8.0 PRIVATE SECTOR ISSUES WITH NSDI AND GENERAL FEDERAL APPROACH

8.1 General NSDI Issues

It is well recognized today that the use of GIS and related technology has expanded to many sectors of society, spanning virtually every function in government and private industry.

For example, the NAPA study, described earlier in this report, concluded that "geographic information (GI) plays a role in about one-half of the economic activities of the United States. Such major economic and industrial sectors as agriculture, transportation, defense, land management, community development, construction, and real estate are dependent, to some degree, on GI," (from NAPA, 1998, p. 11). The market studies and projections described in this report document the penetration of GIS and related technology in the private sector. In addition, these studies are clearly unable to fully document the plethora of mapping applications now available on personal computers and, more recently, through Web-enabled spatial data and mapping tools. Companies of all sizes and missions increasingly utilize these capabilities.

From anecdotal reports, it is believed that private companies may be totally unaware of the term "National Spatial Data Infrastructure" (NSDI). They often initially acquire data and software from another company in the private sector that may or may not provide information about the NSDI. This can be the case with either small or even very large companies, such as utilities, manufacturers, and resource extraction companies. Private sector introduction to the NSDI is often by accident rather than design.

This Section Addresses

- Private sector issues with the NSDI

- Summarizes identified issues

- Identifies drivers to participation

Even if a company decides to contact a government agency directly for data to use with GIS, it may or may not learn about the NSDI as part of this process. This situation exists because various government organizations that are data sources are not necessarily aware of, or a part of, the "NSDI community," particularly local governments or field offices of state and Federal agencies, which many companies contact to acquire data.

For the most part, active NSDI participants seem to primarily be governmental organizations in a spatial data coordination role, such as the FGDC and state government counterparts. There are some positive and noteworthy exceptions in other organizations that also actively participate in the NSDI, for example, by

serving as "clearinghouse nodes," but there are numerous others that are not aware or involved.

8.1.1 Limited Information Availability

Is the NSDI a "product" or a "movement?" If a company does hear of the NSDI, it is usually associated with one of its offerings, such as the clearinghouse or use of the metadata standard. As a result, a company may consider NSDI to be a "product." However, the term "national spatial data infrastructure" originated in the work of the Mapping Sciences Committee (MSC) of the National Academy of Sciences and the Federal Geographic Data Committee during the early 1990s as a vision for a broader system or infrastructure for data sharing and coordination. For example, in a 1993 report the MSC concluded,

> "There is a NSDI in existence. It is an ad hoc affair, because, until very recently, no one has conceived of it or defined it as a coherent entity, and indeed it has not been very coherent or coordinated. It is not the task of the MSC (or anyone else for that matter) to create a NSDI. We want merely to point out its existence, identify its components and characteristics, assess the efficiency and effectiveness with which it functions to meet national needs, (particularly at the Federal level), and make recommendations that might make it more useful, more economical, more effective, better coordinated, and robust. . . .Information flow, particularly in the spatial data infrastructure, should be seen as critical to the maintenance of a competitive position for the United States in an increasingly international economic arena (MSC, 1993, 17)."

This vision clearly suggests that the notion of the NSDI was originally conceived to have value to help increase the efficiency and effectiveness of both the public and private sectors. The MSC broadly defined NSDI-building blocks as "users, policies and procedures, institutional support, people, geographic information, and materials and technology" (MSC, 1993, 16). The FGDC established various programs to address the issues raised at that time. These issues continue today. However, until recently, these initiatives have primarily focused on data issues. For example, as discussed in this report, primary areas of effort have included the establishment of standards, metadata, foundational data known as a "Framework," and a clearinghouse. This focus on data matters may, in part, have caused some confusion about the definition of the NSDI as a movement or a product.

However, significant progress has been made by the FGDC to include other sectors in its deliberations during the last decade, particularly state and local governments. Release of the NAPA study in 1998, and subsequent positive support for several of its policy and institutional recommendations by FGDC Chair and Interior Secretary Bruce Babbitt (as expressed at the June 9, 1999

Congressional hearing described above), seems to have led to increased action by the FGDC to also address non-data components identified in the early vision of the NSDI.

The NAPA report, though five years after the MSC study, identified several problems with the current NSDI approach elaborating on those identified by the MSC, such as:

- excessive overlap and duplication of data, and
- lack of policy direction, oversight and accountability.

In 1999, the FGDC began two efforts to address non-data NSDI issues, including a GeoData Alliance Organizational Initiative and an organizational study to improve internal FGDC effectiveness. These efforts suggest a need to reexamine the notion and requirements to effectuate the NSDI in the 21st Century. This includes a reexamination from a private sector perspective to clarify its mission, goals, objectives and implementation plans in this regard.

8.1.2 Supply and Demand for the NSDI in the Private Sector

As discussed above, the FGDC has largely focused efforts on its suite of data-related offerings to achieve several public sector goals, including supplying data for widespread use. However, a limited focus has been placed on understanding and meeting the demand for data by the public or private sector. For example, the NAPA study identifies several sectors of society and the data requirements needed for each. However, the specific characteristics, requirements, and priorities for these data products and commercial offerings have not been investigated from a demand perspective by the FGDC or otherwise.

This situation has been an issue from both public and private sector perspectives. For example, while efforts have been made to make contact with individual states, and state and local associations working at the national level, very little effort has been made to fully understand the functionality of state and local governments.

A focus on developing and providing access to highly available sources of basic geographic data is certainly an important goal in its own right and can go a long way to address the plethora of redundant data developed in the United States. However, the need remains to understand user needs and requirements to ensure resulting data are used and useful. This focus is essential to achieve the required "buy-in" of any potential user group, and particularly the private sector.

It is even more necessary because the notion of the NSDI includes it be a robust system, including access to current and actively maintained data. Accordingly,

initial investigation of demand must be complemented with a continuing process and relationship with the private sector to ensure supply meets demand on a long-term basis. An understanding of private sector demand can be used to determine the specific characteristics, requirements, and priorities for data products and commercial offerings.

8.1.3 Issues With Policy Direction, Authority, Oversight and Accountability

Much of the NAPA study reviews the issues surrounding the difficulty of establishing the NSDI given the policy and institutional foundation with which it operates. Remarkable progress has been made, but the fact that there is an overall lack of policy direction, authority, oversight and accountability for the FGDC and the NSDI does pose problems in the Federal government in particular, but also in other governments and the private sector. For example, NAPA researchers found (NAPA, 1998, 30, 67,73):

- No efforts have been made to estimate NSDI costs and benefits.

- Each Federal agency has its own set of goals and strategies, only some of which are tied to NSDI policies and programs.

- No national debate has occurred on the merits and challenges of furthering an NSDI, and knowledge of and support for the effort is not widespread.

- Some important scientific and technological challenges have not been surmounted.

- There are significant impediments to and few incentives for the generating of compatible data among government organizations.

- Neither the FGDC, nor any other central body, can require any two or more agencies to work together, much less consolidate or reconcile data activities.

- Federal agencies sometimes ignore requirements to follow FGDC standards.

- No entity is responsible or accountable for defining roles for the NSDI.

These limitations can have a direct impact on the non-Federal spatial data community, because it impacts the overall reliability of the FGDC and NSDI offerings. Regardless of the content or quality of what is offered, potential users can be understandably cautious about relying on a system or data source if important questions exist about whether these offerings will be funded and maintained in the long term. NAPA made several recommendations to address this issue, including the adoption of legislation to create an effective policy base

for the NSDI, cross cutting investigations and increasing attention by central government organizations such as the Office of Management and Budget, and stronger linkages with the broader information policy arena at policy and technical levels.

NAPA also recommended establishment of a National Spatial Data Council to be comprised of representatives of several sectors to help guide the NSDI, including the private sector. It also was recommended that this effort be complemented with the establishment of a Geographic Data Service, within the Federal government, to serve as a locus of activity and to conduct several functions beyond those conducted by the FGDC secretariat. Some of these functions include developing (or sponsoring the development of) synchronized data products and ensuring effective data integration across several data categories. If implemented, these recommendations could help to make the Federal government easier and more reliable for the private sector and broader spatial data community to work with.

8.1.4 Justifying NSDI in the Market Place

While the NAPA study and the market studies reviewed previously clearly indicate that large segments of the U.S. economy depend on spatial data and use GIS and related technology, most FGDC efforts have been on the public sector. The relevance of the NSDI in the market place has not been defined or articulated, nor has the private sector been defined, addressed or solicited to be an important participant in the NSDI.

The lack of clear NSDI definition, mission, and participation requirements and benefits is exemplified in the private sector. While the public sector may adopt and endorse initiatives such as the NSDI that are in the "public good," this attribute does not have a corresponding importance or meaning in the private sector. In addition to the general lack of clarity about the NSDI, its requirements, costs and benefits, a specific business case has not been articulated and made to the private sector to solicit their interest or participation in the NSDI. Such a case is necessary to be brought before corporate decision makers before a decision could be made to endorse an initiative such as the NSDI. This business case must include specific hard costs and other required resources, time requirements and long-term obligations. At the same time, projected benefits need to be defined from both short and long term perspectives. The business case also should define a projected Return on Investment (ROI), including a direct positive impact on the bottom line and corporate profits.   Corporations will also be concerned with protecting their proprietary interests and intellectual property.

To attract interest by, and ultimately, the participation of the private sector, the NSDI needs to be packaged in terms the private sector can understand and

clearly see how they will benefit. Given the NSDI can be a long term commitment, while the objective of corporate profits may be short term, it also would help to provide awareness and educational campaigns about long term benefits. Materials could be targeted and customized for specific industries. Evidence of benefits could be publicized by existing participant-companies to help enlist the participation of other companies. Additional justification, and particularly, incentives, could be provided to the private sector to solicit and maintain their interest and participation.

8.2 Framework Data Purposes Not Well Understood

The "Framework" is one of the FGDC's and the NSDI's leading offerings. Broadly defined by the FGDC and others involved in its design, the Framework is the concept of providing a means to maintain and manage the common information being collected by and for use by the public and private sectors to decrease the costs and inefficiency within individual organizations. In short, the Framework is a continually evolving data resource which,

> ". . . forms the data backbone of the NSDI. It has three aspects: data, procedures and technology for building and using the data, and institutional relationships and business practices that support the environment. The Framework is designed to facilitate production and use of geographic data, to reduce operating costs, and to improve service and decision-making (Somers, 1997, v)."

The Framework has been defined to include seven foundational data themes. These themes provide basic data for use with applications, a base to which users can add or attach geographic details and attributes, a reference source for accurately registering and compiling participants' data, and a reference map for displaying the locations and the results of an analysis of other data. The notion is that Framework data are created and maintained by several organizations, with many contributors from different areas and for various data themes.

While the merits of the Framework are generally accepted by those aware of them, some questions have been raised about the Framework. Questions are still asked about what it is and is not. For example, of the FGDC's offerings, the term "Framework" is the only one without a clearly recognized definition. Alternatively, the terms "clearinghouse," "metadata" and "standards" are clearly understood in the information economy. "Framework" includes the concept of creating and providing access to "foundational" data (the term, in fact, used in the U.S. Department of Defense for analogous activities), but with a broader focus. This broader focus is understandable to help encourage multi-organizational development of common data in the absence of the policy and authority for one entity responsible for accomplishing this objective as described earlier.

However, there are other issues and misconceptions about what the Framework actually is, what it specifically and reliably provides, and what it is not, resulting in several associated topics that do not receive complete attention. For example, there are several issues surrounding data integration and reconciliation:

- Data can be developed by different organizations at different resolutions, resulting in much redundant, but also conflicting, data.

- There is no "authority" to determine which data are accurate or "official."

- Though documentation is provided, it is largely "buyer beware" in terms of what is available.

As a result, many disagreements exist, particularly between agencies and levels of government, as to what data is "the" data representing reality. For example, transportation data are developed by both the U.S. Department of Transportation and its partners, and the U.S. Bureau of the Census and its partners, without reconciliation. The U.S. Geological Survey is building a National Hydro Dataset (NHD), yet correlation of and integration with state-based databases has been trying at best with many associated differences. Much additional data is envisioned to be available through the Framework than through these national level efforts. However, there is no assurance all data are available through this mechanism. As it is well recognized, many local governments and private companies have and will continue to have data not included in the Framework.

Private sector companies could discount the usefulness of their participation in the NSDI on this issue alone. Accuracy of data is critical to organizations in terms of profitability, customer satisfaction, and the limitation of liability.

Issues also have been raised about the definition of the Framework as the seven layers to date. The FGDC, to its credit, included representatives of various non-Federal groups to participate in defining the Framework. Yet, several interested potential participants were not well included, such as local governments and the private sector. In fact, one of the NAPA study recommendations was to "reexamine the FGDC Framework layers in the context of state and local geographic information needs as well as Federal needs (NAPA, 1998, 97)." Questions need to be asked about which data is necessary for which needs, and whether the currently defined Framework data are appropriate to meet common needs, again affirming the need for investigation about demand as well as the strong focus on supply as previously discussed.

For example, if the Framework were defined from a local perspective, and particularly a municipal one, rights of way and addresses would certainly be key foundational data elements. This is appropriate from a local perspective because most local government functions are in direct service to the public, whether it be

utilities, police, fire, or other services, causing demand for highly accurate, current and transactional data.

Moreover, there is no clarity about the definition of the seven data layers. For example, two aspects of cadastral information are included in the Framework. These include cadastral reference systems and publicly administered parcels. This later focus on public real estate is understandable for the Federal and some state governments. However, to local governments and many businesses, information about private land is more crucial in terms of service delivery, and for localities in particular, revenue generation. In fact, the notion of a parcel-based multipurpose information foundation for the country has been advocated during recent decades; most commonly referred to as the Multipurpose Cadastre. Again, advocacy of this notion is based on societal demand for such common data, which seems to be increasing through time.

8.3 Identifiable Issues and Limitations About Data

In addition to the issues discussed above about the current definition and approach to the Framework, there are various identifiable issues and limitations about data in general as it relates to the NSDI. Some of these issues are reviewed below.

8.3.1 Data Content

In order to be useful to a targeted audience, whether it be the private sector or any organization, data content must meet user needs and requirements. The overall quality of the data is an important consideration of whether the data will be of interest and utilized. Important issues include:

- The appropriate <u>resolution</u> to meet user needs, such as Digital Ortho Photos are typically sufficient for planning but not for engineering.

- Data <u>currency,</u> and <u>timeliness</u> and frequency of data updates can be critical, for example in responding to a disaster.

- Data updating methods and tracking are also important for certain users, for example, concerning transactional-based systems.

- <u>Accuracy</u> is another key consideration to help a user determine whether or not to rely on data resources.

- Quality control and accuracy procedures need to be documented to assure users of the reliability of data.

- An important question asked by users is whether the provided data are the best available digital product compared to other data resources? "Truth in

labeling" would suggest information should be provided if other data are available elsewhere.

- Users also require consistent, reliable data with the same quality from place to place, and coverage for all areas of interest.

- A key issue is whether data with these same specifications will be available and supported over time?

8.3.2 Data Access and Use

Data access issues are becoming a leading concern regarding the NSDI. Technical issues include whether, and the degree to which, data are easy and quick to view, understand and use, including if the data are designed and accessible in a "user-friendly" way or are cumbersome and complex. Sufficient query, searching, notification, and investigation tools are needed, as well as, the use of standard formats and customized packaging for specific industries or types of users. It is clear that if data are difficult to use, there will be less interest, and ultimate use of data.

Additional access issues are primarily in a legal context, governed by both Federal and state laws, with state law generally having precedence in most cases regarding state and local data. There are several examples of how state laws and conditions can differ from state to state, and in comparison with that of the Federal government, with direct impact on data access through the NSDI and, in particular, on the private sector.

For example, all 50 states have one or more statutory provisions regarding public access to data; known as "freedom of information acts" (FOIA) similar to the Federal government, or open or public records acts. FOIA statutes are often not the sole determinant of whether documents are subject to public disclosure. All states have some statutory provisions to protect privacy, confidentiality or otherwise limit access to certain information. These provisions often take the form of exemptions to disclosure requirements; however, in many states, specific laws exist for these matters. For example, in addition to a FOIA and Public Records Act, Virginia has a Privacy Act and an Intellectual Property Act. The most common exemptions to disclosure requirements are for:

- Information classified as confidential by state or Federal law

- Law enforcement and investigatory information

- Trade secrets and commercial information

- Preliminary departmental memoranda

- Personal privacy information

- Information relating to litigation against a public body, (Dillehay, 1996, 11).

An important issue related to private sector data access, reflected in many state statutes, is the source and/or motive of information requests, such as whether they are being made by private citizens or by companies or others for commercial purposes. The rationale for the distinction between commercial and non-commercial purposes is that commercial requestors can derive significant monetary benefit from enhanced access, and thus, they should reimburse the public for the money spent on these enhancements. At least eleven states allow agencies to make the distinction between commercial and non-commercial requests (May 1997). Specific issues serving to impact and often limit data access are discussed below.

8.3.2.1 Intellectual Property

Copyrights, patents, and trademarks are increasingly used to protect data rights. The statutes of at least eight states enable some limitations to occur on access to government data that is specifically used with GIS, either as an exemption to the open records act or by otherwise allowing agencies to charge higher fees than for other data. The methodology used to determine these fees is usually not specified by statutes and varies by state. States generally call for fees to be based on recovery of some or all costs, or provide that public authorities are allowed to establish "reasonable" fees, though essentially no guidance is provided about how "reasonableness" is determined.

In some cases, there has been a differentiation between commercial and other users. For example, Tennessee and Kentucky allow agencies to set "reasonable" GIS access fees, but these fees can only be higher for GIS as compared to other data if requested by a commercial concern. North Carolina specifies that GIS databases are public records and access shall be provided by public access terminals or other output devices. Copies in North Carolina shall be provided at reasonable cost, but requestors must agree in writing that the copy will not be resold or otherwise used for trade or commercial purposes (May 1996).

Many state GIS organizations charge some modest fees to recover at least their distribution costs, sometimes to support some operations and maintenance costs, and infrequently to help fund data development costs. For example, Maryland's Department of Natural Resources, which copyrights their data and requires purchasers to sign a license agreement, charges $65 for production of a CD, including the average actual labor time and benefits but not any expenses for data development or maintenance. An important factor is whether the receipts can be retained by the organization providing the data, or whether the money goes to the state general fund as in some cases.

All in all, the desire to recoup costs by charging fees is balanced in most jurisdictions with a desire to encourage GIS use by public agencies, and particularly local governments. Whatever statutory limitations might exist for data within a GIS, state and local data are generally available if the requestor is willing to pay the associated fees of that jurisdiction.

However, open records laws do not apply to privately held utilities though they provide public services, many of which have treated their data as copyrighted. In addition to utilities, some architects, engineers and surveyors are attempting to copyright their work, which can limit public review and scrutiny of their work as well as compromise data availability in the event of an emergency. This situation and approach has caused problems in emergency response and recovery, particularly regarding utilities, and is anticipated to cause increasing problems in the future regarding data access.

For example, Metropolitan Dade County, Florida entered into a $3 million agreement with Florida Power & Light to synthesize data from various departments for its GIS. The agreement provided for the county to turn its records over to the utility company, which in turn, produced a digital compilation of the geographic data. Under the agreement, FL&P retained the copyright. While a member of the public could obtain a copy of the data in its original form from the individual county agencies, copies of the more valuable copyrighted digital compilation were only available from FP&L.

Work was just beginning when Hurricane Andrew occurred. The Florida Department of Natural Resources needed the database owned by FL&P to help in the relief effort, but FL&P wanted the state to sign a license agreement before it would release the data. Despite the urgency of the situation and differing views of the state and the utility, it took three months to negotiate arrangements. FL&P ultimately released the database with strict limitations on DNR's use of the data. It is likely that this situation has existed elsewhere or is likely to do so, with probable costly consequences.

Use of data licensing is a growing trend to address several data access issues in local governments and the private sector, as in the above FL&P example, but new issues are raised in this case. It is clearly used by some utilities and local governments regarding GIS, but also related geographic data. For example, the National Weather Service has almost real time radar data about wind velocity generated every five minutes. However, when Cayuga County, New York was responding to the Labor Day windstorm of 1998, it found these data are typically licensed to companies and may require use of their software. Local governments can't necessarily get quick access to such data during a disaster with these arrangements. When the county did access the radar data, it found it to be extremely useful because the areas with the strongest winds synchronized

exactly to the location of 911 calls, allowing responders to quickly and more efficiently plan and deploy resources than if the data had not been available.

8.3.2.2 Confidentiality

State (and Federal) law provides that information can be withheld if it is considered confidential, and particularly if used in litigation. For example, information about the extent of damage from oil spills can be held confidential in order to simultaneously preserve a legal case against the perpetrator of the damage and prevent third parties from using the data in litigation against state (and Federal) governments. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and regulations promulgated by the Department of Interior and the Environmental Protection Agency, directly designated state and Federal agencies to design and execute natural resource damage assessment (NRDA) studies. The NRDA regulations emphasize coordination of research to avoid duplication and even encourage the sharing of information with potentially responsible parties.

However, in the case of the Exxon Valdez Oil Spill in 1989, the NRDA studies were held confidential in favor of legal interests, were not made available to the response teams, and thus detracted from the larger goal of evaluating environmental damage and restoring injured resources. Confidentiality of these data also has a negative effect on nongovernmental parties in that they cannot use the information to pursue their claims, such as the fisherman and Native Alaskans in the case of the Exxon Valdez spill (Cummings 1992).

8.3.2.3 "Trade Secrets"

Another exemption to the open records laws limiting access to data is "trade secrets" or comparable business information. More than 30 states have specific statutory language prohibiting the disclosure of "trade secrets" or comparable business information, such as formulas and customer lists provided to a government agency as part of an application or proposal. However, there are exemptions to such prohibitions providing for disclosure of information.

A key example of such an exemption is the Federal Emergency Planning and Community Right-to-Know Act (EPCRA), a freestanding act constituting Title III of the Superfund Amendments and Reauthorization Act (SARA). It mandates companies disclose information about the release of hazardous materials into the environment in order for stakeholders to have access to information to help prepare for chemical emergencies, but also to prevent them.

8.3.2.4 Privacy

Privacy protection is usually provided by states in the form of exemptions to open records laws, in fact it is the most commonly occurring exception to open records laws. However, as of 1996, 21 states have specific privacy laws (Dillehay, 1996). Privacy exemptions in state open records laws usually are similar to the Federal FOIA. Privacy protection is typically provided for police and criminal proceedings records of an acquitted defendant, inmate prison records, identities of welfare recipients, reports filed by employers with state industrial commissions and medical records. Federal law requires states to restrict access to personal information in motor vehicle records.

While distinctions between commercial and noncommercial uses have limited data access in some states, such differences have also been used to protect privacy. In some states, agencies can refuse requests for lists of names, addresses, driver's licenses or other personal information if sought for a commercial purpose. However, with the exception of criminal and medical information, there is little guidance in most states about specifically what information is "private," so there is "uneven and inconsistent release of data" (Dillehay, 1996, p. 12). In any case, the rule of thumb is that privacy is paramount, except when a higher purpose is involved. Privacy interests have been waived in only a few narrowly defined cases in some states, such as to establish and collect child, spousal and medical support.

8.3.2.5 Liability

Many liability questions have not been addressed in legislation or in the courts. Organizations can be found liable for many aspects of data collection, data repackaging and distribution, data manipulation and analysis, and data usage in decision-making. Potentially libelous activities include use of inaccurate data, use of incorrect or incomplete information, or misuse of output from automated systems such as GIS. Attention can focus on the data itself, the individual charged with collecting or otherwise using the data, the software or technology employed in a specific case, or some combination of these factors.

Liability is a growing concern, particularly as data are "blown up," aggregated or combined with otherwise disparate data. Information represented on a map often does not represent reality at a large scale if it was created at a less accurate, smaller scale, as is often the case when originating with state and Federal agencies. Most state and local governments include disclaimer language on or with any products created using GIS in an attempt to minimize liability.

The use of access fees is sometimes considered as serving to increase liability in some cases. Among the most obvious liability cases are those in which inaccurate data essentially causes an accident, such as when a utility line is broken because utility company officials did not acknowledge a line was in the location where it was broken. Liability also is one of the biggest problems

resulting from the inadequate information typically portrayed on the floodplain maps used in the National Flood Insurance Program (NFIP). These maps are often the objects of liability claims because they are often inaccurate or out of date.

Another example is when an area may look appropriate for development and not appear at risk for example from an earthquake, but in reality this may be a real concern and development should not be permitted on this site. If an event were to occur in such a case, one of the map producers or governments might be found liable.

8.3.2.6 Security

This is a growing issue as dependence on information technology increases through time and risks from potential harm through the Internet or terrorist attacks increase. Various approaches are being adopted and recommended, though there appears to be little specific attention to security in state statutes as relates to information access.

8.4   Recent or Potential Enablers of Private Sector Participation

While these issues are increasingly important concerning the NSDI and data access, there are several options and opportunities with which to stimulate interest and encourage data access and use. These can be targeted for specific Framework themes, and/or for specific target markets. Framework themes, however they are defined, can be customized and presented in terms understandable to and designed for target markets. These themes must first be defined by user application, and then by class of user, to include clear explanations of data cost, quality, coverage, resolution, service and benefits.

A particularly important issue is the need for data integration and packaging for channel partners and business partners. Some examples exist of how official direction has been provided by government so data can be packaged and disseminated for specific user requirements.

One of the strongest authorizations for data access is the Federal Emergency Planning and Community Right-to-Know Act (EPCRA), a freestanding act that constitutes Title III of the Superfund Amendments and Reauthorization Act (SARA). It mandates companies disclose information about the release of hazardous materials into the environment in order for stakeholders to have access to information to help prepare for and prevent chemical emergencies. Required information under EPCRA includes details about a company's emergency and hazardous chemical inventory and Material Safety Data Sheets identifying the substances used, their hazardous and physical characteristics, health hazards they pose, and procedures for controlling spills or leaks.

Businesses must file this information with state and local emergency management agencies.

EPCRA also established a toxic release reporting system known as the Toxic Release Inventory (TRI). Companies must report the previous year's releases of each covered toxic chemical into the environment by medium – air, water, land, underground injection or transfer to another facility. State and Federal officials compile this TRI information. Annual compilations are available for most states, and nationally by the EPA and the National Institutes of Health, both of which maintain on-line databases. There are some caveats with TRI because health risks caused by listed emissions are not provided, quantities are often estimated, and changes are difficult to understand from year to year because the relationship between the reported quantity and the volume of production is not indicated. However, the data have been creatively used in many jurisdictions (including with GIS) to reveal potential problems to target and address "hot spots" warranting special attention rather than just responding to complaints. It has also served to reduce risk and prevent pollution and accidents, while fostering some social equity in environmental and emergency planning (Schwab, 1993).

One Call Utility Notification Centers are another example of information packaging authorized by government, in this case now mandated by legislation in each of the 50 states. Typically operating as non-profit organizations, the centers provide an institutional mechanism and information clearinghouse by which excavators must "call before you dig" on public or private land. These statutes also require utility companies to respond to contact by the center and locate lines within a proposed work area within a reasonable time before excavation begins. Moreover, state courts have found utility companies to be liable for damages for their negligence if they do not accurately locate their lines.

A third example is the HAZUS system developed by the U.S. Federal Emergency Management Agency and the National Institute of Building Standards (NIBS). HAZUS is a PC-based, GIS software system and data package including a standardized loss estimation methodology for earthquakes. Private companies using the system can realize several benefits. For example, businesses would be able to understand their potential risk of damage in the event of an earthquake and prepare accordingly with advance contracts with evacuation services, and understand whether their suppliers, and they in turn, are at risk if such an event occurs. While this system and data are offered for free, few businesses have taken advantage of this offering, largely because they are unaware of it, similar to the NSDI.

E-commerce offers additional new opportunities for the NSDI and the private sector. Society is experiencing increasing use and dependence on the Internet and other electronic media to deliver information. For example, more and more

states are legislatively authorizing "enhanced access," such as remote or on-line access to electronic records.

For example, nine states enacted legislation in 1997 enhancing public access to government information (Jackson, 1998). It has been argued such access adds value to the requested record and provides increased convenience to the requestor. A growing number of states have used the provision of enhanced access to permit access fees. Enhanced access provisions in a public records statute allow an agency to charge a fee for the convenience of transmitting information from the agency's modem to the requester's modem. While these options are being developed at the state level for other data, they pose opportunities for the NSDI and the dissemination of spatial data.

8.5 Summary of Issues

This sub-section lists a synopsis of the issues specified in Section 8.0:

Sub-Section	Issue
8.1.1	Lack of local government and private sector awareness of the FGDC or the NSDI
8.1.2	The NSDI does not have a private sector focus in any of its offerings due to the relatively low inclusion of the private sector in the planning for the NSDI.
8.1.3	Lack of policy direction, authority, and accountability of the FGDC or NSDI makes private sector firms hesitant about the long-term viability of the FGDC or NSDI.
8.1.3	The same issue above creates a situation where there is little synchronization amongst data sets.
8.1.4	Lack of understanding about the drivers for private sector participation like revenue, profits, time to market, liability protection and intellectual property protection.
8.2	Confusion about the purpose of the Framework and whether it serves the interests of private sector companies.
8.2	The Framework has no authority to determine which data is the official or accurate version.
8.2	There is a great deal of redundant data in the Framework because different groups create data at different resolutions.
8.2	Data accuracy is very important to private sector companies because of customer satisfaction, liability and revenue issues.
8.2.1	The following issues about NSDI data must be resolved from the private sector's perspective: resolution, currency, timeliness, and accuracy.
8.2.2	Tools must be employed to make the design and accessibility of data more "user friendly."
8.2.2	Federal, state and local laws relative to freedom of information, privacy, disclosure, and intellectual property can hamper data sharing, especially when companies consider their information part of the assets

	or worth of their companies.
8.2.2.1	Fees and licensing for data are difficult to determine in the public sector and will be even more difficult to determine in the private sector where liability issues loom for data that is inaccurate or not used properly.
8.2.2.2	State and Federal law provides that information can be withheld if considered confidential, particularly if used in litigation.
8.2.2.3	More than 30 states have statutory language prohibiting the disclosure of trade secrets or comparable business information.
8.2.2.4	Some 21 states have specific privacy laws but there is little guidance about what is private.
8.2.2.5	Organizations can be found liable for many aspects of data collection, data repackaging and distribution, data manipulation and analysis, and data usage.

8.6 Summary of Recent or Potential Enablers of Private Sector Participation

This sub-section lists a synopsis of the drivers for participation specified in Section 8.0:

Sub-Section	*Driver*
8.2.3	Define themes by user application, class of user, with respect to the private sector.
8.2.3	Package data for vertical market segments and private sector channel partners that specialize in market niches.
8.2.3	Certain Federal statutes may be models for data sharing like the statue that required companies to report hazardous materials in the case of emergencies.
8.2.3	Call Utility Notification Centers are mandated by legislation and authorized by government to act as a clearinghouse for the location of utility lines. This can serve as an example of other such clearinghouses to be established in the future.
8.2.3	HAZUS is a free package developed by FEMA that is available for business use but is not widely used.
8.2.3	e-commerce and other new access methods can help to remedy data issues in the private sector. Nine states have legislation enhancing public access to government information.