

Publications

TR-281

Economic and Conservation Evaluation of Capital Renovation Projects: Hidalgo County Irrigation District No. 2 (San Juan) - Rehabilitation of Alamo Main Canal - Final

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Initial construction costs and net annual changes in operating and maintenance expenses are identified for a two-component capital renovation project proposed by Hidalgo County Irrigation District No. 2, to the U. S. Bureau of Reclamation (USBR). The proposed project primarily consists of relining the Alamo Main canal and installing a flow-management system in the Alamo Main canal. Both nominal and real estimates of water and energy savings and expected economic and financial costs of those savings are identified throughout the anticipated useful life for the proposed project. Sensitivity results for both the cost of water savings and cost of energy savings are presented for several important parameters.

Annual water and energy savings forthcoming from the total project are estimated, using amortization procedures, to be 876 ac-ft of water per year and 331,389,647 BTUs (97,125 kwh) of energy per year. The calculated economic and financial cost of water savings is estimated to be \$201.50 per ac-ft. The calculated economic and financial cost of energy savings is estimated to be \$0.0005592 per BTU (\$1.908 per kwh).

In addition, expected real (vs nominal) values are indicated for the USBRs three principal evaluation measures specified in the United States Public Law 106-576 legislation. The aggregate initial construction cost per ac-ft of water savings measure is \$182.98 per ac-ft of water savings. The aggregate initial construction cost per BTU (kwh) of energy savings measure is \$0.0004837 per BTU (\$1.650 per kwh). The aggregate ratio of initial construction costs per dollar of total annual economic savings is estimated to be -20.74.

