FINANCING REPORT

FOR

navigatOR

Oregon's GIS Utility

Prepared for:

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SECTION 1
INTRODUCTION AND RECOMMENDATIONS

This report presents several alternatives for developing a finance strategy for navigatOR. The alternatives are based on a "best practices" review of other states. Some of the information in this report comes from a study conducted for the Ohio Geographically Referenced Information Program and the Oregon Geographic Information Council in 2003 by GeoManagement Associates of Syracuse, NY and PlanGraphics, Inc. of Frankfort, KY. The report provides a summary of information from selected states about each of the following statewide geographic information matters:

- Funding sources to support statewide data development, management, and maintenance;
- Approaches of merit in supporting a more comprehensive approach to statewide data management; and
- Advantages and disadvantages of each of the basic approaches.

The report is based on raw data from the same selected states about these and additional matters that are not discussed in this report but that were discussed with the states in preparing this report. They include:

- Data, coordination, assistance, and other roles of statewide geospatial efforts
- Sectors served by statewide geospatial efforts
- Level of effort of statewide geospatial efforts, measured in terms of full-time equivalent positions (FTEs) for data, coordination, and assistance roles
- Level of effort, allocation of funds, and source of funds of statewide geospatial efforts, measured in terms of dollars for data, coordination, and assistance roles
- Land base data development and maintenance

Based on the information in this report and in the Business Case for the GIS Utility, there are four recommended funding approaches for the Oregon navigatOR initiative.

- The primary source should be capital funding, with the $120 million of base data serving as the principal source of collateral, in addition to the technical infrastructure and applications developed to add value and provide data access.
- Federal and private sector investment should be a secondary source of funding, leveraged against the capital funding.
- Assessments against state agencies should be another secondary source of funding, following the existing model.
- Accounting for geospatial data usage and applying a percentage against the ongoing operational costs of the geospatial efforts and repayment of capital funds should be another secondary source of funding.

SECTION 2
METHODOLOGY

A two-phased approach was taken to conduct the initial review by GeoManagement Associates and PlanGraphics. First, an overall review of existing information about conditions in each of the 50 states was conducted. The 50 states were reviewed regarding their structure, operations, functions and responsibilities, and known existing funding mechanisms. The purpose of this review was to identify 12 states that are similar to Oregon or that have unique and successful approaches to operating and funding spatial data initiatives.

The following "filters" were used to narrow the 50 to 26 and then to 12 states for a more intense review.

1. Organizational Structure—The purpose of this filter was to find states with a similar makeup and organizational structure to Oregon. This filter represents the different roles of state government within that state, their relationship with local government, demographic issues, and the geographic area versus population.
2. Program Operations—This filter focuses on existing efforts and activities regarding coordination of a statewide GIS program. This looks beyond just a program and includes components of programs and their levels of success.
3. Functions and Responsibilities—This filter reviews the varying functions of the states in supporting statewide programs for data development, distribution, and interaction with all levels of government.
4. Funding—This reviews the funding approaches to support the varying programs in the states and includes unique approaches. It also looks at existing and planned funding mechanisms.

Many states have unique and successful programs; however, all filters were subjected to a "could it be implemented in Oregon" scenario.

Each filter was used as a limiting or a positive factor. For example, if a unique approach to funding was being used in a state that did not have a similar organizational structure, the funding approach took precedence.

After reviewing all 50 states, the list was reduced to the following 26 states—Arizona, Arkansas, California, Florida, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Oregon, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, and Wisconsin.

This second review continued to focus on similar structure of government, operations, and current funding mechanisms. To get to the 12 states, the final review looked at unique and creative funding mechanisms and the functioning role of the state in implementing and operating a statewide program.

The 12 states are listed below:

1. Arkansas
2. Kansas
3. Kentucky
4. Maine
5. Michigan
6. Minnesota
7. North Carolina
8. Tennessee
9. Texas
10. Utah
11. Virginia
12. Wisconsin

These 12 states are funding spatial data development in a variety of ways from levied fees to contract services and from general funds to dedicated funds. In some cases, states are using a mix of these approaches, as well as grants. In several of the states, legislative initiatives and support have been instrumental in funding spatial data development.

The principal GIS contact in each of the 12 states was queried to obtain detailed information concerning overall financial approaches, revenue sources, coordination roles, level of coordination effort, etc.

Each state provided requested information, but to varying degrees. In addition to repeated email query, each state was contacted by phone, some repeatedly, in order to secure responses. In addition, after responses were received, verbal contact, interviews, and discussions were held with at least one representative of each of the 12 states, and some in-person meetings were held. This procedure was necessary to assure quality control, particularly to explain and modify results presented on the query forms to assure accuracy and consistent assumptions and definitions across all states.

Finally, in Section 4, this report discusses some approaches used by some jurisdictions to capture the value of GIS usage and apply savings and benefits directly to support geospatial efforts. And in Section 5, the business model being explored by Arkansas is described in some detail.

SECTION 3
FUNDING SOURCES AND APPROACHES

This section includes a synthesis, observations, and conclusions based on the information provided by the 12 states concerning funding sources and approaches. One-page summary funding tables for each of the 12 states provide information on expenditures and sources of funding that augment this analysis and are presented in Appendix B.

It is important to note that a wide variety and combination of funding sources are used to support statewide geospatial efforts. Many of these funds are derived from individual programs for one or many functions of state government. However, emphasis in this report is on sanctioned statewide geospatial coordination programs and the funding used to support these efforts. While additional funding is derived from program funding, it is not reflected here. One state, Arkansas, has put together a business plan in the last year that contemplates a number of innovative financing approaches that rely on external funds. Those approaches are included in this report in Section 5. Another important point, as revealed in the finance tables, is that **virtually all states use a combination of sources and approaches of funding to support statewide geospatial coordination**.

In addition to the different funding sources and approaches discussed below, the question was asked of each state as to whether funds designated for statewide geospatial efforts can be carried over from one year to the next, regardless of source. Of particular interest was whether other states could take advantage of lapsing funds and make them available for data development in future years. The finding regarding this issue is that regardless of the sources and approaches, states have many differing approaches to the use of carry-over funds. Some states, like Arizona, went through a long process and statutory change in order to carry funds over, while others (e.g., Michigan) were able to do this very easily based on their internal approaches. Others indicated that they have not tried to change conditions in order to be able to carry over funds.

The remainder of Section 3 describes and examines five funding sources used by the states. The five are:

- Dedicated Funds
- Mission Driven Funding
- Assessments on Agencies
- Central and Capital Funding
- Cost Recovery

DEDICATED FUNDS

One of the best sources of funding for any function of government is a dedicated source of revenue that provides a continuing stream of funding, often in perpetuity. For example, local governments operate utilities in this way, with dedicated funds based on user charges. State governments have traditionally more limited use of this approach, although some sales taxes, for example, are approved based on their use for dedicated purposes. Property transfer fees are well acknowledged as the key source of funds for the Wisconsin Land Information Program (WLIP), but statewide geospatial efforts are also

conducted with general appropriation support. The WLIP's funding mechanism, which is a land-related documents recording fee collected by each County Register of Deeds, has generated over $70 million statewide since 1991. Oregon's legislature authorized the addition of a $1.00 fee to each land transfer to help develop a statewide property tax map, which has generated approximately $800,000 annually since its inception. While not included in this analysis, Vermont is the only other state known to have use of such fees to help support statewide geospatial data development or coordination. The Illinois legislature, however, recently authorized counties to adopt a fee structure for filing documents to be used strictly for GIS implementation and maintenance.

Advantages

The advantages of this approach are several. Unless "sunsetted," the long term "guaranteed" nature of such a source helps to make a state's geospatial program truly "official" and institutionalized, and thus it is considered a real part of state government. State coordinators can develop and implement a long-term strategy, while others can rely on the program and its resulting data products with confidence that the program will be able to continue delivering such results in the long term. This assurance is a key need in order for a statewide coordination program to develop and deliver results when entering into alliances, as well as assisting others over the long term. The benefits of Wisconsin's program are multifold and include—1) land records modernization, 2) accelerated local government geospatial activities, 3) leveraging of federal funds, 4) reduction of title insurance costs, and 5) economic development (including the creation and expansion of consulting and software development firms). Such benefits could be replicated in another state.

Disadvantages

A key disadvantage of this approach is that it is very difficult to effectuate. Wisconsin was fortunate because it found the state land transfer fees to be lower than those elsewhere, so the State was able to justify an increase. It is a major undertaking to successfully gain sufficient legislative support for such a program. In the case of Wisconsin, many strong proponents in academia worked successfully with practitioners to achieve success. However, a key aspect of the program is that much of the funding is actually retained by the counties who collect the fees, and only a small portion is distributed back to the State. This was necessary to garner support from local officials. As a result, little of the funding is actually used for statewide data, and now the State faces the challenge of linking up all the county systems to help form a statewide data foundation. This is similar to the problem Oregon faces with its program, where the fee is dedicated to producing a map that improves the tax assessment process, with no clear definition in statute of the content of the data needed to produce such a map and no direct link to statewide geospatial efforts whereby the data could be used for other purposes.

MISSION DRIVEN FUNDING

Several states have benefited from the realization and the policy direction that a state government mission can be aided by alignment of the statewide geospatial coordination efforts with that mission. The actual existence of some of these missions varies by state

depending on policy decisions and state roles in relation to local governments, such as with E-911 and some land use and conservation efforts described below. However, all state governments share other missions, such as state lands and asset management.

E-911 is a key government mission, with data responsibilities sometimes assigned to state government. For example, State government in both Maine and Oregon decided to develop a data foundation for E-911 at the state level (rather than at a local level as is the case in most states). Directors of E-911 in both states have coordinated with their statewide geospatial offices on this work. For the Maine Office of Geographic Information Systems (MEGIS), this project has been providing over $700,000 annually. However, this amount will be less when the project moves to a maintenance level. This work is providing MEGIS and the Oregon Geospatial Enterprise Office (GEO) with the ability to develop statewide transportation and addressing foundational data. In Oregon, however, there remains some question as to the availability of this data for enterprise purposes, based on statutory authority local governments have to control this data and charge cost recovery fees for access.

Virginia's geospatial coordination office secured $10 million in funding from the State's Wireless E-911 Fund to help fund data efforts, specifically high-resolution imagery, the development of a statewide road centerline file with address attribution maintained by the geospatial coordination office in coordination and cooperation with the 134 local government jurisdictions in Virginia, and the development of a statewide surface water data set. The Virginia Geographic Information Network office is located in the Virginia Emergency Preparedness Office and has an annual budget of approximately $2.2 million.

Arkansas is another state that has benefited from mission driven funding for spatial data development. Arkansas created a GIS Fund that is organized as a trust fund, and funds for the Trust Fund can be obtained from a variety of sources (funding approved by the General Assembly, grants, gifts, state and federal funding, etc.). The funding is not subject to rollback into the General Revenue Fund at the end of a fiscal year. Additionally, a grant of almost $1.0 million was provided by the Economic Development Fund of Arkansas to assist in data efforts. Information is provided later about Arkansas' innovative funding approaches that are beginning to add monies to the Trust Fund.

South Carolina is another state that has long been recognized for the mission driven funding approach it used for statewide data development to support economic development initiatives.

Conservation of open space and land planning (often termed "smart growth") initiatives also have been legislated as a state mission in several urbanized and growing states and they provide strong drivers for statewide data development. Florida, Maryland, and Massachusetts have used funding for this purpose for statewide data development. Such data is needed for local and statewide land use planning and also to determine and prioritize individual parcels of land that should be acquired or otherwise conserved for public use or open space, often as part of multimillion-dollar land acquisition programs. These states were not included in this project due to their limited or non-existent statewide geospatial coordination programs, but these missions have provided significant funding for data development. Massachusetts' de facto lead geospatial office has been

developing data for the State's local governments to aid in their land planning efforts based on 1998 legislation. Florida's and Maryland's geospatial development has grown due to such State initiatives, but because the states do not have lead offices for geospatial efforts, questions could be raised about the degree to which other functions of government are aided by these efforts.

A state government mission shared by all states that can be aided by spatial data is the management of state lands and other assets. There has been growing interest in the geospatial community about the Governmental Accounting Standards Board (GASB) and proposed changes to Statement No. 34 (GASB 34). The revised statement will have a large effect on the way governments do financial reporting concerning infrastructure assets. Geospatial data and technology use would clearly aid in this regard.

State land management is a key function of state governments in any case because states own and manage approximately seven percent of the Nation's land area. Moreover, these lands are sometimes managed to produce revenue for key government functions, such as schools in many western states. In addition, as indicated above, population increases and development growth are increasing the overall interest and perceived value of public lands, many of which are owned by states. This project and others have revealed that most state governments have fragmented and perhaps antiquated land ownership data programs. Individual agencies often maintain independent records of their land holdings, and these agencies have responsibilities that cover natural resources, forestry, wildlife, parks, transportation, prisons, and other state facilities. Moreover, many of these fragmented databases are not well linked to county or other local property records.

As concluded from this query of the 12 states and other related work by Geospatial Management Associates, Michigan stands out as unique among the states in its approach to managing state-owned land because it is developing an integrated approach. The approach is known as the Statewide Land Database (SWLDB). It is also unique because it is linked to the Michigan Geographic Framework, the State's geospatial foundational data for multiple purposes. SWLDB is a cooperative effort of the Michigan Information Center and the Michigan Department of Natural Resources, and it includes core attributes for the state's landholdings, including buildings, parcels, institutions, and roads. This product is currently being used by multiple agencies throughout the State for various purposes and is under continued development, including developing data linkages with local governments. For example, a new project is developing a system to facilitate access to information about individual schools throughout the state.

Oregon is undertaking a similar effort, led by the Department of Administrative Services Facilities Division with the authority to assess agencies to pay for such a system. An RFP has just been released to hire a consultant to perform an initial needs assessment in anticipation of developing a system similar to the one described for Michigan.

Advantages

Public safety, conservation, land planning, public lands, and economic development have each proven to be a mission that both policy makers and voters have shown a strong willingness to support. While conditions, needs, and policy direction do vary by state, the overall continuing and expected growing public support for these missions is a strong

driver for data development and maintenance over time. Attachment of state geospatial coordination and data development efforts to state missions has also been successful in other states not investigated here. As a result, efforts expended to associate geospatial efforts to state missions, with policy direction and oversight of such missions, can be time well spent. It is likely that much less effort would be required for state mission driven funding than some other funding options presented in this report and elsewhere.

Oregon may have an important related opportunity through the Oregon Wireless Infrastructure Replacement Initiative, which was approved by the Legislature in 2005. The cost of this initiative has been estimated to be approximately $500 million. Geospatial data is essential to this program in at least two ways. The planning of the location of wireless infrastructure must take into account the topography and ownership of land, as well as the potential and actual coverage areas of each tower. Once the wireless network is complete, geospatial data will be essential content to be transmitted to first responders and others via the network. Oregon's Geospatial Enterprise Office is involved in assisting the contractor on the initial engineering study for the statewide wireless system.

Disadvantages

An obvious disadvantage of using one or a combination of specific state missions to fund data development is that there is some risk of skewing the otherwise statewide direction and previously determined plans and priorities in order to meet the needs of the specific mission(s). Another disadvantage is that support for some missions, particularly land planning, have always been cyclical and may suffer when supporting politicians leave office. There is also an ongoing risk of the reduced availability of funding for such "extra" functions of government as public land acquisition due to the political climate across the nation and beyond. However, while these conditions exist today, public safety funding is definitely on the rise. Many E-911 problems remain to be fixed across the country to support the nation's defense infrastructure. In addition, funding has been "locked in" by the voters in some states, and successes from these efforts are expected to continue and to be increasingly revealed to the populace. And at the same time, real estate values have increased significantly in recent years, and the amount of land available for development continues to decline, both of which increase the importance of land use planning and the value of public lands.

ASSESSMENTS ON AGENCIES

A traditional financing approach for information technology (IT) functions, both in government and industry, is to "charge" user agencies to support central IT functions and facilities. This is, in many respects, a legacy of financing large data processing mainframe operations, but this approach is well institutionalized in state governments. For example, charges for services provided by statewide IT offices are negotiated and incorporated in state agency funding arrangements with their counterpart federal agencies in order to operate many social service programs. These assessments on agencies are sometimes used to support IT policy and planning, as well as IT operations. A similar financing approach has been used by some states to support statewide geospatial data

development and maintenance efforts and coordination functions. Four states with such approaches were found among the 12 investigated in this project. The four are Kentucky, Maine, Michigan and North Carolina. Details are provided below for two of these states.

Maine receives funding support from approximately 20 state agencies, through Service Level Agreements (SLAs). The Maine Office of Geographic Information Systems (MEGIS) does not receive any direct appropriation for its operations nor does the State IT office, in which MEGIS is located, provide any direct support. Under the SLA arrangement, each agency annually signs an agreement and contributes a determined amount to support the operations of MEGIS. This predetermined amount is generally determined based on level of GIS activity in each agency, which ranges from $1,000 to $45,000. The total level of funding support changes each year, but for FY02, this arrangement has provided MEGIS with almost $300,000.

Michigan has a similar approach that has also been found to be quite successful. The Michigan Department of Information Technology (DIT) was established as a separate executive branch department by Executive Order in 2001, with the DIT Director reporting directly to the Governor. DIT currently has 1670 employees and 1250 contract employees, with over 60 dedicated to geospatial activities in the Michigan Center for Geographic Information (CGI). The CGI is committed to supporting core statewide geospatial coordination and data development initiatives and providing geospatial application development for state agencies. The core funding for CGI is derived through assessments on seven state agencies to support the development of base data. This arrangement was made by the Budget Director to ensure adequate funding for these data initiatives. These voluntary assessments are placed in a revolving account and are renewed annually. Three smaller agencies of the seven have their contributions in their base budget to ensure that this amount is available each year. Michigan has been very successful at soliciting and solidifying funding support from other agencies. This success has been significantly aided by the location of the CGI in the Department of Information Technology, as well as support from the State Budget Office. CGI also receives funding from the general fund through DIT to cover many of their other activities, including data integration, application development, outreach and training, and web portal data access.

In Oregon, a total assessment of about $1.5 million has been spread among the budgets of every state agency since 2001 to support a geospatial coordination staff of four and some core data development. The amount assessed to individual agencies is based on the importance of geospatial data to the agency mission. The State Budget Director was instrumental in establishing this assessment.

Advantages

This approach has the advantage of helping ensure that a statewide geospatial coordination entity has developed and maintains support from its constituency, i.e., state agencies. This is an essential element of success for any statewide geospatial coordinator or entity, but it is particularly critical for this approach. It serves as an important driver for good management and operating practices for such entities, such as recruiting participants in developing and publicizing annual plans, as well as determining and prioritizing statewide data and other geospatial priorities. This

process is an important one for any statewide service organization such as a statewide geospatial coordination entity. This process also enables state policy and agency leaders to become familiar with the services and capabilities of the coordination entity and geospatial data and technology more generally. This can, in turn, result in additional work among supporting agencies, as well as involvement by new and often nontraditional agencies which can be virtually ignored with other funding approaches. Interagency support inherent in this approach essentially serves as official endorsement for the quality of the statewide coordination entity and its work. Thus, it can be used as a building block to solicit additional funds within state government and from external sources such as federal grants and others.

Disadvantages

A key disadvantage of this approach is that it is very difficult to secure support for and effectuate this arrangement without the support of some key policy officials. The policy officials are usually political appointees, and this situation means that significant work may be required to garner interest and support by both budget officials and leaders of several departments. Such policy level interest and support is a proven key requirement of this approach despite the fact that these officials often change on schedules more frequent than even governors and legislators. While not absolutely essential, the support of the budget director is a key lesson learned from Michigan and Oregon. Any statewide geospatial office with any funding arrangement should recognize this important relationship. Moreover, this approach can require significant planning, record keeping, and logistical work to implement and maintain.

Another disadvantage of this approach is the fact that such support and detailed arrangements must be renewed at least each budget cycle and often annually. Efforts must be made to ensure that funding is available in each supporting agency, including justifying and renegotiating the workload and priorities. Michigan's statewide geospatial efforts were aided by the fact that the Budget Director ensured that CGI support was in the base budget of some agencies, but this may not always be the case.

An added problem can be agency competition. Some agencies may feel they are not being treated fairly compared to others. Their argument could be they are not getting enough services for the amount contributed from their budget or that they are not receiving an equitable level of services compared to those given to, or the funding provided by, others. This potential issue also needs to be addressed on a regular basis, particularly while determining agency assessments.

CENTRAL AND CAPITAL FUNDING

While assessments on agencies have proven useful in some states for geospatial data and technology, and also for many IT offices and functions over time, issues discussed above have, in part, helped lead to the use of central capital or other funding for some IT efforts. For example, it can be argued that policy and planning for statewide needs should not be funded by agency assessments because they then skew results. Accordingly, states sometimes fund and organizationally separate these IT policy and planning functions from IT operations. Traditional information roles, such as that of state records and

libraries, are also usually centrally funded and increasingly include automated tools, such as government information locator services (GILS), which may be similarly funded.

In a report prepared for the Federal Geographic Data Committee, the following capital investment concepts were stated (Cahan, 2001):

- Assets lasting more than one year are capital (not operating) assets.
- Capital Assets should be financed so as to extend their useful life & interdependencies.
- Annual sums spent to maintain and enhance capital assets can be leveraged & pooled with other investors in similar assets.
- If those annual commitments are made contractual, the contract can be pledged as collateral to finance new or replacement capital assets.

Most recently, some states have developed special funds for innovative technology (Town 2001). Massachusetts is well recognized for being the first state to finance IT projects with authorized capital funding in the form of long-term bonds in 1992, and since then, the State has issued more than $400 million in general obligation bonds to support several large and long-term projects, including those with geospatial components.

Separation of geospatial policy and planning functions from operations also is becoming the case in some states. These states include Arkansas and Texas of the 12 states investigated here, but other states are included, as well. In broad statewide geospatial institutional investigations, the states that have two separate organizations that are both responsible for statewide geospatial functions are known as “dual states” (Warnecke 1995). In these states, coordination and, to some degree, policy and planning activities are conducted via central or general funds. Alternatively, operations such as data development, maintenance, and clearinghouse activities are funded by special funding, grants, or cost recovery.

Most states benefit in some way from the use of general appropriations funding, although few have made use of capital funding. Kentucky has benefited from the use of the capital funding approach with approximately $750,000 for each of two years. Additional use of capital funding for a Local Government Geographic Information Partnership Program (LGIP) is now proposed. This program, which would create partnership incentives for Kentucky local governments, will allow state government to take advantage of the high-resolution data that are being created at the local level. While few states have used this approach, several representatives of the 50 states have expressed interest in pursuing this option. In addition, some local governments have utilized this approach.

Advantages

The advantage of this approach is to provide dedicated funds for geospatial efforts that can be expended over more than one year. This dedicated funding provides a means to create a viable foundation for future spatial activities to support spatial data development, E-Government applications, and other far reaching initiatives. The use of capital funds is strengthened by the concepts of E-Government and E-Business because many of the “infrastructure” components (hardware/software, communication and distribution, data

development, data acquisition) necessary to support these concepts are not currently in place. However, the approach requires that budget and management personnel view digital initiatives as physical assets and understand that the digital infrastructure required today to access, distribute, and disseminate information will be in place and have value for longer than five years. For example, the digital version of the USGS 7.5 minute topographic quadrangles (Digital Line Graphs—DLGs) for Ohio are being used by state agencies as the foundation for their spatial initiatives. On average, the base information from which the digital spatial dataset was compiled is more than 25 years out of date.

Disadvantages

A key disadvantage of this approach is that significant effort is required to make the case for the need for capital funding and also to garner policy and political level support in this regard. As described above for mission driven funding and assessments on agencies, this approach requires support of officials who often change. In Kentucky, for example, a business case was prepared for the Secretary of the Finance Cabinet in order to successfully sell the idea of the base map being a capital item. Since that time, the person who was serving in that capacity has left State employment. Another issue is how to adequately fund data maintenance. Generally, these approaches are employed for data development, so an additional strategy and approach is usually required for such maintenance. For many agencies and jurisdictions, it may be possible to cover maintenance costs within existing operations budgets, but some rural local governments may require ongoing financial assistance, or may need to consider working together within regional GIS support centers, to continue to provide high quality data to the enterprise.

COST RECOVERY

Geospatial efforts are often viewed as an ancillary role of government, and thus, there has been a hesitancy to fund geospatial development and maintenance, particularly to meet interagency and inter-organizational needs. Many state geospatial service centers have relied on funding received for contractual services and, to a lesser degree, from the sale of hard copy or other products. As revealed in the best practices review, Minnesota, North Carolina, and Utah have three of the leading and largest state geospatial service centers. However, the relative portion of funding support from contract work in these states has diminished in recent years. These three states and others have pursued other financing options, such as general appropriation funding in Minnesota and Utah and voluntary assessments on agencies in North Carolina. It is important to note that provisions in state statutes may limit some aspects of this approach. For example, potential changes in the State Data Practices Act in Minnesota may eliminate some cost recovery practices.

However, cost recovery is emerging as an approach to fund some IT services, which is also impacting geospatial efforts. Many states are investigating and implementing cost recovery methods to fund electronic government services (including data access) and to conduct transactions, such as paying taxes or acquiring building permits online (Robb 2001). Cost recovery and other non-traditional funding mechanisms are being evaluated

to fund other technological enhancements and services. For example, some governments are evaluating the use of advertising on their official Web sites. Several states have established arrangements with private companies to operate their official state Web sites, including some of the states investigated in this project (e.g., Arkansas, Kansas, Maine, Tennessee, Utah, and Virginia). These public/private partnerships mean that the Web portals operate at no financial cost to the state. In these cases, most data is available at no cost on the Web, but charges are authorized for "premium services." The geospatial coordination entities in both Kansas and Virginia are testing use of such state Web portals to provide access to and use of spatial data. In the future, a charge will likely be associated with such service.

Advantages

The advantages of this approach, once authorized, are that the funds derived are usually under control of those raising them. Also, this approach may ensure that the funds can be carried over from one year to the next, but that may not always be the case. This approach also typically requires less effort to secure and maintain policy and political support than the other approaches. In Minnesota, this approach has been found useful as an effective mechanism to fund specialized staff.

Disadvantages

Cost recovery for work can mean the best result for those organizations with funding to fund and benefit from the services of the state geospatial center. However, in a more general way, this approach may mean that statewide needs cannot be fully met because the priority is placed on paying customers. Moreover, it essentially limits the development of data as well as the access to and availability of data to others. The "digital divide" is increasingly recognized as an emerging issue concerning data, as well as access to technology. This approach essentially reinforces the difference between the "haves" and "have-nots" which in many respects is contrary to the role of government. As stated by Minnesota, the use and value of available data can be reduced if fees are set too high.

Oregon used this approach for many years in their GIS Service Center, but could not support ongoing operational expenses over time and found that it was virtually impossible to pursue an enterprise coordination approach while meeting the needs of only the paying customers. In addition, Oregon's experience indicated that GIS services needed to be closer to the agency business processes supported by the technology in order to ensure sufficient understanding of those processes to provide adequate support.

SECTION 4
CAPTURING THE VALUE OF GEODATA

It has been widely recognized that the value of geospatial data is realized through its usage, and that widespread distribution and use of geospatial data benefits the entire jurisdiction, as well as the government agency responsible for that data. Capturing the value of the geospatial data, both to the public and to the governmental custodian, provides several additional alternatives for funding geospatial efforts.

The Open Data Consortium, funded by the USGS to formulate a model data distribution policy for guiding local governments throughout the country, uncovered eight productive methods of supporting GIS operations (Joffe, 2003). They are organized into four categories:

- Revenue produced from existing taxes
- Revenue produced from service fees
- Cost Savings
- Internal Budgeting

These methods, listed below, do not include the cost savings accrued through multi-agency cost sharing or data sharing. While such actions result in very significant savings in the cost of creating and maintaining geospatial data, they do not derive from the actual usage of the data.

REVENUE PRODUCED FROM EXISTING TAXES

1) Allocate a portion of the **increased revenues that come from increased economic activity and new economic development** to geospatial efforts.

Information about available land, buildings, zoning, transportation, environmental conditions, support facilities, ownership and property value is critical to attract investment for economic development. Many local governments and state economic development agencies have discovered that putting local data on the Web has captured interest and activity from investors as far away as Asia and Europe.

- The cities of Ontario, Vallejo, San Francisco, Rancho Cucamonga, Tucson and Honolulu report increased economic activity after creating web-based economic development applications that enable anyone to query their data for property with specific qualities of interest.
  - √ Vallejo reduced its retail vacancy rate by 46%
  - √ Rancho Cucamonga reduced its retail vacancy rate by 44%
  - √ Tucson reports a return on investment of $400,000 in the first two years
- In Ohio, the cities of Cincinnati, Cleveland, and Columbus made their data available after a new auto factory located in a competing city that provided its information on the Web. The company completed its on-site review in just one day because the data had been easily acquired and pre-analyzed.

Increased economic development generates jobs, sales tax, property tax, and many other revenues. Currently, the increased revenues go into the general fund. A portion of these

increased revenues could be allocated to supporting the geospatial efforts that helped generate the economic development. Accounting procedures could be modified to include an estimate of the percentage of new revenues that can be attributed to the availability of accurate, up-to-date geospatial data, and that portion could be specifically allocated to maintain and expand geospatial efforts.

2) Allocate a portion of the **increased revenues that have come from a more accurate determination of facility locations for taxation purposes**, or from the geospatial analysis of under-taxed property assessments, to geospatial efforts.

Geospatial data and processing enable the precise determination of the special district, city, and county in which facilities such as cell phone towers, point-of-sale businesses, and property parcels are located. Most jurisdictions have complex and frequently-changing boundary lines, and each jurisdictional boundary may have a different tax rate. Geospatial analysis can determine location much more accurately than postal address, which may result in significant revenue increases. For example:

- Orange County, FL, increased revenues from cellular telephone franchise fees by using GIS to determine which cell towers were in their tax jurisdiction. The postal address put some towers in other counties. They now collect an **additional** $650,000 every year.
- The Oregon Geospatial Enterprise Office has been assisting the State's wireless interoperability consultant in mapping the locations of cell towers. They have discovered dozens of towers that are identified as being in the wrong county or city in the existing database.
- Los Angeles County **recovered** $3 million in sales tax after geo-analyzing the location of point-of-sale businesses which were improperly located by their postal address. By performing the geospatial analysis internally, they saved **an additional** $375,000 a year that had gone to external data analysis services.
- Using GIS to identify properties with certain characteristics and proximity to Disneyworld, Orange County identified condominium owners who were renting their units informally for tourist accommodations without paying the required resort tax. Tax **revenues were increased** by $700,000 in a single year, and continue to come in at the new level **every year**.

More accurate assessment and collection of existing taxes increases the revenue to local government without raising the tax rate. It makes current taxation fairer to all the citizens. Usually, the increased tax revenues go into the General Fund. A portion of these added revenues could be allocated to supporting the geospatial efforts that helped identify previously under-taxed properties. Accounting procedures could be modified to assign a percentage of such increased tax revenues specifically to maintain and expand geospatial efforts.

3) Allocate a portion of the **funding for specific programs** to geospatial efforts.

Homeland Security and emergency preparedness are the current focus of special funding programs from Federal and state sources (i.e. taxes), as have been flood control and sewer improvement programs in the past. All of these programs require accurate and up-to-date base maps that not only show local facilities, but also show relationships to

nearby facilities and environments, such as watersheds, infrastructure, and public buildings.

While a small portion of the funding for these programs typically is allocated to "data collection," a small increase in the investment by far-sighted officials has produced an enterprise-wide geospatial base for many governments.

- Somerset County, NJ, Planning Division received grants for "Smart Growth" and Strategic Planning, which required the use of GIS data in support of model forecasting. Some of those grant monies were used to develop data attributes for their enterprise-wide GIS.
- Alameda County, CA, used NPDES storm-drain pollution control funds to map the storm drainage and watershed system, which essentially built a county-wide GIS base map.

Performance of these programs and projects could include financial support for ongoing geospatial efforts that increase their efficiency.

REVENUE PRODUCED FROM SERVICE FEES

4) Usage fees and subscription **fees for customer-specific on-line applications** can help support geospatial efforts.

- Six Southern California counties license their geospatial data to Digital Map Products which redistributes it via web-based query applications and data sales to subscribers. The counties receive a substantial portion of the subscription revenues. Other companies are similarly licensed as well.
- The city of Carson is developing an on-line property locator application for a 15-city consortium, to be maintained on a subscription-fee basis by realtors.

5) Sell **geoprocessing and management services** to other agencies.

The City of Carson, CA, has developed GIS capabilities far in advance of many of its neighboring cities. They are now proposing to manage a data maintenance consortium for these cities, saving them the time and the cost of developing their own in-house expertise, and enabling each city to focus its geospatial resources on its own specific projects. This service will help support Carson's GIS department.

COST SAVINGS

6) Allocate a portion of the **increased savings that come from geospatial analysis** of public service programs to support geospatial efforts

.Los Angeles County's court system started **saving** $300,000 per year in mileage payment to jurors and witnesses after using geospatial data to calculate the most direct distance.

- Another county's Health and Human Services department began using geospatial data to cross-check the location of recipients of health and welfare services and **eliminated 7% duplicate or fraudulent addresses** in the first year.
- The City of Visalia used geospatial data to plan the location of new fire stations based on specific requirements for response time to populated areas. The analysis enabled

them to reduce the number of planned fire stations while also reducing the overall response time. In addition to the **cost savings to the city**, **the fire insurance cost for many of its citizens was reduced**.

The money saved by using geospatial data and technology did not go to the geospatial efforts of the jurisdiction. It was used instead in other ways by the various departments, or it remained in the General Fund to be spent for other purposes. Internal accounting procedures could be changed to identify these savings so as to allocate a portion towards the ongoing geospatial efforts that produce this valuable geospatial data.

7) Allocate a portion of the **increased savings** that come from **coordinated management of public works infrastructure and facilities** to geospatial efforts.

- San Jose uses geospatial data and technology to coordinate the priority assigned to maintenance projects for sewer, water, storm drains, and streets. Preventing multiple digs and repairs on the same street is **saving 5% of their capital improvement budget** - approximately $700,000 per year.
- Another city canceled the planned purchase of an $85,000 street sweeping machine after using geospatial data to route its existing machines more efficiently.
- Palo Alto used GIS with their high-accuracy elevation data to reconfigure flood risk boundaries. Some citizens received the benefit of **lower flood insurance costs**. Others, who were required to modify the construction of their homes, were **saved from ruin** when two 100-year floods occurred in a three-year period.

The money saved by using geospatial data and technology was not set aside to support geospatial efforts in these jurisdictions. Internal accounting procedures could be changed to tag these savings to GIS so as to allocate a portion towards supporting ongoing geospatial efforts.

SUPPORT FROM INTERNAL BUDGETING

8) Allocate a portion of the **general fund to enterprise-wide** geospatial efforts.

There are some organizations where departmental financing of geospatial efforts is contentious. Consensus exists that the enterprise needs geospatial data and technology, but a "don't take it from my budget" attitude prevails. Strong leadership from top management can resolve this frustration by making geospatial efforts an enterprise-wide responsibility, to be budgeted before departments fight over their own slice of the pie.

- Pima County, AZ, started its geospatial effort with a $5 million capital improvement bond, thereby building an enterprise system as a coordinated, master-planned effort.
- The cities of Fremont, Palo Alto, Roseville, and Visalia developed, and continue to maintain, their geospatial efforts as enterprise-wide services, supported as line items from the General Fund.

SECTION 5
OTHER INNOVATIVE APPROACHES

The Arkansas GeoStor enterprise geospatial architecture presents the opportunity for an innovative funding approach that could be emulated in Oregon. A central premise in the Arkansas approach is that the base public data distribution of GeoStor will comply with the state's public records law and should be a no-cost structure (Johnson, 2003). Built upon the data distribution layer, however, can be several "value added" options that have potential to serve as significant revenue generators.

Introduction: Legislative Intent

Arkansas Code 15-21-501, the enabling legislation for the Arkansas Geographic Information Office (AGIO), the State Land Information Board, and GeoStor, defines the basic premise for GeoStor:

> "In recognition that a vast majority of all information used in the management of government can be spatially referenced and that public institutions and private firms expend considerable resources collecting and managing land information records in diverse and disparate formats and scales, a modern automated system of accessible land information data and technologies is required to serve the essential needs of individuals, businesses, and government agencies."

Arkansas Code 25-19-103, the open records act, clarifies the definition of a public record and goes on to describe the government's obligations for making public records accessible to the public:

> "'Public records' means writings, recorded sounds, films, tapes, electronic or computer-based information, or data compilations in any medium, required by law to be kept or otherwise kept, and which constitute a record of the performance or lack of performance of official functions which are or should be carried out by a public official or employee, a governmental agency, or any other agency wholly or partially supported by public funds or expending public funds. All records maintained in public offices or by public employees within the scope of their employment shall be presumed to be public records."

From a broad business model, the base no-cost data distribution structure provides a foundation for various "value added" options that have the potential to serve not only as significant revenue generators, but as enhancements to the data that will provide increased numbers of paying customers. Without the data distribution component, the other options lose a significant part of their value. Significantly, the value added options will often involve adding new data sets to the publicly available data, increasing the value of the system.

Value-Added Business Models for Revenue Generation

All value-added and revenue generating models described below would provide funds to the GIS Fund (Act 1249) and arrangements could be made through interagency service agreements as defined in the AGIO legislation. The GIS Fund will be used for further enhancements to the technical infrastructure and additional data development projects.

Private data catalogue: There is the opportunity to include private data providers in the GeoStor "search." For example the Space Imaging Corporation has a number of high resolution satellite images that cover various parts of the state. "Footprints" showing where the data are available could be included in GeoStor. If the user selects imagery as their data search and a Space Imaging image is present in their selected area, the user would be given the option of being provided a Web link to be automatically directed to the commercial source for the actual data. GeoStor would charge the companies for inclusion in GeoStor, and/or a click through fee, and/or a data acquisition fee if data was actually purchased as a result of the GeoStor referral.

High priority data queue: Generally, geospatial data is distributed by GeoStor very quickly. However, large data sets, such as aerial photographs, take much longer because of the complex processing needed. With the current system, there are three data queues and a large image request may take as long as 36-72 hours to be prepared and distributed. With planned improvements to the system, there will be eight queues and the system will be designed so that additional queues can be distributed to separate machines. A pricing structure could be developed by which users could have differential priorities for data access – in a "GeoStor Express" approach. There could be various premium versions of the standard data distribution where the availability of data in a rapid manner would be guaranteed.

Individualized server support: A variant on the "GeoStor Express" would be a system where the specific user has a dedicated server allocated to their needs.

Data storage/distribution: Many agencies will want to use GeoStor to reduce their data distribution costs within their agencies and to meet FOIA and public records requirements. The AGIO has calculated, for example, that the GeoStor automatic processing of requests for various Arkansas Highway & Transportation Department data has saved that agency nearly $100,000 (as opposed to the agency's traditional internal processing for satisfying data requests). The pricing model for this effort would have to be developed but would have two components: the first would be charges associated with preparing the data for GeoStor usage and the second would be a hosting fee based on data set sizes, processing requirements etc.

Direct connection: They now have the technical capability for selected desktop clients to "direct" connect to GeoStor over the Web. This means that the clients can directly read (not just download) data from GeoStor. Tests indicate that for most data there is essentially no latency and the data appears to be local. This ability will be of considerable benefit to various agencies. The connection will reduce the steps and time necessary to access data and would allow an agency to use GeoStor as a data distribution medium between various geographically separated offices. At the same time, the data that is being distributed could be (if desired) exposed to the public. It is possible to apply a variety of

security levels to this process. It would also be possible to set up a business model where each connection could have different costs.

Web map development and Web map hosting: With GeoStor as the back end, a wide suite of Web mapping applications could be created. These applications can be divided into two cost components: (1) the development of the application, and (2) the Web hosting. Development costs vary based on the agency's needs but it would be possible to develop a standardized annual cost structure for Web map hosting. Pricing on current systems suggest that an annual fee for basic services would be in the range of $15,000 to $25,000 for each application.

Here are some examples of possible specialized Web mapping applications:

1. "The Arkansas Outdoorsman Mapping System", supported by Arkansas Game and Fish, would provide highly detailed printer-ready maps of any selected area with aerial photography and other key data.
2. "Property Assessment Mapping System". This would be an easy to use system where you could enter an address and get detailed digital photography, complete with classified soils (for farm property assessment) and other relevant data layers for appraisals and other real estate purposes.
3. "County Septic Tank Suitability Mapping System" is another option. Basically the same interface as above, but would provide an assessment based on the National Resource Conservation Service's digital soils data base.
4. "Wetland Identification Mapping System" would provide developers with the official location of wetlands, saving local governments and state agencies from having to spend time and resources answering data requests for this information.

SECTION 6
CONCLUSIONS AND RECOMMENDATIONS

Approaches to funding state spatial data development and coordination vary significantly. However, one very clear point was the use of multiple funding sources. The majority of states have a primary funding source augmented with several other secondary sources in support of spatial data development and coordination.

The funding sources that were reported demonstrate a reliance on general funds, contract services, grants (primarily federal agency grants), and levied or voluntary agency assessments. Additional sources being used are mission driven funding, such as E-911 legislated dollars, and, in some cases, dedicated funding, such as an increase in conveyance fees at the local level. Only two states rely solely on the General Fund, and one state relies exclusively on agency assessments and contacts to support spatial data development and coordination.

A few states have successfully used capital funding to support their efforts, but a significant amount of education was required for state budget personnel. In these states, the funding has been used to pursue framework base map development consistent with the National Spatial Data Infrastructure (NSDI). These capital fund initiatives have also been used successfully to leverage federal funding assistance. Other participating states pointed out that state statutes prohibit the use of capital funds to support information technology development. It was noted that local government has been more successful at using capital funds to support spatial data initiatives than state government. However, the use of capital funds continues to be argued in many states and may be necessary to fully support spatial data development in the future.

Several states have established dedicated accounts or trust funds that allow funding to be carried across the end of a fiscal year. This approach, like capital funding, ensures much needed funding continuity for major spatial data collection and management initiatives that span several years.

These 12 states and many others have successful programs because they have a maintained, stable, and reliable funding level. This has been the key to the successful development of their spatial data management and GIS coordination programs.

There are four recommended funding approaches for the Oregon navigatOR initiative.

- The primary source should be capital funding, with the $120 million of base data serving as the principal source of collateral, in addition to the technical infrastructure and applications developed to add value and provide data access.
- Federal and private sector investment should be a secondary source of funding, leveraged against the capital funding.
- Assessments against state agencies should be another secondary source of funding, following the existing model.
- Accounting for geospatial data usage and applying a percentage against the ongoing operational costs of the geospatial efforts and repayment of capital funds should be another secondary source of funding.

APPENDIX A
REFERENCES

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APPENDIX B
GEOSPATIAL EXPENDITURES FOR 12 STATES

Annual Statewide GI/GIT Coordination Budget for Arkansas

	Functional Use of Funds				Totals	
Expenditures	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
Lead entity	$77,000	$698,000	$28,000	$0	$803,000	58.91%
Secondary entity (s)	$80,000	$240,000	$0	$240,000	$560,000	41.09%
Dollar Total:	$157,000	$938,000	$28,000	$240,000	**$1,363,000**	**100.00%**
Percentage:	11.52%	68.82%	2.05%	17.61%		

Revenue Sources	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
1. General Appropriations (general revenue)	$0	$0	$0	$0	$0	0.00%
2. IT support from state CIO or equivalent	$77,000	$28,000	$28,000	$0	$133,000	9.76%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$910,000	$0	$0	$910,000	66.76%
7. Contract services	$80,000	$0	$0	$240,000	$320,000	23.48%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$157,000	$938,000	$28,000	$240,000	**$1,363,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

Annual Statewide GI/GIT Coordination Budget for Kansas

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$102,822	$313,880	$0	$0	$416,702	62.50%
Secondary entity (s)	$0	$250,000	$0	$0	$250,000	37.50%
Dollar Total:	$102,822	$563,880	$0	$0	**$666,702**	**100.00%**
Percentage:	15.42%	84.58%	0.00%	0.00%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$0	$0	$0	$0	$0	0.00%
2. IT support from state CIO or equivalent	$102,822	$105,107	$0	$0	$207,929	31.19%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$383,773	$0	$0	$383,773	57.56%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$0	$0	$0	0.00%
7. Contract services	$0	$75,000	$0	$0	$75,000	11.25%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$102,822	$563,880	$0	$0	**$666,702**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.
Dedicated funds are from the Kansas Water Fund, which funding is reducing in time

Annual Statewide GI/GIT Coordination Budget for Kentucky

	Functional Use of Funds				Totals	
Expenditures	**Coordination**	**Data ***	**Assistance**	**Other**	**Dollars**	**Percent**
Lead entity	$208,000	$855,000	$156,000	$51,000	$1,270,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$208,000	$855,000	$156,000	$51,000	**$1,270,000**	**100.00%**
Percentage:	16.38%	67.32%	12.28%	4.02%		

* $750,000 is provided from the general fund for base mapping and support, while the remainder is included in agency assessments

Revenue Sources	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
1. General Appropriations (general revenue)	$0	$750,000	$0	$0	$750,000	59.06%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$208,000	$105,000	$156,000	$51,000	$520,000	40.94%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$0	$0	$0	0.00%
7. Contract services	$0	$0	$0	$0	$0	0.00%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$208,000	$855,000	$156,000	$51,000	**$1,270,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

Annual Statewide GI/GIT Coordination Budget for Maine

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$70,400	$1,104,260	$53,600	$107,740	$1,336,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$70,400	$1,104,260	$53,600	$107,740	**$1,336,000**	**100.00%**
Percentage:	5.27%	$1,336,000	4.01%	8.06%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$0	$0	$0	$0	$0	0.00%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$70,400	$309,730	$53,600	$0	$433,730	32.46%
4. Dedicated funds (identify source - i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (identify type - E911, growth mgmt)	$0	$700,260	$0	$0	$700,260	52.41%
6. Grants (identify)	$0	$80,800	$0	$0	$80,800	6.05%
7. Contract services	$0	$0	$0	$107,740	$107,740	8.06%
8. Fees for data or other services	$0	$13,470	$0	$0	$13,470	1.01%
Total:	$70,400	$1,104,260	$53,600	$107,740	**$1,336,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

Annual Statewide GI/GIT Coordination Budget for Michigan

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$350,000	$800,000	$350,000	$1,500,000	$3,000,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$350,000	$800,000	$350,000	$1,500,000	**$3,000,000**	**100.00%**
Percentage:	11.67%	26.67%	11.67%	50.00%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$0	$0	$0	$0	$0	0.00%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$150,000	$800,000	$150,000	$0	$1,100,000	36.67%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$0	$0	$0	0.00%
7. Contract services	$200,000	$0	$200,000	$1,500,000	$1,900,000	63.33%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$350,000	$800,000	$350,000	$1,500,000	**$3,000,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

Annual Statewide GI/GIT Coordination Budget for Minnesota

	Functional Use of Funds				Totals	
Expenditures	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
Lead entity	$300,000	$450,000	$177,000	$548,000	$1,475,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$300,000	$450,000	$177,000	$548,000	**$1,475,000**	**100.00%**
Percentage:	20.34%	30.51%	12.00%	37.15%		

NOTE 1: The budgeted amounts shown are for the Minnesota Land Management Information Center only, which is the only agency with staff devoted to coordination and assistance to other organizations. LMIC's budget also supports the work of the Minnesota Governor's Council on Geographic Information. Many other agencies, especially the Departments of Transportation, Natural Resources, Health, Agriculture, and the Minnesota Pollution Control Agency, maintain GIS programs to support their functional needs.

NOTE 2: The data function includes data delivery and metadata training.

Revenue Sources	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
1. General Appropriations (general revenue)	$300,000	$450,000	$147,500	$74,000	$971,500	65.86%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$0	$0	$0	0.00%
7. Contract services	$0	$0	$0	$474,000	$474,000	32.14%
8. Fees for data or other services	$0	$0	$29,500	$0	$29,500	2.00%
Total:	$300,000	$450,000	$177,000	$548,000	**$1,475,000**	**100.00%**

NOTE: The budgeted amounts shown are for the Minnesota Land Management Information Center only, which is the only agency with staff devoted to coordination and assistance to other organizations. LMIC's budget also supports the work of the Minnesota Governor's Council on Geographic Information. Many other agencies, especially the Departments of Transportation, Natural Resources, Health, Agriculture, and the Minnesota Pollution Control Agency, maintain GIS programs to support their functional needs.

* Funds in this category include GIT service bureau revenue, if any.

Annual Statewide GI/GIT Coordination Budget for North Carolina

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$606,000	$782,000	$0	$612,000	$2,000,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$606,000	$782,000	$0	$612,000	**$2,000,000**	**100.00%**
Percentage:	30.30%	39.10%	0.00%	30.60%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$0	$0	$0	$0	$0	0.00%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$0	$580,000	$0	$0	$580,000	29.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$120,000	$68,000	$0	$0	$188,000	9.40%
6. Grants	$0	$134,000	$0	$0	$134,000	6.70%
7. Contract services	$486,000	$0	$0	$612,000	$1,098,000	54.90%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$606,000	$782,000	$0	$612,000	**$2,000,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

The Cooperative Floodplain Mapping Program with FEMA provides more than $488,000 in revenue.

Annual Statewide GI/GIT Coordination Budget for Tennessee

	Functional Use of Funds				Totals	
Expenditures	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
Lead entity	$250,000	$4,500,000	$150,000	$100,000	$5,000,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$250,000	$4,500,000	$150,000	$100,000	**$5,000,000**	**100.00%**
Percentage:	5.00%	90.00%	3.00%	2.00%		

Revenue Sources	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
1. General Appropriations (general revenue)	$250,000	$4,500,000	$150,000	$100,000	$5,000,000	100.00%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$0	$0	$0	0.00%
7. Contract services	$0	$0	$0	$0	$0	0.00%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$250,000	$4,500,000	$150,000	$100,000	**$5,000,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

Note: The above percentages represent a "snapshot" of current budgeting percentages. Our $5M General Funds allocation is envisioned as a short term funding solution through completion of the TNBMP and will eventually be sunset out of the general State budget. It is part of the strategic plan that eventually OIR GIS Services will be 100 percent self-funded. As a result, Budget Sources 2-8 will eventually become the source of all OIR GIS Services funding. Within the next budget cycle, Item 8 will become a reality when we begin delivering TNBMP data to local government partners, and they begin fulfilling their financial obligations to OIR GIS Services for the TNBMP.

Annual Statewide GI/GIT Coordination Budget for Texas

	Functional Use of Funds				Totals	
Expenditures	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
Lead entity**	$200,000	$0	$20,000	$0	$220,000	6.43%
Secondary entity (s)	$250,000	$2,650,000	$200,000	$100,000	$3,200,000	93.57%
Dollar Total:	$450,000	$2,650,000	$220,000	$100,000	**$3,420,000**	**100.00%**
Percentage:	13.16%	77.49%	6.43%	2.92%		

Revenue Sources	**Coordination**	**Data**	**Assistance**	**Other ***	**Dollars**	**Percent**
1. General Appropriations (general revenue)	$250,000	$2,500,000	$0	$0	$2,750,000	80.41%
2. IT support from state CIO or equivalent	$200,000	$0	$20,000	$0	$220,000	6.43%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$150,000	$100,000	$0	$250,000	7.31%
7. Contract services	$0	$0	$0	$0	$0	0.00%
8. Fees for data or other services	$0	$0	$100,000	$100,000	$200,000	5.85%
Total:	$450,000	$2,650,000	$220,000	$100,000	**$3,420,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

** Funds for DIR as the lead entity are approximated.

1. Data funds from GR are for FY2001 StratMap Program

Annual Statewide GI/GIT Coordination Budget for Utah

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$100,000	$950,000	$1,200,000	$300,000	$2,550,000	96.23%
Secondary entity (s)	$100,000	$0	$0	$0	$100,000	3.77%
Dollar Total:	$200,000	$950,000	$1,200,000	$300,000	**$2,650,000**	**100.00%**
Percentage:	7.55%	35.85%	45.28%	11.32%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$200,000	$600,000	$500,000	$0	$1,300,000	49.06%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$350,000	$700,000	$0	$1,050,000	39.62%
7. Contract services	$0	$0	$0	$300,000	$300,000	11.32%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$200,000	$950,000	$1,200,000	$300,000	**$2,650,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

Annual Statewide GI/GIT Coordination Budget for Virginia

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$305,000	$245,000	$85,000	$0	$635,000	100.00%
Secondary entity (s)	$0	$0	$0	$0	$0	0.00%
Dollar Total:	$305,000	$245,000	$85,000	$0	**$635,000**	**100.00%**
Percentage:	48.03%	38.58%	13.39%	0.00%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$305,000	$245,000	$85,000	$0	$635,000	100.00%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$0	$0	$0	$0	$0	0.00%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$0	$0	$0	0.00%
7. Contract services	$0	$0	$0	$0	$0	0.00%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$305,000	$245,000	$85,000	$0	**$635,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.

(Virginia's annual budget does not include the one-time $10M funding they received for aerial photography, road centerlines, and surface water data development)

Annual Statewide GI/GIT Coordination Budget for Wisconsin

Expenditures	Functional Use of Funds				Totals	
	Coordination	Data	Assistance	Other *	Dollars	Percent
Lead entity	$240,000	$550,000	$1,950,000	$50,000	$2,790,000	88.85%
Secondary entity (s)	$250,000	$50,000	$50,000	$0	$350,000	11.15%
Dollar Total:	$490,000	$600,000	$2,000,000	$50,000	**$3,140,000**	**100.00%**
Percentage:	15.61%	19.11%	63.69%	1.59%		

Revenue Sources	Coordination	Data	Assistance	Other *	Dollars	Percent
1. General Appropriations (general revenue)	$290,000	$90,000	$70,000	$25,000	$475,000	15.13%
2. IT support from state CIO or equivalent	$0	$0	$0	$0	$0	0.00%
3. Levied or voluntary assessments on agencies	$0	$0	$0	$0	$0	0.00%
4. Dedicated funds (i.e. land transfer fees)	$200,000	$510,000	$1,900,000	$0	$2,610,000	83.12%
5. State mission-driven funding (i.e. E-911)	$0	$0	$0	$0	$0	0.00%
6. Grants	$0	$0	$30,000	$0	$30,000	0.96%
7. Contract services	$0	$0	$0	$25,000	$25,000	0.80%
8. Fees for data or other services	$0	$0	$0	$0	$0	0.00%
Total:	$490,000	$600,000	$2,000,000	$50,000	**$3,140,000**	**100.00%**

* Funds in this category include GIT service bureau revenue, if any.