WESTERN STATES WATER COUNCIL

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Web Page: www.westgov.org/wswc

July 31, 2006

Dr. John H. Marburger, III
Director, Office of Science & Technology Policy
Executive Office of the President
Eisenhower Executive Office Building
Washington, DC 20502

Mr. P. Patrick Leahy, Acting Director
U.S. Geological Survey
12201 Sunrise Valley Drive, MS: 100
Reston, VA 20192-0002

Dr. Michael Griffin, Administrator
National Aeronautics & Space Administration
Headquarters, Suite 1M32
Washington, DC 20546-0001

The Honorable John McCain
United States Senate
241 Russell Senate Office Building
Washington DC 20510

Vice Admiral Conrad C. Lautenbacher, Administrator
National Oceanic & Atmospheric Administration
14th & Constitution Avenue NW, Room 5128
Washington, DC 20230

The Honorable Ralph Hall
U.S. House of Representatives
2405 Rayburn House Office Building
Washington, DC 20515-4304

Dear Sirs:

On behalf of the Western States Water Council, representing the governors of eighteen western states, I am writing to reiterate our strong support for maintaining a thermal band as part of the Landsat Data Continuity Program. This information is increasingly critical for the management of western water resources, particularly agricultural water use. The current Landsat thermal band provides data vitally important to the computation of evapotranspiration and water use on a field-by-field basis. Specifically, the Surface Energy Balance Algorithm for Land (SEBAL) relies on thermal data from the Landsat satellites to compute evapotranspiration for water management uses.

The Landsat data archive holds thermal data going back to the launch of Landsat 4 in 1982. We understand that current plans call for a new Landsat satellite to back up and replace the aging and failing Landsat 5 and Landsat 7, and that a request for proposals includes a thermal band option. Given the statutory directives authorizing the data continuity mission, we strongly believe the inclusion of appropriate thermal sensors is not a discretionary option, but rather a mandatory requirement. Further, the possible reliance on foreign generated thermal data is not an acceptable long-term alternative.

As the cost of obtaining thermal imaging data has dropped, the uses to which this information has been put have increased dramatically. Currently, demonstrated water resources planning and management applications include quantifying and monitoring consumptive water use by irrigated agriculture, urban and suburban landscapes, and natural vegetation, as well as calibrating ground water models, monitoring aquifer depletion, and computing water budgets for surface water models. Further, the uniformity of irrigation water application can be monitored and crop yields estimated. It is also an increasingly essential tool in monitoring the exercise of water rights, in order to ensure their use

according to myriad state and federal laws, decrees, compacts and negotiated agreements, as well as rules and regulations.

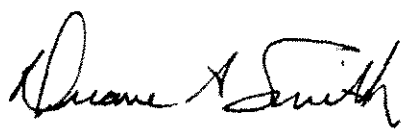
No other remote sensing capabilities available at this time, nor for the foreseeable future, can provide the band width (10.4 to 12.5 microns), high resolution (60 meters, 30 preferred), continuous coverage, workable return times (8-16 days, the shorter the better), consistency of viewing angle (maximum of 8 degrees from nadir) and time of day, coincident short-wave bands (similar to Landsat 7 with spatial resolution of 30 to 15 meters), nor the long history allowing analysis of the evolution and change in evapotranspiration. This is clearly a successful story where research has evolved into development of valuable practical applications.

Landsat thermal information has gained wide-spread use in the West. It has been used in California, Colorado, Idaho, Montana, Nevada, New Mexico, Texas, Utah, Washington and Wyoming. Its diverse uses include: (1) evaluating interstate river compact and international treaty compliance with respect to depletions from irrigation; (2) measuring ground water recharge and the impacts of pumping ground water on the water table and natural vegetation; (3) evaluating impacts on endangered species; (4) studying the impacts of land use transitions from agricultural to residential use; (5) regulation of surface and ground water use and administration of water rights; (6) determining a multi-basin water balance for planning purposes; (7) better managing irrigation practices to achieve water savings; and (8) evaluating spatial and seasonal trends in agricultural water use. More and more water-related uses of Landsat data are emerging, due in part to the drop in costs for images since 1998.

Such activities have been undertaken or proposed in the Arkansas, Bear, Boise, Upper and Lower Colorado, Lemhi, Milk, North Platte, Upper and Middle Rio Grande, Russian, Salmon, San Juan, Snake, South Platte and Yakima River Basins. This work involves federal, state and local agencies, tribes, academic interests and consulting groups.

We strongly support spending to provide for the continued availability of Landsat-comparable thermal data, and oppose any move to omit or delete the thermal band from future satellites. We hope to be able to work with you to ensure the availability of this data as we struggle to balance water uses and demands in the West.

Sincerely,



Duane A. Smith, Chairman

Western States Water Council