

TO: Legal and Finance Committee

FROM: Lisa Seaman, GIS Coordinator

DATE: September 26, 2002

RE: Amendment to the GIS Information Policy for Rapid City and Pennington County

In recent weeks several vendors have expressed interest in purchasing digital data created by the Rapid City/Pennington County GIS Division for redistribution. The Information Policy adopted by the City Council and Pennington County included provisions for copyrighting and licensing the data created by the Rapid City/Pennington County GIS Division. The policy included three types of licensing agreements Personal Use, Intergovernmental and Public Agency and Commercial. The Commercial License permits users to purchase data for use and redistribution; however, the policy states that the "license will also require an annual or other periodic royalty fee for use of the copyrighted data." On September 25, 2002 the LIS Task Force reviewed this section of the Information Policy and has recommended that the Information Policy be revised to exclude the requirement of an annual or other periodic royalty fee for the use and redistribution of copyrighted digital data.

The second issue discussed by the LIS Task Force related to the Privacy section of the Information Policy. The Pennington County Sheriff's office has requested use of the Pennington County-Rapid City road centerline file to make available to the public, via the Internet, the residence of all sex offenders, including the offender's name, address, picture, crimes convicted of, etc. The implementation of the web-site as requested by the Pennington County Sheriff's Office stimulated a discussion by the Task Force of the Privacy Section of the Information Policy. Currently, Section F(2)(I) of the Information Policy states, "Individual owner names and associated personal information will not be made available over the Internet unless otherwise required." The LIS Task Force discussed the availability of personal information to the public through various government agencies and concluded that the Information Policy should be amended to allow individual owner names and associated property information to be posted on the Internet.

Attached please find a copy of the Information Policy with the proposed revisions.

Recommendation: The LIS Task Force recommends approval of the attached revisions to the GIS Information Policy.

GIS Information Policy for Rapid City and Pennington County, South Dakota

Policy Review and Recommendations

March 1, 2000

Prepared By:



GeoAnalytics, Inc.
1716 Fordem Avenue
Madison, Wisconsin 53704-4604
Phone: 608-241-7100
Fax: 608-241-7114
E-mail: office@geoanalytics.com
URL: www.geoanalytics.com

Table of Contents

A.	Overview	1
B.	Project Goals.....	1
C.	Information Policy Issues.....	1
1.	Context	1
a.	Information Dissemination Procedures and Protocols.....	2
b.	Institution of Data Custodianship.....	2
c.	Formalized Data sharing arrangements.....	3
2.	Barriers to Data Access.....	3
a.	Lack of Awareness of the Existence of Data.....	3
b.	Lack of Metadata.....	4
c.	Inappropriate Data Formats.....	4
d.	Need to Address Privacy Requirements.....	4
3.	Types of Information Requests	5
a.	Personal Requests.....	5
b.	Decision Support.....	5
c.	Commercial Requests for Individual records.....	5
d.	Commercial Requests for Large Parts of a Database	5
4.	Organizational Impacts.....	6
D.	Potential Policy Instruments.....	6
1.	Revenue Policy.....	6
a.	Implications for Access.....	6
b.	User Fee Policy options.....	7
c.	Issues when Selling Information.....	8
2.	Privacy Policy.....	10
a.	Privacy Concerns.....	11
b.	Necessary Policy Elements.....	12
E.	Legal Profile	12
1.	Open Records Laws.....	12
2.	Liability.....	13
a.	Conditions Leading to Tort Liability.....	14
b.	Defenses from Claims.....	15
c.	Contract Liability—Uniform Commercial Code.....	16
3.	Copyright	17
a.	Background.....	17
b.	Analysis	18
F.	Policy Recommendations.....	22
1.	Intent	22
2.	Policy Statement.....	22
a.	Open Access to Public Records.....	22
b.	Services.....	22
c.	Data Availability.....	22
d.	Non-Custodial Data.....	23
e.	Data Dictionary	23

- f. Data Format and Media 23
- g. Data Requests 23
- h. Standard Products 23
- i. Metadata 23
- j. Liability 23
- k. Copyright and Licensing..... 24
- l. Privacy 25
- m. Governmental Impediments 25
- n. Custodianship..... 25
- 3. Access Policy 25
- A. REFERENCES..... 26

GIS Information Policy for Rapid City and Pennington County, South Dakota

Policy Review and Recommendations

A. Overview

This document is intended to provide a review of critical information policy choices for the development of GIS Information Policy for Rapid City and Pennington County (RC-PC), South Dakota. This is followed by draft recommendations to provide the framework for policy formation.

There are three parts to this report. The first gives an overview of and the reasons for development of a comprehensive information policy. The second covers the critical issues in policy formation with the implications of the possible options. The third outlines a proposed policy framework with specific recommendations in each area.

B. Project Goals

The goal of this project is to develop a stakeholder-driven, consensus based GIS Information Policy for the City and the County that serves their best interests and those of their citizens. In addition, this policy seeks to create the greatest value for the community as a whole, including other strategic partners of RC-PC such as state and federal agencies and the private sector.

C. Information Policy Issues

1. Context

Rapid City and Pennington County's investment in GIS is becoming operational with data being developed and hardware and software procured. As systems are implemented and data becomes available, RC-PC will begin to reap many benefits from this investment. These investments are also valuable to outside individuals and organizations such as private companies, other units of government and citizens. Data being developed also has commercial value for resale and for support of value-added services. As the RC-PC GIS systems become operational and land information becomes readily available, there will be an increasing need to deal with complex and wide ranging GIS information requests. To date, neither the City nor the County has a formal policy with respect to the distribution of these data.

Just as there has been a need for the City and the County to make collaborative investments and coordinate efforts, there is also a need for a collective information policy. This is for a number of reasons, including consistency,

security, and preservation of the taxpayers' investment. Moreover, a collaborative information policy will minimize the costs of data distribution across agencies.

Currently data sharing is handled in an informal and ad hoc way as the need arises. With the amount and value of the information increasing exponentially the impact of these decisions will become more widespread. Critical mistakes could be made that may greatly impact the citizens of RC-PC. Creating a formal information policy will help to forestall such problems providing the following elements are included.

a. Information Dissemination Procedures and Protocols

A key element of this policy exercise will be the formalization of procedures and protocols regarding access, formats and conversion costs, fees, and funding—all of which must conform to South Dakota Public Records Laws requirements. Unless uniform policies are developed for access, maintenance, revenue generation and pricing, potential users of GIS data will not be able to make firm decisions on obtaining, enhancing or providing value added services based on this data. Formalizing these policies ensures all interests understand the rules governing data dissemination and can make commercial decisions based on those rules.

b. Institution of Data Custodianship

The establishment of formal data custodianship with responsibility for data quality, maintenance and dissemination will be essential to the success of this information policy. Having a formal custodian means that a procedure can be established to handle data error reporting with some expectation that the data will be properly corrected. A data custodian also means that data update processes and quality assurance systems can be established. This also ensures that data exchange is simplified and interchange formats can be standardized.

Data custodianship is defined by four mandates or responsibilities and may be delegated. The functional responsibilities of custodianship include:

1) Data Repository

The custodian has the sanction or mandate to act as official data repository.

2) Data Maintenance

The custodian has the mandate or responsibility to maintain the data.

3) **Data Access**

The custodian has the obligation to provide the means for data access, whether by law or by informal arrangement¹; and

4) **Technical Assistance**

Custodians have the corollary obligation to provide assistance and facilitate data access to requesters². In some instances, this obligation may extend to providing access in a form that is meaningful to the requester. This may apply to situations such as requests under some specific mandate such as open records laws or by way of collaboration.

There are multiple implications to data custodianship. For example, without addressing these issues, potential users of GIS data will not be able to count on data fitness, currency, or responsibility. The commercial market requires consistent policies so that business decisions can be made with some expectation that they can be carried out as planned. Moreover, citizens and others need assistance to make public data useful to them. It is important to note that the concept of data custodianship positively addresses virtually all of the "Barriers to Data Access" (see paragraph C.2 below).

c. **Formalized Data sharing arrangements**

The establishment of a formal data sharing policy will reduce the risk associated with ad hoc data sharing arrangements. Each of these arrangements may result in uncertain liabilities and a possible reduction in citizen privacy. Although individual arrangements may not have apparent implications, the combination of different requests may release information in a way that was not intended.

2. **Barriers to Data Access**

Although the RC-PC is well positioned to provide GIS information once systems come online, there are still numerous hurdles that need to be overcome to ensure information can be provided to those who can best make use of it. Information barriers include the following:

a. **Lack of Awareness of the Existence of Data**

Information produced by RC-PC has considerable value for governmental agencies, the private sector, and citizens. Notwithstanding, there likely is little external awareness of what kinds of data RC-PC has or is developing. Generically, the function of providing awareness of the existence and

¹ E.g. data made available in a timely fashion and in a usable format

² E.g. provide a data clearinghouse, create metadata, or other services. In some situations, this may include some level of needs analysis, data conversion, or education about the data.

availability of data is characterized as a clearinghouse³. A clearinghouse would enable RC-PC staff, citizens and others of what data is available, how to obtain it and the rules that apply. Making the citizenry aware of the potential in using GIS data will also enhance the abilities of citizens and commercial interests alike to make use of the data, provide better products and services and better compete in the commercial arena. It will also mitigate concerns about commercial interests gaining a windfall with publicly available information. Ultimately, it would be expected that the RC-PC clearinghouse would become a node on the FGDC Geospatial Data Clearinghouse (see footnote 3).

b. Lack of Metadata

Effective information access goes together with information about data. Without formal metadata, potential users of RC-PC data cannot easily assess the potential uses for the products and make informed business decisions. More than an access tool, metadata shifts part of the onus of the evaluation of fitness for use onto the requester. If metadata is made readily available, this in turn reduces the amount of time and expense required by staff in fulfilling information requests. Moreover, because the requester has the opportunity to and can better evaluate the available data, whatever legal liability may attach is reduced through the requester's assumption of risk.

c. Inappropriate Data Formats

Incompatible data formats can be a significant barrier to information access. The GIS data may be available, but not in the format that the potential user needs. In other cases the data may be in a proprietary format that requires a specific application to be usable. The costs of these applications may be far above what the requester is able to afford. At the same time, the technology needed to use data in a proprietary format may be so complicated so as to make functionally inaccessible by requesters. To enhance data access the information policy needs to address digital formats with the goal of providing data in widely compatible formats. Data also needs to be made available in standard hardcopy formats to ensure citizens with few resources can also obtain needed information.

d. Need to Address Privacy Requirements

Governments everywhere are faced with the need to provide information while also holding back certain data for privacy reasons. This manipulation of data sets adds additional costs to GIS systems that have to be addressed.

³ The Federal Geographic Data Committee (FGDC) hosts a Geospatial Data Clearinghouse gateway. The Geospatial Data Clearinghouse is a collection of over 100 spatial data servers, which have digital geographic data primarily for use in (GIS), image processing systems, and other modeling software. These data collections can be searched through a single interface based on their descriptions, or "metadata." See: <http://fgdc.gov/clearinghouse/clearinghouse.html>

A formal information policy needs to address what information in general will not be released and how the costs of deletion or redaction are handled.

3. Types of Information Requests

Information requests can be divided into several types, each with particular issues to be addressed in a formal information policy. The different types can be described as follows:

a. Personal Requests

Personal requests are often from homeowners looking for information about their real and personal property, land development affecting it and proposed city or county initiatives. Generally, these requests are relatively straightforward to fulfill provided simplified information is made available to requesters. Citizens generally do not have sophisticated GIS tools and technologies that would allow them to utilize complex data. Generally, hardcopy products are needed for these types of requests.

b. Decision Support

Information is collected by governments to serve a variety of purposes. Primary among them is decision support at the policy-maker level. Elected officials frequently need specific land information to make informed decisions. Often, these data are ad hoc and of limited geographic extent. At the same, decision makers often need data that is broad geographically covering even beyond the extent of an entire jurisdiction. This data may involve time-series and other types of analytical dimensions. Accordingly, data used for decision support requires analysis, presentation, and both horizontal and vertical depth. Serving these needs is labor intensive.

c. Commercial Requests for Individual records

The key issue here is the requirement to provide information while at the same time respecting citizen privacy. Public bodies have a duty to fulfill both mandates. Although records need to be made available to requestors under FOI legislation, certain parts of those records have to be exempted and there is a cost to this process.

d. Commercial Requests for Large Parts of a Database

GIS information is increasingly valued for its role in integrating disparate data by geography. This is especially true in the commercial arena where such information can be used for marketing, site planning and land development to name just a few. The issue here is policy to address requests for large parts or even the entire database. This again raises the need to address privacy issues as well as being fair to both the commercial interests and the citizens who paid for the GIS system.

4. Organizational Impacts

Establishing a consistent information policy requires making changes in the organization that are wide ranging and have impact on many departments. In the course of operations, local government collects and provides a great deal of information. Similar to the great deal of value the government body sees internally in using GIS technology to integrate this information, outside parties also see high value in this information. It is critical that data sharing policies are formalized across all agencies having access to the information to insure that outside parties do not go data shopping to get around fee or data restrictions.

This applies both to commercial interests as well as other governments. In one studied case, a City and County government had different information policies. The City charged for their data at cost recovery rates while the County charges were nominal. When it came time to share data, the City wanted the County to pay full rates while the County was willing to share. This illustrates the importance of developing far ranging information policy and formalizing intergovernmental data sharing arrangements at all levels.

The creation of a formal information policy also involves the training and restructuring of the governments' contacts with the public. Numerous departments need to be made aware of the policy's implications for their operations. Consistent responses have to be developed for numerous situations. This includes establishing formally the statutory exemptions to Public Records laws and formalizing the data sharing arrangements between governments. This is especially critical where different public and private bodies have different policies.

D. Potential Policy Instruments

1. Revenue Policy

a. Implications for Access

1) The citizens' right to know

All rights in a democratic society extend from our ability to access information, especially information on which government decisions are based. Without access to the full information we cannot determine how data supports decisions. Restricting access based on costs leaves the system open to manipulation to support poor or biased decisions.

2) Supporting the Decision Making Process

Access to records for the public means access to answers to questions. Just having copies of the records does not mean that the public has

access to the same information that the government agency has. Increasingly the answers come from analyzing the data through the use of specialized techniques. For instance when looking at how a particular decision was made, a public body can manipulate GIS data to show certain facts to be the case. However, only through access to the full data set and sophisticated GIS tools can the public determine whether the ‘facts’ are indeed true and the resulting decision is the best one. If the data set is sold commercially at high fees then the public may not be able to afford to question or review decisions.

3) Services Attendant to Information Requests

Perhaps the most significant issue confronting public agencies is not recouping the cost of data development and maintenance, but rather the cost of providing services attendant to information requests. It is very infrequent that either the general public or decision-makers simply want data. These audiences want “information”, i.e., data that has been refined and analyzed to make it useful for the requester’s purposes. The need for these services is not trivial, nor is the cost of providing services trivial. Rarely is it a simple matter to recover the costs of providing services. For decision makers, there is no recovery for the costs of services. The public is often disinclined to pay for services because it is difficult to discern between the cost of data and the cost of service providing. As a result, whatever policy is chosen, will have to take into account the effect on personnel time and recoupment of those costs.

b. User Fee Policy options

Some studies have found that high user fees that lower the demand for goods and services are not appropriate when applied to government records. The position taken is that these are public assets and better serve to strengthen the economy, develop knowledgeable citizens and promote better decisions in both public and private matters. Other studies indicate that it is inappropriate for government agencies to hand a windfall over to commercial interests wishing to profit from government data. These studies take the position that fees should be set high enough to recover the cost of creating the data and building the GIS systems.

Given this wide variation in position there are four possible options that a public body can take when setting fees for GIS information. In the following choices, an increase in number indicates increasing liability and less access for the public.

1) Open Access—Charges at Cost of Reproduction Only.

Under this option, information is freely provided with charges based on the cost of dissemination and reproduction only. This would apply both for private and commercial requesters regardless of the size of the

request. The advantages include more use of the information which, when combined with a good reporting system, means better information quality as additional users report information defects. This option also encourages exchange of data, which lowers the overall cost to all parties.

2) Open Access—Commercial Exceptions

This option provides GIS information for small requests at the cost of dissemination and reproduction only with additional fees levied for high volume commercial needs. Often these larger requests are done at hourly rates based on the time it takes to produce the records. Again, under this choice the full cost of system production is not included in the fee structure.

3) Revenue Generation—Costs Related to Cost of Data Production

This method attempts to recover the cost based solely on the underlying cost of building and maintaining the system. Using this method commercial and private interests are treated the same. Fees are set to include the base cost plus all attendant costs associated with maintaining the system.

4) Revenue Generation—Value-Added Services

Under this scenario, the GIS system is run much like a private commercial enterprise. The data and technology is leveraged using skilled personnel to not only provide needed information but also to provide value-added services. This type of operation competes directly with commercial operations and fees are set appropriately.

c. Issues when Selling Information

1) Assessing GIS Data value.

The first issue when selling GIS information is what is its value. The purpose of creating a GIS generally is to improve or enhance government services and the profit motive likely is not a consideration. In any event, public bodies have little experience with offering services at a profit. One also needs to ask whether there really are large profits to be made selling this data. One study indicates that profits are minimal when providing basic information and generally make only a small contribution to the cost of providing services. The real profits are in providing value added services by packaging or presenting GIS data a certain way or combining it with other systems. For instance, street centerline data is of little use to the public unless packaged with search tools or a global positioning system based location system.

2) Issues when setting a Specific Fees

One of the most difficult policy issues is setting appropriate fees for GIS information. One option is setting statutory fees. However there are problems with this approach. How does one decide on a suitable fee? For instance, setting the fee for one record at \$10 might seem appropriate given the average cost of producing a record printout and map. However when applied to 200,000 records the resulting fee of \$2,000,000 would be unrealistic given the potential market. In that case an inflexible policy would likely result in no sales. It is critical that any information policy remains flexible to respond to changing situations and extraordinary requests.

One thing is clear, there is a good deal of price sensitivity when it comes to public records, i.e., demand is “inelastic”. It has been suggested, for example, “the demand for public records is a mile wide and an inch deep”. What this means is that there is great deal of perceived need for public records by individuals, public agencies and the private sector. However, demand, as measured by willingness to pay, is relatively low. In these kinds of demand situations, economists predict that revenue will actually be maximized by a low cost pricing strategy.

3) Setting Fees Dependent on Proposed Use

Should a proposed sales policy establish different fees for different requesters? There is practical difficulty in questioning and verifying the identity and purpose of requests. There are also serious public policy concerns and constitutional issues in a policy that distinguishes between users. For example, how can one distinguish between a company using GIS data to produce a land use map that the public uses to question a government decision from the same company using the same information to support commercial land development interests. Another example is an environmental group’s use of GIS data to fight an oil refinery development versus the oil company using the same data to argue against them.

4) Public Benefits by Fostering Competition

In the private marketplace, competition promotes efficiency and innovation. This efficiency is passed on to consumers in the form of lower fees and better service. Regarding GIS data, if all engineering firms gain access to government GIS information, all can compete for the public’s business by offering value added services based on the data. The need to remain competitive results in lower costs and better services and the public benefits as a whole. At the same time, there is potential cost savings to the extent that public uses the private sector as a data broker and as a service provider—thereby relieving governmental agencies from having to not only respond to data requests, but inevitably requests for service.

2. Privacy Policy

One of the potentially negative societal effects of GIS technology is a resulting decrease in personal privacy. At first glance, GIS information has little to do with personal privacy since it is primarily factual information about land and resources. However geographic information systems are powerful data integrating tools that are becoming extremely valuable to commercial interests, public interest groups, regulatory and law enforcement agencies, and others with a perceived need to know personally identifiable information. The capabilities of GIS lead them to being powerful tools for drawing together and then analyzing personally identifiable information.

The starting point for sound policy in this area is to recognize that privacy interests enter into the equation, but generally for only a subset of public information. Privacy interests have little to do with public access to statutes, agency orders and rules, judicial decisions and opinions. They do however have a great deal to do with access to citizens' information related to identity, life style, living standard and financial status. It is also critical that exploiters of public information not be immunized from privacy laws merely because the content originated with the government.

It has been suggested that government agencies, in and of themselves, cannot violate privacy interests. This is because government is generally limited in the data it needs to collect to support its statutory functions, which serve the public interest. Even if this were true, government can be consciously or unconsciously complicit with commercial or other interests that seek personally identifiable information. At the same time, privacy advocates offer many examples of governmental abuses particularly in the realm of politicized legal and other processes. Robert Ellis Smith, Editor of the Privacy Journal has asked rhetorically:

"As citizens and as consumers, we must force government agencies and businesses to ask:

- ▼ Do we need to ask for the information in the first place?
- ▼ Can we safeguard the information?
- ▼ Will we use the information only for its original purpose?
- ▼ Will asking for more personal information actually solve the problem we perceive? ..."⁴

⁴ Smith, Robert Ellis, *Our Vanishing Privacy and What You Can Do to Protect Yours*, 1993, p. 5.

a. Privacy Concerns

There are four primary concerns when looking at privacy issues in GIS Information:

1) The Widespread Availability of Unregulated Data

In the broad public and private sectors there is a great deal of data residing on many systems, a great deal of which is publicly available. With all levels of government collecting disparate data sets with private aspects, no one knows who has what data or how all of this information can be related. The full impact of releasing data sets is difficult to assess. There is also a lack of knowledge of how much of this information is inaccurate or outdated.

2) The Power in Visual Representations

Visual representations of geographic information combined with attribute information are especially powerful tools for commercial decisions. Using GIS one can characterize a neighborhood as being of a certain type and therefore can establish certain characteristics common to the people living there. The danger here is that people see maps as direct representations of reality. In turn they associate specific behaviors to the individual residents of a mapped area without regard to the wide-ranging diversity inherent to that group.

3) The Development of Data Profiling

Data profiling is the practice of creating a resident profile that is based on the combination of individual data with other publicly available data. This could range from private commercial data on consumption and purchasing to data such as census group data and postal carrier routes. This results in an expectation of what an individual is like based on disparate data. In turn, decisions are made based on assumptions about people rather than using facts.

4) The Alteration of a Citizen's Expectation of Privacy

The danger in making any government information available is the possibility of disparate data sets being concatenated. Although the individual elements are only mildly intrusive, the combined information has major privacy implications. Technological change can also effect what is reasonable or what the public is prepared to accept. Currently, government offices have a great deal of data that was gathered up when 'freely available' meant copying one record at a time at the local government office. This is something completely different from what it means today when GIS data on a CD can make it instantly available to everyone.

b. Necessary Policy Elements

With regard to the above, the necessary elements of a good GIS Information policy with respect to privacy are:

- Individuals need to be able to examine their personal stored information.
- Consent should be required for secondary uses.
- Individuals must have a means of correcting personal information
- Data must be maintained and be kept in a secure fashion.
- Certain elements need to be exempt and the cost of exemption has to be addressed.

E. Legal Profile

The development of any type of information policy for RC-PC is both driven and constrained by legal considerations. This section provides an overview of both the legal limitations and possibilities. There are three relevant areas of the law as it relates to this policy: Open Records Laws, liability, and copyright.

1. Open Records Laws

The principal law governing the GIS Information Policy is South Dakota's Open Records Laws. Obviously, there are other laws affecting this policy, including those affecting privacy, privileges, contract and copyright. This chapter focuses on the legal implications of the circumstances affecting RC-PC, including providing the justification for the proposed policy instruments, specifically open records laws, copyright and licensing.

There are three values - public, private and commercial - that apply to activities that rely on public information. In regard to the public values, Prof. Earl Epstein has commented:

The public value is the need by citizens and groups to know what their governments are doing. This value is expressed as...open records laws. The goal of these laws is exposure of government activity and its basis. *The goal is not access; access is the means.* Satisfaction of the need to know is fundamental in a democracy, and paramount in the consideration of the development of information systems. *Information is empowerment in a democracy. Access is the on-ramp.* The distinction between ends and means is important because it tells us to segregate what is used in government activity from what is not used, and not to segregate based on physical forms of data⁵. (*emphasis added*).

Open records laws in the United States generally represent a deeply held public value. The public value expressed in open records laws is based on the notion that government should be open to citizens. This notion has two distinct underpinnings.

⁵ Epstein, Earl F., 1991, *In My Opinion*, URISA Journal, Vol. 3, No. 1, Page 2, 1991.

First, and most important, is the contribution of open records laws to democratic processes and principles. Government serves at the behest of citizens, not to direct citizens. To the extent that in its regulatory function government decision-making can affect individual personal or economic circumstances, these individuals must have the ability to understand and monitor public decision-making. As a result, government has the responsibility to make its decision-making processes and records open to its benefactors. Without this guarantee democracy fails. The second underpinning is economic. That is the notion that, where appropriate, open records laws ensure access to public investments and that those who pay for government are not taxed twice to make use of the investment.

The State of South Dakota has something of an unusual Open Records Law. Specifically, public records are limited to an enumerated set of documents:

1-27-21. Definitions—Public Document or record—Public Meeting.

For the purposes of §§ 1-37-20 to 1-27-26, inclusive, an official public document or record is any document officially compiled, published or recorded by the state including deeds, publicly probated wills, records of births, deaths, and marriages, and any other documents **required to be kept open for public inspection** pursuant to chapter 1-27...
(emphasis added)

This definition is exclusive rather than inclusive. Accordingly, public records are limited to those that have been defined. The practical import of this is that because GIS data is not explicitly required to be kept open for public inspection, it is exempt from Public Records Laws. This offers a great deal of flexibility in the formation of this policy. For example, RC-PC could charge whatever the market would bear for data and services (although this is not recommended). There could be different charges for different purposes—although this may raise equal protection constitutional issues. Finally, RC-PC could charge at the cost of reproduction. One significant outcome is that there is great flexibility in charging for services and subscriptions that recoup costs in excess of the cost of reproduction.

2. Liability

Although digital data suffers from the same mistakes made with hardcopy-based data, customers are increasingly expecting data from the computer to be correct. This is somewhat related to believing that a computer cannot make mistakes, only people make mistakes. This attitude is taken especially when the data being provided is expensive. Government providers of GIS data have some protection when providing data that is gathered in the normal course of government operations. There are two sources of liability: Tort, i.e., injury to person or property, and Contract, specifically the Uniform Commercial Code.

a. Conditions Leading to Tort Liability

There are six ways to be held liable in tort:⁶

1) Negligent Misrepresentation

The most likely action that leads to liability for provided GIS data are cases of negligent misrepresentation. This is the situation when the government agency inadvertently represents the data as something it's not. Should staff fail to adequately inform the user of data limitations the risk of negligence is greatly increased.

Negligent misrepresentation leads to potential liability if the following conditions are met:

- ▼ Information is provided for a business purpose.
- ▼ It is provided in the course of business in which the provider has a pecuniary interest
- ▼ The recipient suffered a loss due to the actions or inaction of the provider
- ▼ The provider did not exercise reasonable care and diligence

2) Fraudulent misrepresentation

This occurs when the government agency knowingly represents data as something it's not. This is most likely to happen if the unit of government must sell data to meet revenue needs and in the course of business over sells the data on the basis of quality that is not there. This could also occur if the government seller was aware of the various sources of the data and the uses that the buyer wants to put it to and still represents the data as suitable even if it is not.

3) Strict liability

This is liability for errors in the data even though the seller is unaware of the errors. It is prudent for the seller to investigate and examine the quality of the data it sells and if defects are found, such data should be excluded from sale. Under strict liability the government unit could be held liable for the errors effect on the buyer.

4) Malpractice

The myth of machine infallibility seems to hold digital data to a higher standard than traditional data. If the government agency becomes a data production and manipulation shop then in a case of data or product errors, they could be held liable for failing to use the requisite skills to fulfill the information request.

⁶ It should be noted that there is no South Dakota case law specific to these types of claims. These descriptions are abstracts derived from cases across the United States.

5) Defamation

Liability for defamation occurs for such cases as claims for improper listing of properties for tax sales or incorrect statements of judgements. When local governments collect and make public data on individuals or businesses they place themselves open to defamation suits should the data be incorrect or misleading.

6) Invasion of Privacy

An invasion of privacy may derive from two separate theories. The first is where the agency negligently releases personally identifiable information that is protected by law. This requires that the agency knew or should have known that release of the information was proscribed and that victim suffers damages as a result. The second theory relates to intentional release of protected, personally identifiable information. For this theory to succeed, one must prove that the actor (agency) had an explicit intent to release the protected information.

b. Defenses from Claims

Any public body that maintains spatial data is potentially subject to liability for damages caused by errors in that data. This is the case even if the public body does not function in a business-like cost recovery manner. This could even be the case should the request for data be part of a FOI request. If governments engage in the sale of information products in competition with private vendors then they need to be prepared to defend themselves when they take the same risks as their competition. Unfortunately, there is no State Tort Claims Act or case law that excepts liability of acts of tort in South Dakota. As a result, agencies are liable for their negligent acts and have no inherent defense. To fight such actions there are several defenses that can be raised as follows.

1) Defense through Contract and Disclaimers

This defense is usually raised when data is provided in the context of a cost recovery program. The purchaser in the course of buying the data is required to enter into a contract with the providing agency that includes language precluding liability for the provided data. However, courts are often reluctant to enforce the condition, especially when the parties are seen to have an uneven bargaining power when entering into the contract. In any event, the provision should still be included in any contract document.

2) Exercising the proper Standard of Care

Defenses based on the agency taking a proper standard of care depend on the standards that the care is measured against. Standards in this case mean software standards, data formats, data presentation standards and user design standards. In this case the current situation of poor industry standards works in favor of the information provider. The

defense however still has to present evidence of there being a reasonable standard of work given few standards. It is important, however that in providing product and services, agencies and their staff should exercise a reasonable level of care given the circumstances. It should be noted that the standard or care relates to what would be reasonable as measured by what is accomplished in the industry.

c. Contract Liability—Uniform Commercial Code

Liability under this theory arises only in circumstances where there is a contract, i.e., where there is an offer, acceptance, and exchange of consideration (product for money). To the extent that RC-PC "sell" data there is a potential for contractual liability, specifically under the Uniform Commercial Code (UCC). The UCC comes into effect to the extent that data and/or maps become "goods" (2-101). If that is the case, a number of warranties come into play for which agencies may become liable. It should be noted, that unlike tort, damages in contract are somewhat limited in scope, but nevertheless be substantial. It should also be noted that warranties may extend to persons reasonably expected to use or consume the goods (2-318). This is important to the extent that many requesters of information are doing so at the behest of others (e.g., developers, engineering firms, etc.) The following highlights potential liabilities.

1) Express Warranties, 2-313

An express warranty arises where the seller (the agency) makes an affirmation or fact or promise relating to goods that become a basis of the bargain; and this description becomes a basis of the bargain—from the perspective of the buyer. Ironically, some express warranties may be made by implication—for example by reliance on metadata.

2) Implied Warranties

There are two kinds of implied warranties:

(a) Merchantability, 2-314

This warranty requires that the product would pass without objection in the industry and would be fit for ordinary purposes for which goods are used. This means that the goods must conform to label or other representations. It may also arise from course of dealing or usage of trade. In some ways, this is like the standards for torts, i.e., the goods must be of a quality that is reasonable under the circumstances.

(b) Fitness for a Particular Purpose, 2-315

This warranty arises where the seller: has reason to know of purpose for goods are required; and that the buyer relies on skill and judgment of seller. This warranty attaches automatically. It

may arise where the agency provides value added services to meet the specific need of the requester of the information.

3) Exclusion of Warranties

The UCC permits Exclusion of Warranties (2-316). In order to exclude warranties, however, the exculpatory language must be: written (especially for Warranty for Fitness for a Particular Purpose); conspicuous; and explicit. Warranties may be excluded by course of dealing or usage of trade, but this is a very high standard (2-316, 2-317)

3. Copyright

a. Background

The use of copyright ownership by local governments as a policy instrument is not without some controversy. In the governmental context, it is a relatively novel approach to effect a number of policy objectives. There are a number of issues that must be addressed. First is the capacity of local government to assert and hold copyright in its own works. The second is the availability of protection for GIS/LIS data.

This is not to suggest that copyright is fraught with legal uncertainty, even when used by government. For example, the American Bar Association maintains as part of the Section on Intellectual Property Law Committee 308, *Government Relations to Copyright*. This committee devotes its study, among other things, to: the practices of government agencies and private publishers concerning the copyright of work created by government employees; the acquisition and administration of copyrights owned or controlled by government agencies; and the use and infringement of government copyrighted works⁷. It is significant to note that federal agencies are explicitly precluded from asserting copyright in works they create⁸. No similar provision exists for state and local governments. As a result, relative to copyright, state and local governments stand on the same legal footing. In 1989, it was estimated that at least 28 states were using copyright to protect various interests in public works⁹.

Finally, by way of background, copyright is a creature of federal statutory law with its genesis in the U.S. Constitution. Licensing, on the other hand, is by and large a matter of the common law. That is to say that licensing is a contractual mechanism, which, in relation to copyright, is used to effect and enforce the ownership interests of the copyright owner.

⁷ 1996-1997 Annual Report of the Section of Intellectual Property Law Committee 308 (1998)

⁸17 U.S.C. sec. 105.

⁹ *Electronic records Access: Problems and Issues*, The Florida Legislature Joint Committee on Information Technology Resources, January 1994, citing the American Bar Association *1989 Annual Committee Reports, Section of Patent, Trademark and Copyright Law 224* (1989)

b. Analysis

1) Enabling Authority

Copyright law has its basis in the U.S. Constitution. That is, “. . . to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their writings and discoveries”¹⁰. Copyright has two main purposes¹¹. One is to afford authors a degree of monopoly over their protected work, thereby encouraging investment in productive pursuits. Second, is to encourage publication and distribution of intellectual property to advance culture, technology and economic well being. This constitutional vision is implemented by statute, namely United States Code, Title 17 Copyrights. Although there was a major revision to Copyright laws in 1976¹², there have only been relatively minor changes since then. Copyright protection exists:

“...in *original works* of authorship fixed in any tangible medium of *expression*, now known or later developed, from which they can be perceived, reproduced or otherwise communicated, either directly or with the aid of a machine or device ... (b) In no case does copyright protection ... extend to any *idea*, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained or illustrated...”¹³ (*emphasis added*)

Copyright protects “expression”, i.e., the content or appearance of the work. Copyright does not protect ideas, processes or inventions. That kind of intellectual property is protected by patent. There are two other requirements: originality and fixture in a tangible medium of expression, from which the work can be perceived, reproduced or communicated¹⁴.

2) Local Government Copyright Protection

A lynch pin issue in the appropriateness of using copyright as a one-policy instrument is the capacity of local government to assert and maintain a copyright interest. There are two dimensions to this question. The first is upon what authority may local government assert copyright.

¹⁰ U.S. Constitution, Article I, Section 8, Clause 8

¹¹ Kidwell, John A., *Open Records Laws and Copyright*, Wisc. L. Rev. pg. 1021, Sept.-Oct. 1989.

¹² Public Law 94-993.

¹³ 17 U.S.C. sec. 102.

¹⁴ 17 U.S.C. sec. 102 (a).

The second involves the way that copyright is used in relation to other potentially conflicting laws. These issues are inextricably intertwined.

The arguments that have been made against the capacity of local governments to assert copyright have been shrouded in its effect, i.e., use of copyright by local government will subvert access by citizens to public records.

It has been suggested that local government may not hold a copyright because there is no state statute authorizing it. Notwithstanding, Article VI of the U.S. Constitution, the Supremacy Clause, which provides in part: “This Constitution, and the laws of the United States which shall be made in pursuance thereof...shall be the supreme law of the land and the judges in every state shall be bound thereby, anything in the Constitution or laws of any State to the contrary notwithstanding...” As it derives from the U.S. Constitution¹⁵ and federal statutory law¹⁶, copyright protection, ownership and interest supercedes conflicting state law. In this circumstance neither state statutory nor common law is in conflict with copyright as South Dakota law is silent on the capacity of the local governments to hold and assert copyright protection.

Within the framework of the Supremacy Clause, the next issue is whether federal law recognizes the right of local governments to hold and assert copyright. It should be noted that the definition of a copyright owner does not distinguish between classes of owners, whether individual, corporate or public¹⁷. Nevertheless, copyright protection is not available for any work of the United States government, even though it may hold copyrights transferred to it¹⁸.

Ostensibly, the policy underlying the prohibition of copyright protection for federal work is that citizens should not pay for preparation of the work in the form of taxes and again for use of the work at monopoly prices. In addition, federal agencies have maintained a tradition of not charging above the cost of reproduction for information, presumably as a service to citizens. While the same policy reasoning may hold for state and local governments, no similar statutory prohibition exists. It can be suggested that, in regard to the preparation of public work, state and local governments are in a different economic context than the federal government. Local governments, for instance, are much more frequently engaged in activities that may be considered "quasi-private" such as water and power utilities. Often, state governments manage toll roads which have been built with public funds, but for which a fee is

¹⁵ U.S. Constitution, Article I Section 8, Clause 8.

¹⁶ United States Code, Title 17 Copyrights

¹⁷ 17 U.S.C. sec. 101.

¹⁸ 17 U.S.C. sec. 105.

charged for travel. State and local agencies are also much "closer" to citizens in that the primary product and service delivery occurs at those levels. The legislative history and a plain interpretation of the copyright statute suggest that state and local governments are entitled to claim copyright in appropriate works. In addition, the courts have also recognized the competency of a county to hold and assert copyright¹⁹.

Case law has narrowed the type of work for which state and local governments can claim copyright. For example, "official documents", such as judicial opinions and the text of legislation have been excepted from copyright protection as a matter of policy²⁰. These official documents provide a framework for the "contract" of society and of social order. Non-official government records have received copyright protection²¹.

3) Scope of Protection

The copyright statutes explicitly identify maps, globes and charts²² as pictorial or graphic works of authorship subject to copyright protection²³. Moreover, Copyright protection also extends to the creation of "compilations"²⁴. Compilations are defined as "...a work formed by the collection and assembling of preexisting material or data that are selected, coordinated, or arranged in such a way that the resulting work as a whole constitutes an original work of authorship."²⁵ Both statute and case law indicate that map records may be subject to copyright protection²⁶. This protection likely extends to the GIS data associated with the map information. Spatial data, tabular and graphic, represent original expression because of the selection and arrangement inherent in the conceptual data model and its implementation. Although there has been some degree of controversy²⁷, even non-graphic databases are now

¹⁹ See e.g., *Real Estate Data, Inc. v. Sidwell Company*, 907 F.2d 770 (7th Cir. 1990) where the Court found that Cook County (Chicago) copyright claim was valid and superior to a private engineering firm who had prepared county tax maps. See also *Ventura County v. Blackburn*, 362 F.2d 515 (9th Cir. 1996).

²⁰ See, *Kidwell* at pp. 1024-1025, *supra*.

²¹ *National Conference of Bar Examiners v. Multistate Legal Studies, Inc.*, 495 F. Supp. 34 (N.D. Ill. 1980), *affd.* 692 F. 2d 478 (7th Cir. 1982), *cert. denied*, 464 U.S. 814 (1983).

²² 17 U.S.C. sec. 101.

²³ 17 U.S.C. sec. 102 (a).

²⁴ 17 U.S.C. sec. 103.

²⁵ 17 U.S.C. sec. 101.

²⁶ *Mason v. Montgomery Data, Inc.*, 967 F. 2d 135 (5th Cir. 1992).

²⁷ *Feist Publications v. Rural Telephone Service Company*, 499 U.S. 340, 111 S.Ct. 1282 (1991). The *Feist* case has been widely misinterpreted (see *CCC Information*, *infra*) to suggest that any reporting of factual material lacked the requisite originality to support copyright. In fact the *Feist* Court noted, "...". . . the originality requirement is not particularly stringent. A compiler may settle upon a selection or arrangement that others have used; novelty is not required. Originality requires only that the author make the selection or arrangement

being recognized to provide sufficient originality in its expression to be subject to copyright protection²⁸.

4) Rights

Copyright protection affords owners five exclusive rights to: reproduce the work; prepare derivative works; distribute copies by sale or other transfer of ownership such as rental, lease, or lending; perform the work publicly; and display the work publicly²⁹. In essence, the owner of a copyright has control over the use and distribution of the protected work through the creation of a monopoly power in the *subsequent use* of the work. In part, this creates an incentive for publishing and distribution of the work. These statutory rights are frequently preserved through the private contractual relationships of licensing. This mechanism affords the copyright owner the capability to restrict the use and redistribution of the material in a fashion that creates a contractual *quid pro quo* as another means to enforce the copyright interest.

independently (i.e., without copying that selection or arrangement from another work), and that it display *some minimal level of creativity*. Presumably, the vast majority of compilations will pass this test, but not all will. There remains a narrow category of works in which the creative spark is *utterly lacking or so trivial as to be virtually non-existent*, at 1294, (emphasis added).

²⁸ See e.g., *CCC Information Services, Inc. v. Maclean Hunter Market Reports*, 44 F.3d 61 (2nd Cir. 1994), also *Montgomery County Assoc. of Realtors v. Realty Photo Master, Corp.*, 878 F. Supp. 84 (Dist. Ct. MD, 1995) Database subject to copyright protection; also Strong, *Database Protection After Feist*, 42 J. Copyright Society, U.S.A. 39 (1994) Databases offer originality by providing information not just data; The International Copyright Treaties and Laws Committee of the Section of Intellectual Property Law reaffirms the American principle of *sui generis* copyright protection for database for the purposes of international treaties. 1196-1997 Annual Report, Committee 302 (1998).

²⁹ 17 U.S.C. sec. 106.

F. Policy Recommendations

1. Intent

The RC-PC information policy exists to promote the free and open flow of information regarding governmental affairs between them and their citizens and other affected interested parties. The policy was written with the intent of full compliance with the South Dakota Public Records, Chapter 1-27 and all other pertinent relevant federal, state and local statutes.

2. Policy Statement

a. Open Access to Public Records

It is the policy of RC-PC to provide open access to all public records for its citizens in the standard form in which they are maintained. Accordingly, all GIS records, data, and databases, that are not exempt, shall be provided to all requesters at the cost of reproduction.

City and County GIS data will be made available for private use at standard rates set to cover the cost of reproduction. Small orders such as records on a single property or for multiple properties under a specific threshold count will be made available at standard rates. Orders for records over a threshold count are to be provided at hourly rates with a minimum charge. Rates are to be set to include both time and materials. Data will be provided to other public agencies and public utilities at no cost provided such agencies provide data to the RC-PC under similar arrangements.

b. Services

RC-PC agencies may, but are not required to, provide services in conjunction with data distribution to make the data more useful to the requester. If agencies provide services, they are required to charge fees for these services that into account personnel, media, the amortized cost of equipment and software, and overhead to the extent permitted by statute for calculating rates for services. The RC-PC may enter into a data update arrangement or subscription fee basis with commercial interests. Fees for such arrangements are to be set to cover the cost of providing the update service plus the amortized cost of equipment and software, and overhead to the extent permitted by statute for calculating rates for services.

c. Data Availability

RC-PC will provide access to only those data sets created by and maintained at RC-PC and will make available a list of the applicable data sets.

d. Non-Custodial Data

In situations where the RC-PC has a data set that is not created by or maintained by them, they will refer data requesters to the appropriate agency.

e. Data Dictionary

A data dictionary will be made available for all data created by and maintained by RC-PC. The data dictionary will be distributed with data where deemed appropriate.

f. Data Format and Media

Data will be distributed in appropriate formats and on suitable media as determined by RC-PC. Wherever possible data will be distributed on non-erasable media.

g. Data Requests

All formal requests for data shall be made in writing on a “Data Request Form” available from RC-PC. All data requests should be responded to within 7 working days from receipt of the request. Responses include fulfillment, denial, or deferral of the request.

h. Standard Products

RC-PC may make available for sale standard products and may establish a standard products list with product pricing and availability.

i. Metadata

Metadata is defined as information describing a collection of data. It typically includes data currency, accuracy, extent, custodianship and data collection methodology. Metadata will be developed for all GIS data available from the RC-PC. Metadata will be made available to public agencies and private and commercial interests to facilitate the use of RC-PC GIS data. Metadata is considered data and falls within the terms of all data licensing agreements entered into by RC-PC.

j. Liability

All GIS distribution will use a standard GIS Data License (see below) with standard terms and conditions, licensed uses, restrictions and liability disclaimer. All GIS contracts will contain the stipulation that errors found in provided data are to be reported to the RC-PC for correction. All data and records provided shall include a disclaimer limiting the RC-PC’s liability for any use or subsequent use of the data. The liability disclaimer will also extend to any subsequent redistribution. The disclaimer will include the following language:

The Data is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. Rapid City and Pennington County make no warranties, express or implied, as to the use of the Data. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts the limitations of the Data, including the fact that the Data is dynamic and is in a constant state of maintenance, correction and update.

k. Copyright and Licensing

All geographic databases created by RC-PC will be copyrighted in accordance to U.S. Copyright Law and applicable South Dakota law, unless otherwise expressly prohibited. All copyrighted data or records, whether in digital or hardcopy form, shall be conveyed subject to a licensing agreement. Each requester will be required to enter into a licensing agreement that would preclude subsequent redistribution of the data without consent or the fulfillment of a set of standard terms and conditions. Notwithstanding assertion of Copyright, all requesters seeking data or records from RC-PC shall receive the records for the cost of reproduction. There will be three licensing agreements.

1) Personal Use

The Personal Use Agreement, will grant the requester unlimited personal use of the copyrighted material. The requester shall not, however, copy records or databases for distribution or otherwise redistribute these materials without the express consent of RC-PC.

2) Intergovernmental and Public Agency

The Intergovernmental and Public Agency License will include inducements for intergovernmental and interagency cooperation and limited redistribution based on the RC-PC's licensing arrangements. Licensing under this agreement will apply to any use that does not have any pecuniary or other benefit accruing to the licensing body.

3) Commercial

The General Commercial License will permit requesters to use and redistribute records in the course of their businesses without further consent. This license will also require an annual or other periodic royalty fee for use of the copyrighted data. Commercial uses include any use for pecuniary or other benefit without regard to the status of the requester as a for-profit or not-for-profit entity.

The RC-PC reserves the right to assess each license request on an individual basis and determine the appropriate licensing agreement. The precise terms

and conditions of these licenses will be established and or modified, as needed, to serve the interest of RC-PC.

l. Privacy

RC-PC shall preserve and protect the citizens' rights to privacy and from unwarranted intrusion into their personal lives. RC-PC reserves the right to deny access to data on the grounds that they may violate personal privacy, in accord with constitutional law, federal, state and local statutes. Any denial will be provided to the requester in writing. ~~Individual owner names and associated personal information will not be made available over the Internet unless otherwise required.~~

m. Governmental Impediments

RC-PC reserves the right to deny access to data on the grounds that they may jeopardize the integrity of essential government functions and to assure confidentiality of records exempt under South Dakota law and other relevant law. Any denial will be provided to the requester in writing.

n. Custodianship

The relevant RC-PC agency Department will be designated the custodian of GIS information and as such will be ultimately responsible for data currency, accuracy and completeness. The GIS Division will be custodian for all jointly developed data (e.g., orthophotos). The GIS Division may also act as data broker for individual RC-PC agencies where both parties agree.

3. Access Policy

The GIS Division is not required to provide GIS products or services beyond what is required in the normal course of City and County operations.

Standards for data formatting will be set to allow for maximum ease of use by City and County departments and outside commercial interests.

The RC-PC may enter into a data update arrangement or subscription fee basis with commercial interests. Fees for such arrangements are to be set to cover the cost of providing the update service plus overhead.

A. REFERENCES

R. Jerome Anderson, Alan R. Stewart; *Local Government Liability for Erroneous Data: Law and Policy in a Changing Environment*; United States Agency for International Development; (1994).

Michael R. Curry; *In Plain and Open View: Geographic Information Systems and the Problem of Privacy*; (1993)

Lori Peterson Dando; *A Case for the Commercialization of Public Information*; Former Chair of the Minnesota Governor's Council on Geographic Information; (1993)

Epstein, Earl F., 1991, *In My Opinion*, URISA Journal, Vol. 3, No. 1, Page 2, 1991

William S. Holland, *Copyright, Licensing and Cost Recovery, for Geographic and Land Information Systems Data*, Proceedings of the Conference on Law and Information Policy for Spatial Databases, National Center for Geographic Information and Analysis, Arizona State University College of Law, (1994)

William S. Holland, *Copyright, Licensing and Cost Recovery, An Economic and Policy Analysis*, Proceedings of the National States Geographic Information Council, (1995)

William S. Holland, *Legal Issues in GIS/LIS*, Unpublished, Presented at numerous national, state and regional conferences, (1995—2001)

Dennis S. Karjala; *Copyright in Electronic Maps*; 35 Jurimetrics J. (1995)

Harlan J. Onsrud; *In Support of Open Access for Publicly Held Geographic Information*; GIS Law, Vol. 1, No. 1; (1992)

Harlan J. Onsrud, Jeffrey Johnson, Judy Winnecki; *GIS Dissemination Policy: Two Surveys and a Suggested Approach*; Journal of the Urban and Regional Information Systems Association; (1996)

Harlan J. Onsrud; *In Support of Cost Recovery for Publicly Held Geographic Information*; Department of Spatial Information Science and Engineering, University of Maine; (1993)

Harlan J. Onsrud, Jeff P. Johnson, Xavier Lopez; *Protecting Personal Privacy in Using Geographic Information Systems*; University of Maine; (1994).

Barbara A. Peterson; *Issues Concerning Access to Electronic Records*; (1994)

Smith, Robert Ellis, *Our Vanishing Privacy and What You Can Do to Protect Yours*, 1993