

Nebraska State  
Records Board  
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John A. Gale  
Chairman

## **APPLICATION FOR STATE RECORDS BOARD GRANT TO IMPROVE ACCESS TO PUBLIC INFORMATION**

The Nebraska State Records Board is sponsoring a grant program for Nebraska government agencies for the development of programs and technology to improve electronic access to state government information and services. Grants will be awarded for one time funding of small projects. No grant request shall exceed \$25,000.00. The grants may be used for the creation or enhancement of electronic access and delivery of government services and information, but not to fund ongoing operations. Nebraska government agencies wishing to apply for these grants may want to first contact Nebraska.gov to establish feasibility and scope of the project.

**Applications received by April 20, 2011 will be considered for funding by the NE State Records Board at their meeting on July 20, 2011.**

**NOTE:** Loss of Funding. The NE State Records Board may be unable to award grant funds, in whole or in part, in the event funding is no longer available.

### **Grant Criteria**

Grant projects requesting funding must meet criteria #1-3.

1. Enhance the delivery of local government agency services and improve the public and business access to those services.
2. Meet the all applicable **Nebraska Information Technology Commission Standards and Guidelines**. State's technology access clause for providing equal access to services for persons with disabilities. A copy of the technology access clause is available at: <http://www.nitc.state.ne.us/standards/index.html> under 2. Accessibility Architecture.
3. If the project or service created or improved pursuant to the grant application involves the licensing, permitting or regulation of businesses, then the project or service must allow integration with the State of Nebraska's Business Portal at: <http://www.nebraska.gov/index.phtml?section=business>, and the One-Stop Online Business Registration System at: <http://www.nebraska.gov/osbr/cgi/domestic.cgi?osbraapplication/init/init/None>.

In addition, the following criteria will be considered when reviewing applications:

- Does the project enhance the delivery of state/local government agency services and improve the public, government and business access to those services?
- Does the project reduce the amount of reliance on human capital, paper, and office overhead?
- Does the project span more than one office or agency?
- What is the size of the customer base for this service and the geographic impact?
- Is there financial and or in kind contribution from other partners?
- Is there documented community support for the project?

**Responses are required to all questions in Parts I, II & III in order to be considered for funding:**

## **Part I. Grant Summary**

- 1. Name of agency applying for grant** Office of the CIO, Dept. of Administrative Services
- 2. Title of project** NebraskaMAP - A Geospatial Data Sharing and Web Services Network - II
- 3. Brief description of project:**

This proposal is for a continuation of initial startup funding of a project to establish a collaborative, intergovernmental Geospatial Data Sharing and Web Services portal for Nebraska, which has been branded as the NebraskaMAP. GIS/geospatial data is data that contains information about the physical location (street address, latitude/longitude, etc.) of data elements. This type of data is used for a wide variety of governmental applications, and can be mapped and/or integrated with other data based on common or proximate locations.

This geospatial data portal will help users to find existing data, and arrange for interactive data access and exchange between state, local, federal agencies, the private sector and the general public. The project will also utilize the latest online GIS (Geographic Information System) technologies to provide a foundation upon which public agencies can build their own agency-specific online public information mapping and geo-analytical applications using data drawn from multiple agencies. The project will not duplicate existing agency online efforts, but will instead provide interactive links to those existing services. Where agencies do not currently provide online data access or online mapping services, the project will provide those agencies with the opportunity to make their data available through the data-sharing network.

- 4. Grant amount requested** \$25,000

**5. If the grant is to create an application, is the application to have a fee associated with its use for accessing public records, or is the application free for use by the public, businesses and other governmental agencies?**

At the present time, there is no fee directly associated with the use of the GIS data and web services network through what is known as the NebraskaMAP.

When the NITC GIS Council asked the Nebraska Office of the CIO (OCIO) to serve as the lead agency in developing this enterprise service, it was aware that state statute directs the OCIO to recover costs for services from sources other than direct appropriations. The OCIO accepted the challenge of working with the GIS Council and member agencies to develop this new enterprise service with the explicit understanding that it could only support this service if the GIS Council and its participating member agencies actively worked with the OCIO to develop a sustainable funding structure to support the service in the future. The serious state budget constraints of the last couple of years have made it very difficult to both complete the initial two-year pilot project funding and to develop a sustainable funding structure despite wide interagency support and participation for this endeavor. In spite of these funding constraints, the project has achieved many of its original objectives and is providing services to the user community.

Ultimately, the OCIO and the GIS Council must develop a method for charging participating agencies a fee to recover the costs of NebraskaMAP. The preferred approach would be an equitable allocation of costs that participating agencies can build into future budget requests. While developing a new funding model in the context of the current budget constraints, the OCIO and the NebraskaMAP Partner agencies are focusing on ways to sustain and slowly build this new enterprise service by keeping the costs low through the use of contributed services from agencies and start up funding from other sources.

**If there is to be a fee, provide any statutory authorization for assessing the fee.**

As noted above, the OCIO is a state agency that by statute is required to recover most of its operating costs through a system of charges for services to other agencies. Therefore, the OCIO will need to develop a method of allocating and recovering most of the costs associated with supporting the NebraskaMAP. However, at the present time, it is not contemplated that such a system will involve a fee for accessing specific public records. The OCIO statutory authorization for charging for information management services is, Section 81-1117 (2) (g).

**6. If the grant application is for a Geographic Information System project, do you and the agency you represent agree to share the data collected in that project, without costs, with other interested government agencies in the State that may have a need for such data?**

The entire thrust of this project is to develop and support an enterprise-level service that will facilitate the sharing of GIS data and online services from multiple participating state, local and federal agencies. As noted above in response to the question #5, the OCIO is by statute charged with recovering its most of its operating costs from sources other than direct appropriations. Consequently if the data sharing services of the NebraskaMAP are to be sustained, the costs of providing the infrastructure necessary to support these services will need to be recovered from agencies supportive of the services and/or from other sources. Current budget constraints have made it very difficult to develop a sustainable funding model. This grant request is in part intended to allow for a little more timeline cushion to develop that funding model while sustaining the

project. It is unlikely that the funding model ultimately developed by the project partners will include charging a fee for accessing specific datasets.

## **Part II. Grant Detail**

### **1. Please describe the project in detail, to include your vision for the project. (You may attach this description).**

This grant request will support the continued development of a Nebraska enterprise-level geospatial web portal, with Internet mapping and data services capabilities, to serve the users of Nebraska related GIS/geospatial data. The project will enable those users to efficiently and reliably find, access, display, and build public information applications utilizing the geospatial data maintained by a wide variety of state, local and federal agencies.

This project is a continuation of a project for which the State Records Board voted to provide a \$25,000 start up grant on August 1, 2007. The actual grant application at that time requested two \$25,000 grants (one per year) or a total of \$50,000 for a two-year pilot project. In approving the initial \$25,000 grant for one year, the Board indicated that it would “revisit the additional \$25,000 request in one year, provided the CIO demonstrates satisfactory development of the project and sustainability of the project.” This current proposal is an effort to “revisit” the original request for a second \$25,000 grant to support the development of this enterprise-level data sharing effort.

In the intervening period since the initial State Records Board \$25,000 grant was authorized, this interagency project has struggled to overcome numerous challenges, but it has continued to develop and progress and has achieved many of the objectives laid out in the original project proposal. A major struggle initially was to hire a technical project lead with the experience and GIS technical skills required to support some relatively new high-end online GIS software. Because of the specialized skills required, limited salary available, and the short two-year job security, this process required three sequential recruitment efforts, which delayed the start of the project by almost 18 months. Then the serious state budget crunch was another major challenge that resulted in reducing some of the anticipated funding for the project, such as a second State Records Board grant and other state agency contributions. However, the project adapted, continued, and the pilot effort has realized most of its initial objectives.

In keeping with the State Records Board stated willingness in August of 2007 to “revisit the additional \$25,000 request in one year, provided the CIO demonstrates satisfactory development of the project and sustainability of the project” some of the project’s accomplishments are highlighted below (see online report for more detail:

[http://www.nitc.nebraska.gov/gisc/wrkgrps/DataExch/NebraskaMAP\\_Report\\_4-11.pdf](http://www.nitc.nebraska.gov/gisc/wrkgrps/DataExch/NebraskaMAP_Report_4-11.pdf)).

- Cooperating agencies jointly developed specifications for an online GIS hardware/software system that utilizes the latest advances in GIS software to support an enterprise-level data sharing and web services network.
- The required hardware/software has been acquired, customized, and installed at the OCIO.
- Protocols for searching for and accessing GIS data that is served online by other agencies have been developed, tested, and demonstrated to be reliable.

- Customized online tools have been developed to assist in the development of metadata to document GIS datasets and several agencies trained in their use. Metadata is the formal documentation of GIS datasets and is required for most online data sharing tools to function.
- A statewide street centerline-address database has been created for Nebraska by integrating data from 93 counties and the Nebraska Department of Roads. This dataset is key to a wide variety of GIS applications.
- An online geocoding service has been developed to support mapping databases elements that have associated street addresses.
- A statewide base map has been developed by integrating several common map features together (roads, streams, political boundaries, etc.) to provide a visual mapping backdrop reference for a wide variety of mapping applications on the NebraskaMAP.
- A GIS data repository has been developed to host and serve GIS datasets of interest for which other agencies are not currently providing online data access.
- The most recent statewide, full-color, 1-meter resolution, aerial imagery has been loaded into the data repository and an online imagery service provided to demonstrate the feasibility of serving these very large imagery dataset from a common enterprise location as opposed to copying these large datasets onto multiple agency systems.

#### **The Challenge of Developing Sustainability During a State Budget Crunch**

While many of the objectives of the two-year pilot project were achieved, during this same period the budgets of most state agencies have been significantly reduced and this has made it very difficult to build a solid funding basis for project sustainability during the pilot project period. One of the pilot project objectives was to research and make recommendations relative to the requirements for on-going support of this collaborative enterprise-level effort. Consistent with this objective, the NebraskaMAP Partnership Committee formally recommended that a minimum of one FTE, with fairly high level GIS technical skills, would be required to provide on-going support for the NebraskaMAP and its related online GIS services.

While several state and local agencies are actively cooperating and supporting this effort, freeing up agency funding to support a new position has been very difficult during a period of significant agency budget adjustments and reductions. With the end of the two-year pilot project funding, the technical lead originally hired to direct the project has moved to another state and is no longer employed supporting the project. In the interim, some of the NebraskaMAP partners agencies are providing temporary technical support to maintain the current infrastructure while the OCIO and NebraskaMAP Partnership Committee explore alternatives for providing the on-going technical support necessary to sustain and continue development of this enterprise-level service. The requested second \$25,000 State Records Board grant would be used to help provide critical bridge funding to help maintain the project's accomplishments while the partner agencies have the opportunity to readjust their funding and potentially shift some existing positions to help support this new enterprise data sharing service.

#### **Proposed Project Focus for Second NebraskaMAP Grant Activities**

In addition to helping to provide a broader timeline window for making funding arrangements to provide on-going technical support for the NebraskaMAP endeavor, the OCIO and NebraskaMAP Partnership Committee would also propose the following additional project objectives during this period:

- NebraskaMAP GIS software annual maintenance
- Arranging for both remote online access and data repository access for property parcel data from cooperating local governments.
- Enhancement of aerial Imagery services
- Enhancement of geocoding services
- Documenting with metadata an additional 30 datasets
- Making an additional 30 datasets accessible via NebraskaMAP
- Providing technical support for system maintenance and enhancement

**2. Please describe who the beneficiary or recipient of this service will be.**

**General Public** will gain enhanced online access to public information from a wide variety of state and local agencies and in many cases the information will be more intuitive and understandable because it will be presented in a graphical mapping format and combined with other related data.

**Public agencies** will gain reliable access to current geospatial data that is maintained by others agencies (state and/or local) and to an online enterprise-level geospatial applications development platform.

**Public agencies** that currently do not have the technical expertise, hardware, software, and/or collaboration agreements with other agencies will gain an enhanced ability to display and analyze geospatial data at a greatly reduced startup cost for the agency,

**Private Sector** will gain enhanced online access to public information in a more intuitive and graphically enabled format more suited for making their business decisions.

**3. What is the projected activity for access or use of the proposed service?**

This project will serve a very wide variety of applications by a wide variety of public and private entities, by providing access to a variety of GIS-related datasets that are owned and maintained by state, local and federal agencies. The proposed services are not specifically focused on one area of application or activity, but are designed to build and maintain the infrastructure to support a data sharing for a wide variety of applications. The project will also develop online data services that can be consumed and used to support a variety of application, such as providing geocoding services and a related map that can be embedded into an agency's website to support a variety of other applications.

**4. Timeline for implementation of the project (a specific completion date (MM/YYYY) must be provided). Grant funds may lapse if not expended prior to completion date.**

An initial two-year pilot project period has recently been completed. Due to the serious state budget reductions that have occurred over the last couple of years, state agencies need more time to make adjustments in agency budgets and potentially to existing positions to build the foundation to support this new enterprise service. A one-year implementation timeline (ending on July 30, 2012) is requested for the additional \$25,000 requested in this grant application. A one-year timeline will allow for grant funds to be used for immediate needs, such as software maintenance fees, and also allow for the funding flexibility to contract for necessary technical assistance during an

interim period where project partners work collaboratively to provide interim technical support and develop a funding and staff positioning model necessary to support the NebraskaMAP data sharing network.

**5. Please specify in detail your, or any other Subdivision(s) contribution to the project (financial, labor, equipment etc.). Provide specific dollar amounts.**

The start-up funding for this collaborative project was also collaborative in nature. In addition to the initial \$25,000 funding provided by the State Records Board grant, funding was also made available from the NITC Government Technology Collaboration Fund, the US Geological Survey, and both cash and in-kind contributions from state agencies. Below is an approximate overview of those contributions, so far, as the final billings and totals are not yet available.

APPROXIMATE OVERALL TWO-YEAR STARTUP FUNDING SO FAR

US Geological Survey Grant	\$39,000	
NITC Collaboration Fund	\$200,000	
State Records Board	\$25,000	indicated an additional \$25,000 possible
Nebr. State Patrol	\$22,000	
Nebr. Emergency Mgmt. Ag	<u>\$22,000</u>	

Total Est. two-year funding \$308,000

\* Does not include the extensive in-kind contributions from state and local agencies in the form of technical support to integrate their data and systems (see below).

STATE AND LOCAL AGENCY PROJECT CONTRIBUTIONS. Twelve state and local agencies signed a Project Charter outlining the concept and vision for this collaborative endeavor, upon which this application is based. The Project Charter included the assumption that participating agencies would contribute in-kind technical services to establish and maintain connections with their IT systems and their data — in addition to being actively engaged in defining the specifics of the enterprise data sharing network and any related web services, protocols, standards, data sharing agreements, etc. While it is expected that the number of participating agencies will grow, this initial twelve is used as a conservative base upon which to estimate agency contributions to the project.

Cash Contribution:

\$22,000 each from Nebr. Emerg. Mgmt. Ag. and State Patrol for statewide roads **\$44,000**

In-Kind Labor - estimate:

Technical: 12 Partner Agencies x 80 hrs x \$35/hr *(includes benefit costs)* \$33,600

Policy: 12 Partner Agencies x 40 hrs x \$35/hr (data sharing agreements, financial) \$16,800

OCIO GIS Coordinator 1<sup>st</sup> yr.-¼ FTE (520 hrs) + 2<sup>nd</sup> yr.- ¼ FTE (520 hrs) x \$35/hr \$36,400

In-kind labor total (conservatively estimated) \$86,800

In-Kind Data: 5 x \$50,000 \$250,000

*(This will be the key contribution from partner agencies. Datasets cost from \$10,000 to over a \$1,000,000 to develop and maintain. Many agencies will make available multiple datasets, for example Sarpy County has provided a list of 20 datasets they would likely make available through this system).*

Total Cash and Conservatively Estimated In-kind Agency Contributions **\$380,800**

**Current Contributions.** The above contributions reflect an estimation of the contributions to this project, as of the time of this grant request. At the present time, the NebraskaMAP project is being maintained by interim technical and policy support efforts from a few agencies participating in the NebraskaMAP Partnership Committee. Those on-going in-kind technical and policy support contribution amounts are estimated below:

<u>Anticipated In-kind Contributions Over Next 12 Months of Project</u>	
OCIO 87 hrs/mth x \$35/hr x 12 mths.	\$36,540
Game and Parks Comm. 20 hrs/mth x \$35/hr x 12 mths.	\$8,400
UNL Libraries 10 hrs./mth x \$35/hr x 12 mths	\$4,200
Partner Agency support 12 agencies x 20 hrs. x 12 mths	<u>\$100,800</u>
<b>Estimated In-kind Support Over the Next 12 Month Project Period</b>	<b>\$149,940</b>

**6. Is other funding available for this project (explain)? Please explain what efforts your agency has made to obtain funding.**

At the present time, there is no other funding available to support this project. As noted above, several of the NebraskaMAP Partners agencies are currently helping to maintain the project by providing interim technical support from some of their technical staff. The OCIO, the NITC GIS Council, and the NebraskaMAP Partners Committee agencies are currently exploring alternative and more sustainable arrangements to support this enterprise effort. The current fluid and constrained state budget situation has made these efforts very difficult. The requested funding would allow the OCIO and the participating NebraskaMAP agencies additional time to develop funding and staffing approaches necessary to sustain this enterprise data sharing effort.

**7. Does the project require additional statutory authority (explain)?**

No

**8. Specify (in detail) what the grant money will be used for. Include a complete cost breakdown of the project. Please attach bids from vendors (if applicable) and describe the relationship, if any, between a vendor and you or your agency.**

NebraskaMAP Software Annual Maintenance Costs (due 9-1-11)	\$14,000
System Hosting and Technical Support Costs	\$11,000
Est. Hosting Costs .....	\$4,000
Est. Technical Support & Development Costs .....	<u>\$7,000</u>
Est. Total System Hosting and Tech Support Costs ....	\$11,000
 State Records Board Grant Request Total	 <u>\$25,000</u>

**9. Why the grant money is needed for the project, and, if applicable, how will the service be sustained once the grant money is expended?**

This project has established and is seeking to maintain and continue development a new collaborative, enterprise-level, data-sharing and public information service for the State of Nebraska, while it seeks to arrange a funding foundation for its long-term sustainability. It is always difficult to get startup funding for new enterprise-level information services, but the unprecedented budget constraints of the last two years have made it uniquely difficult. Because of these budget constraints, some of the anticipated initial two year startup funding was not received; this includes a potential second \$25,000 grant from the State Records Board Grant to as well as funding from some state agencies. In spite of these funding shortfalls, the project has adapted, continued and has realized many of its initial objectives. However, in the face of these serious budget constraints, the OCIO and the NebraskaMAP Partners have yet to arrange for a sustainable funding foundation. The OCIO is requesting the second \$25,000 State Records Board grant that was part of its original proposal, to help provide the OCIO and the NebraskaMAP Partners an extended window in which they might adjust budgets and staffing in ways to arrange for sustainable technical support for this enterprise service.

**10. Should available fund not allow the NSRB to grant the full amount requested, but a reduced amount, would this project still be financially feasible?**

The most critical needs is to cover the annual software maintenance fee of approximately \$14,000. However, the other funding is very much needed to help provide the high end technical support to assist state and local agencies to utilize the NebraskaMAP data sharing network capabilities.

**11. Please describe how this project will enhance the delivery of government agency services and improve the public and/or business access to those services.**

- Enhanced access to geospatial data. There are many datasets maintained by state agencies that are not currently easily available to the public. For example, if you lived in Scottsbluff and wanted to get a copy of a close-up rendering of the current school district boundaries in the county, where would you go to get easy access to this somewhat dynamic information?
- Improved data interface—more intuitive and user-friendly. A picture is worth a thousand words and the ability to provide a mapping/graphical representation of large tabular datasets frequently conveys the impact of that data more readily than any other presentation method.
- Enhanced information by combining data from multiple agencies. Frequently combining data from multiple agencies can generate more useful information. In the Scottsbluff school district boundary example above, those boundaries lines would potentially be more useful if they could be combined with digital property parcels lines maintained by county government.
- Improved consistency of public policy implementation across agencies. It is not uncommon for state, local, or regional public agencies to have overlapping public policy responsibilities in similar arenas (i.e. water policy). It is also not uncommon for these agencies to be working from slightly different datasets or information base. The proposed data-sharing network would enhance the likelihood of them working from the same dataset and thereby enhance the consistency of public policy implementation.
- Increased state / local collaboration. The increased ability of state and local agencies to readily share data directly impacts their ability to collaborate. For example, a state web application that mapped local sites available industrial economic development, combined with information

related to transportation, sewer, and water infrastructure could provide a real boost to economic development opportunities.

- Enhanced online applications with addition of graphical/mapping component. Many current and future online applications/services could be made more informative with the addition of a related mapping service of the information/service provided. For example, an online application providing a listing of nearby doctors who will accept new Medicare patients could be greatly enhanced by providing a mapping of the search results.

## **12. Please describe how this project will improve the efficiency of agency operations.**

There are currently over 100 statewide, regional and local geospatial datasets, and thousands of aerial and satellite images, now available for Nebraska. Collectively, these datasets probably currently total at least 50 Terabytes (Tb) of disk storage (note that 10 Tb = printed collection of the Library of Congress). These data constitute an invaluable resource for the State. There is currently no central access point to find and access this wealth of Nebraska-related data.

It is also important to note that the number of datasets and data volume will increase annually as new data are digitized, more agencies adopt GIS, and existing datasets are updated. As more agencies use GIS, the demand for data access will increase as well. This growth trend is particularly noteworthy as more local governments adopt GIS technology and state agencies desire ready access to these highly accurate local datasets for state-level applications. This trend towards an increasing demand for online GIS capability and data access will also be heightened as more agencies become comfortable with the concept and the reliability of the NebraskaMAP Geospatial Data Sharing Network. This will likely result in more data being made available thru the NebraskaMAP and more agency applications being built based on the availability of that network.

The following project objectives outline some of the ways that this effort will improve the efficiency of state agency operations and facilitate collaboration among state agencies, with other public institutions and with the private sector.

- **Create Data-sharing Network.** Create an online geospatial data-sharing network, which will allow public agencies to share their geospatial data with other public agencies and/or the public and the private sector via live interactive links to their most up-to-date data.
- **Develop Data-sharing Security Protocols.** Develop data access security protocols and mechanisms for the geospatial data-sharing network, which will enable data-sharing agencies to allow either full open public access and/or password-controlled access to specific datasets and/or functionalities.
- **Provide Enterprise Internet Mapping Services.** Implement an enterprise-level online GIS Internet mapping service to enable public agencies to share/publish/display their geospatial data and to enable users to combine, map, analyze, display and download geospatial datasets from multiple agencies.
- **Establish Enterprise Geospatial Data Repository.** Develop an enterprise-level geospatial data repository, which will allow public agencies to maintain up-to-date copies of selected agency geospatial datasets on enterprise data servers and provide online access to those datasets through the data-sharing network and/or the GIS Internet mapping service.

- **Empower Public Agencies.** Strengthen the capability of public agencies to fulfill their missions by providing them with new tools to develop customized, agency-specific online GIS applications through the utilization of the enterprise-level infrastructure, technical support, and access to data from multiple agencies that will be provided by this project.
- **Improve Public Services.** Improve public services by enabling the general public and other agencies to access and display an agency's information via a more user-friendly, intuitive graphical map interface rather than tabular data formats. Make public policy implementation more consistent and coordinated across state and local agencies by making commonly needed, up-to-date data more readily accessible to all.
- **Save Public Resources.** Save public resources by making these public investments for hardware, software, and technical support resources at the enterprise level and thereby minimize the need to duplicate these investments at every public agency. Save resources by reducing the likelihood of duplicate data investments, by making it easier to reliably find and access similar geospatial data that is available at other agencies. Save resources by developing data-sharing protocols at the enterprise level instead of the individual agency-to-agency level, which would then need to be revised or synchronized when other agencies' data-sharing protocols conflict.
- **Facilitate Data-sharing.** Facilitate data-sharing between public agencies at the state, local and federal level by making it easier to find and access data of the specific type of data needed that may be available at another agency. Facilitate data-sharing by requiring data listed on the data-sharing network to be documented with formal metadata (data about the data). Facilitate data-sharing by arranging, in advance, specific data-sharing agreements, which outline the understandings related to sharing of a specific dataset.

**13. Please describe how this project will facilitate collaboration between either local, state, federal and/or other public or private institutions.**

A growing number of state, local and federal agencies invest in collecting, developing and maintaining GIS/geospatial data based on a wide variety of themes. Many of these same agencies currently provide online access to some of their data. Many of these same agencies have the need to access and combine their GIS data with data maintained by other agencies. The NebraskaMAP project will provide an enterprise-level serve to allow agencies to list what data and data services they currently have and to search for and access GIS data from other agencies.

**14. Does the project involve the licensing, permitting or regulation of business? If yes, explain how the project or service will allow integration with the State of Nebraska's Business Portal, located at: <http://www.nebraska.gov/index.phtml?section=business>, and the One-Stop Online Business registration system located at: <https://www.nebraska.gov/osbr/index.cgi>**

No, this project does not involve the licensing, permitting or regulation of business.

**15. Community Support. Please include letters of support to document the public expression that has caused you to implement this application.**

This project was initiated by the NITC GIS Council. The project is directed and supported by an interagency NebraskaMAP Partnership Committee that includes representatives from the following

agencies: Dept. of Natural Resources, Dept. of Roads, Game and Parks Commission, Dept. of Health and Human Services, Nebraska Emergency Management Agency, Office of the CIO, UNL School of Natural Resources, Nebraska State Patrol, UNL Libraries, Lincoln/Lancaster County, Omaha/Douglas County, Sarpy County GIS Coalition, and the US Geological Survey.

The NITC GIS Council has endorsed this grant request and a letter of support will be provided.

### **Part III. Technical Information**

#### **1. Describe the hardware, software, and communications needed for this project and explain why these choices were made.**

**Hardware/Software.** The core software adopted for this project are focused on ESRI ArcGIS-related software packages. Other software products were considered, but ultimately a major factor in the selection of ESRI products was the fact that most of the NebraskaMAP partner agencies use these products and they were therefore most familiar with these productions. This was also true of the Project Manager hired to lead the project implementation. . The one significant exception to this pattern is the Nebraska Department of Roads that primarily uses Intergraph and GeoMedia GIS software. However, NDOR also uses ESRI products and feels comfortable that data-sharing protocols can be arranged.

The hardware is based on the virtual server environment currently existing at the OCIO. This choice was based on maintaining low costs and the flexibility to start small and grow with system use and development.

Major software components include:

- ArcGIS Desktop 10
- ArcGIS Server 10
- ArcGIS Server Data Interoperability Extension
- ArcGIS Server Geoportal Extension
- ArcGIS Server Image Extension
- Http Server – Internet Information Services (IIS)
- Servlet Engine – Apache Tomcat
- Java 2 Platform – Java JDK 6
- Database – Microsoft SQL Server
- User Authentication – LDAP v.3-enabled directory server
- Operating System – Microsoft Windows XP, Windows Server

**Communications.** The data communications network is based on Internet protocols and rely on the existing broadband network to provide connectivity between state and local agencies and existing private Internet connectivity to provide service to the general public and private sector.

#### **2. Address any technical issues with the proposed technology including:**

- **Conformity with general accepted industry standards. Projects which interface with other state systems (such as distance learning systems) must meet NITC technical standards and guidelines. (The NITC standards and guidelines are located at: <http://www.nitc.state.ne.us/standards/>).**
- **Compatibility with existing institutional and/or statewide infrastructure.**

- **Reliability, security and scalability (future needs for growth or adaptation).**

**Standards.** The adoption of ESRI ArcGIS Server as a foundation software means from a practical point of view the system will be consistent with generally accepted industry standards, since ESRI is the number one GIS software vendor. However, it is also the intention of the project Working Group to develop the system such that data and mapping services will also be available according to Open GIS standards and therefore be vendor neutral. One of the major NITC technical standards that this project will impact is the requirement that state-funded geospatial data be documented with formal metadata describing the data. Data will not be made available on the Data Sharing Network unless it is documented consistent with the NITC Metadata Standard.

**Compatibility with Existing Infrastructure.** This project will be designed to build upon and be compatible with existing infrastructure wherever practical. Existing online data and mapping services provided by public agencies will be linked through the portal. The adoption of ArcGIS Server and SQL Server software will enhance system compatibility as they are widely used. The data communication network will be based on existing services and protocols. The portal is designed to work and communicate with national geospatial portals such as The National Map, Geospatial One-Stop, and the ESRI Geography Network. Efforts to comply with Open GIS standards will also increase the level of compatibility with systems that maybe somewhat less in the mainstream.

**Reliability and Scalability.** The adoption of ESRI ArcGIS Server and SQL Server software will provide this system with a considerable level of reliability, security, and scalability as these are leading OTS software designed with these considerations in mind. The project is designed around the Office of the CIO SQL Server capability in part because the Working Group felt that the OCIO would take on much of the burden of providing the reliability, security, and scalability on the DMS side.

**Security.** Tools to provide data security are available in both the ArcGIS Server and the SQL Server software and efforts will be made to build upon existing security protocols built into the state's network.

- 3. Describe how the project will comply with the State's Technology Access Clause:** meet all applicable Nebraska Information Technology Commission Standards and Guidelines. A copy of the Standards are available at: <http://www.nitc.state.ne.us/standards/index.html>. **under 2. Accessibility Architecture.**

The information technology involved in this system is one that is primarily based on map and map-related information. There is currently no readily available means or product to make this map-related information accessible and therefore we believe this project falls under section 5 (a) and (b) of the State's Technology Access Clause.

"5. These provisions do not prohibit the purchase or use of an information technology product that does not meet these standards provided that:

- a. there is no available means by which the product can be made accessible and there is no alternate product that is or can be made accessible; or
- b. the information manipulated or presented by the product is inherently unalterable in nature (i.e., its meaning cannot be preserved if it is conveyed in an alternative manner)."



I, the Authorized Representative of Nebraska Office of the Chief Information Officer, certify to the Nebraska State Records Board that the applicant/agency has the necessary authority to undertake the proposed project, will comply with Affirmative Action requirements and provide a drug free workplace environment.

Signed this 19 day of April, 2011

Brenda L. Decker

**Brenda L. Decker**  
**Nebraska Chief Information Officer**

**Please return completed application to:**

**Executive Director**  
**Nebraska State Records Board**  
**440 South 8<sup>th</sup> Street, Suite 210**  
**Lincoln, NE 68508-2294**  
**(402) 471-2745**  
**(402) 471-2406 (fax)**

**Board Staff use only, do not fill in below this line**

Grant Request Number: _____	Date Request Received: _____
Grant Amt Requested: _____	Grant Request Score: _____
Technical Comm. Recommendation: _____	
Grant Disposition: _____	Date of Mtg Minutes: _____

(Last updated 02/07/2011)

## **Supplemental Questionnaire for State Funded Entities on Land Record Information and Mapping-Related Grant Applications**

**Numbers refer to specific NITC Land Record Information and Mapping Standards**

*For a complete listing of these standards and guidelines please see:*

[http://nitc.nebraska.gov/gisc/docs/LRMS\\_20060127.pdf](http://nitc.nebraska.gov/gisc/docs/LRMS_20060127.pdf)

### **Supplemental Questionnaire for OCIO Grant Application for the NebraskaMAP Project**

- 1.1 Datum.** Local government multipurpose GIS/LIS (Geographic Information System/Land Information System) and their associated geospatial data layers should be based on the North American Datum (NAD) 83 and the North American Vertical Datum (NAVD) 88. Any existing systems developed based on other datums should consider conversion to these datum.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

With the possibility of a few special exceptions, the data available through the NebraskaMAP site will not be data developed by the NebraskaMAP. The NebraskaMAP is primarily a data sharing infrastructure and network which allows users to access data developed and maintained by other users.

- 1.2 Projection.** The Nebraska Plane Coordinate System, NAD 83, should be used as the primary map projection system for the recording of positions in local land-data systems in Nebraska. Selection of any other projection should be done reluctantly and only after most careful consideration. The plane coordinate values for a point on the earth's surface may be expressed in either meters or feet.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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- 1.3 Geodetic Control.** GIS/LIS systems developed with the goal of providing a multipurpose cadastre for local government use should be referenced to a local geodetic reference framework that is properly connected to the National Spatial Reference System (NSRS).

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#### **1.4 Public Land Survey System Control.**

**1.4.1 PLSS Geodetic Framework.** For all land in Nebraska that is subdivided according to the Public Land Survey System (PLSS), the geodetic reference framework for the cadastre should be the section corners of the PLSS for each section.

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**1.4.2 Locate, Monument, and GPS Primary Corners.** At a minimum, local government entities developing a geospatial land information system should initially invest in a precision Global Positioning System (GPS) survey to locate, re-monument as necessary, and obtain the geographic coordinates of the major boundary defining corners that legally define the boundaries of their county jurisdiction(s). These precision GPS survey coordinates for the boundary defining corners should be collected and integrated as framework data into the land information system. This effort should be coordinated with officials from the adjacent county(ies) to ensure agreement on the location of the shared corners.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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**1.5 PLSS Base Map.** Local governments considering the development of a multipurpose GIS, should consult with the Nebraska State Surveyor's Office to locate and access the best available data on the Public Land Survey System (PLSS) for their geographic area. To assist the State Surveyors Office in maintaining a repository of the best available PLSS data, local governments participating in the Nebraska Land Information System Program should share any enhanced PLSS data, for their geographic area, with the State Surveyors Office so that it might be integrated into the PLSS repository database.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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- 1.6 Ortho-base (Aerial Layer) or Base Maps.** Both a Public Land Survey System base map and an orthophoto (surface features) base map should be used to provide the geospatial reference framework upon which a local government multipurpose land information system is developed. Both base maps should be tied to the National Spatial Reference System and have a level of spatial accuracy appropriate to the range of applications planned for a given area.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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**1.7 Map Scale and Spatial Accuracy.**

- 1.7.1 Minimum Horizontal Accuracy Standard.** Public entities developing a GIS/LIS program should conduct data collection and development in a manner to achieve at least the minimum level of horizontal spatial accuracy consistent with the National Horizontal Map Accuracy Standards corresponding to a 1:12,000 (1"= 1,000') scale map (90% of the "well defined" horizontal locations must be within  $\pm 33.3$  ft. of their real world location).

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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- 1.8 Legal Lot and Parcel Layers.** Two graphic data layers are necessary to provide the foundation for a wide variety of local government GIS/LIS applications that involve land subdivision and/or ownership.

a). The legal lot layer consisting of legal land subdivisions. These are aliquot portions of the PLSS, filed subdivision plats and irregular tracts defined by filed deeds.

b). The parcel layer that defines ownership tracts of land. These tracts may group multiple legal lots into one taxable account and that typically represents the boundaries of a landowner's property. These data layers include locational coordinates for points representing property corners, lines between property

corners representing property boundaries and closed polygons representing the property area.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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### **1.9 Parcel Identifiers.**

a). Each county/region should adopt a system of unique, permanent feature identifiers (PID) that provide the link between each graphic land ownership parcel polygon and the attribute information (ownership, size, situs address, value, etc.) related to that specific land ownership property parcel.

b). A county/region PID system must be designed in a manner such that a unique, statewide PID can be defined and maintained for each property parcel by using the county FIPS code (Federal Information Processing Standards Publications) as a prefix to the county/region's PID system.

c). To maintain this unique one-to-one association between a specific property parcel and its related attribution information, new PIDs should be assigned whenever a property parcel is altered by either splitting it into two or more parcels or by combining two or more parcels to form a new parcel. The previous PIDs should not be used for these new modified parcels, but the historical PID associations should be maintained through a parent/child PID reference table.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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**1.10 Spatial Data Format.** A broad range of state and regional applications require property parcel information. Many of these applications require the combining of data across jurisdictional boundaries. To facilitate these applications, the property parcel spatial (graphic) data should be either maintained in a manner that allows it to be readily integrated in a common geographic data format (i.e., shapefile) or be capable of being exported into a common geographic data format (i.e., shapefile), while including the parcel identifiers.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

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is primarily a data sharing infrastructure and network which allows users to access data developed and maintained by other users.

**Data Sharing-Data Integration.** A major focus of the State Records Board grant program is enhancing access to public records. Not only the general public, but also other public agencies benefit from facilitating access to public records. As noted in the NITC standard above there are numerous applications for which substantial benefits can be derived by integrating data across jurisdictional boundaries. Please describe whether your agency would be willing to share periodic updates of GIS-enabled property parcel data, such that other agencies might integrate that data into statewide or regional datasets to provide a resource for public agencies and the general public and any restrictions that you anticipate might apply. *(Note: this is not a current NITC standard, but is an interest of the State Records Board)*

One of the major goals of the NebraskaMAP will be to work with local governments to facilitate the sharing of these local government records and to the extent that it is feasible and practical to integrate this data across county jurisdictional lines so that it is more useable for many users.

**1.11 Metadata.** All geospatial land record databases, and their associated attribute databases should be documented with Federal Geographic Data Committee (FGDC) compliant metadata outlining how the data was derived, attribute field definitions and values, map projections, appropriate map scale, contact information, access and use restrictions, etc.

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

The NebraskaMAP software relies upon the existence of metadata to document and catalogue GIS datasets. Because of that characteristic of the software, the NebraskaMAP project will work closely with state and local agencies to document their GIS datasets with compliant metadata. Customized tools have been built into the NebraskaMAP website to assist agencies in documenting their data with metadata.

**1.12 Attribute Data.** To provide the foundation necessary for a wide variety of local government applications, non-graphic, attribute data should be organized within the GIS/LIS, which describes individual property parcels relative to their basic parcel characteristics, tenure, value, history, buildings and units within the parcel, and tax status. In most cases, much of this attribute data will already exist in separate databases within a variety of local agencies and should be tied to the graphic property parcel via the unique PID. To meet a range of state and regional applications that require property parcel information, the following types of property parcel data should be maintained (for every property parcel?) and (be) available in a manner that allows it to be harvested, translated, and integrated into a statewide property parcel attribute dataset.

PID#..... Parcel identifier (county FIPS code plus local government PID)  
Situs Address..... Address of parcel (may be multiple fields)  
Owner Address..... Address of property owner (may be multiple fields)  
Township ..... Township #

Section..... Section #  
 Range ..... Range #  
 Range Direction..... East or West  
 Legal Description ..... Narrative legal description of parcel  
 Assessed Value ..... Total assessed value of property (land and improvements)  
 Land Value..... Assessed value of land  
 Area (Deeded) ..... Area of parcel according to the deed  
 Property Class ..... (Res, Ag, Com, Rec., Ind.)  
 Property Sub-class ..... i.e., Ag (Dryland, Irrigated, Grassland/Pasture, Waste)  
 Ownership type..... Federal, State, County, Private, Tribal, Exempt, Other and Unknown  
 Tax District..... County ID plus Tax Dist. #  
 School District ..... State number definition  
 Landuse ..... Actual landuse with NPAT defined general categories  
 Property Parcel Type... NPAT defined categories  
 Status ..... (Vacant, Improved or Improved only) (NPAT defined)  
 Location ..... (Urban, Sub-urban, Rural)(NPAT defined)  
 City Size..... 1<sup>st</sup> class, 2<sup>nd</sup> class, primary, metro, or village  
 Source Document..... Sales/transfer reference or document (book & page)  
 Recording Date..... Most recent sales/transfer date  
 Sales Value..... Most recent sales value

**Please describe how you would comply with this standard if you are awarded a Nebraska State Records Board grant.**

With the possibility of a few special exceptions, the data available through the NebraskaMAP site will not be data developed by the NebraskaMAP. To the extent that the NebraskaMAP site has direct responsibility for creating land records data, it will follow the Land Record Information and Mapping Standards. The NebraskaMAP is primarily a data sharing infrastructure and network which allows users to access data developed and maintained by other users.

**Collaboration.** In most instances, the development of a local government GIS system and the related geospatial data involves a fairly costly initial upfront investment. These costs are frequently offset by the benefits gained through coordination and collaboration that an integrated GIS can bring to local government and related public entities. For example, with property parcel data and maps the County Register of Deeds, the County Surveyor, and the County Assessor all frequently maintain and make changes to aspects of this data and the data is also commonly used by local public safety agencies, local emergency responders, local transportation agencies and state agencies such as the Dept. of Revenue, Dept. of Roads, and Game and Parks Commission. Please describe the level and nature of any multi-agency/department involvement in the planning and proposed management of your proposed GIS system.

The NebraskaMAP Project is collaborative from its origin and throughout its implementation. There is a collaborative intergovernmental committee that directs the NebraskaMAP development and implementation. The primary thrust of the NebraskaMAP project is the development of web-based tools to facilitate the sharing of GIS datasets and online GIS data services.