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Todd Doherty
Intrastate Water Management and Development Section
Colorado Water Conservation Board
1580 Logan St., Suite 600
Denver, CO 80203

Dear Todd:

The Florida Mesa Canal Companies are proposing two water activity projects to the Southwest Basin Round Table for consideration. The first water activity project is for \$220,895 and includes funding for:

- a) A ditch loss study to prioritize sections of canal for future lining projects based on seepage rates.
- b) Installation of water measuring devices in the canal conveyance system, installation of telemetry on existing and the proposed water measuring devices, and the installation of automated gates.
- c) A feasibility study of hydropower development at sites that have been previously identified by the USBR.

The second water activity project is for \$1,364,205 to design and install lining in selected sections of the Florida Mesa Canal Conveyance System. The sections selected for lining will largely be based on the results of the ditch loss study.

Background

The USBR conducted a Rehabilitation and Betterment Study in 1988 that identified and recommended improvements to the Florida Mesa Canal Conveyance System. As part of the study, the USBR calculated losses of 8,400 AF from seepage and administrative waste. The FWCD water monitoring program records indicate that over the last seven years losses in the canal conveyance system have averaged 24 percent or 11,600 AF per year.

The USBR Rehabilitation and Betterment Study proposed \$20 million (2008 dollars) in conveyance system improvements including lining and piping sections of the canal conveyance system. The USBR estimated the improvements to the efficiency of the conveyance system

would yield 4,100 AF of water per year. Given the high cost of the improvements coupled with the economic recession at the time the R&B program was not funded.

In 2006, the FWCD and the Florida Mesa Canal Companies undertook a Water Conservation and Management Plan. During the planning process, the increase in efficiency of the Canal Conveyance System was identified as a goal of both the FWCD and the Florida Canal Companies. For 2009, the Canal Companies have doubled their assessments in order to begin to improve the efficiency of the canal conveyance system.

Analysis of Lemon Reservoir and Florida Mesa canal operations found that increased efficiency in the canal conveyance system would: 1) firm water supply availability to existing irrigated lands during both average and dry periods, 2) provide a more reliable supply of water to Pastorius Reservoir, and 3) reduce releases of project water during both average and dry years.

In addition to improvements to the canal conveyance system, the Water Conservation and Management Plan identified the need for augmentation and municipal and industrial water supplies in the Florida Basin. The Water Supply and Needs Report for the Dolores/San Juan/San Miguel Basin (June 2006) also identifies the need for the development of augmentation water supplies (Table 8-3, Detailed Identified Projects). Currently, the only augmentation supplies in the Florida Basin are generated from the dry-up of irrigated agriculture coupled with small scale storage of excess consumptive use credits.

The lower reach of the Florida River (2 miles south of highway 160 to the confluence with the Animas River) has historically been administered as noncritical because historically a water rights call has not been placed. The upper reach of the Florida River (Lemon Reservoir to 2 miles south of highway 160) is over appropriated, and generally only water rights with F-10 or senior priority are able to stay in priority. A majority of the water rights with an F-10 or senior priority have already been dried-up and transferred from irrigation to other uses. The City of Durango owns a large portion of the senior water rights (8.92 cfs, average 4,000 AF/yr) in the upper reach, which is diverted from the Florida River transbasin into the Animas River drainage.

Overall Strategy

In 2007, the FWCD applied for a junior storage water right in Lemon Reservoir for several beneficial uses including augmentation. The storage water right is junior to the instream flow and will rely on water stored during spring runoff and booked against the senior fill for storage. A reduction in project releases is also an important factor to increase operational flexibility in the reservoir to meet future uses of the water rights. The FWCD is in the process of securing new junior water rights. After these junior water rights are obtained, the FWCD will negotiate a contract with the USBR to allow the reservoir to provide for beneficial uses in addition to project agricultural irrigation.

Furthermore, the water conservation and management plan identified the development of hydropower to increase revenue generation of the canal companies and/or the FWCD.

Reduction of canal losses through reduction of seepage and administrative waste and the development of hydropower will provide several benefits to the Florida River Basin:

- 1) The increased efficiency will firm up water supplies to existing irrigated agriculture on the Florida Mesa.
- 2) Will reduce project releases from Lemon Reservoir and may provide operational flexibility for the reservoir to meet other future beneficial uses including augmentation, municipal and industrial, wildlife, fish habitat, wetlands, etc.
- 3) The secondary benefit of increased efficiency is reduction in operation and maintenance of the canal conveyance system, thus reducing the cost to farmers and promoting continued commercial irrigated agriculture.
- 4) Provide sustainable electrical energy using existing canal conveyance system infrastructure with minimum disturbance to the environment.
- 5) Provide additional revenue sources for the Florida Mesa Canal Companies and FWCD to assist in meeting future costs of the repair and ultimate replacement of the conveyance system components.

Please call if you have any questions.

Very truly yours,

WRIGHT WATER ENGINEERS, INC.

By 

Peter R. Foster, P.E.
Senior Project Engineer

CC: Michael Preston, Chairman, Southwest Basin Roundtable