

***Hidalgo County Irrigation District No. 6
Proposal to the Texas Water
Development Board for Use of Oil
Overcharge Proceeds for Preparation of
a “Project Report” for a Water and
Energy Conservation and Improvement
Project under Public Law 106-576***



Prepared by

Hidalgo County Irrigation District No. 6

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1 Official Name

Hidalgo County Irrigation District Number Six

2 Citation to Legal Authority of District

Hidalgo Irrigation District Number Six (the District) is a political subdivision of the State of Texas, organized under and by virtue of Article XVI, Section 59 of the Constitution of the State of Texas. The District is operated under the statutes of Chapter 49 and 58 of the Texas Water Code.

2.1 Directors

Thomas H. Thompson, President

Patrick Walsh, Vice President

Oscar Garza, Secretary

Robert Smith, Director

Jose Date, Director

3 Project Representative for District

Cornelio Morales, Manager

PO Box 786, Mission, Texas 78572

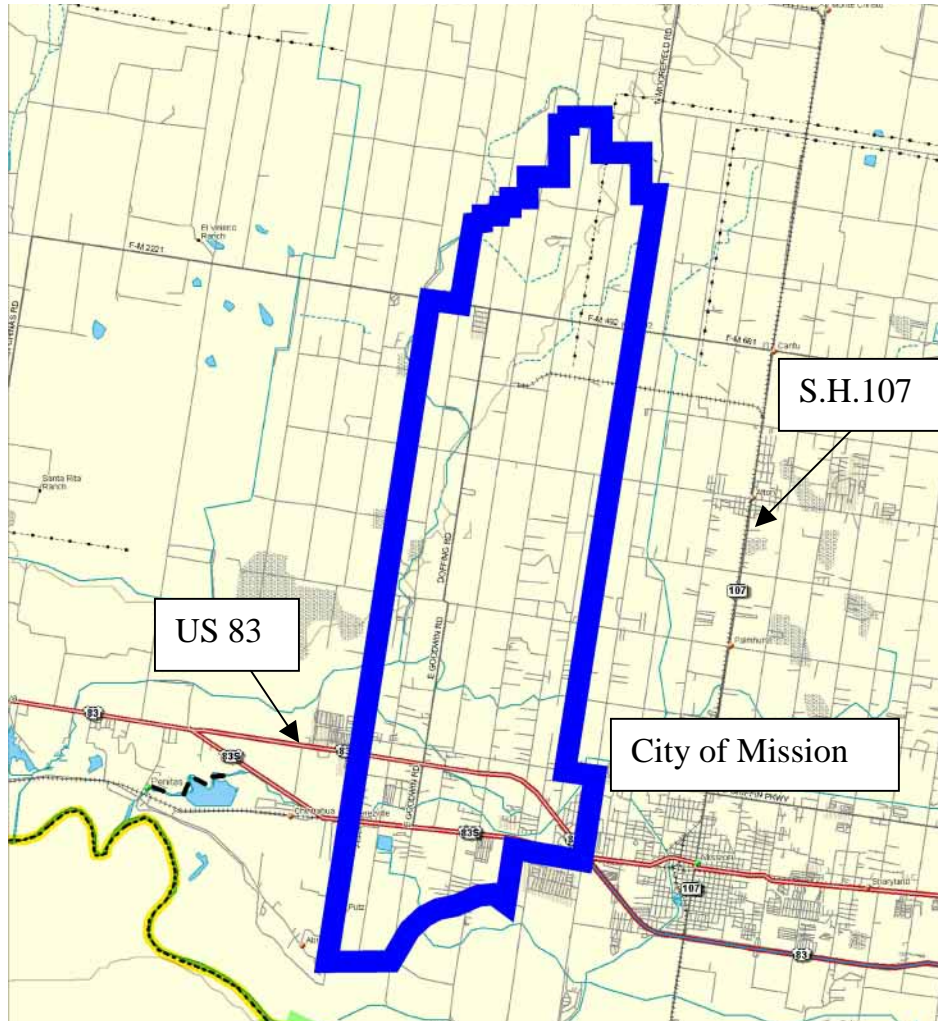
Phone: (956) 585-8389

Fax: (956) 585-9920

4 District Overview

The gross area of the District is approximately 18,090 acres in the western portion of Hidalgo County with the eastern portion of the District overlapping the eastern portion of the City of Mission. The District's boundaries extend from U.S. Highway 281 on the south for approximately 12.5 miles north. The District has approximately 31.2 miles of main canals and 88.6 miles of laterals. The District operations one primary lift station (Pump Station No. 1) located on the Rio Grande and three secondary or re-lift stations (Pump Stations No. 2 through 4). Pump Station No. 1 consists of three pumps with a total rated horse power of 1050 and capacity of 240 cfs. Pump Station No. 2 has a capacity of 190 cfs. Pump Station No. 3 has a capacity of 240 cfs. Pump Station No. 4 has a capacity of 90 cfs.

4.1 District Boundaries



Approximate Location of District's Boundaries

4.2 Water Supply

The District delivers raw untreated water to La Joya Water Supply Corporation, La Frontera Power Generation Plant, and Bates Electric Power Generation Plant. The District holds Certificate of Adjudication 23-828 for 5,816 acre-feet of water per annum for multi-use and 34,913 acre-feet of water per annum for Class A irrigation use.

5 District Information and Proposed Conservation Measures

The funds requested under this proposal will be used by the District to complete the engineering reports required by the U.S. Department of Interior, Bureau of Reclamation (Reclamation) under the "Guidelines for Preparing and Reviewing

Proposals for Water Conservation and Improvement Projects Under Public Law 106-576.” The projects proposed by the District include.

The proposed conservation project consists of renovation of 10.2 miles of the rehabilitation of the existing concrete lining of the Mission Main Canal between Lift Station No. 2 and No. 4 in Hidalgo County Texas. The current canal lining was installed in the 1930 and in certain locations has significantly deteriorated. The District is proposing to re-line the canal using either a urethane liner or concrete with a fiberglass add mixture. Photograph 1 shows the type and condition typical of the existing concrete lining of the Mission Main Canal. Photograph 2 shows a newly placed urethane liner in canal in Hidalgo County Irrigation District No. 1. The Mission Main Canal is approximately 50% larger than the canal shown in Photograph 2.

The renovation of the Mission Main Canal also includes the replacement of the existing slide gate structure on the main canal with radial gate bays and remote reporting of the gate settings and water levels in the canal. The Mission Main Canal conveys raw untreated water to the La Joya Water Supply Corporation’s for treatment and production of potable water and to La Frontera and Bates Electric Power Generation Stations for makeup water for evaporative cooling. The quantity of water salvaged by the project is estimated to be 3,500 acre-feet per year.

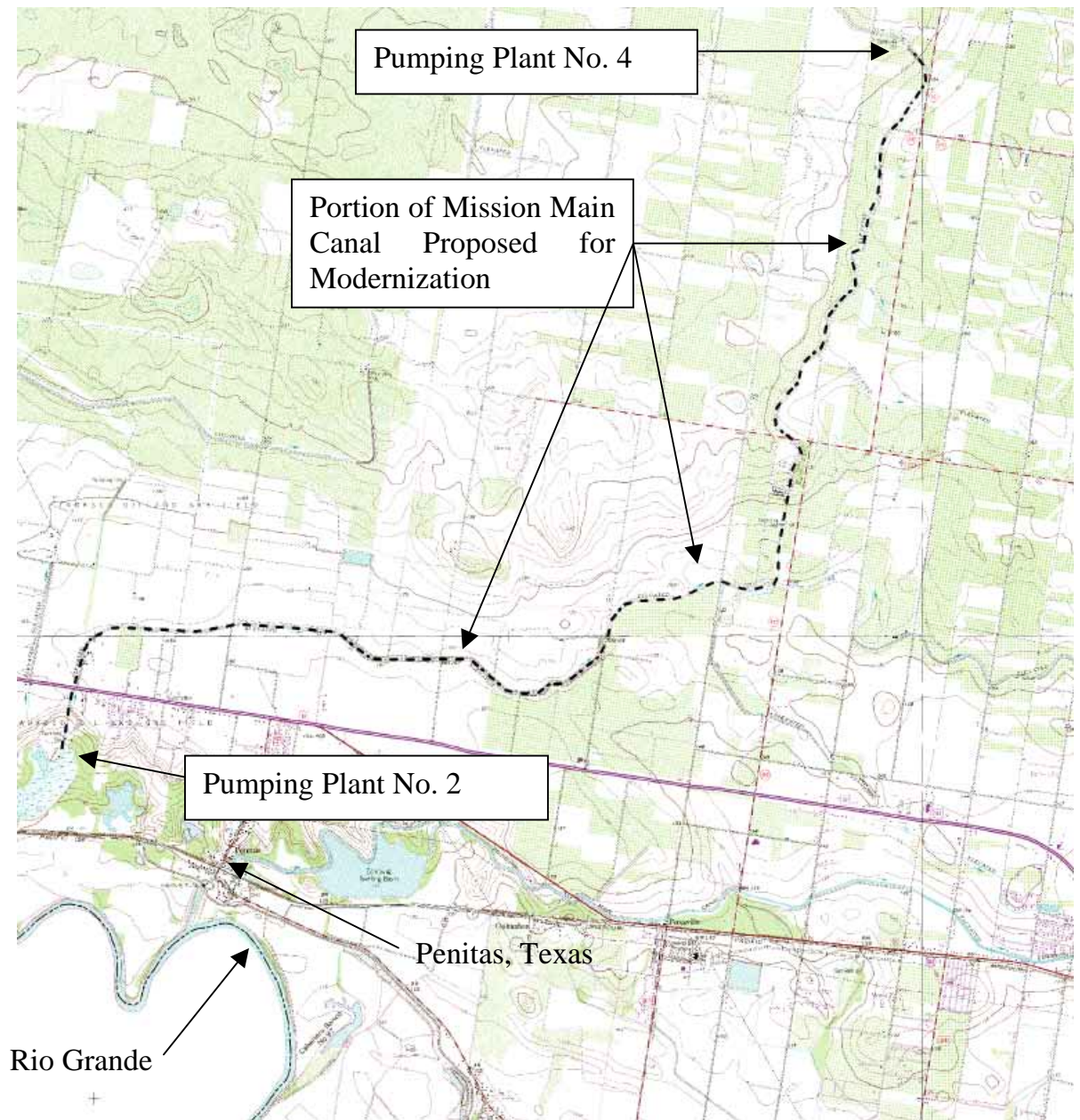


Photograph 1 – Condition of Concrete Liner Typical of Mission Main Canal



Photograph 2 – Urethane Liner Placed in Hidalgo Irrigation District No 1 Canal

5.1 Project Location



5.2 Conservation Commitment

The District's Board of Directors and employees are committed to the conservation of water and the energy associated with its use. This commitment is most clearly demonstrated by a number efficiency maximization programs adopted. A variety of programs have been implemented including the following:

<i>Pump Modernization</i>	Since, 1985, the District has systematically replaced their existing main canal pumps at lift stations 2, 3 and 4 with modern vertical shaft mixed flow pumps. These new pumps are approximately 5% more efficient than older horizontal shaft pumps
<i>Regulating Reservoir</i>	In 2001 the District completed a 300 acre-foot regulating reservoir located between Pump Station 1 on the Rio Grande and Re-lift Station No. 2 on the Mission Main Canal. The regulating reservoir allows the District to store “no charge water” that would otherwise be lost downstream in the Rio Grande.
<i>Data Base Management</i>	In 1989 the District developed a computer database that is used to account and manage water allocation, taxes, and water use invoices. The database contains flow metering records for all turnouts in the District, and the amount of irrigable land owned by each landowner within the District.

5.3 Participation Commitment

The District has an annual operating budget of approximately \$2.0 million. The District has funds and staff capable of meeting the obligations of the District for the proposed projects. Contractors will be selected by competitive bidding pursuant to the requirements of Texas Water Code Section 49.273.

6 Scope of Work

6.1 Project Study

A consulting engineer, licensed to practice in the State of Texas shall be contracted by the District to prepare the Project Study Report. Such services shall be obtained pursuant to the procedures provided in Subchapter A, Chapter 2254, Government Code (Professional Services Procurement Act). The Project Study and Project Plans and Specifications will provide the engineering information as specified in “Guidelines for Preparing and Reviewing Proposals for Water Conservation and Improvement Projects Under Public Law 106-576,” United States Department of Interior, Bureau of Reclamation, June 2001.

6.1.1 Project Tasks

6.1.1.1 *Description of Proposed Conservation Measures*

The proposed Plan of Study will evaluate the District's primary water delivery system for which canal lining would be cost effective. In addition, check structure locations which would aid efficient operation of the system will also be identified.

6.1.1.2 *Land Surveys of Existing Canals and Proposed Improvements*

A professional land surveyor licensed in the State of Texas and familiar with land surveys in Hidalgo County will update the District's existing easement and right-of-way maps. The surveys shall include plan and profile maps of the proposed canal lining, check structure sites, pump station site and pond location.

6.1.1.3 *Selection Criteria for Canal Lining*

Seepage studies shall be performed by the District during the Project Study to identify and prioritize canal segments relative to the quantity of water lost to seepage and the potential the project has for improving delivery efficiency. The project study will identify the quantitative selection criteria for ranking each reach of the existing canal. Additionally, potential check structure locations will be evaluated for suitability.

6.1.1.4 *Identification of Seeps or Spill Areas*

No known seeps or spills associated with the District's distribution system have created any wetlands. The proposed canal/pipeline alignment and structure locations will be visually inspected and photographed with respect to adjacent land conditions.

6.1.1.5 *Determination of Water and Energy Conserved*

The proposed Project Study shall estimate the quantity of water and energy conserved by the proposed projects using seepage, evaporation and evapotranspiration studies prepared by the selected consulting engineer.

6.1.1.6 *Cost Estimates*

Construction cost estimates will be prepared using local cost information and Means Heavy Construction Cost Estimation software based on a unit price bids. The cost estimates shall use procedures recommend by Reclamation and those generally accepted by the heavy construction industry.

6.1.1.7 O&M Cost Estimates

The O&M cost for maintenance and repair of the canal lining, check structures and pond are estimated to be very minimal. Conversely, some O&M cost will be associated with the operation of the proposed pump station. O&M costs shall be estimated based on similar projects installed during the last 20 years in the Lower Rio Grande Valley.

6.1.1.8 Value Analysis

A simple value analysis shall be prepared for the proposed project. Such analysis shall include fixed, operational, and maintenance costs associated with the canal lining, check structures, pump station and pond.

6.1.1.9 NEPA, NHPA, ESA, CWA Issues

The proposed improvements shall all be installed on existing District canals or within previously disturbed District right-of-ways or easements. The canal lining is considered a maintenance project for the existing canal and the check structures and the wasteways are appurtenant to the canals. Upon submittal of the Project Plan to Reclamation, as required in Reclamation's Guidelines for Preparing and Reviewing Proposals, the District and/or its consultant shall work closely with Reclamation, which has ultimate responsibility for the fulfillment of Federal consultation and compliance responsibilities under NEPA and other associated laws, such as National Historical Preservation Act (NHPA) and the Endangered Species Act (ESA). The potential pond site will require, at a minimum, a Phase 1 environmental assessment due to previous land use activities.

6.1.1.10 Proposed Mitigation

No environmental or other mitigation is expected to be required for the planned installation of canal lining, check structures and pump station. The phase 1 assessment of the Regulating reservoir site may identify the need for mitigation associated with the removal of pollutants. The District will work with Reclamation to determine if any mitigation is required and if so the final Project Study shall include the details and extents of such mitigation activities.

6.2 Drawings and Specifications

6.2.1 Layout Sheets and Sections

The proposed Drawings and Specifications shall include plan and profile engineering drawings of each reach proposed in the Project Study for canal lining. Plans shall include details of appurtenant structures including rails, ladders, drains, catwalks, etc. Site layout plans and appropriate sections will be prepared for the proposed check structures and pump station. A layout and grading plan will be prepared for the proposed pond.

6.2.2 Detail Sheets

The proposed Drawings and Specifications shall also contain detail sheets as necessary to fully define the placement and composition of all appurtenant structures including gates, blocks, risers, mechanical equipment, etc.

6.2.3 Construction Specifications

The proposed Plans and Specifications shall include detailed construction specifications, as approved by Reclamation, for the construction of all proposed improvements.

6.2.4 Materials Specifications

The proposed Drawings and Specifications shall include Reclamation's specification for all proposed installations.

6.2.5 Project Schedule

The Drawings and Specifications shall include a detailed Gantt Chart project schedule identifying the completion times for installation for each reach and all project milestones.

6.3 Monitoring Plan Development

The District shall develop a Monitoring Plan to be utilized for monitoring the water conservation results of the completed project. This plan will serve as a step-by-step outline for documenting the successes of the project. The plan will include, at a minimum, sufficient information to allow for completion of the following tasks:

- Designation of a construction inspector not affiliated with the primary construction contractor to inspect and administer construction quality control documentation for the proposed projects.
- Hydrostatic seepage tests of the installed canal liners by the District or Texas A&M. Hydrostatic leakage tests of all structures.
- Inspection of the lined canal reaches one and two years after the initial installation. Inspection should check structural integrity, cracking and leakage. Photographs should be taken of the inspected portions and a letter from the project engineer should be prepared summarizing the condition of the liner and if any repairs are warranted by the contractor pursuant to the construction contract documents.
- Preparation of an annual report containing the monthly reports and any other data collected.

7 Task Budget

The cost for each task proposed for the subcontractor was estimated on an hourly basis at combined cost rate of between \$45 and \$95 per hour.

Task	Description	Amount			Totals	
		Previously Expended by District	Anticipated Expenditure by District	Requested from TWDB	For Task	From TWDB
(A) Project Plan and Study						
A-1	Description of Conservation Measures	\$0	\$0	\$3,800	\$3,800	\$3,800
A-2	Site Surveys	\$0	\$0	\$3,200	\$3,200	\$3,200
A-3	Existing Facilities	\$0	\$0	\$1,200	\$1,200	\$1,200
A-4	Selection Criteria for Canal Lining	\$0	\$0	\$1,800	\$1,800	\$1,800
A-5	Identification of Seeps or Spill Areas	\$0	\$0	\$760	\$760	\$760
A-6	Determination of Water Conserved	\$0	\$0	\$1,900	\$1,900	\$1,900
A-7	Determination of Energy Conserved	\$0	\$0	\$2,400	\$2,400	\$2,400
A-8	Construction Cost Estimates	\$0	\$0	\$2,200	\$2,200	\$2,200
A-9	O&M Cost Estimates	\$0	\$0	\$2,200	\$2,200	\$2,200
A-10	Value Analysis	\$0	\$0	\$1,400	\$1,400	\$1,400
A-11	NEPA, NHPA, EAS, CWA Issues	\$0	\$0	\$15,200	\$15,200	\$15,200
A-12	Proposed Mitigation	\$0	\$0	\$900	\$900	\$900
Subtotal		\$0	\$0	\$36,960	\$36,960	\$36,960
(B) Drawings and Specifications						
B-1	Layout Sheets and Sections	\$0	\$0	\$42,000	\$42,000	\$42,000
B-2	Detail Sheets	\$0	\$0	\$26,000	\$26,000	\$26,000
B-3	Construction Specifications	\$0	\$0	\$8,000	\$8,000	\$8,000
B-4	Materials Specifications	\$0	\$0	\$4,000	\$4,000	\$4,000
B-5	Surveying & Geotechnical	\$0	\$0	\$22,000	\$22,000	\$22,000
B-6	Project Schedule	\$0	\$0	\$2,600	\$2,600	\$2,600
Subtotal		\$0	\$0	\$104,600	\$104,600	\$104,600
(C) Monitoring Plan Development						
C-1	<i>QC, Tests, Inspections & Reports</i> Monitoring Plan	\$0	\$0	\$3,500	\$3,500	\$3,500
Subtotal		\$0	\$0	\$3,500	\$3,500	\$3,500
(D) District Administration		\$2,000	\$10,000	\$0	\$12,000	\$0
(E) Bureau of Reclamation Review		\$0	\$0	\$8,000	\$8,000	\$8,000
Totals		\$2,000	\$10,000	\$153,060	\$165,060	\$153,060

7.1 Expense Budgets

Category	Total Amount
Salary and Wages	\$0
Travel	\$0
Expendable Supplies	\$0
Subcontracting Services	\$152,060
Technical and Computer Services	\$0
Communications	\$0
Reproduction	\$1,000
Profit	\$0
TOTAL	\$153,060

8 Schedule

Completion of the Project Plan and Study will require approximately four months from notice to proceed to completion. Upon approval of the Study, preparation of Drawings and Specifications will require nine months to final completion. A construction period of 12 months is anticipated, however, select improvements must be construction during early winter to assure the canal system is operational for the spring planting. The pond and pump station are off-line relative to the existing system, accordingly, construction of these components could occur concurrently with canal operation.

9 Subcontracts

The District plans to subcontract with an engineering firm or Reclamation to complete the Drawings and Specifications section of the proposed Project Report. The expense budgets proposes that approximately 100% of the requested funds shall be used to fund subcontracts to a consulting engineer.

10 District Management and Oversight

The District has experience in administrative and field management of technical report preparation and supervision of engineering and surveying services. The District's Maintenance Supervisor shall supervise the proposed Project Report and shall hold meetings regarding the progress that is being made by District staff and consultants on such report. The proposed Project Report shall conform to Reclamation's "Guidelines for Preparing and Reviewing Proposals for Water Conservation and Improvement Projects Under Public Law 106-576" and shall be submitted to Reclamation as a draft for review and comment prior to the report being finalized.

11 Coordination with Applicable Regional Water Plans

The proposed project is consistent with adopted regional water conservation plans and strategies outlined in the Far West Texas Regional Water Plan approved by the Texas Water Development Board.

12 Schedule of Tasks and Deliverables

A Schedule of Tasks and Deliverables is attached below. The schedule is based on a September, 2002 start date.

SCHEDULE OF TASKS AND DELIVERABLES

Task / Phase	Start Date	Finish Date	Deliverable	TWDB Delivery
Notice to Proceed	08-01-02	08-01-02	No	
Execute Engineering Contract	09-06-02	09-08-02	Yes	09-13-02
Project Study Report	08-13-02	11-10-02	Yes	11-20-02
Drawings&Specifications	12-20-02	07-22-03	Yes	08-01-03
Monitoring Plan Development	06-15-02	07-22-03	Yes	08-01-03
Construction	10-01-03	02-15-05	No	
Monitoring Activity	02-15-05	02-15-07	No	