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SPECIAL REPORT

CONSTRUCTION OF THE ADDITION TO THE
EARTH RESOURCES OBSERVATION
SYSTEM DATA CENTER,
U.S. GEOLOGICAL SURVEY

REPORT NO. 96-I-466
MARCH 1996

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U.S. Department of the Interior,
Washington, D.C. 20240

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United States Department of the Interior

OFFICE OF INSPECTOR GENERAL
Washington, D.C. 20240

MAR 11 1996

SPECIAL REPORT

To: Director, U.S. Geological Survey

From: *Judy Harrison* *Ron LaRochelle*
Assistant Inspector General for Audits

Subject: Special Report on Construction of the Addition to the Earth Resources Observation System Data Center, U.S. Geological Survey (No. 96-I-466)

INTRODUCTION

This special report is to advise you of the results of our review of the construction of the addition at the U.S. Geological Survey's Earth Resources Observation System (EROS) Data Center in Sioux Falls, South Dakota. The addition, which will house the archive center used to support certain activities of the National Aeronautics and Space Administration (NASA), is being constructed and furnished with funds appropriated to the Geological Survey. NASA had provided additional funds for installation of communications cabling and equipment; heating, venting, and air-conditioning systems; backup power systems; and furniture and fixtures. The review was initiated in response to a July 28, 1995, request from NASA's Office of Inspector General for information on the expenditure of NASA funds by the Geological Survey.

BACKGROUND

The EROS Data Center is a research field center of the Geological Survey's National Mapping Division. Its mission is to archive, process, and distribute remotely sensed land data produced by satellites and aircraft and to develop new uses for this information. During fiscal year 1995, EROS employed 65 Government and 308 contractor personnel and had a budget of \$36 million. EROS performs cooperative work for several Federal agencies, including NASA.

As a major part of the United States Global Change Research Program, NASA's Mission to Planet Earth Program funds and manages nine Distributed Active Archive Centers throughout the United States. These archive centers, which are part of NASA's Earth Observing System Data and Information System, are repositories for earth science data received from satellites, and the archive centers support the

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conduct of research in specific earth science disciplines. The EROS Archive Center specializes in land processes imagery. The Earth Science Data Information System Project Office at NASA's Goddard Space Flight Center is responsible for planning, budgeting, overseeing, and managing the operations of the archive centers. The Geological Survey receives funds from NASA for operating the EROS Archive Center. NASA's projected funding for fiscal years 1994 through 2000 for the EROS Archive Center was about \$26.6 million.

In June 1991, NASA provided \$900,000 to the Geological Survey under an interagency agreement to contract for an architectural and engineering study for the new Archive Center facility at EROS. The contractor provided a design for a \$12.6 million, two-level facility that adjoined the existing facility and contained 65,000 square feet of finished usable floor space on the main floor for the Archive Center and other EROS functions. Some of the features of the design included a computer center, offices, conference rooms, a 300-seat auditorium, a cafeteria, and a lobby.

On December 3, 1992, the Geological Survey and NASA entered into a memorandum of understanding for participation in the Earth Observing System Data and Information System. This agreement stated:

The Geological Survey will construct and/or lease facilities, as required, with lease and facility maintenance expenses included in annual Distributed Active Archive Center operation and maintenance costs over the life of the Earth Observing System Project, in accordance with NASA and Geological Survey funding responsibilities defined earlier.

This memorandum of understanding, however, was rendered "null and void" by the fiscal year 1994 report entitled "Congressional Conference Report for the Appropriations for the Departments of Veterans Affairs, Housing and Urban Development, and Sundry Independent Agencies, Boards, Commissions, Corporations and Offices," dated October 4, 1993, which stated:

NASA is directed, however, to provide no funds for the construction of non-NASA facilities including reimbursement of construction costs through annual data archive center operation budgets. The conferees further agree that all prior interagency agreements that would have permitted this are considered null and void and that facility costs should be borne by non-NASA agencies directly.

Consequently, funding for construction of the addition was included in the Geological Survey's fiscal year 1994 Appropriations Act (Public Law 103-138). However, the Geological Survey received only \$9 million instead of the \$12.6 million requested. According to Report Number 103-158 of the House Committee on Appropriations, Department of the Interior and Related Agencies Appropriations,

the \$9 million "represents a bare bones approach to the new facilities, but is deemed sufficient for total construction."

On May 20, 1994, the Geological Survey awarded an \$8.6 million contract to the Gil Haugan Construction Company for construction of the addition. A subsequent contract was awarded by the Geological Survey to Haugan for \$1,155,000 on August 23, 1995, for completion of the addition. Although these contracts provided for the construction of the facility based on the original structural design, components of the facility's interior and exterior were either eliminated or scaled back significantly. For example, much of the work that was included in the original plans for finishing the lower level to provide additional archive storage space was eliminated from the contract. As a result, most of the lower level space has no dividing walls, an unfinished ceiling, and dirt floors.

On November 23, 1993, the Chief of the EROS Earth Observation System Data Systems Project Office proposed that NASA provide funds totaling \$4.2 million for fiscal years 1994 through 1997 for ancillary systems and support equipment required to support full Archive Center operations. The proposed funding was designated as follows:

PROPOSED FUNDING

	<u>Fiscal Year</u> <u>1994</u>	<u>Fiscal Year</u> <u>1995</u>	<u>Fiscal Year</u> <u>1996</u>	<u>Fiscal Year</u> <u>1997</u>
Communications	\$285,000	\$330,000	\$260,000	\$150,000
Computer/Communications Room Conditioning	315,000	585,000	520,000	340,000
Conditioned Archive Space				220,000
Finish Additional Office Space *		<u>285,000</u>	<u>420,000</u>	<u>490,000</u>
Total	<u>\$600,000</u>	<u>\$1,200,000</u>	<u>\$1,200,000</u>	<u>\$1,200,000</u>

*This includes the installation of partitions, furniture, and fixtures.

NASA's Office of Mission to Planet Earth accepted the proposal for the first 2 years and provided EROS approximately \$1.8 million for fiscal years 1994 and 1995. Some of the funded items were included in the Geological Survey's original \$12.6 million cost estimate for the addition. Geological Survey officials stated that the funding to be provided by NASA in fiscal year 1996 and beyond will be addressed in proposed annual work plans provided to NASA by the Geological Survey.

OBJECTIVE AND SCOPE

The objective of our review was to provide NASA's Office of Inspector General with an accounting of NASA program funds obligated for the addition for fiscal years 1994 and 1995 and to determine how construction of the addition was affected by the reduced funding levels.

To accomplish our objective, we reviewed the Geological Survey's accounting records for fiscal years 1994 and 1995; interagency agreements between the Geological Survey and NASA; procurement documents for the addition; and applicable laws and regulations. We also physically inspected the addition and interviewed officials from the Geological Survey; NASA's Office of Inspector General; and contract personnel responsible for procuring, constructing, and monitoring construction of the addition. We performed our review at the Geological Survey's National Center in Reston, Virginia; the Geological Survey's EROS Data Center in Sioux Falls, South Dakota; and NASA's Goddard Space Flight Center in Greenbelt, Maryland. Our conclusions are presented in the Discussion section of this report.

PRIOR AUDIT COVERAGE

On May 12, 1995, NASA's Office of Inspector General issued the draft rapid action audit report entitled "EROS Data Center (EDC), Distributed Active Archive Center Facility Addition, Goddard Space Flight Center." The report stated:

NASA DAAC operations funds may have been used to augment the construction of a facility addition at EDC [EROS Data Center], a U.S. Department of [the] Interior activity. This condition has occurred because of an agreement between the Directors of the EDC and the NASA Headquarters Office of MTPE [Mission to Planet Earth], Operations, Data, and Information Systems Division. This agreement was made even though Congressional intent is to prohibit the use of NASA DAAC operations funds to finance the construction of non-NASA facilities. As a result, EDC may have already expended more than \$600,000 of FY [fiscal year] 1994 NASA funds for purposes other than appropriated. The EDC plans on expending an additional \$4.2 million of NASA funds during FYs 1995 through 1998.

The report recommended that NASA's Goddard Space Flight Center's Earth Science Data and Information System office: (1) recover any funds already expended by EROS to augment construction of the addition; (2) take immediate action to reverse its decision to provide \$4.2 million to augment the construction of the addition; and (3) immediately notify management at EROS that NASA funds of \$4.2 million are not available to augment the construction of the EROS addition.

The response to the draft report from the Assistant Associate Administrator for Mission to Planet Earth disagreed with all the audit report's recommendations. The response stated that the funds expended to date were required to provide the specified power, communications, and cooling needed to support NASA computer systems in the Archive Center. In addition, the response stated that future funding would be supplied only to the extent required to continue to provide power, communications, and other outfitting needed to support NASA systems in the EROS facility. The nonconurrence was based on the position that "the items for which NASA funds have been expended in FYs [fiscal years] 1994 and 1995 are appropriate 'facility outfitting' according to the NASA Facility Project Implementation Handbook."

NASA's Office of Inspector General issued its final audit report on September 15, 1995. In commenting on the Assistant Associate Administrator's response, the report noted that while NASA funding was used for certain items that could be clearly defined as outfitting (a PBX phone system costing NASA \$223,000), other items such as cabling, room conditioning, and an uninterruptable power supply are defined as construction costs in the NASA Handbook.

The NASA Administrator, in a July 19, 1995, letter to the Chairman, Committee on Science, U.S. House of Representatives, cited the concerns of NASA's Office of Inspector General regarding the use of NASA funds for the EROS addition. The letter stated:

The IG [Inspector General] report suggests that use of NASA Mission to Planet Earth program funds for equipment outfitting and other final space finishing alterations to the DAAC [Distributed Active Archive Center] facility, constructed by the Department of [the] Interior, could reasonably be construed as noncompliant with the Conference report direction cited above. Essentially, the question turns on interpretation of the Committee's intent with regard to "construction" of the facility and whether that extended to outfitting the facility with computers.

NASA funds are being used for equipment outfitting, space finishing, or remodeling of the Sioux Falls DAAC, consistent with requirements for performing the approved program. The equipment procured with NASA-appropriated funds remains the property of NASA until otherwise disposed. Although NASA program officials are convinced that these expenditures were not tantamount to "construction," it is obvious from the IG's report that a broader interpretation of the language is possible. We are, accordingly, informing the Committee of this matter and respectfully request a finding that this broad interpretation of the direction of the Committees on Appropriations was not the intent.

As of February 6, 1996, NASA had not received a response from the Committee addressing this request.

DISCUSSION

We determined that, as of September 25, 1995, the Geological Survey had obligated about \$10,898,874 for constructing and furnishing the addition at its EROS Data Center. The amount obligated consisted of Geological Survey funds of \$9,113,622 and NASA funds of \$1,785,252 (obligations of NASA and Geological Survey funds are summarized in Appendices 1 and 2, respectively). We also determined that the Geological Survey had significantly reduced its original plans for the addition as a result of the reduced appropriations for construction of the addition.

We did not attempt to determine whether NASA funds were used for constructing or for outfitting the addition or whether these funds were used in compliance with directions to NASA that were contained in the fiscal year 1994 Congressional Conference Report. These issues were addressed in NASA's Inspector General report and are pending before the Committee on Science, U.S. House of Representatives. Our review did reveal, however, that NASA-funded obligations totaling \$813,500 were used to fund projects that were included as direct costs in the Geological Survey's construction contract with the Gil Haugan Construction Company. (See Appendix 1.)

During our visit to EROS in September 1995, we found that the original plans for the building addition had been scaled back significantly. While the contract for the building retained the original exterior dimensions, it did not provide for the completion of all interior areas, and the exterior grading and paving and the parking facilities included in the original plan were reduced significantly. When the contract is completed, the majority of the lower level of the structure will be essentially an unfinished area, with dirt floors and unfinished ceilings and walls; the planned cafeteria will be an unfinished room; and an elevator will not be installed in the completed elevator shaft. An EROS official stated that these areas will be finished to meet increased space requirements as funds become available. According to these officials and construction and architectural personnel, the cost to complete the building will be significantly higher than had the building been completed under the initial contract. We suggest that Geological Survey officials develop a plan, including estimated costs, for completing the facility.

A response to this report is not required. However, if you have any questions regarding this report, please contact Mr. Andrew Fedak, Regional Audit Manager, Eastern Region, at (703) 235-9231.

cc: Assistant Secretary for Water and Science
Inspector General, National Aeronautics and Space Administration
Audit Liaison Officer, Water and Science
Audit Liaison Officer, U.S. Geological Survey

**NASA-FUNDED OBLIGATIONS FOR
THE ADDITION TO THE EROS DATA CENTER
THROUGH SEPTEMBER 25, 1995**

<u>Description</u>	<u>Obligated Amount</u>	<u>Explanatory Notes</u>
COMMUNICATIONS:		
Cable Tray	\$18,000 *	(1)
PBX System	223,000	(2)
Communications Cabling/ Equipment	<u>441,064</u>	(1)
Subtotal	\$682,064	
Overhead @ 15%	<u>102,310</u>	(3)
Subtotal	<u>\$784,374</u>	
COMPUTER/ COMMUNICATIONS ROOM CONDITIONING:		
Access Flooring	\$220,000 *	(4)
HVAC Equipment	270,000 *	(4)
UPS Cabling/Switchgear	<u>305,500 *</u>	(5)
Subtotal	\$795,500	
Overhead @ 15%	<u>119,325</u>	(3)
Subtotal	\$914,825	
CONDITIONED ARCHIVE SPACE:		
	<u>0</u>	
FINISH ADDITIONAL OFFICE SPACE:		
Furniture/Fixtures	<u>\$74,829</u>	(6)
Subtotal	\$74,829	
Overhead @ 15%	<u>\$11,224</u>	(3)
Total	<u>\$86,053</u>	
Grand Total	<u>\$1,785,252</u>	

* These items, totaling \$813,500, were included as direct costs in the Gil Haugan construction contract.

EXPLANATORY NOTES:

(1) Cable Tray and Communications Cabling/Equipment: This work involves extending local and wide area network cables, switches, related equipment, and fiber optic cable to each office and laboratory area of the Archive Center.

(2) PBX System: This is a digital switching system used for telecommunications that will service the entire EROS facility, including the addition. NASA agreed to fund one-half of the cost of this system, and the Geological Survey used operations funds to pay for its half of the costs. This system includes expansions to the telecommunications equipment for both standard telephone and video teleconferencing systems.

(3) Overhead Rate: This is a rate that the Geological Survey's National Mapping Division charges for equipment purchases and related items. We did not audit this rate.

(4) Access Flooring and HVAC (Heating, Venting, and Air Conditioning) Equipment: This work involves the acquisition and installation of special computer electrical, grounding, and cooling equipment and systems in the Archive Center computer room and communications area in preparation for the delivery, installation, and operation of Archive Center Systems. This work also includes the acquisition and installation of raised flooring, which is needed in a computer facility to store the large number of wires and cables needed to operate a large computer system.

(5) UPS (Uninterruptable Power Supply) Cabling/Switchgear: This equipment includes uninterruptable power systems, emergency power generators, and additional power distribution equipment.

(6) Furniture/Fixtures: This work includes outfitting office space and work area support space, such as computer operations areas, visiting scientist and user assistance areas, training rooms, conference rooms, and clerical support areas, with items such as desks, modular furniture, chairs, and shelves.

USGS-FUNDED OBLIGATIONS*
FOR ADDITION TO THE EROS DATA CENTER
THROUGH SEPTEMBER 25, 1995

<u>Description</u>	<u>Obligated Amount</u>			<u>Explanatory Notes</u>
	<u>FY 1994</u>	<u>FY 1995</u>	<u>Total</u>	
Salaries	\$55,063	\$53,979	\$109,042	(1)
Travel	4,111	1,559	5,670	(2)
Supplies	566	0	566	
Postage	240	0	240	
Printing	192	0	192	
Gil Haugan Contract	4,000,000	4,995,700	8,995,700	(3)
Reimbursable Billing	0	2,212	2,212	(4)
Total	<u>\$4,060,172</u>	<u>\$5,053,450</u>	<u>\$9,113,622</u>	(5)

EXPLANATORY NOTES:

- (1) Salaries: Salaries were paid to the contracting officer and the contracting officer's representative from operations funds separate from the funding appropriated for the addition.
- (2) Travel: These travel expenses were for the contracting officer, the space facility management specialist, and the contracting officer's representative from operations funds separate from the funding appropriated for the addition.
- (3) Gil Haugan Contract: These contract obligations were to the contractor that was building the addition, net of NASA-funded direct costs totaling \$813,500. All funding for the contract was provided from the appropriations for the addition.
- (4) Reimbursable Billing: This amount was paid to the Washington Computer Center from operations funds separate from the funding appropriated for the addition.
- (5) Total: This amount represents obligations recorded in the accounting system as of September 25, 1995.

* All obligations except those included in the Gil Haugan contract were funded from Geological Survey operations funds. The Haugan contract obligations were funded from Geological Survey funds appropriated for the addition and did not include funds provided by NASA. (See Appendix 1.)

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