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# KANSAS

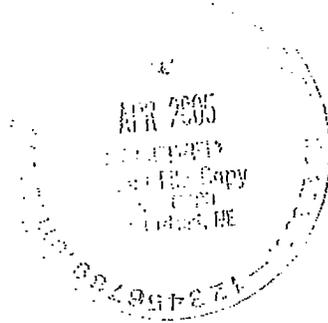
TRACY STREETER, DIRECTOR

KANSAS WATER OFFICE

KATHLEEN SEBELIUS, GOVERNOR

April 18, 2005

Jack Wergin  
Bureau of Reclamation  
PO Box 1607  
Grand Island, NE 68802-1607



NAME	INITIAL	ACTION	DATE
Steve	JA		4/21
Alice		by cy	4/21
A Mike	AK		4-21
Jack	J	✓	4/7
REMARKS: Forwarded to GP-4502 by 4/25/05 memo from AM to RD			

Dear Mr. Wergin:

Thank you for your e-mail of March 29<sup>th</sup> informing me of Kansas' approval for assistance under Title I of the Reclamation States Emergency Drought Relief Act of 1991. Kansas was approved for the drought assistance by Commissioner Keys according to the March 3, 2005 to Governor Sebelius.

We wish to have the following project considered for potential assistance:

- Kansas-Bostwick Irrigation District No. 2, Kirwin Irrigation District No. 1, and Webster Irrigation District No. 4 - not call for 2005 irrigation season storage releases from Harlan County Lake, Kirwin Reservoir, and Webster Reservoir

Preliminary cost information regarding both projects is attached.

Please let me know if additional information is needed or if you have any questions.

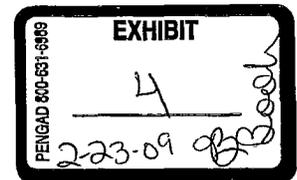
Sincerely,

Tracy Streeter  
Director

Attachment

cc: Alice Johns, Area Manager, Bureau of Reclamation  
Kenny Nelson, Manager, Kansas-Bostwick Irrigation District  
Andy Wilson, Manager, Kirwin and Webster Irrigation Districts  
Farl Lewis, Kansas Water Office

TS:sl



050461

**DROUGHT ASSISTANCE – KANSAS  
REPUBLICAN AND SOLOMON IRRIGATION DISTRICTS  
INCREASED RESERVOIR STORAGE CARRYOVER  
HARLAN COUNTY LAKE, KIRWIN RESERVOIR, WEBSTER RESEVOIR**

**Background**

Declining inflows throughout the Republican and Solomon Basins have significantly reduced storage supplies for Irrigation Districts in Southcentral Nebraska and Northcentral Kansas. These areas have suffered effects of the current drought since 2000.

Harlan County Lake - Natural flows in the Republican River and White Rock Creek and storage water from Harlan County Lake in Nebraska and Lovewell Reservoir in Kansas provide the water supply for project lands of the Kansas Bostwick Irrigation District No. 2. Declining inflows to Harlan County Lake has drastically reduced the Districts' water supply for project areas above Lovewell Reservoir. In 2003, the Kansas Bostwick Irrigation District No. 2 delivered 7.5 inches per acres above Lovewell Reservoir. Water delivery projections for 2004 were 2 inches per acre for project lands above Lovewell Reservoir. The District elected not to utilize the limited 2004 irrigation storage in Harlan County Lake and received financial incentives provided by the Kansas Water Office through the Reclamation States Emergency Drought Relief Act of 1991. In 2005, water delivery projections for lands above Lovewell are 1.0 inches per acre.

Kirwin Reservoir - Natural flows in the North Fork of the Solomon River and storage water from Kirwin Reservoir provide the water supply for the Kirwin Unit of the Solomon Division. Higher inflows experienced in the early to mid 1990s provided the project with a stable water supply. As the inflows have declined since the year 2000, the water supplies have been reduced to the levels experienced in the 1980s. Water deliveries for 2004 were approximately 4 inches per acre. Estimated 2005 water delivery projections for the Kirwin Unit are 1.5 inches per acre.

Webster Reservoir - Natural flows in the South Fork of the Solomon River and storage water from Webster Reservoir provide the water supply for the Webster Unit of the Solomon Division. Higher inflows experience in the early to mid 1990s provided the project with a stable water supply. As the inflows have declined since the year 2000, the water supplies have been reduced to the levels experienced in the 1980s. Estimated water deliveries for 2004 were approximately 4 inches per acre. Estimated 2005 water delivery projections for the Webster Unit are 1.5 inches per acre.

**Statement of Need**

The recent drought has led to historic low inflows to Harlan County Lake and have returned Kirwin and Webster Reservoirs to the lower storage levels of the 1980s. As lake levels drop, fish and wildlife habit also suffers. Lower lake levels can cause problems such as increased noxious weed and invasive species. As water levels recede the bare soil provides optimum growing conditions for Canada thistle. Salt Cedar is a noxious weed that thrives in arid climates and prefers saline rich/nutrient poor soil. Salt Cedar can have severe impacts on ground water levels, surface water flows, and native vegetation. As lake levels drop, new shorelines spread farther from existing park

facilities. New shorelines are often extremely muddy and choked with vegetation, which reduces opportunities for bank fishing, swimming, dock mooring, etc.

Lower lake levels also caused increased water temperature and lower levels of dissolved oxygen. Swanson Lake (2001) and Harry Strunk Lake (2002) in Southwest Nebraska have suffered major fish kills due to low lake levels. Some have estimated that ½ of the total fish population in Swanson Lake was lost, including many trophy size sport fish. Stocking efforts continue but it will take many years to rebuild the trophy size fishery. Harlan County Lake reached a historical low elevation in 2004.

Irrigation Districts in the Republican and Solomon Basins must decide whether or not to take the small amounts of irrigation storage water in the reservoirs and deliver it to the project lands, or to leave the small storage supplies in the reservoirs for future years use.

### **Benefits**

This assistance will provide the Kansas Bostwick Irrigation District No. 2, the Kirwin Irrigation District No. 1, and the Webster Irrigation District No. 4 with incentives for leaving irrigation storage water in Harlan County Lake, Kirwin Reservoir, and Webster Reservoir for future years use. Saving the irrigation storage water for future years use will result in a higher carryover reservoir level, which would provide fish and wildlife and recreation benefits to the reservoir area.

By choosing to leave the storage in these reservoirs, these irrigation districts are providing fish and wildlife benefits, as well as increased recreation opportunities. The higher reservoir levels will increase visitation to the parks surrounding the reservoirs. The higher reservoir levels also will keep water temperatures cooler and oxygen levels higher, which will be more beneficial to fish populations. In addition, the proposed higher levels will improve shoreline access for recreation.

The Kansas Bostwick assistance proposal (combined with a similar proposed project for Bostwick Irrigation District in Nebraska) will result in an estimated increase in reservoir elevation of 0.6 feet in Harlan County Lake and an estimated 187 additional water surface acres. The Kirwin proposal would result in an estimated increase in reservoir elevation of 3.1 feet and an estimated 194 additional water surface acres. The Webster proposal would result in an estimated increase in reservoir elevation of 2.5 feet and an estimated 189 additional water surface acres.

### **Budget**

Drought assistance for irrigation storage left in reservoirs was computed on a graduated scale. The first 2500 acre-feet left in a reservoir was computed at a payment of \$10 per acre-foot, the next 2500 acre-feet was computed at \$5 per acre-foot, and anything over 5000 acre-feet was computed at \$2.50 per acre-foot.

The Bureau of Reclamation provided estimated irrigation storages for Harlan County Lake, Kirwin Reservoir, and Webster Reservoir for May 31, 2005.

**Drought Assistance by Reservoir**

Reservoir	2005 Estimated Irrig. Storage	Drought Assistance
Harlan County Lake (KS Bostwick Share)	1,200 AF	\$ 12,000
Kirwin Reservoir	3,980 AF	\$ 32,400
Webster Reservoir	3,220 AF	\$ 28,600
		=====
Total		\$ 73,000

**Drought Assistance by Irrigation District**

Kansas Bostwick Irrigation District No. 2	\$ 12,000
Kirwin Irrigation District No. 1	\$ 32,400
Webster Irrigation District No. 4	\$ 28,600
	=====
Total	\$ 73,000