

***Sustainable Development Criteria Report
Hidalgo County Irrigation District No. 6
Water Conservation Projects***



Prepared for the

**BORDER ENVIRONMENTAL COOPERATIVE COMMISSION
UNDER THE AUSPICES OF:
TEXAS WATER DEVELOPMENT BOARD AND THE
TEXAS STATE ENERGY CONSERVATION OFFICE**

TWDB Contract No. 2002-G19100



**PREPARED BY:
AXIOM-BLAIR ENGINEERING, L.P.**

2711 West Anderson Lane
AUSTIN, TEXAS 78757

August 25, 2003

TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	DEFINITIONS AND PRINCIPLES OF SUSTAINABLE DEVELOPMENT.....	1
3	INSTITUTIONAL AND HUMAN CAPACITY BUILDING.....	1
4	CONFORMANCE WITH APPLICABLE LOCAL AND REGIONAL CONSERVATION AND DEVELOPMENT PLANS	3
5	NATURAL RESOURCE CONSERVATION.....	3
6	COMMUNITY DEVELOPMENT	4

1 INTRODUCTION

Sustainable Development Criteria is defined as conservation oriented social and economic protection and sustainable use of resources, while addressing both current and future needs, and present and future impacts of human actions. This definition is based on the Rio Grande Declaration on Environment and Development, which states that development should meet the needs of the present without compromising the ability of future generations to meet their own needs.

This report will address the following issues in regard to the Proposed Project and how they comply with BECC Sustainable Development criteria:

- The Definition and Principles of Sustainable Development
- Institutional and Human Capacity Building
- Conformance with Applicable Local and Regional Conservation and Development Plans
- Natural Resource Conservation
- Community Development

2 DEFINITIONS AND PRINCIPLES OF SUSTAINABLE DEVELOPMENT

All of the proposed project components will comply with the definitions and principals of Sustainable Development in that they positively impact the area and sustainable life of the area's residents through the conservation of water. Water conservation is critical to quality and life and economic growth in the Rio Grande Valley. The Reservoir Renovation, Canal Seepage Recovery and Canal Rehabilitation projects will help eliminate the seepage of valuable water. In addition to water savings, local residents will experience energy savings through a more efficient delivery system.

3 INSTITUTIONAL AND HUMAN CAPACITY BUILDING

The Rio Grande Regional Water Plan, in support for the implementation of agricultural water conservation strategies, includes the following actions for reduction of irrigation shortages:

- Expanded technical assistance should be available from local, state and federal sources to assist irrigation districts with more detailed systematic evaluations of district facilities and management policies to identify cost effective water efficiency improvements

- The State of Texas and the federal government should assist with the financing of irrigation water improvements through the provision of low interest loans and grants

Accordingly, due to the limited financial capacity of irrigation districts, the State of Texas through the State Energy Conservation Office (SECO) and the Texas Water Development Board (TWDB) provided financial assistance to the District for the preparation of the project plans and the necessary documentation required to meet the federally appropriated funds. In addition, the Texas A & M University Texas Water Resources Institute completed an economic and conservation assessment of the projects with funds provided through the “Rio Grande Basin Initiative”, administered by the Cooperative State Research, Education and Extension Service of the U. S. Department of Agriculture. The U. S. Bureau of Reclamation (USBOR) approved the methodology for the economic and conservation analyses.

The project plans for the proposed project were completed under the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000 (Act), Public Law 106-576. The Act also provides limited funding availability for engineering work, infrastructure construction and improvements. An amendment to the Act (H.R. 2990/S.1577) authorized funds for conservation projects, including Lateral A improvements and modifications to the Wisconsin Canal. The USBOR project reports for the two projects were prepared in compliance with the requirements of the Act.

The District entered into a contract with the TWDB, whereby the TWDB will reimburse the District, with grant funds, for the cost of preparing the project plan, project report, plans and specifications and monitoring reports for the proposed project.

The North American Development Bank (NADB) Water Conservation Infrastructure Fund (WCIF) will complement, with grant funds, the capital investments required by the District for construction of these projects. The use of WCIF grant funds allows the District to fully finance its infrastructure in order to reduce water conveyance losses.

The projects will be managed by the District and will be constructed and operated in conformance with Federal, State and NADB requirements. The process for the development of the projects has followed a planning and public participation process that developed alternatives and associated costs, solicited public input, established priorities based on the input of the stakeholders and proceeded according to the priorities established in the planning process.

A monitoring program will be established for a two-year period to evaluate and quantify the actual water and energy savings following construction of the projects. The monitoring program will consist of the following:

1. The electrical use per acre-foot of water pumped will be determined on a monthly basis and submitted annually. The annual report will include the historic electrical costs per acre-foot for comparison.
2. The amount of water pumped will be measured and compared with the water delivered on a monthly basis and submitted annually. The annual report will include historic water pumped and water delivered volumes for comparison.

4 CONFORMANCE WITH APPLICABLE LOCAL AND REGIONAL CONSERVATION AND DEVELOPMENT PLANS

The proposed projects comply with all local and regional conservation and development plans. In particular, the project complies with the “Rio Grande Regional Water Plan”, which recommends agricultural water conservation and on-farm water use efficiency in order to reduce irrigation shortages.

The project Report has been prepared in accordance with the “Guidelines for Preparing and Reviewing Proposals for Water Conservation and Improvement Projects Under Public Law 106-576” issued by the U.S. Department of Interior, Bureau of Reclamation, June 2001.

The projects are in conformance with local conservation efforts already developed by the District and served communities. Conservation of water is stressed and penalties are assessed for overuse of water. The municipalities served by the District have their own water conservation plans. A water allocation plan (Drought Contingency Plan), goes into effect for irrigation when the irrigation water account storage balance amounts to a maximum of three irrigations per acre. This program remains in effect until the water is restored to the District’s irrigation account.

5 NATURAL RESOURCE CONSERVATION

The proposed project was developed with the intent of conserving water. The Districts authorized irrigation water rights are 34,913 acre-feet per year. However, these water rights are on an “as available” basis and the actual water available to the District may vary from year-to-year.

In addition to the irrigation water rights, the District holds authorized multi-use water rights in the amount of 5,816 acre-feet per year. The District contracts to deliver raw water to the La Joya Water Supply Corporation and the following industrial entities:

American Electric Power – Bates Power Plant

Frontera Power Generation Plant

USDA – Moore Air Field

The District has 2,223 water accounts in the District with approximately 15,381 acres.

According to the Economic and Conservation Analysis section of Engineering, the implementation of the project will allow an estimated water savings of 6,540 acre-feet per year, and a net energy savings of 479,264 KWH per year on an average annual basis, as shown in the following table.

Annual Water & Energy Savings

Project Component	Project Description	Annual Water Savings (Acre-Feet)	Annual Energy Savings (KWH)
Canal Lining	Repair and Impervious Lining of Portions of Main Canal for transport of irrigation and municipal water	3,200	283,735
Canal Gate Replacement	Replacement of Canal and Lateral Water Level Control Structures	2,457	223,996
Canal Regulation and Telemetry	Renovation of Regulating Reservoir and Installation of Water Level and Flow Measurement Telemetry	883	-28,467
TOTAL ANNUAL SAVINGS		6,540	479,264

6 COMMUNITY DEVELOPMENT

The benefit obtained by modernization of the irrigation facilities may directly impact agricultural production and may result in increased income and an improved quality of life for end users. Making residents active participants in development of their community may also enhance economic activity. An improved quality of life for the residents may also have a favorable impact on the development of health and education in the area.