentially the same as those for other county offices. The alternatives include use of a service bureau, integration with other county systems including the possibility of a single county-wide system, or acquisition of an in-house stand-alone computer system compatible with other county systems.

Use of service bureau computing is always an option but is not recommended for the county judges or the probation



office. Service bureau use may limit flexibility--the content and form of reports usually require a time lag for processing and tie the office to changing (usually rising) costs over time. Due to these offices' needs for flexible, timely, and economical computing on a planned basis, service bureau computing is a less satisfactory solution for their data processing needs.

Either of the other two alternatives will adequately serve these offices. Given the possibility of a relatively large county computer facility, the costs of acquiring a stand-alone mini- or microcomputer system for either of the offices totals about the same as extending the capacity of the county-wide system to meet the needs of an added office. The decision about which way to proceed is dependent on other system considerations.

Central to the decision are the preferences of the county and its various offices for centralized versus decentralized computing. The greatest advantage of a centralized approach is the integration of files. Thus, centralization enables the sharing of information and programming among offices and the avoidance of duplication.

At the same time, however, the larger a computer system the greater is the need for system management and operations personnel. A more centralized and therefore larger computer system will require a greater number of operations personnel. The initial report described a county-wide system

alternative configured with 31 work stations. That is already a fairly large configuration. With future growth and/or with the incorporation of additional offices, that system would become even larger and, perhaps, rather cumbersome to administer.

By contrast, the advantage of a decentralized stand-alone system is in its ease of control and management. In addition, files are maintained separately with confidentiality assured. If communications with other stand-alone county systems are also implemented, then information from those systems may be queried and duplication could be avoided.

The following is a description of the configuration and costs of alternatives for the offices examined.

A. District Court Judges

The District Court judges have no immediate need for systems acquisition beyond that already recommended for the clerk of District Court. Eventual acquisition may include inquiry capability to the clerk and other offices. No recommendation is made at this time.

B. County Court Judges

The County Court offices can be automated by being incorporated into a county-wide system (if one is acquired) or by purchasing its own stand-alone system. If a stand-alone system is desired, it should be compatible with the other county-wide system(s).

A separate multi-user microcomputer system with hard disk storage should adequately serve the County Court offices. Specifications for such a system should include expandability for future growth, and maximum future configuration should be considered at the time of initial acquisition.

The state of Nebraska court administrator is considering the establishment of "standard" programming for such functions as docketing and accounting of child support payments in Nebraska. The availability of such programming will be a future development, but the Hall County Court offices should investigate the most recent status of such programming at the time of acquisition.

1. Hardware (Equipment)

Central processing unit (CPU) - 512K to 1MB of memory  
 Memory unit (disk drive) - 20 to 40MB of storage  
 4 terminals  
 1 matrix printer  
 1 letter quality printer

2. Summary of Estimated Costs

|  | <u>low</u>   | <u>high</u>  |
|--|--------------|--------------|
| Hardware                               | \$28,000     | \$46,000     |
| Software                               | 5,000        | 11,000       |
| Hardware maintenance<br>(on hard disk) | <u>3,000</u> | <u>5,000</u> |
| Total                                  | \$36,000     | \$62,000     |

### C. Probation Office

The probation office should be able to automate its operations using several stand-alone microcomputers for word processing, accounting, and case management. Record storage on floppy disks should prove adequate for the volume of records kept and maintained.

The state of Nebraska probation office is in the very early stages of acquiring its own computer system. The state office has made a commitment to IBM hardware and may eventually make services and/or information available to district offices. Therefore, the Hall County probation office ought seriously to consider IBM or IBM-compatible equipment during its acquisition process.

#### 1. Hardware (Equipment)

- 3 work stations (each with 256K of main memory and dual floppy disk drives)
- 1 dual-mode (matrix/correspondence) printer

#### 2. Summary of Estimated Costs

|          | <u>low</u>   | <u>high</u>  |
|----------|--------------|--------------|
| Hardware | \$10,000     | \$20,000     |
| Software | <u>3,000</u> | <u>7,000</u> |
| Total    | \$13,000     | \$27,000     |

#### IV. Conclusion

Automation is recommended for two of the three offices examined during the follow-up analysis--the County Court offices and the probation office. Stand-alone computer systems are recommended, although integration with the county-wide system is also a possibility. The costs of stand-alone systems are estimated above, and comparable costs should be expected if integration with a county-wide system is preferred.