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TO:		ACTION	INFO
1.	D/OLL		✓
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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

SPECIAL Chrono

March 16, 1984

OMB

LEGISLATIVE REFERRAL MEMORANDUM

TO: Legislative Liaison Officer

Department of Agriculture
National Aeronautics and Space Administration
Department of Commerce
Office of Science and Technology Policy
Federal Communications Commission
General Services Administration
Department of Justice
Department of State
Central Intelligence Agency
National Security Council
Department of Transportation

SUBJECT: Department of the Interior proposed testimony for 3/22/84, on S. 1855, S. 1861, S. 2292 -- LANDSAT Commercialization Act.

The Office of Management and Budget requests the views of your agency on the above subject before advising on its relationship to the program of the President, in accordance with OMB Circular A-19.

A response to this request for your views is needed no later than 4:00 p.m. - Tuesday, March 30, 1984. Oral comments acceptable.

Questions should be referred to William A. Maxwell (395-3890), the legislative analyst in this office.

James C. Murr for
Assistant Director for
Legislative Reference

Enclosures

cc: Scott Gudes
Dan Taft
Tim Sprehe
Arnie Donahue
Norine Noonan
Pat Szervo
Bill Hughes

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CONGRESSIONAL TESTIMONY BEFORE THE SCIENCE, TECHNOLOGY, AND SPACE SUBCOMMITTEE OF THE SENATE COMMERCE, SCIENCE, AND TRANSPORTATION COMMITTEE

Mr. Chairman and members of the subcommittee, my name is Doyle G. Frederick; I am the Associate Director of the U.S. Geological Survey (title). On behalf of the Department of the Interior, I am pleased to be here today to discuss Interior's perspective on commercialization of the U.S. land remote sensing satellite system. I will also comment briefly on selected aspects of the three bills before this subcommittee pertaining to satellite land remote sensing -- S. 2292, S. 1855, and S. 1861. All three bills have as a principal objective the maintenance of United States leadership in this technology. Of the three bills, S. 2292, recently introduced by Chairman Gorton and Senator Goldwater, appears to be the most comprehensive and is quite similar to H.R. 4836, recently introduced in the House Committee on Science and Technology. Hence, my comments directed towards the legislation will concern S. 2292, the "Land Remote Sensing Satellite Communications Act of 1984."

I want to emphasize at the outset that the Department of the Interior is among the strongest advocates for this new era of remote sensing technology. The Department was among the earliest to recognize the potential of satellite land remote sensing for managing the country's land and water resources. During the last decade, managers, planners,

and scientists within the various Bureaus of the Department have learned to use data from Landsat by employing a balanced approach, combining remotely sensed data from satellite and aircraft with other forms of topographic and cartographic data and with ground verifications. Landsat data, in combination with other types of data, have been used to support geologic analyses, hydrologic assessments, land cover mapping, image mapping, and applications research.

For example, Landsat and digital elevation data have been used to make land cover classifications for about 130 million acres of Alaska lands. Participants in this program include the U.S. Geological Survey (USGS), Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service (USFS), and the State of Alaska. Another 60 million acres of land are being classified this year and we expect to complete the entire state in the next 3 to 4 years. Prior to this time, very little land cover information had been available for vast regions of Alaska. These Bureaus and Agencies are now using Landsat data, as part of a digital data base, for a variety of applications. Data bases have been developed for many of the National Wildlife Refuges, where they are used for Refuge planning in response to the Alaska National Interest Lands Conservation Act of 1980. Other applications include engineering and water resource planning on the North Slope, and wildfire suppression planning on public lands.

Interior Bureaus are actively using Landsat data in their operational as well as research programs. Several Bureaus have facilities and trained staff devoted to the analysis of remotely sensed data (including Landsat) and other earth science data. Selected locations include USGS (Reston, Virginia; Denver, Colorado; Flagstaff, Arizona; Sioux Falls,

South Dakota; Menlo Park, California; and Anchorage, Alaska), BLM (Denver, Colorado; and Anchorage, Alaska), USFWS (Ft. Collins, Colorado; Slidell, Louisiana; St. Petersburg, Florida; and Anchorage, Alaska), NPS (Denver, Colorado), and Bureau of Reclamation (Denver, Colorado). Other Bureaus and Agencies are using these facilities as well as the services of the private sector to test and implement the use of Landsat technology.

Interior's commitment to fostering the use of remote sensing was consolidated in 1966 by the formation of the Earth Resources Observation Systems (EROS) Program. Under the guidance of the staff of this Departmental activity, awareness of possibilities of aircraft and satellite remote sensing was increased in the Department. EROS scientists and managers helped in the conceptual design of the first Earth Resources Technology Satellite, ERTS-1 (now known as Landsat 1). The EROS Data Center was established in Sioux Falls, South Dakota, at the beginning of the Landsat program to serve as a national center to process, archive, and distribute Landsat products to users. This role in the Landsat program began as a cooperative effort with the National Aeronautics and Space Administration (NASA) and continues today with the National Oceanic and Atmospheric Administration (NOAA) that now has management responsibility for the operational aspects of the Landsat program. The Data Center's continuing association with the Landsat program is also demonstrated by its active contacts with foreign landsat ground receiving stations and international remote sensing programs.

At the time that the EROS Data Center began to process and distribute Landsat data in the early 1970's, the Department made a commitment to develop a national capability at the Data Center for analyzing remotely sensed data and transferring this new technology to various program

elements of the Department. This action was entirely consistent with, and a logical extension of, the EROS Program concept that was formulated in the late 1960's. Over the years, the EROS Data Center's capabilities for image processing, spatial data handling, and technology transfer grew rapidly. Many cooperative projects were begun with Interior Bureaus, and specially designed training courses were offered to Interior and other Federal agency personnel to help spread an understanding of the potential uses of remote sensing technology. Active participation by EROS personnel helped several Bureaus to establish some of the Department's remote sensing/digital data analysis centers that I mentioned earlier. EROS scientists continue to cooperate with Bureau personnel to develop and implement new technology.

At the present time, the Center has over 300 employees (a combination of Government and contractor personnel), with less than one-fourth of these directly identifiable to landsat data handling and processing. The majority of the individuals who staff the Center's data handling and distribution activities are shared between NOAA's Landsat activities and USGS's aircraft data program. Only 10 to 12 full-time individuals are unique to Landsat operations. Computer facilities and photographic processing equipment are also shared between Landsat and other Center activities.

If the Center's Landsat processing activity were to be taken over by a commercial system operator, there would be an obvious impact on the Center's work force. However, the Center would continue to serve the wide variety of Departmental functions that it has addressed for many years, including 1) specialized processing of Landsat data to meet unique Interior needs (image mapping, enhanced images, geographically registered

data sets, etc.); 2) cooperative applications projects [illegible] Landsat data as well as many other digital earth science data sets; 3) research and software development, leading to more effective ways to manipulate digital data and use geographic information systems; 4) training and technology transfer; and 5) archiving, processing, and distributing aircraft data products. Because of these ongoing Interior functions, it should be clearly understood that the EROS Data Center's hardware systems will not be available for possible transfer to a commercial operator.

We support wording in the legislation that confirms the role of NASA, NOAA, and other Federal agencies to continue land remote sensing research and development. The Department intends to continue its remote sensing research and development programs which are designed to meet its specific resource information requirements. By carefully defining our information requirements and data needs, we will continue to test, evaluate, and implement new approaches to data analysis and applications.

Interior Bureaus and Offices have worked actively with data that are obtained from new aircraft and satellite sensing systems, including Landsat. We have undertaken research and development to understand the unique characteristics of each new data type, as well as to explore ways that new data can be used to evaluate, inventory, and monitor our nation's natural resources. For example, we have found that the improved spectral resolution of Landsat Thematic Mapper (TM) data helps geologists to identify important mineral occurrences that were not revealed on Landsat Multispectral Scanner (MSS) images. As another example, the increased spatial resolution of TM data has permitted the Geological Survey to print more detailed image maps. The recently released false-color satellite image map of the Washington, D.C. area, printed at

a scale of 1:100,000 has been shown to meet National Map Accuracy Standards. In this way it is compatible with other maps in our national map series. Other Interior Bureaus are discovering that the resolution of TM data also permits them to perform more detailed inventories of Federal lands under their jurisdiction.

Interior will continue to perform studies like these as new data are generated by future satellite sensing systems. We plan to use new data from both the MSS and TM sensors on Landsat 5, and would hope to use data provided by a commercial system operator as defined under Title III of S. 2292, and data from other operators who obtain licenses to collect data under Title IV. Furthermore, foreign sensing systems are being designed with features not offered by Landsat 5 (improved spatial resolution, stereo imaging capability, and microwave spectral sensitivity). We will also want to work with data from these systems to keep aware of the technological benefits offered by these systems.

Based on our experiences with Landsats 1, 2, 3, and 4, we believe very strongly that there is a need for technological improvement throughout the 1980's in sensor design, data processing procedures, and analysis techniques. Improvements in spatial resolution and spectral sensitivity and the availability of stereoscopic coverage are among the technological advancements needed to ensure increased utility within the Department of data from U.S.-sponsored systems.

The Department has made a significant investment in personnel as well as facilities to use this emerging technology. Continuity in the availability of data from Landsat and follow-on systems is important to the Department. Many of the applications of Landsat data are relatively new and have demonstrated a cost savings over traditional methods. For

those applications requiring current (new) data, a data gap would probably reduce the acceptance of this technology. We have noted that the transition period specified in S. 2292 (6 years) is shorter than the 12-year contract period (including the anticipated 3-year lifetime of Landsat 5) defined in the Commerce Department's Request for Proposals for Transfer of the U.S. Land Remote Sensing Program to the Private Sector. We hope that your committee will carefully consider the most appropriate transition period so that the opportunity for successful commercialization can be maximized.

We fully agree with the clauses in the proposed legislation which support the right of all nations to acquire land remote sensing data of any site on the Earth, so long as such data are made available to all potential users on a nondiscriminatory basis. Any policy other than "open skies" and nondiscriminatory data dissemination would be contrary to the longstanding tradition of the United States regarding the exchange of scientific and technologic information with other nations of the world.

A transition resulting in total commercialization should logically include a strong and viable value-added services industry in the private sector. The Department of the Interior is among those who currently draw upon this industry for enhanced products and specialized analytical services. Consequently, we are encouraged that the proposed legislation attempts to ensure that possible unfair competitive advantages by the eventual owner/operator of the satellite system be eliminated. To ensure the highest level of competition and effectiveness with the services industry, each participant must have direct, timely, and equal access to the satellite data as they become available.

Mr. Chairman, this concludes my [illegible] the opportunity to be here today, and I would be happy to answer any questions at this time.