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The Honorable Ralph Regula
Chairman
The Honorable Sidney R. Yates
Ranking Minority Member
Subcommittee on Interior
and Related Agencies
Committee on Appropriations
House of Representatives

Subject: Land Management Systems: Information on BLM's Automated Land and Mineral Record System Release 2 Project

In response to your April 7, 1997 request, we are providing you with information on the Bureau of Land Management's (BLM) Automated Land and Mineral Record System (ALMRS) Release 2 information system project. You asked for a description of the ALMRS Release 2 project and information on the status of the project.

As you know, the Department of the Interior's BLM is developing ALMRS¹ to improve its ability to record, maintain, and retrieve land description, ownership, and use information. ALMRS initial operating capability (IOC), the initial release of ALMRS, is moving into the final testing phase which is expected to be completed in November 1997. ALMRS IOC, with new software and upgraded hardware, is to provide support for case processing activities and information for land and resource management activities. BLM is proposing Release 2 to improve processing efficiency and provide additional automated capabilities.

¹We addressed BLM's progress and risks in developing ALMRS in two prior reports: Land Management Systems: Progress and Risks in Developing BLM's Land and Mineral Record System (GAO/AIMD-95-180, Aug. 31, 1995) and Land Management Systems: BLM Faces Risks in Completing the Automated Land and Mineral Record System (GAO/AIMD-97-42, March 19, 1997).

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BACKGROUND

BLM's mission is to manage public lands and resources to serve the needs of the American people. It maintains over 1 billion records, which cover land and mineral ownership for about 564 million acres for which BLM has surface or subsurface management responsibilities. These records include land surveys, surveyors' notes, tract books, land patents, mining claims, oil and gas leases, and land and mineral case files.

Since 1993, BLM has been developing ALMRS IOC to (1) automate land and mineral records and case processing activities, including leasing oil and gas reserves, recording valid mining claims, processing mineral patents, and granting rights-of-way for roads and power corridors and (2) provide information to support land and resource management activities, including timber sales and grazing leases. BLM expects to complete the development of ALMRS IOC late in fiscal year 1997, operational assessment testing and evaluation in October 1997, and independent verification and validation in November 1997. On the basis of these final tests, BLM plans to certify, in November 1997, whether the system performs accurately and effectively, and provides the expected capabilities.

ALMRS RELEASE 2: DESCRIPTION

BLM is now planning the ALMRS Release 2 project to add to the ALMRS IOC system's capabilities. The ALMRS Release 2 project is in a conceptual stage, thus information about the project is of a preliminary and general nature. BLM has recently begun more detailed planning and, in the next few months, expects to have a more precise description of the project, articulation of its specific functional requirements, and cost estimate.

BLM's preliminary estimate for the life cycle cost of ALMRS Release 2 is about \$42 million. Software development is planned for fiscal years 1998 and 1999 for a total estimated cost of \$15.2 million. Hardware acquisition, planned for fiscal year 1999, is estimated at \$7.9 million for additional servers, additional disk storage, and upgrades to the telecommunications network. The remaining estimated cost, approximately \$19 million, is primarily for operations and maintenance through fiscal year 2005.

As described below, the ALMRS Release 2 project is intended to improve ALMRS IOC by providing (1) a more economical and efficient database structure, (2) capabilities that were planned for ALMRS IOC but could not be delivered within that project's budget or schedule, and (3) new automated capabilities. BLM's preliminary planning documents show that ALMRS Release 2 will be composed of several modules. Since the project is in the preliminary

planning stage, the following BLM descriptions and estimated costs could change as the Bureau further defines its requirements.

- Database optimization. This is a remedial effort to redesign the ALMRS IOC database structure to improve system performance and reduce long-term maintenance costs. According to BLM, an optimized database design will allow for quicker response times for displaying cartographic products² and will simplify linkages with other natural resource management agencies, such as the U. S. Forest Service. The module is also expected to improve BLM's ability to manage data. For example, it is expected to allow the Bureau to collapse data models into smaller subsets and employ more user friendly data names. BLM's preliminary cost estimate to develop this module is \$5.9 million.
- Access and security. This module is to improve overall security for ALMRS data. It is to provide a higher level of security for sensitive data, such as mineral production and lease data, by adding password protection and other security measures. According to BLM, the increased protection is needed for the planned ALMRS environment in which data will be exchanged with external customers, including other federal, state, and local government agencies; commercial businesses; and special-interest groups. This module is also to include a component that will manage internal access to ALMRS and maintain passwords, user accounts, and other security controls. BLM's preliminary cost estimate to develop improved access and security capabilities is \$2.9 million.
- Queries and reports. This module is to provide a case information reporting capability that was deferred from ALMRS IOC and add more reporting capabilities for BLM and public users. Case information reporting is to replace a number of standard reports and provide users with an ad-hoc reporting capability—the ability to select information from databases and prepare reports they need—to help them accomplish their work. The preliminary cost estimate to develop the queries and reports capabilities is \$4 million.
- Cartographic products. This module is to improve the quality of ALMRS IOC map-based displays so they can be more readily used by BLM field office personnel. It is also intended to produce new output products, provide more user friendly options to input and edit data, allow for the creation of data sets such as geographic grids and ownership information, and delineate case boundaries. This module is linked to the completion of the database optimization module and the purchase of additional hardware, which are

²Cartographic products graphically depict various information such as land ownership, mining claims, oil and gas wells, roads, and rivers.

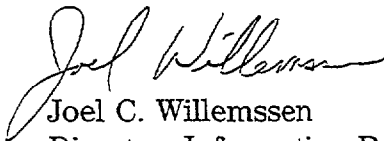
described above. BLM's preliminary cost estimate to develop this module is \$1.8 million.

- Oil and gas program support. BLM currently uses a combination of manual and automated processes in preparing oil and gas lease sales. This module would integrate and automate those processes and facilitate implementation of ALMRS in states with high volumes of oil and gas activities. The preliminary cost estimate for this module is \$600,000.

ALMRS RELEASE 2: CURRENT STATUS

ALMRS Release 2 is in the preliminary planning phase, and therefore BLM has not yet performed the detailed planning work needed to fully define and justify the project. According to the Assistant Director, Information Resources Management, BLM recently acquired a project manager and will be performing detailed planning work over the next few months to refine the Bureau's detailed requirements and prepare a technical design for the project. The official also stated that BLM is working on the development of a project management plan to outline the scope, design, development, and deployment of Release 2. BLM expects this detailed planning work to be completed by September 30, 1997, in full compliance with the Department of the Interior's systems development policies.

We provided a draft of this letter to BLM for review. Bureau officials agree that this letter presents an accurate summarization and current status of the ALMRS Release 2 project. Should you or your staff have any questions concerning this correspondence, please contact me at (202) 512-6253. I can also be reached by e-mail at *willemsenj.aimd@gao.gov*.



Joel C. Willemsen
Director, Information Resources Management

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