

THE EROS DATA CENTER

AS AN

INTERIOR USER FACILITY

July 25, 1980

EROS DATA CENTER  
SIOUX FALLS, SOUTH DAKOTA  
57198

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INTERIOR USER FACILITY

- o Starting in FY 84, the EROS Data Center will be operated as an Interior User Facility:
  - o Archiving, processing, and distributing Interior aircraft data.
  - o Generation of "custom-tailored" Interior required satellite data products.
  - o Carry out Interior required applications R&D.
  - o Providing analytical services, training, and technical assistance to Interior bureaus and offices.

### INTERIOR "OPERATIONAL" USE OF LANDSAT DATA

- o Mapping geologic structure for mineral and fuel exploration (GS, BLM).
- o Identification of geologic structures for hazard assessment (GS, BLM).
- o Surface water inventories (GS, BLM, F&W, WPR).
- o Wetland inventories to assess wildlife habitat (F&W, WPR).
- o Monitoring irrigated lands (BLM, WPR).
- o Route selection for utility corridors (BLM, BPA, WPR).
- o Regional environmental surveys for preparation of environmental impact statements (GS, BLM, WPR, F&W).
- o Regional wildland vegetation mapping and wildlife habitat assessment (F&W).
- o Alaska Federal lands inventory and vegetative land cover mapping (including support of the Native Lands Act) (BLM, F&W, GS).
- o Source material for the National Land Use/Land Cover Mapping Program (LUDA) (GS).
- o Preparation of image maps of unmapped or poorly mapped regions of the Antarctica and other regions in support of national and international cooperative efforts (GS).
- o Flood and other natural disaster impact assessments (GS, BLM, WPR, F&W).
- o Map forest and rangeland fire scars and monitor rate of revegetation (BLM).
- o General geologic and land cover reconnaissance of poorly mapped areas (GS, BLM, WPR).
- o Monitoring of coastal shore line changes (GS, F&W).
- o As a base map for plotting and correlating many types of information (GS, BLM, WPR, F&W, NPS).

### "NEAR-OPERATIONAL" USES

(Will achieve "operational" status with minor refinements in techniques, with reliable and timely availability of data, or improvements in data characteristics.)

- o Identification and analysis of rock alteration areas and potentially mineralized zones.
- o Monitoring Alaskan sea ice conditions for off-shore operations and transportation route suitability.
- o Detection and monitoring of surface mining and mine reclamation activities.
- o Land use and land cover change detection and statistical analysis.
- o Monitoring long-range regional environmental changes resulting from cultural development or natural disasters.
- o Agricultural crop classification for irrigation water use determination.
- o Monitoring snow cover accumulation and melt in watersheds and hydroelectric catchments in order to contribute to predictive hydrologic models and runoff calculations.
- o Monitoring rangelands for drought and other forms of stress.
- o Site suitability evaluation and recreation resource inventory of national park lands.
- o Oil slick detection and monitoring.
- o Monitor rangeland to cropland conversion.
- o Monitoring of desertification and drought assessment.
- o Geohydrologic analysis and ground water targeting methodologies.
- o Monitoring of defoliation and other stages of vegetation stress.
- o Assessment and monitoring of physical water quality and turbidity.
- o Shallow seas mapping in trust territories.

## MAJOR AREAS OF RESEARCH

- o Development of luminescence sensors and data applications.
- o Development of crop-soils interrelationship models.
- o Techniques for merging remote sensing, geophysical, topographic, and other forms of digital geo-referenced data.
- o Development of optimized sampling methodologies.
- o Merging of Landsat RBV and MSS data.
- o Development of suitable digital geo-referenced data information systems.
- o Development of automated planimetric mapping systems based on Landsat parameters.
- o Planning for collection and analysis of geophysical data related to the thermal, heat capacity, magnetic, and gravity fields of the Earth.
- o Development of all-weather monitoring capabilities for soil moisture measurement, sea ice mapping, oil spill detection, hazard and disaster assessment, snow cover mapping, sea state, and wave spectra.
- o Development of data compression, random access, and more efficient information techniques.
- o Development of low-cost distributed processing systems and remote analysis stations.

EDC TRAINING AND APPLICATIONS ASSISTANCE

Example of Interior Agency Support

- o Bureau of Land Management
  - o 5 Years of Cooperation
  - o Number of Training Courses
    - o 16 Basic Training, 374 Participants
    - o 8 Advanced Training, 149 Participants
      - o Total Number BLM Personnel Training - 523 (25% of BLM professionals)
  - o Cooperative Projects
    - o Alaska -- 1978-1980 Denali Vegetation Resource Inventory
    - o Arizona -- 1978-1980 Arizona Vegetation Resource Inventory
    - o Idaho -- 1979 Idaho Vegetation Resource Inventory
    - o Arizona Vegetation Resource Inventory Follow-On -- 1979-1980 Continuing
      - o Total Funds to EDC - \$400K
  - o Status of Technology in BLM
    - o Purchase of Digital Image Analysis System
    - o Establishment of Data Analysis Laboratory
    - o Establishment of Remote Sensing Branch
    - o Operational Use of Data
    - o Continued Cooperation on R&D Tasks

EROS PROGRAM BUDGET PROJECTION  
(Constant FY 82 Dollars in Millions)

<u>OPERATING COSTS</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	
1. Applications Research, Training, and Technical Assistance (Including Program Management)	5.3	5.3	5.3	
2. Aircraft Data Processing, Archiving, Inquiry and Order Handling, Reproduction and Distribution	3.8	3.8	3.8	
3. Satellite Data Processing, Archiving, Inquiry and Order Handling, Reproduction and Distribution <sup>1/</sup>	4.8	5.3 <sup>2/</sup>	2.3	Landsat data handling runout costs (FY 82-88) are \$22.3m direct and \$37.0m with apportioned fixed costs.
4. Fixed Costs - Facility Lease, Taxes, Utilities, Maintenance, Security, etc.	4.5	4.5	4.5	
TOTAL COSTS	18.4	18.9	15.9	
<u>RECEIPTS</u>				
1. Aircraft Product Sales	1.1	1.2	1.3	
2. Satellite Product Sales	2.9	3.0	0.7	
3. Training Services	0.4	0.4	0.5	
4. NCIC Support	0.8	0.8	0.8	
5. Net EROS Appropriation Required	<u>13.2</u>	<u>13.5</u>	<u>12.6</u>	
TOTAL RECEIPTS	18.4	18.9	15.9	

<sup>1/</sup> Assumes no TM data public dissemination at EDC.

<sup>2/</sup> Includes \$250 one-time software mod to EDIPS.

MASTER EROS PROGRAM BUDGET PROJECTION  
(Real Year Dollars in Thousands)

	<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>	<u>FY 85</u>	<u>FY 86</u>
<u>OPERATING COSTS</u>							
1. <u>EROS Program Management (Reston)</u> Administrative and Programmatic Management	796	500	500	500	500	500	500
2. <u>EROS Program Applications R&amp;D (Reston)</u> Interbureau Interior Applications R&D at Reston	900	900	900	900	900	900	900
3. <u>EDC Applications R&amp;D and Technology Transfer</u> Carrying out Applications R&D, Technique Development, and Technology Transfer	3,324	3,512	3,897	3,932	4,401	4,865	5,366
4. <u>Product and Information Systems R&amp;D</u> Systems and Software Development and Image Processing R&D	762	826	851	1,169	882	953	1,029
5. <u>Landsat Digital Data Processing</u> Operation of the MSS and RBV Digital Processing and Archive Creation System	1,509	1,585	1,635	1,885	1,147	1,238	1,338
6. <u>Archive and Data Base Management</u> Operating Film Archives, Data Base and Main Image File Creation; Incoming Inspection, and Accession Aids Preparation	835	846	896	968	927	1,001	1,081
7. <u>Information Services</u> Inquiry Processing, Terminal Network Support, and Information Systems O&M	723	714	764	825	685	740	799
8. <u>Data Reproduction and Distribution</u> Imagery and CCT Reproduction, Order Handling, and Billing and Accounting	3,561	3,858	4,458	5,031	3,660	3,953	4,269
9. <u>Ongoing EDC Facilities and Administration Costs</u>	3,940	4,263	4,463	4,712	5,089	5,496	5,936
SUBTOTAL	<u>16,350</u>	<u>17,004</u>	<u>18,364</u>	<u>19,922</u>	<u>18,191</u>	<u>19,646</u>	<u>21,218</u>
<u>RECEIPTS</u>							
1. <u>Product Sales</u>	3,500	3,700	4,000	4,200	2,000	2,300	2,700
2. <u>Training and Cooperative Projects Income</u>	310	405	405	425	500	500	500
3. <u>NCIC Funding</u>	800	800	800	800	800	800	800
4. <u>Net EROS Appropriation Required</u>	11,740	12,099	13,159	14,497	14,891	16,046	17,218
SUBTOTAL	<u>16,350</u>	<u>17,004</u>	<u>18,364</u>	<u>19,922</u>	<u>18,191</u>	<u>19,646</u>	<u>21,218</u>