Technical Panel
of the
Nebraska Information Technology Commission
Tuesday, April 13, 2004 - 9:00 a.m.
Varner Hall - Board Room
38th and Holdrege, Lincoln, Nebraska

AGENDA

Meeting Documents:
Click the links in the agenda
or click here for all documents (X MB)

1. Roll Call and Meeting Notice

2. Public Comment

3. Approval of Minutes* - February 10, 2004

4. Technical Architecture

- Set for Public Comment*

Groupware Architecture	E-mail Standard for State Government Agencies

5. Project Reviews

    STATE RECORDS BOARD GRANT APPLICATIONS* (Sample motion)
    - Business Forms Search Upgrade
    - Interactive Licensing - Phase IV
    - Public Meeting Calendar Upgrade
    - Nebraska Geospatial Data Center Clearinghouse

6. Regular Informational Items and Work Group Updates (as needed)

- Accessibility Architecture Work Group / Accessibility of Information Technology Work Group
- CAP
- Security Architecture Work Group
- Statewide Synchronous Video Network Work Group

7. Other Business

8. Next Meeting Date

    Tuesday, May 11, 2004

9. Adjourn

* Denotes Action Item

NITC and Technical Panel Websites: http://www.nitc.state.ne.us/
Meeting notice posted to the NITC Website: 4 MAR 2004
Meeting notice posted to the Nebraska Public Meeting Calendar: 4 MAR 2004
Agenda posted to the NITC Website: 9 APR 2004

Tuesday, February 10, 2004, 9:00 a.m.
University of Nebraska-Varner Hall
3835 Holdrege Street, Lincoln, Nebraska
PROPOSED MINUTES

MEMBERS PRESENT:

Michael Beach, Nebraska Educational Telecommunications Commission
Brenda Decker, Department of Administrative Services, State of Nebraska
Christy Horn, University of Nebraska, Compliance Officer
Kirk Langer, Lincoln Public Schools, Technology Director
Steve Schafer, Chief Information Officer, State of Nebraska
Walter Weir, Chief Information Officer, University of Nebraska

ALTERNATES PRESENT:

Steve Henderson, Department of Administrative Services, State of Nebraska
Rick Golden, University of Nebraska
Rick Becker, Office of the Chief Information Officer, State of Nebraska

CALL TO ORDER, ROLL CALL, AND MEETING NOTICE

Walter Weir called the meeting to order at 9:05 a.m. A quorum was present at the time of roll call. The meeting notice was posted to the Nebraska Public Meeting Calendar and the NITC web sites on January 14, 2004. The meeting agenda was posted to the NITC web site on February 6, 2004.

PUBLIC COMMENT

There was no public comment.

APPROVAL OF JANUARY 13, 2004 MINUTES

Mr. Henderson moved to approve the January 13, 2003 minutes. Mr. Beach seconded the motion. Roll call vote: Beach-Yes, Decker-Abstained, Horn-Yes, Langer-Yes, Schafer-Abstained, and Weir-Yes. Results: 4-Yes, 2-Abstained, 0-No. The motion was carried by majority vote.

TECHNICAL ARCHITECTURE – VIDEO STANDARDS WORK GROUP MEMBERSHIP
Mike Beach, Video Standards Work Group Chair

Per the recommendation of Technical Panel, the video standards are scheduled for a review in January 2004. Mr. Beach presented the proposed slate of members for the Video Standards Work Group. He noted that some of the members served on first review. A telehealth representative is still needed and suggestions and/or recommendations were asked of the panel.

Mr. Beach moved to approve the membership slate. Mr. Schafer seconded the motion. Roll call vote: Decker-Yes, Beach-Yes, Weir-Yes, Schafer-Yes, Langer-Yes, and Horn-Yes. Results: 6-Yes, 0-No. The motion was carried by majority vote.

VOICE OVER IP (VoIP)
Brenda Decker

The draft document was presented at the last meeting for informational purposes. Mr. Weir distributed a document entitled "Technology Forecast" developed by the Janus Research Group, Inc. projecting the future of VoIP.

UPDATE ON DISTANCE EDUCTION NETWORK COMPLETION (DENC) GRANT
Wayne Fisher

Mr. Fisher reported that the project is almost complete and is on time and under budget. There are four schools left that need to be completed but the rest are all functioning. There was one correction to the report – the Central Consortium expiration date should be 2009. There were approximately 10 school districts that did not want to participate. Mr. Fisher entertained questions.

AGENCY IT PLANS – DRAFT REVISED FORM

Steve Schafer

The State Government Council has reviewed the document and made no major changes. The panel recommended the following:

- For Section 3.A.1 – include Mozilla in the list of browsers.
- For Section 3.D - provide definition of disaster recovery and business continuity.

The document will be presented to the NITC at the March meeting. It is anticipated that I.T. Plans will be due in August.

NITC PROPOSED CHANGES TO POLICIES AND PRACTICES

Every two years, the NITC must make funding recommendations on technology investments. The NITC would like a more proactive role in this process. The new process allows the NITC and councils to concentrate their efforts on the identified strategic initiatives.

INFORMATIONAL ITEMS AND WORK GROUP UPDATES (as needed)

Accessibility Architecture Work Group, Christy Horn. Ms. Horn has been researching what other institutions have implemented. A work group charter was presented to the panel. Recommendations for persons to serve on the work group were requested.

Mr. Schafer moved to approve the Accessibility of Information Technology Work Group charter. Mr. Langer seconded the motion. Roll call vote: Langer-Yes, Schafer-Yes, Weir-Yes, Beach-Yes, Decker-Yes, and Horn-Yes. Results: 6-Yes, 0-No. The motion was carried by unanimous vote.

CAP, Brenda Decker. Ms Decker provided an update on CAP activites.

Security Architecture Work Group, Steve Schafer. A meeting was held yesterday, February 9th, to focus on network security and an update from IMS and DOC regarding firewalls was provided. OmniTech will repeat a vulnerability scan sometime in March. There was a discussion regarding next steps for standards and technical training. The work group will meet again in 2 months.

Statewide Synchronous Video Network Work Group, Mike Beach. Still moving forward in the 3 areas: statewide scheduling, governance, and funding sources. The work group is meeting today to discuss funding opportunities and strategy.

NIS, Tom Conroy. Mr. Conroy provided an update on the project. Mr. Conroy entertained questions.

OTHER BUSINESS:

Walter Weir. The Nebraska Department of Education is continuing with the development of a Statewide Student Record System. Discussions have focused on confidentiality over the web and the replacement of Social Security Numbers with a state assigned number. He will send members the URL for member's input and suggestions.

Rick Golden. Provided a report on the Statewide Network Conference that he and Dr. Jim Emal attended.

Gene Hand. The FCC is meeting on Thursday, February 13th. Some items to be discussed include: VoIP and broadband over power line interference issue.

Steve Schafer. The RFP for a Business Continuity Consultant has been released. The SGC is moving toward the development of an enterprise architecture.

NEXT MEETING DATE, TIME AND MEETING ADJOURNMENT

The next meeting of the NITC Technical Panel will be held on March 9th, 9:00 a.m. at Varner Hall, 3835 Holdrege, in Lincoln, Nebraska.

With no further business to discuss, Mr. Weir adjourned the meeting at 11:20 a.m.

Minutes were taken by Lori Lopez Urdiales and reviewed by Rick Becker of the Office of the CIO/NITC.

NEBRASKA INFORMATION TECHNOLOGY COMMISSION

STANDARDS AND GUIDELINES

E-Mail Standard for State Government Agencies

Category	**Groupware Architecture**
Title	**E-Mail Standard for State Government Agencies**
Number	

Applicability	☑ **State Government Agencies** 　☐ All...**Not Applicable** 　☑ Excluding: Higher Education; 　and agencies receiving an 　exemption pursuant to Section 4.2............ **Standard** ☐ **State Funded Entities -** All entities 　receiving state funding for matters 　covered by this document.................**Not Applicable** ☐ **Other:** _____ ....**Not Applicable** **Definitions:** **Standard** - Adherence is required. Certain exceptions and conditions 　may appear in this document, all other deviations from the 　standard require prior approval of the Nebraska Information 　Technology Commission after review by the Technical Panel 　(see Section 4.2). **Guideline** - Adherence is voluntary.

Status	☐ Adopted　　☑ Draft　　☐ Other:_____
Dates	Date: (Draft) April 7, 2004 Date Adopted by NITC: Other:

1.0   Standard

1.1   E-mail Standard for State Government Agencies

The state will standardize on a unified e-mail system which provides agencies with the option of choosing a business-class e-mail product or a low-cost, basic e-mail product. These products are:

Unified E-mail System	Product
Business-Class E-mail	Lotus Notes

Basic E-mail	IBM/Lotus Workplace Messaging
	• Mail server hosted by IMServices
	• Supported user-interfaces to the Basic E-mail system are:
	  o Web browser
	  o Microsoft Outlook
	  o Microsoft Outlook Express
	[A list of supported versions of these products is available at: http://www.nitc.state.ne.us/standards/]

1.2   E-mail Infrastructure

The e-mail infrastructure needs to provide for secure transmission of e-mail within state government and provide for a unified e-mail directory.

1.3   Timeline - Transition from the 1997 Standard

Date	Activity
June 3, 2004	NITC approval of this standard
June 2004	Pilot testing of Basic E-mail product
July 1, 2004	Begin transition to Unified E-mail System
January 1, 2006	Finish migration to Unified E-mail System for all agencies, excluding Higher Education and those agencies receiving an exemption under Section 4.2.

2.0   Purpose and Objectives

In 1997, the Information Resources Cabinet -- the predecessor of the Nebraska Information Technology Commission ("NITC") -- adopted the first electronic mail standard for Nebraska state government agencies. Section 1 of the standard states as follows:

"The state will standardize on four e-mail products from which agencies must select in order to take advantage of universal message switching and a central e-mail address directory. These products are:
   • Internet Mail Products based on SMTP/MIME and IMAP4
   • Lotus Notes/cc:Mail

- Microsoft Exchange
- OfficeVision (OV/VM and OV/400)"

That standard has remained unchanged since its adoption. Both the NITC and the State Government Council determined that this standard should be reviewed and recommendations made for possible revisions. A work group was formed to perform this review.

The work group, based on guidance from the State Government Council, established the following goals for this revised e-mail standard:

1. Provide for secure e-mail communications within state government.
2. Provide for regular, server-based backup of all state government e-mail, and assure that business recovery is possible.
3. Allow for gateway-based blocking of viruses and Spam.
4. Provide a unified e-mail directory for all state employees that provides information about the security of sending intra-agency e-mail communications.
5. Revise the standard to only include vendor-supported software.
6. Provide a low cost e-mail alternative.

This standard was developed to meet these goals. For more information, see the E-mail Work Group Report and Recommendations - February 2004. A link to the report is provided below in Section 6.

3.0 Definitions

None

4.0 Applicability

4.1 State Government Agencies
This standard applies to all state government agencies, except Higher Education and those agencies receiving an exemption under Section 4.2.

4.2 Exemption
Exemptions may be granted by the NITC upon request by an agency.

4.2.1 Exemption Process
Any agency may request an exemption from this standard by submitting a "Request for Exemption" to the NITC. Requests should state the reason for the exemption. Reasons for an exemption include, but are not limited to: statutory exclusion; federal government requirements; or financial hardship. Requests may be submitted to the Office of the CIO via e-mail (info@cio.state.ne.us) or letter (Office of the CIO, 521 S 14th Street, Suite 200, Lincoln, NE 68508). Requests will be considered by the NITC after review by the Technical Panel.

5.0   Responsibility

5.1 IMServices
IMServices will incorporate the needed hardware and software into their infrastructure to provide the following:
- Basic E-mail (support for Web mail via browser only, see Other)
- Directory for e-mail accounts
- Business/disaster recovery

5.2 Other
Agencies/entities utilizing an application, other than a supported Web browser, to access Basic E-mail accounts are responsible for installation and support of the application.

6.0   Related Documents

6.1 E-mail Work Group Report and Recommendations - February 2004
[link]

Technical Panel
of the
Nebraska Information Technology Commission

Project Review

Type of Review: State Records Board Grant Application

Project Title: Business Portal Phase II

Agency: Chief Information Officer

Resolution passed by the Technical Panel on January 8, 2002:

The Technical Panel, having reviewed the grant application entitled "Business Portal Phase II," finds that:

- The project is technically feasible.
- The proposed technology is appropriate for the project.
- The technical elements can be accomplished within the proposed time frame and budget.

NSRB Grant Application
Business Forms Search Upgrade

1. Name of agency applying for grant

Chief Information Officer

2. Title or brief description of the project

Business Forms Search Upgrade

3. Grant request amount

$16,500

4. Will there be a fee for accessing records associated with this project?

There will be no direct fee for any services available through the Business Forms Search feature. Some services that are linked to the portal may have fees that have been separately approved by the board.

5. If yes, provide any statutory reference or authorization for the fee

N/A

6. Please describe the project in detail

Nebrask@ Online for Business, also known as the Business Portal, was initially launched in 2001. The Business Portal is designed as a one-stop-shop for information and services used by business in their interactions with government agencies. The most significant value-added feature of the portal is an inventory of forms used by various agencies in their interaction with business. The inventory, which is called the "Business Forms Search" allows users to search the forms inventory by agency, key word or business type and, if desired, store the information in an online portfolio. Maintenance of information in the inventory is handled by staff members from various agencies.

Experience with the system over the past three years has disclosed several shortcomings. Currently, information exists on more than 1,200 forms. However, information on some forms is not complete. Different methods are used to input form titles, with the result being several dozen that begin with "Nebraska" or "Application for." This makes search and retrieval less than optimal. The industry search function has not been very useful, because the underlying standard industry codes do not generate good results.

Another problem is linking to online systems that require authentication as the first step. The forms database needs a feature that helps the user understand the authentication process before being asked for a password, PIN, or other means of authentication.

The basic system for the inventory database remains viable, but enhancements are needed to improve the user interface (through which business access forms information) and the administrative tools (used by agencies and NOL staff to maintain information in the inventory).

These enhancements will provide a foundation for use of the system for a wider range of forms, including those used by citizens in general. This would allow the Citizen Portal and possibly other subportals to include a forms search capability targeted to its users.

Proposed enhancements include:
- Review and revise the type of information that is collected for the inventory to add new requirements (e.g., authentication) and eliminate sections such as the industry code that have not been as useful as anticipated;
- Develop "naming conventions" for certain types of information such as form titles. This will provide guidance for agencies to enter form titles in a consistent manner, and will result in more consistency and ease of use for businesses;
- Review and upgrade of user interfaces for both external users (businesses) and internal users (agency staff);
- Review and upgrade the overall portal architecture to improve navigation and expand sources of information;

7. Please describe whom the beneficiary or recipient of this service will be and projected activity for access or use of the proposed service

Beneficiaries include businesses of all types who must complete forms to transact various activities with government agencies. Businesses will also benefit by having one-stop access to a wide range of information from federal and state agencies, educational institutions, and economic development organizations.

8. Estimated timeline for completion

Work is expected to begin in May 2004, starting with development of a Project Charter, soliciting input from agencies on possible enhancements, and development of system specifications. Development work is expected to begin in mid-June, with completion, testing and launch of the enhanced system anticipated by early September. The time required for development and testing is dependent upon the requirements identified in early stages of the project, so the launch date is an estimate and may be revised once system specifications are developed.

9. Agency contribution to the project (labor, equipment, etc.)

All design and development work will be performed by Nebrask@ Online, with review by the CIO, and if appropriate, other agency personnel. Once upgrades to the forms database and administrative screens are completed, agency staff will need to review and update their information in the system.

10. A. Has this project ever been submitted as a budget request (explain)?
No.

10. B. Does the project require additional statutory authority (explain)?
No.

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

Initial development of Nebrask@ Online for Business was supported by a prior NSRB grant. Once launched, maintenance of the system has been subsidized by general network revenue. This project constitutes a significant review and upgrade of the forms inventory, and an additional grant for the enhancements is warranted. Long-term, the NSRB may wish to review how ongoing maintenance and periodic upgrade of the system is supported.

11. Please describe how this project will enhance the delivery of state agency services or access to those services.

The proposed enhancements are intended to increase the value of Nebrask@ Online for Business in providing one-stop access to a wide range of agency services. The utility of the forms inventory should be enhanced, and the upgraded portal architecture will improve ease of use and access to an even broader range of information and services.

12. Please describe how this project will 1) improve the efficiency of agency operations; 2) facilitate collaboration among state agencies; 3) facilitate collaboration between state agencies and other public institutions; 4) support public/private partnerships in the delivery of public services   (you may respond to any or all of these criteria in your answer)

Improving the effectiveness and utility of forms information and one-stop access to business resources can reduce the number of phone calls and written requests for information received by agencies, allowing time to be redirected toward more productive activities. Integrating information in a single location promotes collaboration among agencies and other public institutions. The work being done by Nebrask@ Online continues the long-standing public/private partnership in the delivery of public services.

13. Contact person information

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521 South 14th Street, Suite 200
Lincoln, NE 68508-2707
(402) 471-4385
slschafe@notes.state.ne.us

NSRB Grant Application
Interactive Licensing – Phase IV

1. **Name of agency applying for grant**

Chief Information Officer

2. **Title or brief description of the project**

Interactive Licensing Phase IV

3. **Grant request amount**

$25,000

4. **Will there be a fee for accessing records associated with this project?**

Licenses, permits and registrations typically have an associated statutory fee, regardless of whether they are acquired or renewed online or through traditional paper processes. It is anticipated that projects undertaken through this grant will include some type of ongoing payment to Nebrask@ Online from existing fee proceeds. Any such arrangements will be negotiated on a case-by-case basis and presented to the board for approval.

5. **If yes, provide any statutory reference or authorization for the fee**

Statutory references for specific fee-based payments to Nebrask@ Online will be presented on a case-by-case basis for board approval.

6. **Please describe the project in detail**

Previous grants have supported efforts by Nebrask@ Online with several agencies to bring more than 30 license, permit and registration processes online, including credit card payment of associated fees. One goal of this effort has been to develop standard approaches and modules that can speed development of subsequent online licensing processes. The initial projects have proven successful in that regard, although some degree of customizing is necessary for each application. This is particularly true when dealing with different agency back-end systems.

The purpose of this grant is to continue work with additional agencies, as well as additional license types for current agency partners such as Health & Human Services. The grant amount for each application is anticipated to be $2,500, meaning this grant will support ten additional projects. Work on each project will include analysis of the process used by the agency in issuing each license, development of web screens to guide the applicant through the process, integration with the agency back-end system, and

integration with the NOL payment portal for credit card or electronic check payment processing. NOL and agency staff will do complete system testing prior to the launch of each application. In some instances, license applicants may be recruited to assist with testing if deemed necessary.

7. Please describe whom the beneficiary or recipient of this service will be and projected activity for access or use of the proposed service

Beneficiaries of the service will include various professions, facilities and other businesses and individuals who are required to obtain a license, permit or registration for a particular activity or service. The licensing process will be made more convenient, faster and more accurate for users. The licensing agency will also benefit from improved efficiency in the licensing process.

8. Estimated timeline for completion

Depending on agency interest and cooperation, NOL expects to finish programming for the additional 10 licensing projects by the end of 2004. Licensing schedules may extend the actual implementation dates of some licenses into 2005.

9. Agency contribution to the project (labor, equipment, etc.)

Agency staff members involved in various licensing processes will be involved in assisting NOL to understand the business rules and requirements for each license type, and testing the system as it is developed. Agency technical staff will be involved in developing specifications for data exchange between NOL and the agency back-end system.

10. A. Has this project every been submitted as a budget request (explain)?

No.

10. B. Does the project require additional statutory authority (explain)?

No.

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

Grant funding for the work in license, permit and registration applications allows work to proceed, while decisions are made regarding the fee-based revenue stream to support development of licensing applications in the long term. The grants also support continued research and development of standard modules that can be re-used in subsequent projects. Depending on what decisions are made regarding ongoing funding to support maintenance, upgrades and other ongoing costs, it may be necessary to continue modest grant support to bring all appropriate licensing processes online.

11. Please describe how this project will enhance the delivery of state agency services or access to those services.

E-government services in general enhance the delivery of services by improving convenience, accuracy and speed for the user while introducing efficiencies into the process. These efficiencies include faster turn-around time, elimination or reduction of data entry by agency staff, and improved accuracy of information exchange.

12. Please describe how this project will 1) improve the efficiency of agency operations; 2) facilitate collaboration among state agencies; 3) facilitate collaboration between state agencies and other public institutions; 4) support public/private partnerships in the delivery of public services   (you may respond to any or all of these criteria in your answer)

Experience with projects to date indicates that efficiencies are gained through reduction or elimination of follow-up phone calls or regular mail to ensure completeness and accuracy of information exchanged; reduction or elimination of redundant data entry by agency staff; and faster movement of statutory fees into the state treasury due to the electronic payment associated with each application. The ongoing relationship between the Records Board, state agencies and Nebrask@ Online continues the long-standing public/private partnership in bringing e-government services to Nebraskans.

13. Contact person information

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NSRB Grant Application
Public Meeting Calendar Upgrade

1. Name of agency applying for grant

Chief Information Officer

2. Title or brief description of the project

Public Meeting Calendar Upgrade

3. Grant request amount

$15,000

4. Will there be a fee for accessing records associated with this project?

No

5. If yes, provide any statutory reference or authorization for the fee

N/A

6. Please describe the project in detail

Nebrask@ Online has hosted an online Public Meeting Calendar since 1999. The calendar allows agency staff to add and update listings for public meetings, and includes links to agendas and other meeting materials. The public can review information posted to the calendar and search by several criteria including date, agency, and meeting type.

E-mail notification capability was recently added, called nebAnnounce. Interested citizens can register to receive e-mail notification whenever an event is added to the calendar that matches a profile they set up. The e-mail notification includes a link to event details.

With greater use by state agencies, the Public Meeting Calendar is becoming a comprehensive repository of official meetings that the public can depend on for timely notification and easy access to information such as agendas. nebAnnounce was a major improvement, but other enhancements are needed to make the Public Meeting Calendar more useful. These include:
- Adding "granularity" to the nebAnnounce feature so that users may be more specific in what meetings to include in their notification profile. For example, anyone designating HHSS would receive dozens of notifications on topics that might be of no interest.
- Adding an archiving feature for removing old meetings from the system.

- Adopt a naming convention with corresponding edits for the "List of Activities" to make this a more useable field.
- Create a feature for entering recurring events into the system.
- Allow agencies to file attachments, such as agendas, minutes or meeting materials.
- Provide additional fields that agencies need.
- Create additional categories and allow users to screen events by those categories. An example of additional categories would be county government, city government, school districts, etc.

Given the system's age and requests for additional enhancements received from agency staff, NOL recommends that a project be undertaken to identify and organize requests for enhancements, develop requirements and specifications for a system upgrade, and implement the upgrade.

The existing Public Meeting Calendar system was modified from a version used in the Commonwealth of Virginia and is nearly five years old. Technical limitations and a need for some content guidelines regarding how agencies input information demonstrate that an upgrade is in order. The system will continue to provide a standard Web interface for both agencies and the public, providing ease of use both for those who post information and those who view it. Upgrades will allow more granular selection of options for e-mail notification, down to a greater level of detail below the agency level.

7. **Please describe whom the beneficiary or recipient of this service will be and projected activity for access or use of the proposed service**

The general public and those interested in monitoring public meetings benefit from a one-stop Web site where information regarding public meetings is posted. With the addition of nebAnnounce, citizens can receive e-mail notification when meetings or events matching their profile are posted to the calendar. The additional enhancements will improve the usefulness of this feature and the overall system. The enhancements will also make it easier for agencies to use the system.

8. **Estimated timeline for completion**

Work is expected to begin in May 2004, starting with development of a Project Charter, soliciting input from agencies and citizens on possible enhancements, and development of system specifications. Development work is expected to begin in mid-June, with completion, testing and launch of the enhanced system anticipated by early September. The time required for development and testing is dependent upon the requirements identified in early stages of the project, so the launch date is an estimate and may be revised once system specifications are developed.

9. **Agency contribution to the project (labor, equipment, etc.)**

Agencies will continue existing efforts to post meeting and event information to the calendar. All design and development work associated with the upgrade will be done by Nebrask@ Online.

10. A. Has this project ever been submitted as a budget request (explain)?

No.

10. B. Does the project require additional statutory authority (explain)?

No.

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

Initial development and maintenance of the system has been subsidized by general network revenue since 1999. This project constitutes a significant review and upgrade of the system, and grant funding is warranted. Long-term, the NSRB may wish to review how ongoing maintenance and periodic upgrade of the system is supported.

11. Please describe how this project will enhance the delivery of state agency services or access to those services.

Online posting of and e-mail notification about public meetings and events significantly enhances public access to the workings of various agencies, boards and commissions.

12. Please describe how this project will 1) improve the efficiency of agency operations; 2) facilitate collaboration among state agencies; 3) facilitate collaboration between state agencies and other public institutions; 4) support public/private partnerships in the delivery of public services (you may respond to any or all of these criteria in your answer)

The Public Meeting Calendar and nebAnnounce represent a strong commitment by the State to enhancing digital democracy in Nebraska. Citizens can more easily stay informed about meetings and events in which they have an interest. With the ability to post meeting agendas and other information to the Web, costs associated with printing, mailing and related activities can be reduced. The work being done by Nebrask@ Online continues the long-standing public/private partnership in the delivery of public services.

13. Contact person information

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Nebraska State
Records Board
State Capitol, Suite 2300
Lincoln, NE 68509

John Gale
Chairman
(402) 471-8606
http://www.nol.org

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

Agencies desiring grants from the Nebraska State Records Board for projects to improve access to state government information should complete this application and follow any procedures outlined in this application and any accompanying materials.

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I. Grant Summary

1. Name of agency applying for grant

Nebraska Department of Natural Resources (NDNR)

2. Title of project

Nebraska Geospatial Data Center Clearinghouse

3. Brief Description of Project

This project will establish an online, enterprise clearinghouse for available geospatial (location-referenced) data related to the geographic area of Nebraska. The clearinghouse will allow Nebraska citizens, public agencies, and private entities to conduct online searches for a wide variety of geospatial data developed and/or maintained by a variety of state, local, and federal agencies and private entities. This project entails merging two existing online geospatial clearinghouses and developing web-based programs to facilitate the entry, validation and submission of metadata to be published in the metadata clearinghouse function of the Nebraska Geospatial Data Center.

This interagency project is based on recommendations of the Nebraska Geographic Information System (GIS) Steering Committee (see attached, "Facilitating Geospatial Data Sharing in Nebraska"). The project will also work with and support a parallel effort through the Conservation and Survey Division – UNL to inventory available geospatial data currently held by Nebraska institutions of higher education and key state agencies and assist those entities to document their existing geospatial data with standardized metadata so that it can be listed in the clearinghouse catalog and shared with others.

3. Grant request amount $ 25,000 for this initial phase.

Please be advised that a separate, but related grant request is likely to be submitted for consideration in either the next quarter or the following quarter. The second request would be for funding to build on the work accomplished based on this application. It would help finance continued metadata collection and the development of online tools designed to support the direct online display/mapping and access to a variety of public geospatial databases that were identified,

documented and cataloged based on this grant. The exact nature of future applications will depend, in part, on an interagency working group's success in applying for federal grant funding to support this enterprise effort.

4. Will there be a fee for accessing records associated with this project?

There will be no fee anticipated for using either the processes developed in this project or GIS metadata clearinghouse. Furthermore, most agencies do not charge for online access to the data that will be referenced in the clearinghouse. For example, the clearinghouse will provide online links to geospatial data which can be viewed and downloaded at no cost from the NDNR web site, either online or via an overnight file transfer (FTP) process.

5. If yes, provide any statutory reference or authorization for the fee NSRB Grant

n/a

II. Grant Detail

1. Please describe the project in detail (you may attach this description)

The development and/or purchase of specialized geospatial datasets is by far the most expensive component of most GIS implementations. For many of the GIS applications undertaken by a wide variety of public and private entities, many of the same geospatial databases (streams, roads, aerial imagery, government boundaries) are needed. Facilitating the sharing of this costly data is a very cost effective approach for stretching scarce public resources.

This project entails the development of a unified, enterprise-wide, geospatial data clearinghouse for Nebraska. This clearinghouse will be a partial achievement of the longer-term goal of providing a one-stop enterprise portal for online searching, accessing and displaying/mapping of available geospatial data related to the geographic area of Nebraska. This project is consistent with Nebraska GIS Steering Committee recommendations outlined in a white paper, entitled "Facilitating Geospatial Data Sharing in Nebraska" (see attached). The interagency white paper outlined the need for and the recommended steps to develop an enterprise geospatial data center for Nebraska.

The proposed enterprise geospatial data clearinghouse will be based upon a clearinghouse currently operated by NDNR for the natural resources-related geospatial data maintained by the NDNR Data Bank. This agency-specific clearinghouse will be expanded to include metadata on the wide variety of geospatial data maintained by other agencies. As part of this project, the outdated metadata listed in a small interagency pilot project clearinghouse that was initially hosted on Nebraska Online will be updated and incorporated into this new enterprise clearinghouse.

The project will also develop web-based programs to facilitate on-going, online entry of metadata to be published in the clearinghouse. Metadata is information in a standardized format that describes the characteristics of a specific database. Standardized metadata is the foundation upon which clearinghouse search engines work. Metadata also provides the necessary information to enable an agency to understand and properly utilize geospatial data that has been developed by a different agency.

This project will work with and support a parallel effort by the Conservation and Survey Division – UNL and the Nebraska GIS Steering Committee to contact Nebraska institutions of higher education and state agencies to inventory the geospatial data currently held by those entities. That parallel effort will assist entities to document their existing geospatial data with standardized metadata and to list their geospatial data holdings in the clearinghouse catalog. The listing of databases in the clearinghouse catalog will enable other agencies and citizens to conduct online searches for needed data.

The new enterprise geospatial data clearinghouse node will be hosted by NDNR. It will be structured and maintained in a manner that is compatible with the Federal Geographic Data Committee (FGDC) geospatial data clearinghouse network. This work will be directed and performed by the staff of NDNR, with oversight from the Nebraska GIS Steering Committee.

Features to be included at that time will include:
   a. The internet presence (web pages) for the Nebraska Geospatial Data Center Clearinghouse. This will be accessible directly over the internet, through links from Nebraska State government and links on other entities' web sites, and through the National Map (a national effort by the USGS to use Internet Map Server technology to provide nation-wide online access to the core mapping data elements currently provided by the USGS 7.5 minute topographic maps.)
   b. A catalog architected to ultimately include metadata for all Nebraska geospatial data stores
   c. A "front end" process to facilitate the submission and initial validation of metadata for inclusion in the catalog
   d. An initial set of cataloged metadata reflecting the publicly accessible geospatial data offered by NDNR, and metadata from other Nebraska entities submitted for publication. Current plans include publishing existing metadata for the Conservation & Survey Division the School of Natural Resources, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln. The parallel effort by the Conservation and Survey Division – UNL and the Nebraska GIS Steering Committee will work with other agencies to document and list their geospatial data on the clearinghouse. These agencies include: the Nebraska Department of Roads, the Nebraska Game and Parks Commission, the Nebraska Department of Environmental Quality, the State Surveyors Office, the Nebraska Military Department, and the Health and Human Services System of Nebraska.

2. Please describe whom the beneficiary or recipient of this service will be and projected activity for access or use of the proposed service

The clearinghouse will enable government and commercial users of GIS information to easily research and discover the existence and characteristics of geospatial data and how it may be accessed. Beneficiaries of the Nebraska Geospatial Data Center Clearinghouse will include numerous Nebraska State and local governing bodies, as well as universities, private businesses, and individuals that need access to state-wide enterprise geospatial data.

3. Timeline for implementation (specific completion date must be provided, grant funds lapse if not expended prior to completion date)

Implementation will be scheduled for about six months after award of the grant. Assuming an award date of July 1, 2004, the project should be completed by December 31, 2004.

4. Agency contribution to project (labor, equipment etc.)

DNR will provide the following resources in support of the Nebraska Geospatial Data Center Clearinghouse development:

a. Information Technology staff with GIS and web application design and technical implementation expertise as required to direct contract efforts
b. Information technology hardware and software as required to support the development processes and limited production operations
c. Staff experienced with metadata development to perform quality reviews and publish the initial metadata submissions
d. Continued operations, data support, and management of the clearinghouse and web pages

5. Has this project ever been submitted as a budget request (explain)?

No

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

No. This project falls within the NDNR statutory responsibility to maintain and administer a Data Bank containing geographic information about soil and water resources in the State of Nebraska.

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

The most significant impediment to implementing this project as recommended by the GIS Steering Committee has been a lack of available resources due to the serious state budget shortfall. Grant funds would enable NDNR to obtain temporary staffing required to perform project tasks including computer program development and initial metadata receipt and review activities.

We estimate that development and testing of the basic geographic information metadata clearinghouse and a web-based "front end" process for submission and validation of metadata will require approximately eight to ten weeks of programmer effort. Due to limited application developer resources within NDNR, we anticipate that a contract programmer would be retained for this purpose.

Major activities will include:
- Combining the two existing online geospatial clearinghouses.
- Creating forms that the cooperating agencies will use to submit metadata over the web.
- Creating forms that the cooperating agencies will use via the internet to update/delete metadata retained at NDNR.
- Developing programs for cooperating agencies to test metadata compliance with FGDC standards before it is uploaded over the web.
- Creating forms for quality control and quality assurance (QC/QA) review processes.
- Developing programs to update the metadata server after the QC/QA review processes.
- Supporting efforts by the Conservation and Survey Division – UNL and the GIS Steering Committee to inventory, document and list other agencies geospatial data in the enterprise clearinghouse catalog.

Grant funds would be utilized to cover the following estimated costs. Any funds not required for these categories would be used to offset the cost of metadata collection, review and publication.

Contract Programmer*	(8–10 work weeks of effort)	$ 16,000 – 24,000
Development PC and software**		$ 2,000 – 2,500

  * Contractor skill sets and experience must include web programming in
      .net. Knowledge of MS Access and GIS will be a plus.

** Upon completion of the metadata submission front end and web tools,
      it is envisioned that this PC would be dedicated to metadata acquisition,
      quality review, and publication.

We believe continued operations can be sustained by the present Information Technology staff at NDNR. NDNR currently operates a web site which facilitates public access to a number of geospatial datasets. It is envisioned that the Nebraska Geospatial Data Center Clearinghouse will be a separate, closely integrated, addition to the existing web operations. Because it is separate, operations and the metadata publishing support will add to present NDNR responsibilities; however, assuming the infrastructure is consistent with existing NDNR infrastructure, current staffing should be adequate to meet operations requirements after implementation

8. Please describe how this project will enhance the delivery of state agency services or access to those services (you may attach a separate sheet if needed)

Timely, accurate information that is easily accessed and capable of being shared across federal, state, and local political jurisdictions is now recognized as a fundamental component of sound public policy decision-making and good, efficient government. As more and more public and private entities adopt geographic information system (GIS) technology, it is increasingly important that institutions be developed to facilitate the reliable and efficient sharing of the costly geospatial information integral to these systems.

GIS technology allows public agencies to bring together and analyze numerous types of datasets and information based upon similar location attributes (i.e. roads, streams, soils and property parcels). GIS technology also offers a range of powerful analytical tools and the ability to more clearly communicate implications of and reasons behind public policies by the use of visual maps.

Because of these capabilities, more and more public agencies are beginning to use or are interested in using GIS technology. One of the major impediments to new agencies adopting this technology is the high cost of specialized data acquisition or development. Many current GIS applications rely on the ability to readily access a variety of geospatial databases (roads, streams, aerial imagery, political boundaries and property parcels) that are both dynamic in nature and maintained by a variety of public and private entities. The development of an online enterprise clearinghouse would allow agencies to more easily determine whether another agency has already developed a geospatial datasets that would meet their agency's needs.

At the present time it is not uncommon for multiple agencies at the same or different levels of government to maintain similar, but different datasets upon which public policy decisions are based. Enabling these agencies to locate and access common datasets would likely result in enhanced public policy decision-making because those policies would be based on the same data instead of different datasets.

For a broader context of the benefits of this project, please refer to the attached Nebraska GIS Steering Committee recommendations entitled "Facilitating Geospatial Data Sharing in Nebraska".

9. Please describe and provide supporting documentation for how this project will 1) Improve the efficiency of agency operations; 2) Facilitate collaboration among state agencies; 3) Facilitate collaboration between state agencies and other public institutions; Support public/private partnerships in the delivery of public services (you may respond to any or all of these criteria in your answer, attach additional pages if needed)

Over the last few years an increasing number of public and private entities have discovered that Geographic Information Systems (GIS) provide powerful tools for displaying, combining, and analyzing information based on its geographic location (latitude/longitude, etc.). GIS is now used by many public and private entities for an even wider variety of applications. These applications range from reapportionment, emergency vehicle routing, highway pavement management, water quality management, property assessment, economic development, public health, and the more recent applications related to homeland security planning and response. For many GIS applications, common sets of core geospatial databases provide a foundation for referencing and analyzing a few specialized databases. The attached Nebraska GIS Steering Committee white paper entitled, "Facilitating Geospatial Data Sharing in Nebraska" provides a broader context for the needs and benefits of the services proposed in this project. Responses specific to the criteria listed in your requirement are also provided below.

Improved efficiency. The significant costs for development and/or acquiring geospatial databases is one of the important reasons for developing mechanisms to facilitate data sharing. By far, the most costly component of most GIS implementations is data acquisition. As more and more public and private entities adopt GIS technology, it has become increasingly important that institutions be developed to facilitate the reliable and efficient sharing of the geospatial information integral to these systems. Today's governments cannot afford to have multiple agencies investing scarce public resources in the development and maintenance of duplicate (or similar) databases. Increased efficiency and enhanced public policy decision-making will be the likely results of coordinated public investments in the development and maintenance of quality, core geospatial databases that are coupled with mechanisms to share this data widely among public and private entities. The ability of one agency to meet its geospatial data needs by easily locating and then building upon data developed or acquired by another agency represents a significant efficiency. This is a foundation for facilitating sharing of geospatial data, and the Nebraska Geospatial Data Center Clearinghouse is designed expressly for this purpose.

Development and maintenance of standardized metadata is another foundation for facilitating geospatial data sharing. This metadata (data about data) enables a borrowing agency to know, with a relatively high degree of certainty, the various characteristics of the dataset and can therefore make informed decisions about the appropriate applications of that dataset. It is a common problem that agencies which originally develop geospatial datasets frequently do not invest the time and resources to properly document those datasets because their in-house staff has that information due to their personal involvement. Metadata on geospatial datasets provides the documentation upon which clearinghouse search engines operate and that other agencies need to make appropriate use of borrowed data. Therefore, facilitating the development and listing of this metadata in an enterprise geospatial clearinghouse is a key component to an efficient system of sharing this relatively expensive data among agencies.

Because much of this geospatial data and its associated metadata are dynamic in nature, it is also important to develop online mechanisms through which the developing agency can maintain, with relative ease, their metadata. These mechanisms allow other agencies to be reasonably certain

that they are able to conduct searches based on current metadata and to access the updated metadata with a particular dataset. For this reason, development and implementation of online forms for creating and updating metadata are critical components of this clearinghouse project.

2, 3 and 4. <u>Facilitate collaboration among state agencies and with other public institutions and public/private partnerships.</u>   One of the foundations for collaboration, either between state agencies or between state agencies and other entities, is the ability to readily share and reference the same information. At the current time, there is no efficient and reliable means to quickly determine if another agency has developed or acquired geospatial datasets that would meet another entities' needs.   The geospatial data clearinghouse, and the related efforts to develop metadata to document databases, is designed to facilitate locating and sharing of geospatial datasets of common interest.

The terrorist attacks of September 11th illustrated that it is important that data sharing mechanisms be reliable in times of crisis, that they provide ready access to the most recent data maintained by multiple agencies, and that they provide access to data that has been pre-formatted to facilitate its rapid integration with other geospatial data. These are the long-term objectives of the proposed Geospatial Data Center Clearinghouse, and its ultimate evolution into a broader geospatial data center that will provide online viewing/mapping and accessing of Nebraska-related geospatial data.

Sound public policy decisions are more likely when multiple agencies (state, local and federal) are making decisions based on the same data. The existence of an enterprise geospatial data clearinghouse will help avoid situations where different agencies use similar, but different databases, to develop or implement public policies that may not be harmonious with the policies developed by other agencies using slightly different data. An enterprise clearinghouse will allow one agency to be responsible for maintaining a given geospatial dataset, and other agencies will know that they can reliably find and access the most current version of that data through the clearinghouse, as needed. Without this reliable mechanism for accessing the most current data, many agencies will attempt to maintain their own separate datasets, which will result in a duplication of effort and in many cases slightly different data.

III. Technical Information

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

The infrastructure for the initial implementation of the metadata clearinghouse will rely upon the existing server hardware, software, and communications capabilities available at NDNR. As noted earlier, parallel interagency efforts are also underway to seek federal funding to support the broader goal of developing a more comprehensive Nebraska Geospatial Data Center. Depending upon the success of those efforts, future grant requests to the State Records Board may include a request for funding to obtain additional hardware and software to support a full-scale geospatial data center that would include the proposed clearinghouse.

2. Address any technical issues with the proposed technology including:
- **Conformity with generally accepted industry standards. Projects which interface with other state systems (such as distance learning systems) should also address NITC technical standards and guidelines.**
- **Compatibility with existing institutional and/or statewide infrastructure.**
- **Reliability, security and scalability (future needs for growth or adaptation).**

Technical standards and guidelines that must be complied with in this project include the following.
- Web access, ftp, FGDC metadata standards, ESRI conformity/compliance
- Compatibility with existing institution and/or statewide infrastructure
- Reliability, security, and scalability: NDNR's current capabilities include the ability to supply backup server, metadata, and application software capabilities.

6. Describe how technical support will be provided.

NDNR application developers and information technology services personnel have significant training and experience in the development, operations and maintenance of geospatial and web applications, datasets, and related systems. These personnel are willing and able to extend their support to the Nebraska Geospatial Data Center Clearinghouse development and operations. This clearinghouse will follow national models and standards and therefore federal technical resources can be called upon for assistance, if needed.

IV. CONTACT INFORMATION, SIGNATURE

Contact person for any questions regarding this application _____Rex Gittins_____

Phone # __ (402) 471 – 1767 _____   **E-mail** ____ rgittins@dnr.state.ne.us _____

Signed this __ 30th __ **day of** ___ March ___, __ 2004 __

_____
Agency Director

Please Return to:

State Records Board
Suite 2300, State Capitol
P.O. Box 94608
Lincoln, NE 68509-4608

Revised 9/24/03

Recommendations of an Advisory Committee on Facilitating Geospatial Data Sharing
-- a subcommittee of the Nebraska GIS Steering Committee

FACILITATING GEOSPATIAL DATA SHARING IN NEBRASKA

Meeting the Growing Needs for
Enterprise-wide Access to Available Geospatial Data

INTRODUCTION

Timely, accurate information, easily accessed and capable of being shared across federal, state, and local political jurisdictions is now recognized as a fundamental component of sound public policy decision-making and good, efficient government. Over the last decade public entities have invested in the development of compatible database structures and networks to facilitate data sharing in pursuit of these information-sharing objectives.

During this same period, an increasing number of public and private entities have discovered that Geographic Information Systems (GIS) provide powerful tools for displaying, combining, and analyzing information based on its geographic location (latitude/longitude, etc.). GIS is now used by a wide variety of public entities for an even wider variety of applications. These applications range from reapportionment, emergency vehicle routing, highway pavement management, water quality management, property assessment, economic development, public health, and the more recent applications related to homeland security planning and response.

As more and more public and private entities adopt GIS technology, it has become increasingly important that institutions be developed to facilitate the reliable and efficient sharing of the geospatial information integral to these systems. The public costs of developing geospatial databases are one of the important reasons for developing mechanisms to facilitate data sharing. Today's governments can not afford to have multiple agencies investing scarce public resources in the development and maintenance of duplicate (or similar) databases. Sound public policy decisions are more likely when multiple agencies (state, local and federal) are making decisions based on the same data. Increased efficiency and enhanced public policy decisions-making will be likely results of coordinated public investments in the development and maintenance of quality, core geospatial databases coupled with mechanisms to share this data widely among public and private entities.

The terrorist attacks of September 11th have illustrated that it is also important that data sharing mechanisms be reliable in times of crisis, that they provide ready access to the most recent data maintained by multiple agencies, and that they provide access to data that has been pre-formatted to facilitate its rapid integration with other geospatial data. It was to address this range of needs and concerns that the intergovernmental Advisory Committee on Facilitating Geospatial Data Sharing was created and tasked with making recommendations for how we might meet the growing needs for enterprise-wide, ready access to available geospatial data.

BACKGROUND

While GIS can no longer be considered a new technology, its wide spread use among many agencies, many applications and numerous users is relatively new. In Nebraska, the Conservation and Survey Division at UNL was one of the early experimenters with GIS technology starting back in 1985. Other early users were the Nebraska Natural Resources Commission starting in '89, the Legislature in '91, the Dept. of Roads in '91, the Dept. of Environmental Quality in '92 and Game and Parks in '94. During this same period a similar

limited, specialized use of GIS was evolving in federal and local government agencies. In all of these instances, the early GIS users were based in just a few agencies, the specialized applications residing only on the computers operated by skilled technicians, and the applications relied on geospatial data that was primarily developed and maintained within that same agency.

However, over the last few years the nature of GIS users and applications has undergone major changes. These changes are related to the growing awareness of the potential of GIS technology, and the evolution of the technology in terms of its sophistication and ease of use. The current trend is toward widespread use of GIS technology across both the horizontal and vertical breath of public and private agencies. As a result of these changes, people with a wide range of technical skills are now using the technology. Many current GIS applications rely on the ability to readily access a variety of geospatial databases (roads, streams, aerial imagery, political boundaries and property parcels) that are both dynamic in nature and maintained by a variety of public and private entities. The relatively new phenomenon of providing a wide range of interactive GIS applications over the Internet (i.e. general public access of assessor's property parcel information via the Internet) is just one example that illustrates these trends.

These trends in GIS software, applications, and users have served to heighten the demand for mechanisms that facilitate easy, reliable, enterprise-wide access to geospatial databases that are developed and maintained by a variety of entities. Also contributing to this increasing demand for geospatial data sharing, has been a growing recognition that with limited public resources available it is vitally important that public entities avoid costly duplication by cooperating in the development and maintenance of the geospatial databases that are needed for many GIS applications

In pursuit of this intergovernmental cooperation, several state and federal geospatial coordination initiatives have been organized. Many of these coordination efforts have focused on a core subset of geospatial databases (roads, streams, aerial imagery, political boundaries, property parcels, etc.) that have become known as Framework Databases because they provide the underlying framework for so many GIS applications. Most of these coordination initiatives also highlight the need for mechanisms to provide easy access, across the enterprise, for these and other geospatial databases. Among these coordination initiatives are the following.

Nebraska GIS Steering Committee. Over the last several years this intergovernmental coordinating body has outlined in its annual reports the need and plans for the coordinated development of key geospatial databases on a statewide basis. These strategic reports have also consistently noted the needs for enhanced mechanisms for facilitating online geospatial data access and sharing across the enterprise.

Federal Geographic Data Committee. The FGDC is a federal level GIS coordinating body that works closely with its state counterparts. The FGDC took the lead in identifying Framework Databases, developing database standards, and actively works with states to encourage the development of a national network of geospatial data clearinghouses as a means to find and provide online access to existing geospatial data.

Implementation Teams. Implementation Teams (I-Teams) are a national initiative to bring together representatives of state, local, federal and private entities to define collaborative strategies for the development of widely needed geospatial databases and the means to distribute them. One of the priority needs identified in the draft Nebraska I-Team Strategic Plan is the development of a geospatial data center to serve the Nebraska GIS user community.

USGS National Map. For many years the US Geological Survey's 7.5" paper topography maps have served as the standard reference map for a wide variety of applications. Many state statutes, including Nebraska's, refer to these maps. Most of these maps are at least 30 years

old and in need of revision and updating. As part of its National Map strategy, the USGS has made a strategic decision that it will rely on digital geospatial data, created largely at the state and local level, as the means to update and keep relatively current these standard reference maps. As currently envisioned, this evolving strategy will rely heavily on state-by-state data centers that provide the focal point for collecting, integrating, and providing online access to the digital geospatial data (see State of Delaware pilot, *http://datamil.udel.edu*).

Homeland Security. In the wake of the September 11th terrorist attacks the critical importance of ready, reliable access to a cross-section of geospatial data, from a wide variety of agencies, has become very clear. At the federal, state and local level, GIS and geospatial data collected from a variety of sources is being used for short-term homeland security planning efforts. In the longer-term, it will be important to be able to quickly access the most current geospatial data, from a variety of sources, to provide an informed basis for responding to emergencies.

CURRENT STATUS

There are currently two state-operated geospatial data clearinghouses, which allow GIS users to conduct online searches for available geospatial data related to the Nebraska geographic area. There are also several online clearinghouses operated by federal agencies, at the national or regional level, which contain Nebraska-related geospatial data among their data catalogues. Both of the state-operated clearinghouses are compatible with the FGDC national clearinghouse network. However, neither is comprehensive in the scope of their listings and as a consequence there are numerous existing Nebraska-related geospatial databases that are not currently listed and therefore not available through the clearinghouse network.

The Nebraska Department of Natural Resources operates one clearinghouse, which provides a comprehensive online, up-to-date listing of the data holdings in its Natural Resources Databank. Through this clearinghouse, online access is available to most, if not all, of the data holdings of the NDNR Databank.

The other state-operated clearinghouse, the Nebraska Geospatial Data Clearinghouse, was developed under the auspices of the Nebraska GIS Steering Committee, in cooperation with the Nebraska Library Commission. This clearinghouse node was originally developed as a pilot project, with the goal of ultimately building a comprehensive clearinghouse for Nebraska-related geospatial data. The clearinghouse was initially developed in 1995-96, with the support of an FGDC grant. As part of this pilot project, the necessary documentation was created for approximately 45 geospatial databases and an online clearinghouse node was established on a Nebraska Library Commission server. This clearinghouse node has since been moved to servers operated by Nebraska Online.

Unfortunately, since the completion of this clearinghouse pilot project, the GIS Steering Committee has not had the resources to continue the necessary outreach and education work with agencies to get their data documented and added to the clearinghouse catalogue. There are now numerous Nebraska-related geospatial databases that have been developed at the state and local level, but which are not currently documented and have not been added to the Nebraska Geospatial Data Clearinghouse catalogue. As a consequence, GIS users can not easily discover that these databases exist and they are not readily available for online access.

Related Initiatives. In exploring how we can best address the current gaps in providing online access to Nebraska-related geospatial data, it is important to consider several related initiatives that are currently underway or planned. In this time of scarce public resources, cooperation and coordination among these initiatives may hold the key to developing of a more comprehensive and enduring approach to facilitating Nebraska geospatial data sharing.

On the federal level, there are several related initiatives that are being proposed and/or developed. Among these is the evolving USGS vision of the National Map, and its proposed implementation through a series of state or regionally-based online digital mapping portals. While this initiative will probably not be as comprehensive in terms of the range of Nebraska-related data themes, it will however involve many of the same databases and similar infrastructure. America View is another USGS pilot program with possible synergy for the development of an enhanced Nebraska geospatial data center. The goal of America View is the development of state-level distribution mechanisms to provide rapid online access to recent satellite data. Another related initiative is the USGS pilot program to develop state-based USGS Mapping Project Offices, as one way to develop closer coordination with states and decentralize some of its national mapping operations. Finally, the President's Geospatial One Stop E-Government Initiative envisions creating a single Internet portal through which one could locate and access all federal agency geospatial data.

All of these federal initiatives share an understanding that if they are to be successful, they will require a fairly high degree of coordination with states. At the same time, it is also important to note that most of these initiatives do not currently have new funding available that could be used to help states provide the on-going support needed to maintain a geospatial data center.

On the state level there are also several initiatives that could possibly lend support to the development of an enhanced Nebraska geospatial data center. The Dept. of Natural Resources has agreed to host a combined clearinghouse (NDNR Databank and Nebraska Geospatial Data Clearinghouse) on their servers, given proper endorsement and support. The UNL Libraries have offered to conduct a survey of state agencies, universities, and natural resource districts to identify the geospatial data that are currently available but not listed in a clearinghouse and to help document that data.

The University of Nebraska Peter Kiewit Institute has recently announced that they will be acquiring a large scale server and creating an internet ESRI interactive map interface and web site to allow users to more easily locate and select location-based information along the Lewis and Clark Bicentennial (2003-2006) Celebration route. They have also expressed an interest in hosting and serving state geospatial data on this server. Several other state agencies are either considering or have developed plans to expand their current GIS capabilities (NDOR, NDEQ, NEMA, NPAT, NGPC, CSD-UNL). Many of these proposed plans involve developing additional interactive Internet mapping capabilities as a way to bring these analytical tools and information to either their field offices and/or the general public. For many of these applications, there are compelling reasons to base most of these initiatives within a specific agency. It is however a possibility that within these agency initiatives there are areas of potential collaboration that could lend support to the development of an enterprise Nebraska geospatial data center.

As avenues are explored for addressing the current need for a Nebraska geospatial data center, it is important to not forget the lessons learned from the Nebraska Geospatial Data Clearinghouse experience. If these intergovernmental data sharing programs are to be successful, they require resources for on-going development, maintenance and outreach. In considering the possible synergy of the various federal and state programs, it is quite possible that through collaboration and partnerships we may be able to bring together the hardware and software infrastructure required for an online enterprise data center. More difficult, but equally or more important are the resources necessary to provide on-going support for the operation of an enterprise such as a Nebraska geospatial data center.

RECOMMENDATIONS

At the outset of the Advisory Committee's discussions, there was general agreement that the unmet needs in this area were substantial. However, it was also acknowledged that the resources available in the short-term to help address those needs were likely to be very limited, particularly in this time of state budget shortfalls. Based upon this understanding, the Advisory Committee decided to proceed to identify the unmet needs and to take a two-fold approach to making recommendations to address those needs. This two-fold approach involved:

a) Making recommendations for short-term limited resources efforts that could be undertaken, and have a reasonable chance of success, within the current constraints of little or no additional resources;

b) Outlining a consensus longer-term vision for the policies and structures that should be pursued, as additional resources become available, to address the longer-term needs for institutional structures and policies to facilitate an on-going, high-level of geospatial data sharing among the public and private sector in Nebraska; and

c) Following an 18-month period, the GIS Steering Committee and the Department of Natural Resources shall re-evaluate the policies, barriers, opportunities and options for facilitating Nebraska-related geospatial data sharing. The purpose of this re-evaluation is to determine how well the arrangements outlined in this document are working and to make recommendations for changes as necessary

Short-term, limited resources efforts

1) Initiate a process to create a unified, enterprise-wide, Nebraska geospatial data clearinghouse with the goal of ultimately providing a one-stop portal for searching for available geospatial data related to the geographic area of Nebraska. Recommended initial steps would involve merging the two existing online geospatial catalogues/clearinghouses which are currently operated by the State of Nebraska. The metadata catalog which describes a limited, cross-section of geospatial data themes and is currently hosted on the Nebraska Online servers would be combined with the metadata catalog describing the natural resources geospatial data currently hosted by the Nebraska Department of Natural Resources Databank. This enterprise geospatial data clearinghouse node would be hosted on a NDNR server and would be structured and maintained in a manner to be compatible with the national Federal Geographic Data Committee (FGDC) geospatial data clearinghouse network. This work would be conducted primarily by the staff of NDNR (as time and resources permit), with assistance from Nebraska Online staff and the Coordinator for the Nebraska GIS Steering Committee.

2) As an enterprise-wide Nebraska geospatial data clearinghouse, it is recommended that the Nebraska GIS Steering Committee would be the ultimate owner of this enterprise clearinghouse and NDNR would be the trustee charged with operational responsibility for the clearinghouse, subject to available resources. NDNR staff commitments would require the endorsement of the NDNR Director. Under this conceptual model, the Steering Committee would have the primary responsibility to take the lead in pursuing any additional resources needed to insure adequate support for clearinghouse-related functions. It is recommended that the Nebraska Department of Natural Resources and the Nebraska GIS Steering Committee develop a Memorandum of Agreement to further define the nature and terms of this relationship.

3) Identify other existing geospatial data that is not currently listed in either of the existing metadata catalogs/clearinghouses via an online survey. Due to current resource limitations, the initial survey would focus on state agencies, institutions of higher education, and natural resources districts. The survey should identify not only what geospatial data exists, but also whether the data is documented. This online survey will be conducted primarily by the staff of University of Nebraska - Lincoln Libraries, with the assistance of the Coordinator for the Nebraska GIS Steering Committee.

4) Agencies with existing geospatial data, that is not been documented with metadata, will be encouraged and assisted to develop FGDC-compliant metadata to document their data. This is a necessary step before this data can be listed on FGDC-compliant geospatial clearinghouses and is consistent with the Nebraska GIS Steering Committee policy on metadata. *"To preserve the public's investment in geospatial databases and to facilitate data sharing, public agencies should document new geospatial data it collects or produces, either directly or indirectly, with metadata compliant with the Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata (data describing the data). Systematic efforts should also be made to develop metadata for existing legacy geospatial data, as time and resources allow."* — adopted 3/9/00. Within the limits of available resources, the staff of UNL Libraries, the staff of Conservation and Survey Division UNL and the Coordinator for the Nebraska GIS Steering Committee will assist agencies to develop metadata.

5) Agencies with geospatial data, which has been documented with FGDC-compliant metadata, should be encouraged to list that data in the enterprise Nebraska geospatial data clearinghouse by adding the metadata to the clearinghouse catalog. This work would be conducted primarily by the staff of NDNR (as time and resources permit), with assistance from the Coordinator for the Nebraska GIS Steering Committee.

Longer-term institutional structures and policies

6) As resources become available, it is recommended that the Department of Natural Resources and the GIS Steering Committee work together to enhance the Nebraska geospatial data clearinghouse/center and provide a broader range of data access and support services for the enterprise-wide Nebraska GIS user community.

For most GIS applications, it is very helpful if users can have ready access to the best available geospatial data. As the use of GIS-related technologies continues to grow across a broad range of state, local and federal agencies, and the private sector, there is a growing demand for reliable, timely access to the geospatial data that is developed and maintained by a variety of agencies. For applications related to public safety, emergency/disaster response or homeland security, it is vitally important to have ready access to the most current and accurate geospatial data available, that the data be maintained in a manner such that it can be rapidly integrated with data from multiple sources, and that the online access service is reliable in times of an emergency. Many states have found that state geospatial data access and support centers, designed to support the enterprise, are an efficient, reliable means to provide these specialized services of on-going geospatial data integration and online distribution. In developing an enterprise Nebraska geospatial service center, the following services and/or characteristics should considered:

Recommended Services

a) On-line Catalog and Data Access Point. An enterprise geospatial data center should develop and maintain a Nebraska geo-portal through which users could search for and

gain online access to a wide range of existing Nebraska-related geospatial data from multiple agencies (state, local, federal, and private). Data access services should be structured to provide the flexibility of either housing data directly on the center's servers or providing online access via hyperlinks to data residing on other agencies' servers. An enterprise geospatial data center could also provide an efficient avenue for investing in the secure and reliable information architecture necessary to insure ready access to critical geospatial information in times of natural disasters or other emergencies.

b) Help Desk. An enterprise geospatial data center should be structured to provide users with an initial single contact point for assistance in obtaining the most recent versions of a variety of dynamic geospatial databases and a first avenue of inquiry for basic questions related to those databases. Consequently, the data center personnel could relieve the skilled personnel in those agencies that are directly responsible for developing and maintaining these dynamic geospatial databases from the necessity of responding directly to many common day-to-day questions and requests related to those databases.

c) Data Integration. Databases developed by multiple agencies frequently require at least some manipulation before they can be integrated with other datasets. In some cases this manipulation may involve patching together several similar datasets from multiple jurisdictions to form a statewide dataset (i.e. street centerlines/addresses) or inserting a new update from one area into a larger statewide dataset. In other cases, this data manipulation may involve changing several datasets to common map projections or scales. Providing many of these data integration services through a data center would result in increased efficiency and accuracy in that these same data manipulations would be performed once by skilled technicians, instead of by the multiple users of the data, with varying levels of knowledge and skills. In emergency situations, this on-going data integration service could save critical analysis and response time.

d) Interactive Internet Mapping. Internet mapping is a rapidly growing trend in GIS software and applications development. Internet mapping applications go beyond using the power of the Internet to just locate and download existing geospatial databases. Internet mapping technology provides the ability to graphically display, combine and analyze geospatial data remotely. This evolution of GIS technology is having the effect of moving GIS applications from just the desktops of central office technical personnel, to putting these powerful tools in the hands of personnel in agency field offices and in the hands of the general public via the Internet.

However, the application of Internet mapping technology requires an additional layer of technical skills, software, and hardware, in addition to the traditional GIS requirements. The provision of this service within the context of a broader geospatial data center would provide an efficient means for multiple government agencies to transition into this relatively new evolution in the technology. Providing this service through an enterprise data center would provide the opportunity for the multiple agencies, either with existing GIS capabilities or not, to explore the applications of this new technology without the necessity of their agency making substantial up-front investments in staff training and additional software and hardware purchases.

e) Technical Assistance. Significant public resources could be saved if GIS technical assistance was available to help guide state and local public entities in planning for and making public investments in GIS technology.   An enterprise geospatial data center would be a logical place to provide such assistance. At the current time, policy makers and administrators, at both the state and local level, are called upon to make public

investment decisions related to the development and/or procurement of GIS data, hardware and software, and technical personnel, for which they have little or no experience. Absent that experience, it is relatively easy to make GIS-related investment decisions that can have costly long-term negative consequences. At the present time, there is no entity in state government charged with providing this type of GIS-related technical assistance. The nature of this assistance could vary widely. Many state or local agencies would benefit greatly from the availability of a consultant to help them plan an overall multipurpose GIS implementation strategy and to work with vendors on implementation. Technical assistance is needed to help define data needs and help negotiate with vendors for GIS data development to realize the required data quality and compatibility for the widest range of applications and users.   The availability of limited technical assistance could also help stretch the capabilities of current agency personnel to develop new application and utilize new software capabilities without extensive additional training.

f) <u>Pooling of resources</u>. Many entities (state, local, federal and private) have need of similar geospatial databases (streams, roads, street addresses, digital photography, etc.). Great efficiencies can be gained, when these entities cooperate in the development and maintenance of geospatial databases needed by multiple entities, instead of developing duplicate or similar databases. In developing the organizational structures related to an enterprise geospatial data center, considerations should be given to incorporating mechanisms to help facilitate the voluntary pooling of resources that is frequently a key to achieving an aggregate level of resources that are necessary for many geospatial data development efforts.

Recommended Organizational Characteristics

g) <u>State Agency – University Collaboration</u>. Many states have found that there are benefits to be gained by developing an enterprise geospatial data center in an operational context that involves a state agency – university collaboration. Universities, in general, have more organizational flexibility and can draw upon a talented pool of students to help staff up to meet temporary project needs and to keep a data center on the cutting edge of technological evolution. University-related enterprises also frequently benefit from very significant price breaks from GIS software vendors. A university connection can also be helpful in drawing upon the education experience and technical expertise of the faculty in support of a technical assistance mission of the data center. On the other hand, a state agency connection can provide a more direct connection to changing state and local policies, priorities, and accountability. Given these potential benefits, opportunities for a collaborative state agency – university geospatial data center should be pursued.

h) <u>Relationship with Nebraska GIS Steering Committee</u>.   The Nebraska GIS Steering Committee is the statutorily-defined (§81-2601) intergovernmental entity charged with establishing enterprise-wide GIS policies, priorities, and standards, including "The acquisition, development, maintenance, quality assurance such as quality control standards, access, ownership, cost recovery, and priorities of data bases". For this reason, it is important for the overall coordination of the GIS enterprise in Nebraska that there be a close, and clearly defined, relationship between a Nebraska enterprise geospatial data center and the Nebraska GIS Steering Committee. As part of this relationship, the GIS Steering Committee should take an on-going, active role in assisting NDNR to explore opportunities for partnerships and collaboration as a means to enhance the services available through the Nebraska geospatial data center.

i) <u>Enterprise Service Focus</u>. If a geospatial data center is to be successful in providing the state's overall GIS enterprise with efficient and reliable services, such as on-going geospatial data integration, online data distribution, and technical assistance, it is important that it be designed and structured around an enterprise service focus. If the enterprise is to gain the maximum efficiencies and benefits from such a data center, it is important that the various entities within the enterprise feel that they can rely on these services being consistently available through the data center. Such reliability will minimize the tendency of other entities to develop similar or redundant systems to ensure the availability of these services. While it is probable that such a geospatial data center would be located within the context of an existing agency, policies and/or organizational structures should be considered to help buffer the enterprise data service center from the short-term fluctuations in the host agency's priorities. In a similar vein, to provide these reliable services to the enterprise, it would be important to the host agency that they have at least a minimum level of relatively stable funding to support this enterprise service function.