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GEOPROCESSING FOR GRAND ISLAND AND HALL COUNTY: ANALYSIS AND RECOMMENDATIONS

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May 1983

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The University of Nebraska—An Equal Opportunity/Affirmative Action Educational Institution

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EXECUTIVE SUMMARY

This report examined the feasibility of establishing an automated geobased data processing system for housing and community development data in Grand Island and Hall County. The principal findings of the report follow.

1. An automated geobased housing and community development data system is not currently feasible for Grand Island and Hall County. The reasons for this conclusion are:

a) Current levels of governmental uses of electronic data processing in Grand Island and Hall County are relatively low. Sound administrative practice would dictate that several basic functions in the city and county, such as financial management activities, should be automated prior to the automation of housing and community development data.

b) Grand Island and Hall County have taken divergent approaches to the solution of their individual data processing needs. The study could find no evidence that these divergent approaches were likely to change.

c) City/county cooperation is essential for the successful implementation and operation of an integrated geobased data processing system. Yet, the history of city/county cooperation in Grand Island and Hall County is mixed.

d) There appears to be only limited policy level support for a geobased system in both governments.

e) The cost of a minicomputer system and software adequate to enable establishment of a geobased system for city and county users is estimated to be between $79,500 and $155,000. This cost is relatively high, especially when compared to its value to participating agencies and when viewed in the light of the community's more basic computing requirements.

f) Most organizations interviewed, including those that supported the concept of an integrated geobased system, could not commit their financial, organizational, and political support to its establishment. Their reasons were essentially pragmatic, involving the uncertainties of system cost and benefit to these organizations.

2. Alternatives to be considered by the Chamber of Commerce Housing Committee include the following:

a) The Community Development Agency or Regional Planning Commission could implement a housing data file in-house using a microcomputer. This system would provide for the processing of a more limited range of data and would cost between $6,500 and $8,900.

b) If Hall County were to acquire a computer system to serve the needs of several county offices, the system would partially satisfy the information management requirements for a geobased data processing system.

c) The committee might support both alternatives a) and b) in an effort to ensure the maximum coordination of computerization, albeit on different systems, of the area's housing and community development data.

d) A plan might be developed to overcome the previously mentioned barriers to the implementation of a geobased system. If the barriers are overcome, a fully integrated geobased data processing system might ultimately be established.

I. INTRODUCTION

The Center for Applied Urban Research has conducted a feasibility study assessing the potential for establishing an area-wide data processing system based on housing data in the Hall County and Grand Island area. This report, presented to the Housing Committee of the Grand Island Area Chamber of Commerce, examines the results of the study.

A. Background

The project reported upon here resulted from recommendations made in a previous report conducted for the Housing Committee of the Grand Island Chamber of Commerce. The previous report, Grand Island Housing Study, 1982 by Hanna:Keelan Community Development and Research Associates, was intended to "create an understanding of the overall housing situation in Grand Island and its suburban areas." The report included an inventory, needs assessment, and attitude survey of housing in the Grand Island area. One objective of the previous study was to "identify a process for implementation of an automated data retrieval system for information obtained from the study" and for related local housing data.

Subsequently, the Center for Applied Urban Research received a contract from the Housing Committee to investigate the feasibility of establishing the desired data retrieval system for housing and community development data.

B. Purpose of the Study

The purpose of this report is to determine the feasibility of establishing an automated and geobased data processing system for Grand Island and Hall County housing and community development data.[1] The feasibility of such a system is dependent upon political, administrative/organizational, financial, and technical considerations.

In order to determine the feasibility for such a system, the following items were examined:

1) the source, location, type, and condition of housing and related data available among Grand Island area public and private agencies;
2) the requirements of existing and potential users of these data;
3) the willingness of both data providing and using agencies to participate politically, administratively, and financially in the development, acquisition, administration, and operation of an automated system;
4) the alternative methods of acquiring an automated system;
5) general system configuration for initial and phased implementation; and
6) general system cost estimates.

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[1]See Section II--Definitions and Context for the definitions of terms.

C. Methodology

This study was designed to determine the need and desire for acquiring a geobased data processing system for Grand Island and Hall County and to determine the technical specifications required of such a system should it be deemed feasible.

Determining the feasibility of a geobased data processing system was accomplished through interviews with key officials and administrators in Grand Island and Hall County governments and with leaders of several nongovernmental organizations in the community. These interviews solicited information from persons on their operations, including records structure and use, attitudes toward data processing, and attitudes toward the system. Survey results lent insight into the political, organizational, and financial potential for such a system. The interviews also provided information on the nature and extent of record keeping which can be used to specify the technical requirements of the system.

Initial discussions were held with the chamber's Housing Committee and with other local decision-makers prior to the administration of the survey. This was done in order to inform those involved of the forthcoming survey and to compile a working list of key persons to be interviewed. The key persons actually interviewed were selected based on whether they were thought to hold, gather,

dispense, and/or use relevant housing and community development data. All respondents were very cooperative and expressed an interest in the outcome of the survey.

Interviews were conducted with key officials and department heads from Grand Island and Hall County governments and community organizations during the weeks of February 21st and March 7th. A total of 29 people were interviewed: 11 county officials, six city officials, two joint city/county officials, four school administrators, and representatives of five independent agencies. The interviews were semistructured and were conducted informally with individuals in their offices. Interviews ran from 30 to 60 minutes. (See Appendix for interview schedule.) The offices contacted for interviewing are listed below.

City of Grand Island:

1) Offices of the Mayor and City Administrator
2) Building Inspection Division
3) City Clerk's Office
4) City Engineer's Office
5) Community Development Agency
6) Utilities Department

City/County Joint Offices:

1) Regional Planning Commission
2) Department of Health

Hall County:

1) Assessor's Office
2) Board of Supervisors

3) Building Inspection Office

4) Clerk's Office

5) Treasurer's Office

6) Election Commission

7) Highway Department

8) Housing Authority

9) Register of Deeds Office

10) Welfare Department

11) Hall County School Superintendent's Office

Area Schools:

1) Central Catholic High School

2) Central Technical Community College

3) Grand Island Public Schools
(School District of Grand Island)

4) Northwest High School

Other Agencies:

1) Board of Realtors

2) Chamber of Commerce

3) Goodwill Industries, Inc.

4) Home Builders Association

5) Downtown Improvement Committee

II. DEFINITIONS AND CONTEXT

The development of computers, programming, and electronic data processing has led to a new vocabulary, much of which may sound foreign to the average person. Most of the vocabulary is simple jargon or shorthand terminology. This report discusses the feasibility of implementing an "automated geobased data processing system" for housing and community development data in the Grand Island and Hall County area. In order to understand better the concepts involved each term will be defined here individually.

A. Definitions

Automated. Automated refers to a task or process that has been designed as or converted to an automatic operation. In this case, the reference is to an electronically controlled operation or the use of a computer to perform a task or tasks.

Geobased. Geobased is an adjective which refers to geographic location. In an automated system, geobased means that data are indexed or referenced to the geographic location at which they occur. For example, a city may want to know not only how many fire hydrants it must maintain in its firefighting system but also where each hydrant is located--on what corner or in front of which property. Thus, a geobased system indexes each hydrant by its

location, as well as by its capacity, condition, and other characteristics.

Relatedly, geobased systems employ "geocoding" or coding by geography. Geocoding simply assigns geographic codes (such as map coordinates) to data in order to develop a cross-reference directory by location. The purpose of such a system is to be able to retrieve information previously stored quickly and efficiently. In the case of fire hydrant inventory, a person operating a geobased data processing system could instruct the system to list all hydrants painted in 1980 by location, assuming a three-year cycle of painting maintainance. In a matter of seconds the system would print the list, and a work order to paint those hydrants in need could be issued.

The difference between a geocoded and non-geocoded system is relatively simple. A geobased system would require the addition of only one additional piece of information per record to enable the system to work--an index of location. Most importantly, however, the index of location must be based on a locational scheme which includes a fixed origin. In other words, all locations must refer to a single point around which is usually constructed a system of geographic coordinates. Records which include street addresses alone do not constitute geocoded data since addresses are not necessarily continuously scaled nor established with reference to a fixed origin.

An example of the difference between geocoded and non-geocoded systems is demonstrated in Figure 1. Using the case of a fire hydrant inventory, properties with fire hydrants are noted in the file. The record structure is identical between Figure 1A and 1B except that geocodes have been added to the records in Figure 1B to enable a rapid identification of properties with hydrants by exact location.

FIGURE 1

A. NON-GEOCODED SYSTEMS

X-Coor (east-west location)	Y-Coor (north-south location)	Address	Parcel Number	Presence of hydrant	Year last painted	Capacity (cfs)
		101 N. Elm	X	0	0	X
		102 N. Elm	X	1	80	X
		103 N. Elm	X	0	0	X
		.	.	.	.	.
		.	.	.	.	.
		.	.	.	.	.
		404 E. Center	X	1	82	X
		405 E. Center	X	0	0	X
		406 E. Center	X	0	0	X

B. EXPANDED GEOCODED SYSTEMS

X-Coor (east-west location)	Y-Coor (north-south location)	Address	Parcel Number	Presence of hydrant	Year last painted	Capacity (cfs)
1031	5316	101 N. Elm	X	0	0	X
1032	5317	102 N. Elm	X	1	80	X
1033	5318	103 N. Elm	X	0	0	X
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
4270	6118	404 E. Center	X	1	82	X
4271	6119	405 E. Center	X	0	0	X
4272	6120	406 E. Center	X	0	0	X

Data Processing. Data processing involves the collecting, storing, organizing, manipulating, and retrieving of facts. The purpose of such processing is to make the facts, or data, more meaningful or informational. Data processing may be accomplished by hand or may be performed electronically by machine (a calculator or a computer). Automated data processing refers to processing according to an automatic and pre-defined set of procedures. Electronic data processing refers to computerized processing.

The greatest benefit of automating a set of data processing procedures is achieved when large volumes of data need to be processed and/or when the procedures are complex, particularly if the procedures need to be repeated many times. Thus, the utility of electronic data processing comes with the speed, accuracy, and efficiency achieved for high volume and complex operations.

System. Most generally, a system is a set of objects and/or procedures that work together as a unified whole for some purpose. With an automated data processing system the tangible objects are the hardware (the machinery), and the less tangible procedures are the software (the programming or sets of instructions). The hardware and software must work together to achieve their relatively complex purpose. Most importantly, the purpose should determine the hardware and software selected to create the system, not the other way around.

Housing and Community Development Data. Housing and community development data are those facts relevant to achieving some purpose related to housing and/or community development. Housing facts may include age, size, condition, and location of structures, relationships between structures, relationships between structures and other phenomena, and/or characteristics of the occupants of structures. Community development facts include information on neighborhood attitudes, economic, social, and demographic character, and physical characteristics. The purposes of such facts are many and varied and include such aims as police and fire protection, public service provision, housing and neighborhood maintainance, regulatory and legislative compliance, and others.

B. Context

The creation of an area-wide automated geobased data processing system for housing and community development data in Grand Island and Hall County would serve a utilitarian purpose. It would enable the electronic transfer of non-confidential housing and community development data among the various offices concerned with such data. The manual transfer of information would be replaced by an automated transfer, thus eliminating the need for individuals to travel from their offices to other offices (or for "paperwork" to travel) in order to access the information.

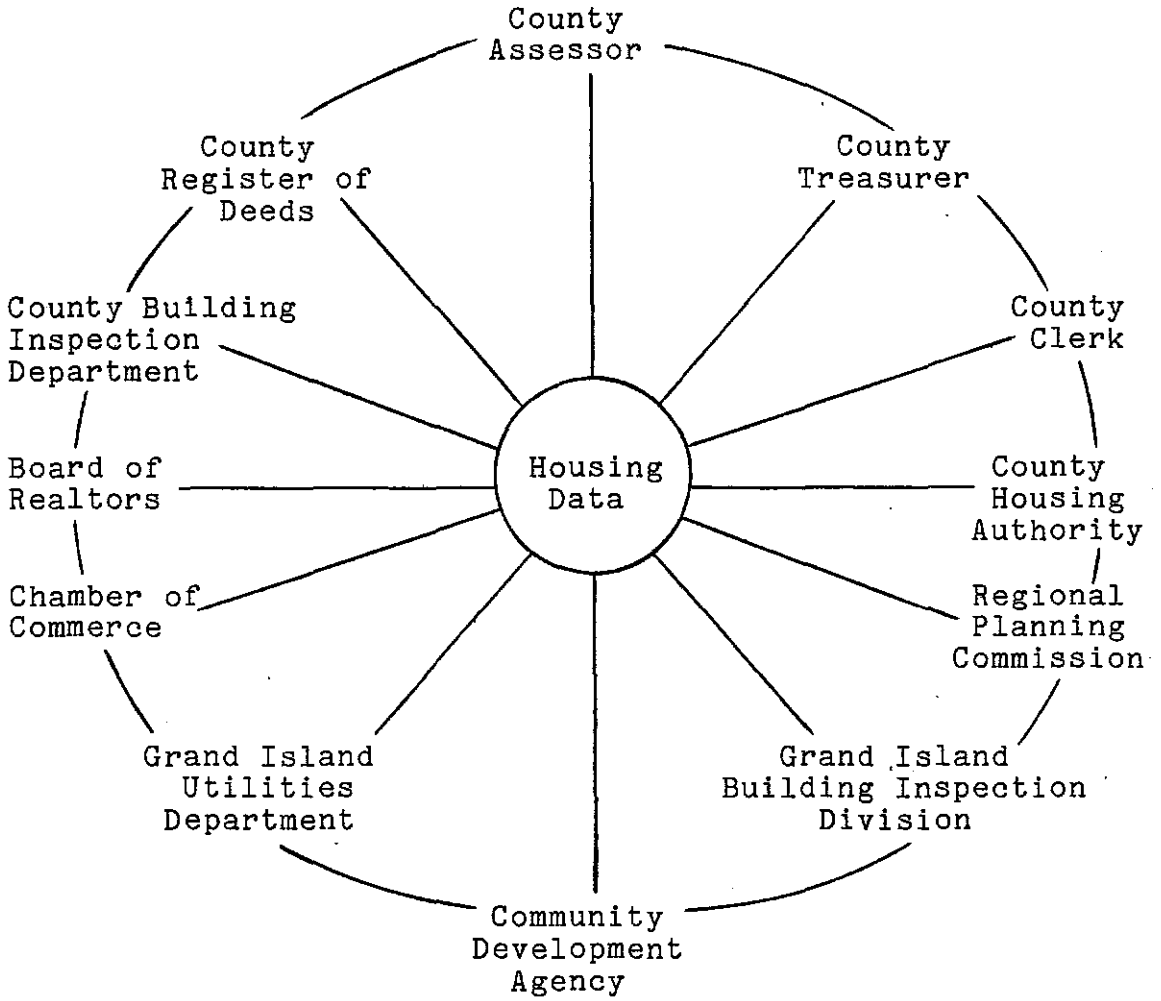
The system would not alter the administrative responsibilities of each office. Each office would still be in charge of its own record-keeping. In fact, a system should be devised so that all offices would have access to all data, but only authorized offices would have the ability to enter or change specific data. For example, the register of deeds should have sole authority to input information concerning a property's legal description, but other offices such as the assessor and treasurer should be able to access and use the description.

Likewise, the public would still have to follow established procedures at the appropriate offices. For example, the public would continue to visit the county register of deeds to record titles and would contact the treasurer's office to pay taxes. However, a benefit to the public would be the immediate transfer of validation of title transfers and tax payments.

In other words, an automated geobased data processing system would not alter the purpose, function, or procedures of individual offices, but such a system would enable the sharing of information among offices and also improve the efficiency of office operations. The key to such a system for Grand Island and Hall County is to link those offices involved with, and that would benefit from, housing and community development data. A portrayal of such linkages is represented by the diagram (or model) in Figure 2.

FIGURE 2

MODEL OF AGENCY LINKAGES
IN A GEOBASED SYSTEM



III. FINDINGS

A. Current Status of Automation in Grand Island Area

One of the first and most important steps in determining the feasibility of an automated housing and community development data system for Grand Island and Hall County is to understand the current status of data processing in affected organizations in the community. Interviews with Grand Island and Hall County elected officials, public administrators, and community organization leaders revealed that various offices have taken different approaches to, and are at different stages in, automating their data processing functions.

The approaches vary from the purchase of internal on-site (in-house) systems, to the use of state-wide or regional computer networks, to the employment of services from professional data processing organizations (service bureaus). However, both city and county governments exhibit a relatively low level of automation. The city, through its utilities department, is more advanced in data processing than the county.

1. City of Grand Island

a. City Utilities Department

The city of Grand Island utilities department is the only significant local government user of electronic data

processing in the Grand Island area to date. The department leases and operates an IBM System/34 minicomputer. Located at City Hall, the system is configured with 8 CRT's (cathode ray tubes, or terminals) and a 350 lpm (line per minute) printer. The system has 256 KB of central processor memory, 60 percent of which is currently utilized.[2] It also has 256 MB of hard disc storage capacity, 156 MB of which is currently used.[3]

Current costs of the system include a $5,600 monthly leasing fee, which totals $67,200 annually and $336,000 over five years. In addition, the annual cost of personnel (including a data processing manager, a programmer/operator, and an additional operator) totals $47,000 annually and $235,000 over five years.[4]

Prior to adopting an in-house system in 1980, the department had operated through a service bureau. Software was developed originally by the service bureau, but substantial in-house program development has taken place since the purchase of the original programming. A two-year customer history file is currently being added to the system and is estimated to require an additional 100 MB of

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[2]KB stands for kilobyte, or 1,000 characters of information.

[3]MB stands for megabyte, or one million characters of information.

[4]Considering functions currently automated on this system, an annual system cost of $114,200 and a five-year cost of $571,000 may be considered excessive.

storage. In addition, current plans call for eventual programming for a complete accounts payable file and a customization of customer files.

The primary function of electronic data processing in the utilities department is utility record keeping and billing for sewer, water, and electric usage. According to departmental estimates, 90 percent of system use is by the utility department and 10 percent by other city departments. The department handles approximately 18,000 electric billings and over 11,500 water billings per month. Up to 500 new or changed records are created each month. In addition to customer billing and accounting, the department has automated its payroll, general ledger, warrants, and customer inquiry and work order functions.

The utilities department's electronic data processing system also provides the other city departments with payroll, some accounting, and monthly financial reporting services. Monthly reports include fund balance, expenses, and payroll register. Since the department is operated as a separate, self-sustaining unit with its own public governing board, other city departments that use its data processing capabilities are billed for those services.

The utility master file is thought to have the most up-to-date and error-free name and address file locally and, therefore, is used by the city attorney, police, and

other departments. The file might be used as a starting point for building a geobased system. Although the utility master file has ample room for expansion for accounting purposes, expansion of the existing system for geoprocessing would not be realistic. A separate system would have to be developed due to this limitation of capacity.

The utilities department is satisfied with its current operations and future plans for data processing. However, additional expansion of the system has been contemplated to accomplish transformer load analyses, and possible linkages between city and county data bases (both of which could use geocode references).

Other city departments perform manual data processing to accomplish their office functions. Though not automated, each will be discussed in the context of their record-keeping appropriate to a geobased system.

b. Building Inspection Division

The city of Grand Island building inspection division is concerned primarily with construction permits and building inspections. Its records are based on properties and land parcels, and all records are manually processed. The division currently processes 150 new records per month and has processed up to 300 records per month during more active periods of development. The division is mandated by law to keep records, and monthly reports are required by the city council. The division exchanges information with,

and is therefore functionally linked to, the county assessor, city engineer, and all planning and development units locally. It also provides information to the public, including local builders and developers.

Internal data processing needs include improved storage capacity and access to information and the ability to make projections. The division is considering the addition of zoning use permits to its record-keeping and desires greater documentation because of liability issues.

c. City Engineer

The Grand Island city engineer's office deals primarily with the physical development and infrastructure of the city and its zoning jurisdiction. In a geobased context, it designates street addresses in subdivisions, and those records are, therefore, property based. It keeps approximately 1,100 subdivision records and adds another two records per month on an average. A staff of seven processes all records manually. No regular reporting of property data is required, but information is provided to city departments and the public on request. Regular information exchange takes place between the engineer's office and the register of deeds, city attorney, and building inspection division.

Internal data processing needs include the rapid access of information and the ability to generate summaries

of work quickly and accurately. No new record-keeping is currently planned.

d. City Clerk's Office

The Grand Island city clerk's office does not deal with geobased data. It is the office of record of all city ordinances, including zoning ordinances, and the offical zoning map. The main desire of the clerk's office, as related to a geobased file, is to build an historical file of zoning data which details zoning changes over time.

e. Community Development Agency

The Grand Island Community Development Agency is a prime user and compiler of data. With its staff of five, the agency often aggregates relevant data into report form without the benefit of electric data processing. The goals of the agency are to determine the ongoing economic development needs of the area and to promote improvements where and when needed. The agency deals with a variety of issues, but all of these are oriented to the enhancement of housing stock and community (including commercial) development. Most information used by the agency is locational, and its products are available to all local agencies.

The agency deals with many other local offices on a regular basis, including the county assessor and register of deeds, the city building inspection division, the

Regional Planning Commission, the Chamber of Commerce, realtors and developers, and the local Community Action Agency. In addition to reporting to its advisory committee, the agency has traditionally reported to the U.S. Department of Housing and Community Development with performance reports, housing assistance plans (HAP's), and other required reporting.

The agency views a geobased system as valuable to the currency and accuracy of needed data, particularly for the new housing rehabilitation and block grant programs it will administer.

2. City/County Joint Offices

a. Regional Planning Commission

The Regional Planning Commission is a primary user, rather than generator, of geobased data. Though housed in City Hall, the commission serves both city and county, as well as private information users. The commission, with its three person staff, generates many reports based on the aggregation of individual records without the benefit of electronic data processing. The reports deal with such broad-based subjects as land use, subdivisions, capital improvements, flood plains, zoning, transportation, and schools. All reports have a locational frame of reference and are, therefore, geobased. The data for these reports

are garnered from other local offices, including the city and county building departments, public works, and utilities department. In turn, the reports furnish base information to all local units of government, as well as to realtors, developers, bankers, schools, and others.

In terms of geobased data processing, the commission cited the accuracy and currency of data as of greatest value to it.

b. Department of Health

The Grand Island/Hall County Department of Health keeps a variety of records dealing with housing inspections and complaints. These records are property (housing unit) based. The department keeps over 2,400 records and manually processes approximately 60 records per month, particularly during the summer months.

The department interacts with several other administrative units. It reports to the city council, county board, the State Board of Health, and the Agriculture Department. It also exchanges data with the county attorney, register of deeds, planning commission, and local schools.

The department is considering the addition of weed control record-keeping, and also desires an improved storage and retrieval of records and more rapid record access.

3. Hall County

a. Register of Deeds Office

The county register of deeds office is the only county office that uses automated data processing in its operations.[5] The register of deeds has recently acquired an Apple IIe microcomputer with hard disk storage and is using a commercially available data base management software package to build an in-house file of property titles. The individual records were constructed to include a reference number, name, address, and legal description of property, and the records are set up with cross referencing between record items. At the time of this writing 6,700 records out of a total of 26,800 had been created on the in-house microcomputer.

The register of deeds office houses more than 750,000 records dealing with the legal title of all real estate in the county. The office creates or alters from 500 to 700 titles each month. The source of these data is 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 to other agencies.

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[5]Initiatives are currently being taken by the County Board of Supervisors to investigate computerization for county functions and departments.

The main goal of a geobased data processing system as expressed by the register of deeds would be the more rapid access of records.

b. Assessor's Office

The county assessor's office handles the appraisal and tax assessment of all real property in the county and of motor vehicles. The three types of records kept relevant to geobased data processing are property assessments, personal property tax schedules, and homestead exemptions. The assessor's office keeps in excess of 20,000 "parcel" records on hand (not equivalent to individual lots), and processes 600 to 650 new or revised records each month. Records are maintained for 100 years by statute, but most record references are made over the previous several years. Revised record formatting is being pursued during the current 1983 appraisal.

The assessor's office reports to the county board and 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 11 staff personnel. The one task which the assessor viewed as

benefiting from automation would be an automated "tax list" for office record keeping.

c. Treasurer's Office

The county treasurer's office processes real estate tax information by parcel. Record volume consists of 10 to 20 corrections to the tax rolls per month, and a new tax roll of approximately 23,000 parcels is generated each year. The treasurer's office is also responsible for all tax billing and collection and for processing motor vehicle registrations. All records are hand tabulated and processed by a staff of 13 people. The treasurer's primary task related to geobased data is to produce tax statements each year. The treasurer's office deals most closely with the assessor's office, though other public agencies, banks, and realtors use its data regularly.

The treasurer's office viewed automated data processing as most useful to its billing and collection functions. The office would also like to be able to compute actual, estimated, and projected tax revenues by user several times during the year.

d. Clerk's Office

The county clerk's office does not deal with data appropriate to a geobased data processing system. Its functions are primarily administrative and financial in nature. Nevertheless, it does have non-geobased data processing needs. The clerk's office currently utilizes a

service bureau, Countryman's and Associates, to process payroll records. The office would like to add budgeting and bookkeeping functions to the automated payroll base.

e. Highway Department

The county highway department is responsible for records of county streets, roads and bridges, subdivision data beyond the city's two-mile jurisdiction, and street data in the county's three villages. Its records include 803 miles of county roads and 60 miles of subdivision streets and properties. All records are gathered in the field and are essentially geobased. Staff consists of five persons, including the county building inspector.

The highway department reports to the county board and 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.

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) and would also like to microfilm records. In-house microcomputer record-keeping is currently being considered for these functions.

f. Building Inspection Office

The county building inspection office, housed with the county highway department, deals with all county properties outside the Grand Island jurisdiction. Data consist of new structures, structure inspections, and flood plain information. All data are property based and therefore geobased. The records total to several thousand, and the office processes approximately 85 new or altered records per month.

The inspector reports to the the state of Nebraska once per month, and to the county board once per year. He also provides data to other agencies and the public on request. His data needs include information from the register of deeds, assessor, clerk, and treasurer as needed. The inspector is currently merging and reformatting the office's permit and blueprint records.

g. Housing Authority

The county housing authority deals with the planning, building, administration, and management of public housing, and with rental assistance programs. The authority currently manages 273 housing units for the elderly, 76 public housing units, and 170 active Section 8 rental assistance clients. Current records total 519, and 35 to 50 new or revised records are created per month. The two staff people work closely with a variety of other

offices to gather data, including social service agencies, banks, hospitals, and realtors. The authority must file numerous government reports for funding and must file a quarterly summary of activities to the county board and the U.S. Department of Health and Human Services (HHS).

The authority would like to see its data processing automated to enable rapid access and compilation.

h. Welfare Department

The county welfare department keeps thousands of public assistance records dealing with various programs from food stamps to Medicaid. There are 1,200 current records and staff create over 200 new records each month. Each record includes locational data (an address), but none of the records is created specifically with housing and community development interests in mind. Therefore, records could be tied to a geobased system, but there would be less value in geocoding such data than those from other agencies.

The state welfare office is automated and provides services to the county office with monthly batch-processed reports. The local office can pull information from the state office with in-house terminals but cannot input data except by mail to the state. The department is satisfied with the degree of automated data processing currently available.

i. Election Commission

The county election commission's primary duty is to maintain a listing of registered voters. Records total 24,000 actively registered voters and 40,000 inactive, and approximately 75 records are created or changed each month. As with the welfare department, the records include locational data (address) but are not specifically housing or community development related. The commission would welcome the ability to automate its records in order to update and list data for its clients--the political parties, the candidates, and the clerk of courts.

3. The Schools

Schools in the Grand Island and Hall County area have automated their instructional functions to varying degrees using microcomputers, such as Apple II's, TRS 80's, VIC 20's, and Commodore 64's. In addition, Central Technical Community College reported that it is fully automated in the following functional areas: financial management (budget, accounting, inventory), student records, and word processing and uses a Prime computer system linked to the Hastings, Columbus, and Grand Island campuses. The Grand Island Public School system also has on-line management ability (payroll, budget, accounting) through linkage to the Omaha Public Schools' IBM/4300 system.

Several schools have automated storage and retrieval of student records, the Grand Island Public Schools in

particular. All student records include locational data (address), but the data are not specifically housing and community development based.

4. Other Agencies

a. Board of Realtors

The Grand Island Board of Realtors includes 30 local firms. Records are all housing related and geobased (locational). The board's file includes 1,600 records for the six year period 1976 to 1982. The records result from its Multiple Listing Service (MLS) which is totally automated via a service bureau located in South Dakota. The service bureau provides weekly reports and updates twice per week. The board is satisfied with its current level of automation and is hesitant to link with an area-wide data processing system because of the desire for confidentiality of data.

b. Central Nebraska Home Builders Association

The Central Nebraska Home Builders Association currently keeps no records of housing stock. It relies upon public agencies for its information.

Realizing that geobased housing data would be useful for record-keeping and planning, the association would like to see an automated geobased data processing system created locally. The functions it would like to see automated include:

1) inventory and condition of all housing stock
2) inventory of houses for sale by type, size, and value
3) real estate sales by value
4) inventory of building sites available
5) inventory of rental units
6) inventory of public and/or subsidized housing
7) estimates of effective housing demand
8) projections of housing types needed.

c. Chamber of Commerce

The Chamber of Commerce, like the Regional Planning Commission and Community Development Agency, is primarily a user rather than generator of data. The chamber does not keep records as such but houses a library of publications and aggregate statistics about the Grand Island area primarily for the business community. It does keep track of building permits locally.

The chamber uses a service bureau, Countryman's and Associates, for some of its functions (accounting, membership roll, etc.) but does not use the system for housing data. It does plan to acquire a data/word processing capability by the fall of 1983.

IV. INFORMATION MANAGEMENT REQUIREMENTS FOR A HOUSING AND COMMUNITY DEVELOPMENT SYSTEM

The purpose of a geobased automated data processing system for housing and community development data is to provide rapid and efficient access to data and information necessary for effective decision-making.

The development of a geobased system may be viewed in several ways. These include the functions performed, the data base or information gained, and the administrative units contributing and benefiting from the system.

A. Functions

An automated data processing system performs a series of increasingly complex functions.

1. Data Storage

Data storage consists of inputting or building records of selected data. One example of records in a housing and community development data base might be information on the condition of existing housing stock. Data storage alone, however, offers little utility. This leads to the second major function of the data base.

2. Data Aggregation

Individual units of data or individual records are seldom of great utility to decision-making. Records gain

additional utility when combined or aggregated with other units of data. An example might be combining information on the condition of existing units into groups according to location in the community in order to determine areas in which housing rehabilitation actions might be warranted.

3. Inquiry and Data Analysis

Once data files have been constructed, data may be accessed at any volume or scale of aggregation. The ability to access data is called a data inquiry capability and enables users to search data files and create reports for analytical purposes. An example of data analysis might be the use of statistical techniques such as percentages, averages, or even complex regression techniques to place in rank order the areas of the community that contain the most deteriorated housing. In addition, analytical capabilities would allow users to combine data from a housing condition file with a socioeconomic data file in order to determine if meaningful relationships exist between housing condition and per capita or family income or to combine housing condition information with age of structure to determine if any relationships exist between these factors.

4. Graphic Display of Data

With commercially available software, data stored in and/or analyzed by the system can be displayed graphically for summary and/or report writing purposes. For example,

the mapping of the community according to housing condition might be a valuable tool for analytical purposes.

B. The Data Base

Determining the nature and extent of data to incorporate into the automated geobased data processing system for Grand Island and Hall County depends on the purpose of the system. This was expressed in the Hanna:Keelan report (1982) as that of data retrieval.

This study envisions a more complex purpose--that of analysis of data for improved decision-making and more informed policy considerations. Thus, the greatest priority must be placed on incorporating housing and related data that may affect public administration and policy formulation.

An automated geographic data processing system for housing and community development data in Grand Island and Hall County should contain the following records and files. Many of these are currently maintained manually in several offices in the community. They include data on real property, improvements to real property (structures), and public services and facilities (e.g., utilities, streets, etc.). In addition, socioeconomic data on the resident population taken from the 1980 Census of Population and Housing should be included. Figure 3 contains a list of

FIGURE 3

A HOUSING AND COMMUNITY DEVELOPMENT DATA BASE,
GRAND ISLAND AND HALL COUNTY

Selected Data Records and Files	Selected Data Sources
I. Primary Files	
A. Property Records	
Parcel number	County register of deeds
Legal description	County assessor
Date of platting	County treasurer
Address	Regional Planning Commission.
Ownership	
Property value	
Zoning designation	
Flood plain status	
Tax status	
B. Structure Records	
Type of structure	County assessor
Dimensions	County treasurer
Assessed value	Community Development Agency
Condition	and city or county building
Current use	inspectors.
Construction date	
Number of units	
Building permits	
Inspections	
Tax status	
C. Population Records	
Demographic and socioeconomic characteristics	County election commission Census Bureau
Special groups (e.g., elderly, handicapped, school age children)	Public and private social service agencies, and schools.
Registered voters	
II. Secondary Files	
A. Transportation Records	
Street and road conditions	City and county engineer
Street signs, traffic control inventory	and street and road departments
Traffic flow information	
B. Public Utilities and Services Records	
Underground, above ground lines, pipes	Public utilities,
Public safety	Public safety agencies
Crime data	Parks and recreation agencies.
Fire incident data	
Park and recreation facilities	

these data and the name of the organizations currently responsible for collecting and maintaining them.

C. Categories of Data

The information recommended for inclusion in a geographic data base for Grand Island and Hall County is divided into three primary and two secondary categories. Primary categories are property, structures, and population, and secondary categories are transportation and public services and facilities.

1. Primary Files

a. Property

This file would contain data regarding real property and would include such characteristics as parcel number, legal description, address, ownership, zoning status, and others. These data are currently available in the city and county offices listed in Figure 3.

b. Structure

In this file data on improvements to real property, i.e., buildings, would be located. Among other things this might include structure type and condition, current use, assessed value, and tax status. Here again, these data are currently on file in various locations in the city and county.

c. Population

In order to take full advantage of the analytical capabilities of a geobased system, property and structure data need to be combined with information about the local population. Non-confidential public information on population characteristics is available at various levels of aggregation from the U.S. Bureau of the Census. Also public and private organizations have data on special groups within the population, (such as the schools for school census tabulations and Goodwill Industries for information on handicapped persons.)

2. Secondary Files

In addition, should local users and policy makers so decide, a geobased system could also contain information on the transportation network and on various public services and facilities as listed in Figure 3.

D. Geocoding

The element that holds the entire system together and makes it usable is the locational identifiers or geocodes attached to all data records and files. Hence, each parcel of real property for example, would have an x-y coordinate in addition to a plat number, a parcel number, and an address. Structures would be tied to properties through addressing or would be cross-indexed according to parcel number. Population (i.e., demographic data) would be provided by block, block group, or census tract areas. Other

data would similarly be tied to physical location in the community.

This, then, is the structure of an automated geobased housing and community development system. Many potential uses for the system include a number of activities not now feasible with the essentially manual information management systems in the city and county.

E. Issues for Special Consideration

Several issues deserving special attention surround the development of the data base described here. Each is discussed below.

1. Complexity

The more complex a system, the more it will cost and the more likely technological failures will occur. The system envisioned for Grand Island and Hall County will involve several agencies from two separate levels of government and will contain several essentially independently generated data files. The level of complexity, even for a rather basic system, is high--particularly for a community with little prior experience with automated data processing.

2. Ultimate Users

To be effective over the long run, a system must be capable of accommodating not only initial but also future

users. In designing an initial configuration, therefore, there must be an awareness of and accommodation to the needs of future users and future, perhaps more complex, functions.

3. Speed of and Priorities for Development

How rapidly the data file is constructed and which specific data items are included will depend on a balance between a desire for comprehensiveness and the reality of the costs (including manpower) that the community is able and willing to bear. This suggests that if such a system is developed it be developed in distinct phases.

The Grand Island Housing Study, 1982 suggested the creation of a computer housing data retrieval system and speculated about the phases in which the system could be implemented. The phase-in of a geobased system for Grand Island and Hall County should be determined by the importance of particular data files to the utility of the system for the greatest number of users. Figure 4 portrays a

FIGURE 4

PRIORITY OF INCLUSION FOR
PRINCIPAL AGENCIES FOR GEOBASED SYSTEM

	Priority I	Priority II	Priority III
Key Sources:	Register of Deeds Assessor Treasurer	County Housing Authority Department of Health Streets Department Police Department	Welfare Department Schools Election Commission Goodwill Industries, Inc.
Other Contributors:	Regional Planning Commission Community Development Agency	Fire Department Home Builders Association Board of Realtors	

three stage development of the proposed system and lists the principal departments and agencies based on this criterion.

The proposed staged development of the system departs significantly from that suggested in the Housing Study. The reason for this departure is the broader function and utility of the system as conceived by this report.

4. Privacy and Confidentiality

Virtually all of the housing data held by city and county offices are public record. However, citizens are sensitive today to the indiscriminate dispersal of information. It would be prudent, therefore, to insure at least the same degree of protection of the data in an automated file that exists with the current manual record keeping.

Beyond the housing data themselves, a system might be developed that would include data processing for administrative functions. In this case, confidentiality of the administrative files (such as personnel records) should be maintained through the use of security access codes.

5. Analysis by Machine or People

No matter how well a geobased system is designed (including hardware, programming, and data files), the fact is that it will only provide information. It will not

interpret the information. It cannot exercise judgment. It is incapable of empathy and compassion. The all-important element of reasoned choice inherent in decision-making remains with the human beings operating the system and using the data.

At best a geobased data processing system will provide good information, reliably, accurately, and quickly, but human beings still must use the information wisely.

V. FEASIBILITY

What remains to be addressed in this report is the feasibility of an automated geobased data processing system for Grand Island and Hall County. Feasibility is divided into three areas: technical, cost, and political.

A. Technical Feasibility

Clearly, computer hardware to support such a system is available on the marketplace. The system as envisioned by this report would include a number of agencies and a rather large data base (initially a minimum of 15,000 records on parcels of property plus associated files on structures and population characteristics). These considerations suggest that a computer will be required with a large storage capacity and one that will allow several agencies to input, access, and manipulate data simultaneously. In all probability, this means a mid-sized minicomputer system.

Software or programming to allow input, storage, access, manipulation, and output of data could be specially written or obtained from software vendors. Software of the sort needed for such a system can be expected to be both complex and relatively costly. Nevertheless, both hardware and software are available on the marketplace.

B. Cost

Cost will be addressed in two alternative configurations. The first, a minicomputer alternative, will

correspond to the needs of an integrated system involving several agencies. The second, a microcomputer alternative, provides a potential and more modest answer to geobased housing data needs to be located in and used by a single agency.

1. Minicomputer Alternative

The establishment of an integrated, automated housing and community development data processing system for Grand Island and Hall County will require, at the minimum, mid-sized minicomputer hardware and appropriate geobased processing software. Such a system would be located in a single office in the community with peripheral devices (terminals and printers) located in user offices. The following offices would be essential to the initial construction of the geobase and would require the listed minimum hardware.

Office	Hardware
Register of deeds	2 terminals, 1 printer
Assessor	2 terminals, 1 printer
Treasurer	2 terminals, 1 printer
Community Development Agency	1 terminal, 1 printer
Regional Planning Commission	1 terminal, 1 printer

Given the size of the initial data base (including a minimum of 15,000 property records, 15,000 structure records, and census data at the block or block group

level), the number of users, and the users' hardware and processing requirements, the suggested minimum system configuration to ensure system adequacy follows.

System Elements	Number	Estimated Cost[6]
CPU with 512 KB main memory	1	$35,000 to $ 50,000
35 MB disk drive	1	14,000 to 20,000
CRT's (terminals)	8	8,000 to 20,000
Printers (90 LPM)	5	12,500 to 25,000
Software (Programming for the creation of the data base and manipulation of the data)		10,000 to 40,000[7]
	Total	$79,500 to $155,000

The configuration suggested here is minimal. It will enable the listed offices to begin building the data base with their existing files and records. (For example, information from these offices, as suggested earlier, could be used to create property and structure files, and the addition of demographic data from the census would create a population file.) The offices would also be able to use the data base to create such reports as are pre-programmed

[6]Cost estimates are derived from reviewing list prices of commercially available systems and projecting a range of low to high prices within which bids for such a system could be expected to fall.

[7]In this investigation software costs actually ranged from $10,000 to $100,000. However, the $40,000 figure was selected as more reasonable maximum for a community of Grand Island's size.

into the software, inquire across the data base to create unique reports and use the data base for some analytical purposes.

These offices, however, will not be able to perform regular business functions, e.g., preparation of tax assessments or tax bills. These business functions will require yet additional programming and probably hardware elements not considered here as they were not within the scope of this study.

Finally, no provision has been made here for the following important items: the method and cost of entering the data necessary to create the data base, the annual cost of maintaining the hardware and the software, and the annual operation costs of the system (e.g., operator's salary, utilities, rent, depreciation, supplies, etc.). These, of course, will increase the cost estimates presented above.

2. Microcomputer Alternative

A more modest alternative to creating an automated geobased data processing system for Grand Island and Hall County housing and community development data would involve use of a micro or personal computer. This less ambitious system would be housed in an office that deals directly with housing and serves all levels of the local public sector, specifically the Community Development Agency or the Regional Planning Commission. Although the capacity of the system would be considerably less than the integrated

data base on a mid-sized minicomputer system, commercially available hardware and software do exist to accommodate the base data resulting from the Grand Island Housing Study, 1982 with geocoding and with some additional data on a microcomputer.

The total system could be configured on a commercially available personal computer. The hardware cost would approximate $6,000, including a video monitor, 128 KB of central processor memory, 5 MB of hard disc storage capacity, and an 80 character per second printer.

Several programming options for geocoding are available for microcomputer hardware. These include the Gridapple routine from IRIS International (costing $3,000), the MICRO-MAP II program through the University of Washington

Hardware	Estimated Cost
64 KB RAM (with 1 floppy disk)	$2,104
+64 KB	350
5 MB hard disc drive[8]	1,995
Adaptor card	345
Video display monitor	345
Printer (80 cps)	659
Printer cable	55
Operating system	40
Total	$5,893.

Software	
Gridapple-IRIS	$3,000
MICRO-MAP II-IBIS	$650
U.D.M.S.	Free

[8] An additional 5 MB disc storage is available for $500 at the time of purchase.

(costing $650), and the U.D.M.S. (Urban Data Management Software) package through Columbia University (free to public sector users). Any of these will allow for the display, analysis, and mapping of geocoded data.

C. Political Feasibility

The political feasibility of a computer system, especially a system involving more than one agency and more than one unit of government, is perhaps the most important determinant of whether such a system will be implemented. For present purposes, the following considerations will be examined: level of interest, existing electronic data processing uses, and intergovernmental cooperation.

1. Level of Interest

Most elected officials, administrators, and community group representatives who were interviewed expressed favorable attitudes toward computers and recognized that automation of administrative functions is inevitable. Almost all of the respondents said that they thought automation would improve accuracy and efficiency and allow them to do their jobs more effectively. Most were also aware, however, that even with automation, accuracy of records would be dependent on employees' abilities to enter error free data into the computer.

When specifically asked, "How would you feel about the computerization or automation of your records relating to

population, housing, and community development?" the majority of respondents were in favor of such automation. However, not all of their offices would be equally affected. For example, many of the schools already have some part of their data bases automated and perceived themselves as benefiting very little from this new automated system. Similarly, some agencies were uncertain as to how much they would directly benefit from such a system and thus were reluctant to commit themselves to financial or other support.

Thus, attitudinal support for an automated geobased system for housing and community data was tempered by pragmatism. Local officials and other respondents generally supported the idea of an automated system but wanted to know what it would offer them and what its costs would be. A majority of the respondents were also unwilling to commit themselves to paying a part of the cost to establish or administer such a system. Local government respondents could not commit such support as they felt this was a policy decision for their elected governing boards to make.

Respondents were also asked about the attitudes of key people and other members of their staff toward automation. A majority of respondents indicated they perceived the attitudes of key people and other staff to be favorable. A few respondents, however, perceived a certain amount of

"computer phobia" among staff and possible adjustment problems in initial stages of automation.

2. Existing Electronic Data Processing Uses and Future Plans

According to a nationwide study undertaken in 1974-75 (Kraemer and King, Computers and Local Government, 1977), "More than half of all U.S. cities and counties over 10,000 population use computers in one way or another." Similarly, 90 percent of cities over 50,000 and counties over 100,000 were found to use computer technology in some fashion in their activities (Kling and Dutton, "The Computer Package: Dynamic Complexity," in Danziger et al. (eds.), Computers and Politics: High Technology in American Local Governments, 1982.)

Typically, "housekeeping functions" such as financial management (e.g., accounting, billing, and budgeting) are among the first functions automated by local governments. A second tier of automated activities includes payroll, personnel, inventory, and administrative record keeping.

Current levels of governmental uses of electronic data processing (EDP) in Grand Island and Hall County as reported in Section III of this report are relatively low. In fact, only the city of Grand Island uses EDP to any significant extent. The city's utility department leases an IBM System/34 minicomputer and provides automation for both utility functions and certain city activities.

In Hall County, until the recent acquisition by the county register of deeds of an Apple IIe microcomputer for the modest purpose of indexing deeds, none of the activities or functions of the county was computer automated.

Currently, Hall County supervisors are considering the acquisition of a computer system for county administrative purposes. Also, officials in Grand Island have expressed interest in enhancing the extent of city uses of data processing, although no concrete plans have been announced.

Generally speaking, this situation--the relatively low level of EDP uses in the city and county--would be a positive one for the establishment of a data processing system for city and county users.

However, establishment of a geobased system in advance or independently of automation of the most basic and needed functions would violate sound administrative practice. This means that such things as an automated, fully integrated financial management system (e.g., budgetary and general ledger accounting, accounts payable and receivable, and purchasing and inventory control), and automated payroll and personnel systems should have priority over a geobased system for housing and community development data. For the county, it means that automation of the activities of the county treasurer (especially tax billing and collection), integrated as necessary with functions of the

county assessor and register of deeds offices, should come first. Also, the county could make good use of automation of budgeting, payroll, and personnel functions.

3. Intergovernmental Cooperation

In the previous section, the study team reported a generally high level of support in Grand Island and Hall County at the administrative level and among significant community organizations for an automated housing and community development data system. They also noted a healthy pragmatism on the part of these persons. That is, while they support such a system in general terms these persons and organizations want to know what it will cost and what it will do for them. However, a high level of support was not found among city and county elected officials for an automated geobased housing and community development data base.

Technically, either Grand Island or Hall County could acquire the necessary technological elements (computer hardware and programming) to make such a system work. However, technological feasibility is only a small piece of the puzzle. Establishment and administration of an automated geobased housing and community development system requires a strong political commitment on the part of both city and county governments. This is so because of the multiplicity of data generators and users from both city and county agencies and from other organizations in the

community. In addition, establishment of an automated housing and community development system requires a long-term commitment to coordination and cooperation. This is so if for no other reason than the fact that different computer systems owned by different agencies may not be compatible with one another. Only a strong coordinative, cooperative spirit over a long period of time will ensure that equipment and other system elements acquired by the two governments will be compatible.

At the moment, a sufficient degree of political support does not appear to be present. The reasons for this conclusion are threefold. First, the more basic computing requirements of the city and county agencies should be met before embarking on a broad-based geoprocessing system. Second, both governments are pursuing solutions to their particular computing needs independently of one another. The county is currently accepting bids from consultants to assist in determining whether and how the county can automate the functions of several of its offices. The city utilities department has definite plans for additional program development on its IBM System/34, and the city administration has expressed interest in improved uses of automation for city administrative purposes.

Finally, currently and in the recent past, city and county governments have found themselves at odds with one another over various issues. Whether these dif-

ficulties would adversely affect the coordination and cooperation needed for establishment and administration of an automated geobased housing and community development data base in the community is beyond the scope of this analysis, but the existence of these difficulties is not a good sign.

D. Conclusion

The study team has concluded that an integrated automated geobased housing and community development data processing system for Grand Island and Hall County is not currently feasible. The reasons for this conclusion follow.

1. The more basic computing needs of the governments should be met before initiating the development of an integrated geobased system.
2. City/county cooperation is essential for the successful implementation and operation of an integrated geobased data processing system. Yet, the history of city/county cooperation in Grand Island and Hall County is mixed.
3. Apparently only limited policy level support for a geobased system exists in both governments.
4. In addition, Grand Island and Hall County have taken divergent approaches to the solution of their individual data processing needs. The study team

could find no evidence that these divergent approaches are likely to change.

5. The cost of an integrated geobased system (the minicomputer alternative) is relatively high, especially when compared to its value to participating agencies and when viewed in the light of the community's more basic computing requirements.
6. Most organizations interviewed, even those that supported the concept of an integrated geobased system, were uncertain of their governing boards' willingness to commit their financial, organizational, and political support to its establishment.

This conclusion and its attendant reasons should not be interpreted as unduly harsh or negative. Given the more basic computing needs of the city and county governments and current plans to address those needs, a sensible conclusion is that an integrated geobased system for housing and community development data should not receive immediate or priority consideration. Additionally, the economic climate in which local governments must operate would suggest application of a greater measure of caution in committing large sums of public funds for the sole or primary purpose of automating for so limited a function.

This conclusion does not necessarily signal the end of possibilities for establishing an automated housing and community development information base in the community.

Should Hall County acquire a computer system to serve the needs of several county offices (register of deeds, assessor, treasurer, and perhaps others), this system will partially satisfy the information management requirements for a geobased system developed in Part III of this report. Finally, the microcomputer alternative for use in providing automation for housing data represents an attractive and inexpensive method of addressing at least a few elements of the larger data base (e.g., housing condition data, census data, and possibly others).

VI. NEXT STEPS

The Housing Committee may wish to consider one or more of the options developed from the findings of this study.

First, the committee could choose to take no further action regarding the automation of housing and community development data. In making this decision, the committee should carefully weigh the area's need for housing and community development data.

Secondly, the committee could choose to develop a plan to overcome the previously mentioned barriers to the implementation of an automated geobased system for the city and county. This would involve the initial automation of more basic city and county functions such as financial and personnel data. It would also involve the development of greater cooperation between the city and county. The process involved in this alternative would probably require considerable time.

A third alternative is to construct a more limited system consisting of a microcomputer located in the Community Development Agency or Regional Planning Commission. Though the capacity of such a system would be less, hardware and software are available to handle the data base from the Grand Island Housing Study, 1982.

A fourth option would depend upon the acquisition by Hall County of a computer system to serve the needs of several county offices. If the county decides to move in

this direction, the resulting system could partially satisfy the information management requirements for a geobased system. The Housing Committee may wish to communicate with the county in regard to the development and capabilities of such a system.

Finally, the committee could consider a combination of the last two alternatives. This would involve acquisition of a microcomputer based system by a selected agency and that agency working with the county to satisfy the requirements for the remaining geobased elements in the system.

APPENDIX

OFFICE: _____ DATE: _____

PERSON/POSITION: _____

OFFICE LOCATION: _____ Tel. No.: _____

TYPE OF RECORD(S): _____

RECORDS:

What records do you keep in your office dealing with population, housing, land use, development or related information?
[Ask for examples of all records and forms used for these data.]

What is the total number of records on file?_____.

How many new records do you receive or create per month?_____.

How many years have these records been kept?_____.

How long in their present form?_____.

Do you expect to begin keeping any new records or data in the near future?_____.

SOURCE:

What is the source of these records?
That is, do you compile them yourselves or do others provide your office with information for your records? [ ] Selves
[ ] Others

If self

Could you describe where you get the information for these records and how you put them together?

RECORDS (cont.)

If others

Could you describe who these sources are, how the information comes to you, the form it comes in, and what you do with it?

RECORD USE:

What uses do you make of these records and data?

Internal Use

Do you: Write reports or summaries (explain/examples):

To whom are they made?

Why are they made [e.g., required by P.L. XX]?

RECORD USE (cont.)

What would you like to be able to do with these records or data that you can't now do?

External Use

Do other persons or organizations use these records? [ ] No
[ ] Yes

[If so] Who are they?

How often do they use your records?

What information do they use from your records?

What do they use that information for?

Do you use records from other persons or organizations?

COMPUTERS:

Do you use a computer for any of your office activities? [ ] No
[ ] Yes

What kind of computer? Located where? Owned by whom?

COMPUTERS (cont.)

What activities are computerized?

Do you use "word processing" for any of your activities? [ ] No
[ ] Yes

How would you feel about the computerization or automation your records relating to population, housing, and community development?

Do you feel it would improve accuracy?

Do you feel it would improve efficiency?

Would it allow you to do your job more effectively?

How would the "key" people in your organization feel about computerization of these data?

How would your staff react; would they support or resist computerization?

How many people on your staff deal directly with your records?_____.

Other than records dealing with housing and land use, how would you feel about computerizing/automating other aspects of your office operation?

INTERAGENCY OFFICE:

If a computerized system for population, housing and community development data is established in Grand Island, which do you think is the most appropriate agency to head the effort? Hall County? City of Grand Island? Chamber of Commerce? Other? Why?

INTERAGENCY OFFICE (cont.)

Do you think an intergovernmental/interagency system such as this will work?

Will all units cooperate?

What problems do you think would occur? Which agencies?

Would you be willing to pay a part of the cost to establish such a system? A proportional part?

Would you be willing to pay a part of the cost of administering and operating such a system? How much per year?

Any other comments that might help us with this study?