

Montana NRIS Advisory Committee
Issue Action Form - NRIS Role in Framework Data Access

For Meeting date 05/14/02

Provide a brief action statement:

NRIS has served as the primary point of access to Framework data layers for many years, but is not formally recognized as such. The Montana State Library therefore seeks recognition and support of the Natural Resource Information System as a primary access point for framework data layers in Montana. NRIS shall provide direct access to these data and/or integration of these data through user interfaces and applications.

Provide a brief narrative describing the issue: X See Attached

Signature of Submitter

Signature of Member if different than submitter

Date

This portion to be completed by the Chair

Committee Action:

voted to approve
 no action

voted to deny
 other (describe below)

Signed _____

Date _____

The NRIS Role in Framework Data Access in Montana

NRIS Advisory Committee Discussion Document
May 14, 2002

Framework Data Described:

The Federal Geographic Data Committee (FGDC) coordinates the development of the National Spatial Data Infrastructure (NSDI). The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geographic data. The 17 federal agencies that make up the FGDC are developing the NSDI in cooperation with organizations from state, local and tribal governments, the academic community, and the private sector. The goal of the NSDI is to reduce duplication of effort among agencies, improve quality and reduce costs related to geographic information, to make geographic data more accessible to the public, to increase the benefits of using available data, and to establish key partnerships with states, counties, cities, tribal nations, academia and the private sector to increase data availability.

The FGDC identified seven key geospatial data layers as critical in geographic information system (GIS) development and use. These *Framework data layers* serve as the basic foundation on which powerful GIS applications can be built. The Montana GIS community has expanded this set of Framework data layers with the addition of four more data layers, bringing Montana's current total to eleven (see attachment "A"); additional layers may be added. The Montana Geographic Information Council (MGIC) recently formalized a process to establish framework 'Implementation-Teams' to work on completing Framework data layers in Montana with the adoption of the Montana Spatial Data Infrastructure (MSDI) Strategic Plan.

Framework data are described by the FGDC as follows:

...framework data serve as the base data for a great deal of problem solving and many operations...

...framework data provide a base on which users' data can be overlaid or a frame to which they can be attached...

...framework data enable you to register your data, which places them in their correct geographic context for further development and enables incorporation of data from other sources...

...framework data are intended to provide basic geographic data in a common form that is readily accessible, so that organizations can devote their efforts to their own application data and activities...¹

Framework Data Implementation:

The FGDC describes seven functions necessary to ensure the availability of Framework data: data development/maintenance; data access; data management; coordination;

¹ Federal Geographic Data Committee. 1997. *Framework Introduction and Guide*. Federal Geographic Data Committee. Washington, D.C. pp 16.

executive guidance; resource management; and monitoring and response. Although NRIS has participated in and will continue to participate in many of these activities, most are primarily the function of others in the GIS community. For example, MGIC provides executive guidance regarding the Montana Spatial Data Infrastructure; the Department of Administration's Information Technology Services Division (ITSD) is coordinating the development of the cadastral and transportation data layers, and plays an overall coordinating role in the development and implementation of the Montana Spatial Data Infrastructure Strategic Plan.

NRIS is primarily involved with the data access function, described in part by FGDC as follows:

Data access enables participants to obtain framework data. The major activities include providing access to data and metadata, processing data requests and charges, determining and providing needed data distribution formats, and reporting and acting on users' concerns. This function also directs users to other resources.²

Framework Data Models:

The FGDC describes two fundamental models at the opposite extremes of Framework organization. In the 'Centralized Model', one organization performs all Framework functions with the exception of data creation and updates. In the 'Decentralized Model', many organizations within a geographic area take on both data development and data access functions as well as other Framework functions, in a closely coordinated, networked structure.

The FGDC also describes a hybrid model that more closely matches the current situation in Montana. In this model, one or more organizations provide some, but not all, functions for the group. Currently in Montana, MGIC provides executive guidance, ITSD provides overall coordination and NRIS provides primary data access; data development and maintenance responsibilities relating to the currently identified eleven Framework data layers are distributed among ten agencies.

NRIS has been a long time user and distributor of Framework data and serves as the only current centralized source for existing Framework data in Montana. Because Framework data are base data needed for most comprehensive spatial analysis, the ability to use Framework data to provide context for locating data, to serve as base data for display and analysis, and to facilitate the integration of data from multiple sources are necessary to allow NRIS to fulfill its legislative requirement to be "...a comprehensive program for the acquisition, storage, and retrieval of existing data relating to the natural resources of Montana..." (MCA 90-15-301). NRIS, therefore, as the only current centralized source for existing Framework data, serves the Framework data access function as described by FGDC.

² Federal Geographic Data Committee. 1997. *Framework Introduction and Guide*. Federal Geographic Data Committee. Washington, D.C. pp 34.

It is important to note that some organizations responsible for data development and maintenance (Framework data custodians) provide direct access to their data, through varying means. Access to individual Framework data layers through each custodial agency could be problematic. Some potential drawbacks include:

- incompatible format and structure;
- multiple (or non-existent) and non-standardized data access methods;
- lack of requirements on the part of all custodial agencies to disseminate "public" data;
- lack of user support within some custodial agencies;
- requires multiple points of contact for users;
- reduced coordination and cooperation opportunities;
- benefits of data integration are not realized.

Planning, coordination and oversight, as well as continued improvements in software, hardware and Internet infrastructure, may eventually reduce or eliminate some of the problems associated with users accessing individual data sets directly through each custodial agency; the approach used by NRIS to facilitate user access to data will evolve accordingly. For example, NRIS currently accomplishes the data integration necessary in order to provide data access by routinely importing copies of data layers obtained from custodial agencies. For data layers that are dynamic in nature (e.g. cadastral), the ability of a custodial agency to directly serve their data is important in order to reduce the lag in data update associated with the current model. Many factors will determine whether and how a custodial agency will directly serve its data to users, including the cost of developing the necessary infrastructure (hardware, software, staff) versus the cost of routine data transfer to a central source, the rate of change of their data and the relative importance of making available the very latest changes, and the potential benefits to the agency of developing data dissemination technology and expertise in house. As some custodial agencies develop the ability to directly serve their data, NRIS will accomplish its data access and integration function by linking directly to such data sources, thus reducing the need for routine transfer of data layers. NRIS will work with the individual Framework data custodians to continue to establish and refine appropriate mechanisms for effective and efficient data access.

The Proposed NRIS Solution to Framework Data Access:

NRIS seeks recognition as a primary point of access for Framework data in Montana. **NRIS shall provide direct access to these data and/or integration of these data through user interfaces and applications.** The following points are relevant:

- NRIS' legislative mandate (90-15-301, MCA) is to provide " . . . a comprehensive program

CLEARINGHOUSE VS. CUSTODIANSHIP

It is vital to understand that NRIS is not proposing to serve as *custodian* of all Framework data layers but rather to serve the *data access* function (commonly referred to in NRIS documents as its clearinghouse role). These are two very different functions. *Custodianship* includes the development, management, and maintenance a particular data theme. The role of custodian usually lies with an agency whose mission links closely to a particular layer or layers (e.g. the Natural Resources Conservation Service creates and maintains the soils data layer). The role of information *clearinghouse*, is on the other hand, clearly at the foundation of the NRIS mission, and clearly in line with the Montana State Library's mission as well.

Natural Resource Information System - Role of NRIS regarding Framework Data

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for the acquisition, storage, and retrieval of existing data relating to the natural resources of Montana";

- Virtually all Framework Data layers are stored and used by NRIS in the manner described by the Federal Geographic Data Committee in order to effectively carry out NRIS' legislative mandate;
- Dissemination of Framework Data layers is in line with the mission and statutory requirements of the Montana State Library;
- Montana library law protects the privacy of those who access information;
- State Library policies and Montana's laws and constitution guarantee equitable access to information;
- NRIS has the technical expertise to assist others maintaining or integrating Framework data to insure effective, efficient and standardized data access;
- NRIS has data hosting capabilities that may be used by custodial agencies in the event that direct data access is not provided by custodial agencies;
- NRIS has the necessary staff, expertise and infrastructure to serve the Framework data layers and can offer an alternative to costly duplicative efforts to provide public access. .

NRIS has served as the primary point of access to Framework data layers for many years, but is not formally recognized as such. The Montana State Library therefore seeks recognition and support of the Natural Resource Information System as a primary access point for framework data layers in Montana. NRIS shall provide direct access to these data and/or integration of these data through user interfaces and applications.