



OZUNA & ASSOCIATES, INC. CONSULTING ENGINEERS

8118 BROADWAY

SAN ANTONIO, TEXAS 78209

(512) 828-1431

April 6, 1993

Mr. Craig D. Pedersen
Executive Administrator
Texas Water Development Board
1700 N. Congress Avenue
Austin, Texas 78711-3231

Re: South Bexar County Water Study
TWDB Contract No. 92-483-308

Dear Mr. Pedersen:

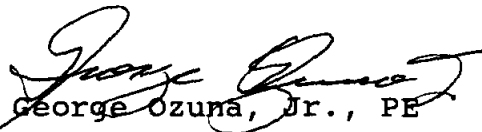
Enclosed herewith are ten (10) copies of the final report of the "Application Report for the Development of a Water Supply System Plan in South Bexar County" to identify and to provide a priority listing of water supply projects in South Bexar County.

This final report incorporates some changes as per your comments in your letter dated March 10, 1993.

All revisions, deletions and additions to this report are attached hereto.

If any further information is required, please do advise me.

Very truly yours,


George Ozuna, Jr., PE

Encls.: List of changes to Report

April 6, 1993

**SOUTH BEXAR COUNTY
REVIEW COMMENTS
LIST OF CHANGES TO REPORT**

<u>Page</u>	<u>Description</u>
Cover	REVISED: Title and date
5	CORRECTED: Typing error in Table 1
6	DELETED: Table 3
30	REVISED: Initial list of projects to eighty nine (89) and condensed list to seventy four (74)
31	REVISED: Cost and unserved population figures
33	REVISED: Section IX Conclusion first paragraph
41	ADDED: Project 89 and revised total cost figure to \$14,736,363.00
42	ADDED: Project 89 with a priority rating, 4th place and revised priority rating place number for all other projects on this page
43	REVISED: All priority rating numbers
44	REVISED: All priority rating numbers and changed Project No. 18 project costs from Eligible Areas to Ineligible Areas
45	REVISED: All priority rating numbers
46	REVISED: All priority rating numbers
47	REVISED: All priority rating numbers and project cost totals
Exhibit 9	ADDED: Project 89 Map and Cost Estimate
Exhibit 10	REVISED: Bexar Metropolitan Water District CCN 10675 area expansion Ron May CCN 10650 area consolidation ADDED: Project 89 Identification Information



OZUNA & ASSOCIATES, INC. CONSULTING ENGINEERS

8118 BROADWAY

SAN ANTONIO, TEXAS 78209

(512) 828-1431

October 30, 1992

Craig D. Pedersen
Executive Administrator
Texas Water Development Board
1700 N. Congress Avenue
Austin, Texas 78711-3231

Re: South Bexar County Water Study
TWDB Contract No. 92-483-308


Dear Mr. Pedersen:

Enclosed herewith are ten (10) draft copies the report entitled "Application Report for the Development of a Water Supply System Plan in South Bexar County" to identify and prioritize water supply projects in South Bexar County.

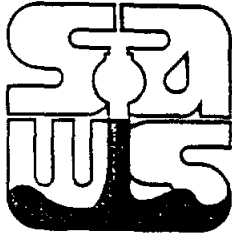
This report has been prepared with input from South Bexar County residents, the applicant water purveyors and from the Bexar County Commissioners Court and staff.

Do advise me if additional particulars are required.

Very truly yours,


George Ozuna, Jr., PE

Encls.: Report - 10 copies



SAN ANTONIO WATER SYSTEM

October 29, 1992

Mr. Craig D. Pedersen, Executive Administrator
Texas Water Development Board
P.O. Box 13231
Capitol Station
Austin, TX 78711-3231

Dear Mr. Pedersen:

The San Antonio Water System has worked in cooperation with the Bexar Metropolitan Water District, the Atascosa Rural Water Supply Company, and the South Bexar County Steering and Management Committees for over a year in order to produce a plan for bringing organized water systems to South Bexar County. The draft Application Report For The Development Of A Water Supply System Plan In South Bexar County, which we are forwarding for review by your staff, is the result of that effort.

The San Antonio Water System has contributed significantly to the development of this report and fully supports its contents. When implemented, this program will meet the intent of the State Legislature and will markedly enhance the quality of life in the area. We look forward to your comments and to continuing our working relationship with your staff.

Very truly yours,

A handwritten signature in cursive script that reads "Joe A. Aceves".

Joe A. Aceves, P.E.
President/Chief Executive Officer

Enclosure

cc: The Honorable Robert Tejeda
County Commissioner

2706 WEST SOUTHCROSS
SOUTH SAN ANTONIO
POST OFFICE BOX 3577
SAN ANTONIO, TEXAS 78211-0577
PHONE 922-1221 FAX 924-9229



THOMAS C. MORENO, GEN MGR
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WILLIAM J. TYLER, DIRECTOR

October 30, 1992

Mr. Craig D. Pedersen
Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

RE: South Bexar County Water Study
TWDB Contract No. 92-483-308

Dear Mr. Pedersen:

The Bexar Metropolitan Water District has assisted and participated in the process of preparing this report and therefore agrees with its findings and recommendations.

Thank you and we look forward in carrying out the study's outlined findings together. We hope we have been as cooperative as your staff has been with our District representatives on the various committees.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas C. Moreno". The signature is fluid and cursive, written over a white background.

Thomas C. Moreno
GENERAL MANAGER

TCM/sg



ATASCOSA RURAL WATER SUPPLY CORPORATION

POST OFFICE BOX 9 — ATASCOSA, TEXAS 78002 — PHONE 622-3901

October 29, 1992

Texas Water Development Board
P. O. Box 13231
Austin, Texas 78711

Attn: Craig D. Pedersen
Executive Administrator


Ref: South Bexar County Water Study
TWDB Contract No. 92-483-308

Dear Mr. Pedersen:

This letter will advise you that the Atascosa Rural Water Supply Corporation has participated in the preparation of this report and concurs in the findings and recommendations of the study.

I want to thank you and your staff for your assistance to date in preparation of this planning study and we look forward to the completion of the goals outlined therein.

Sincerely Yours,


Curtis Gann
President

PLW/lec

**PLANNING AND IDENTIFICATION
FOR A
SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

A joint and cooperative study under a contract with the Texas Water Development Board, Contract Number 92-483-308, with the Atascosa Rural Water Supply Corporation, Bexar Metropolitan Water District and the San Antonio Water System and facilitated by the Commissioners Court of Bexar County.

STEERING COMMITTEE

County Commissioner Robert Tejeda, Chairperson

Jose Camacho, Jr., Community Representative
Mayor Paul G. Cuellar, Small Cities
Bertha Alicia Flores, Community Representative
Sylvia Gamez, Public Water Purveyor
Curtis Gann, Public Water Purveyor
Landon Martin, Private Water Purveyor
James Midgett, Community Representative
Howard Peak, Public Water Purveyor
Janet Ruzza, Community Representative

MANAGEMENT COMMITTEE

Wayne Bitzkie, Chairperson

Mayor Paul G. Cuellar, Small Cities
James Midgett, Community Representative
Nick Rodriguez, Jr., Public Water Purveyor
Janet Ruzza, Community Representative
County Commissioner Robert Tejeda, Bexar County
Patrick Wright, PE, Public Water Purveyor

STAFF

Joe Garza, Commissioners Court Administrator
Aurora Munoz Sanchez, Bexar County Department of
Community Resources
Kelsey Menzel, District Attorney's Office

PLANNING AND IDENTIFICATION
FOR A
SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN

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**PLANNING AND IDENTIFICATION
FOR A
SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

INTRODUCTION

A. DESCRIPTION AND PURPOSE OF PROJECT

The applicants have entered into a contract with the Texas Water Development Board for the purpose of developing a water system plan for South Bexar County in accordance with the provisions of the Board's Rider No. 8, Emergency Financial Assistance, General Appropriations Bill (HB 1, 72nd Legislature, 1991, First called Session).

B. GENERAL INFORMATION

1. Applicants - the San Antonio Water System (formerly the Water Works Board of Trustees [CWB] of San Antonio), the Bexar Metropolitan Water District and the Atascosa Rural Water Supply Corporation, a joint cooperative effort.

San Antonio Water System, Manager
1001 E. Market Street
San Antonio, Texas 78205

2. APPLICANT'S OFFICIAL REPRESENTATIVE

Joe A. Aceves, PE
President/Chief Executive Officer
San Antonio Water System
Phone (512) 225-7461

3. APPLICANT'S CONTACT PERSON FOR BILLING

Lee J. Chegin, PE
Director of Waterworks Engineering
San Antonio Water System
Phone (512) 225-7461 ext. 1251

4. STATUTES, ORDERS CREATING APPLICANT AND GRANTING LEGAL AUTHORITY TO PLAN, DEVELOP AND OPERATE WATER SUPPLY FACILITIES.

San Antonio Water System: A public water purveyor as created by Section 5, Article 11, 1912 State of Texas Constitution.

Bexar Metropolitan Water District: A non-profit water purveyor as created by Section 59, Article 16, State of Texas Constitution.

Atascosa Rural Water Supply Corporation: A non-profit water purveyor as created by Article 1434a, Texas Revised Civil Statutes.

C. PROJECT SCOPE

This project is a cooperative effort by the major water purveyors serving the South Bexar County Area and the Texas Water Development Board. The intent of the program is to serve presently unserved population areas with a water supply that meets all of the standards and requirements of the Texas Department of Health and the Texas Water Commission.

D. STUDY AREA

The project area geographical limits are the Southern Pacific Railroad, Loop 410 and US 181 being the North boundary, Wilson County line on the East, Atascosa County line on the South and the Medina County line on the West. See Exhibit 1.

This project area comprises approximately 195,840 acres or 306 square miles, which is roughly 24% of the entire area of Bexar County, including the incorporated municipalities of Elmendorf, Somerset and Lytle. The population living within this project area is estimated to be 35,230 people.

E. HISTORICAL BACKGROUND

South Bexar County residents have a long history of seeking funds to bring quality community water supplies to their areas.

In the 1960's, a group of families from the Buena Vista/Losoya Area spearheaded a request to seek a HUD grant for extension of water service to the area. The funding request was denied.

During 1970, another group made an attempt to seek a HUD grant for extension of water services to the Loma Linda area along Somerset Road. The request was denied.

In the late 1970's and early 1980's, San Antonio Water System facilities were extended to provide water service to two (2) Southside Independent School District sites and to residences of Buena Vista and Losoya.

During the 1980's, the development of three major wastewater treatment plants in the study area prompted the extension of water mains along FM 1937 and Valley Road to the Dos Rios Plant. Another extension of water mains was along FM 2537, Martinez/Losoya Road, Pleasanton Road and Mauermann Road to the Leon Creek Plant. Also, an extension water main was built along Donop Road, Southton Road and Blue Wing Road to the Salado Creek Plant.

The Thelma Area Neighborhood Community Organization organized for the purpose of securing a community water system capable of providing quality drinking water for residents who are poorly served or have no service.

The problem of accessibility to clean, potable water for Bexar County residents has been presented to Commissioners Court for their consideration during each of the Community development Block grant funding years.

In 1990, the magnitude of the water problem in South Bexar County became evident. The Department of Community Resources received applications for over six million dollars to construct water mains in the area around Pleasanton Road both north and south of FM 1604. These requests were brought to the attention of Bexar County Commissioners Court.

Evaluation of these applications for funding brought forth the information that approximately 20,000 citizens residing in South Bexar County did not have access to clean potable water. Many were still depending upon creeks, rivers and rain barrels for their water supply. Others were purchasing water from water haulers. Still others were drawing water from brackish wells.

At the direction of Commissioner Robert Tejeda and in coordination with Senator Frank Tejeda, the staff of the Bexar County Department of Community Resources developed raw data in support of Senator Tejeda's S.B.320. Although this bill did not pass, the result of further efforts by Senator Frank Tejeda, Representatives Frank Madla and Ciro Rodriguez was the allocation of funds via Boards Rider No. 8.

In July 1991, the Bexar County Department of Community Resources, under the direction of the Commissioners Court, called together the three major water purveyors in the study area to discuss the feasibility of and requirements for accessing these appropriated funds.

Meetings were held with the staff of the Texas Water Development Board, the Texas Water Commission and State Senator Frank Tejeda's legislative staff.

As a result of these meetings and guided by Mr. Ron Bond and Ms. Carolyn Brittin of the TWDB staff, it was determined that the three major public purveyors in the study area should file a joint application for funding a study of the area to determine the best use of these funds. This was forwarded to the TWDB in November 1991.

Notices were sent to each of the seven public entities in the study area (see attached sample) and the grant request was reviewed by the Alamo Area Council of governments in January, 1992.

The study grant request was funded on February 3, 1992 and the Steering Committee and Management Committees were appointed by the Commissioners Court.

The San Antonio City Water Board, acting as agent for the applicants, solicited engineering interest statements and selected a short list. Three applicant firms were interviewed. Ozuna and Associates, Inc. was selected to perform the study and a contract was signed on April 30, 1992.

Thereafter, meetings of the Management Committee and Steering Committee were held as often as several times each week to accomplish the goal and expedite the work. Mr. Curtis Johnson of the TWDB Planning Division staff, frequently attended the Steering Committee meetings.

Also in attendance were Mr. Nick Dauster and Ms. Sherry Muller of State Senator Frank Tejeda's legislative staff.

I. POPULATION STATISTICS

Development in the study area has occurred primarily along IH 35, US 181, US 281, SH 16, and Pleasanton Road. Development will continue along these corridors. The construction of the loop road FM 1604 and IH 37 in the study area will continue to be a catalyst for new development, although the lack of frontage roads along FM 1604 tends to retard growth. Major thoroughfares in the study area are shown in Exhibit 6.

Continued population growth within the study area can be attributed to the desire for residents to live in a rural setting, close to relatives and in close proximity to their jobs. The study area is expected to continue to grow at an annual rate of 2% to 4%.

Census information indicates that more than 50% of the households in the study area are in the low to moderate income level (See Exhibit 14).

Table 1 and 2 provides census information relating to population growth in this area. A copy of each report is included herewith as part of this application.

TABLE 1
SOUTH BEXAR COUNTY
POPULATION AND DWELLING UNITS

<u>Census Tract</u>	1970 <u>Pop./DU</u>	1980 <u>Pop./DU</u>	1990 <u>Pop./DU</u>
1417	1166/363	2228/839	2937/1217
1418	1869/571	2489/867	2847/1029
1519	2373/533	2598/620	2845/809
1520	353/126	400/137	637/206
1521	1484/409	2168/729	3504/1208
1522	1992/608	2962/1067	4584/1624
1612	568/141	554/161	1557/478
1618	4830/1280	4614/1521	4477/1695
1619	3439/914	3663/1218	4436/1508
1620	<u>4323/1246</u>	<u>6146/1971</u>	<u>7406/2527</u>
TOTAL	22,397/6191	27,822/9130	35,230/12,301

Source: U.S. Census Data

TABLE 2
POPULATION GROWTH PER YEAR

<u>Area</u>	<u>1960-1970</u>	<u>1970-1980</u>	<u>1980-1990</u>
Bexar	2.09%	1.91%	1.99%
San Antonio	1.13%	2.01%	1.91%
Elmendorf	6.00%	1.05%	2.85%
Somerset	2.57%	2.52%	0.38%

II. WATER RESOURCES

A. SOURCES

1. Surface Water Resources

The area is partially traversed by all four of the main river features within Bexar County: The San Antonio and Medina Rivers, and Leon and Salado Creeks. In addition, the area is also drained by several intermittent creeks such as Medio Creek, Elm Creek, and Polecat Creek, plus several of the many tributaries of both creeks and rivers.

Within the study area there are several lakes including Braunig Lake, Bluewing Lake, Mitchell Lake, and Canvasback Lake.

The study area of South Bexar County has three major wastewater treatment facilities that are permitted to discharge on a daily basis a total of 154 million gallons. Some of this wastewater discharge is used as cooling water for the power plants. No surface water treatment plants are in use in Bexar County.

2. Ground Water Resources

a. Edwards Aquifer

The best regional ground water resource is the Edwards Aquifer, a moderately deep (2,200 feet) and prolific limestone aquifer that underlies portions of five different counties in the area, including Bexar. The Edwards yields a moderately hard, remarkably pure, and good tasting water supply. Chlorination is the only treatment needed to comply with state requirements.

Faulting occurs along the southern border of the aquifer within the study area producing a zone of brackish water along a "bad water line".

The dividing line between the good Edwards water and the brackish, less pure water traverses across the northwest corner of the project area, generally following the IH-35 Highway right-of-way.

b. Carrizo - Wilcox Aquifer

South and east of this "bad water line", the surface geology includes mixed shallow alluvial formations which generally yields poor quality fresh water in small amounts.

South of FM 1604 within the study area is a portion of the outcrop of the Carrizo - Wilcox Aquifer.

In this area, the aquifer is exposed on the surface and runs to a depth of 200 to 500 feet.

Anyone seeking well water east of the Edwards formation, would be drilling into either the shallow (less than 100') surface gravels or the Carrizo - Wilcox sand aquifer.

Exhibit 2 shows the location of these formations within the study area.

B. EXISTING WATER SUPPLY AND QUALITY

The Texas Department of Health has set the primary and secondary Maximum Concentration Levels (MCL) for water which is used for human consumption. The standards for selected inorganic constituents are found in Table 4.

The Texas Water Development Board has conducted a study entitled "Ground-Water Quality Monitoring Results in the Winter Garden Area, 1990" published in February 1992. This study examines the quality of ground water from selected wells in the Queen City Sand, Carrizo Sand, and the Wilcox group in all or parts of Atascosa, Bexar, Dimmit, Frio, Karnes, La Salle, Medina, Wilson and Zavala Counties. A total of 119 wells were sampled.

Three of these sample wells are located in the Carrizo/Wilcox aquifer within the study area.

TABLE 4

Drinking Water Standards for Selected Inorganic Constituents as Set by the Texas Department of Health

Primary Constituent Levels			
Arsenic	As	0.05	mg/l
Barium	Ba	1.0	mg/l
Cadmium	Cd	0.010	mg/l
Chromium	Cr	0.05	mg/l
Fluoride	F	4.0	mg/l
Lead	Pb	0.05	mg/l
Mercury	Hg	0.002	mg/l
Nitrate (as N)	NO ₃ (N)	10.0	mg/l
Selenium	Se	0.01	mg/l
Silver	Ag	0.05	mg/l
Gross Alpha	a	15	pCi/l
Gross Beta	B	50	pCi/l
Radium	Ra225 + Ra 228	5	pCi/l
Secondary Constituent Levels			
Chloride	Cl	300	mg/l
Copper	Cu	1.0	mg/l
Fluoride	F	2.0 mg/l	(community)
Iron	Fe	0.3	mg/l
Manganese	Mn	0.05	mg/l
pH		>7.0	
Sulfate	SO ₄	300	mg/l
Dissolved Solids	TDS	1,000	mg/l
Zinc	Zn	5.0	mg/l

The sample well results in Bexar County as presented in this report (see Exhibit 13) are to-wit:

Well No. 68-46-801 (Bexar)
W Sulfate was 359 Mg./1
 Dissolved Solids were 1054 Mg./1
 Iron was 0.671 Mg./1

Well No. 68-53-809 (Bexar)
W Iron was 0.654 Mg./1

Well No. 68-52-405 (Bexar)
W Iron was 0.472 Mg./1
 Manganese was 0.08 Mg./1

The location of these wells are shown on the map drawing for the project.

Each of the three sample wells in Bexar County exceeded the drinking water standards. The constituents exceeded were: dissolved solids (1 well); iron (3 wells); sulfate (1 well) and Manganese (1 well).

The Texas Department of Health 1990 publication entitled, "Chemical Analysis of Public Water Systems" contains chemical analysis of water supplies from community system.

This report with the study area wells highlighted is included herein as Exhibit 12. Only two of the private purveyors who were listed had a water quality which met the minimum quality standards. Not all community wells were included in the study (ie. Vos Water Co.).

The applicant purveyors supply water to areas that are located over the Carrizo - Wilcox aquifer, however, their water source is from wells in the Edwards formation. The Edwards water source meets the current requirements of the Drinking Water Quality Standards.

C. ENVIRONMENTAL CONCERNS FOR WATER QUALITY

1. Sewage treatment facilities

Three of the San Antonio Water System's major wastewater treatment facilities are located within the project planning area.

These three wastewater treatment facilities have a permitted capacity of 154 million gallons per day which amounts to 172,500 acre feet of water per year.

In the past, wastewater discharges through this area were not in compliance with State requirements and thus presented serious environmental concerns.

All these facilities now comply with their discharge permits and are monitored by both the Texas Water Commission and the Environmental Protection Agency.

2. Landfills

Other environmental concerns within the planning area are the several permitted landfill sites some of which remain in operation. Many of the closed landfills were shut down prior to the time when strict State requirements were imposed and thus could be a source of contamination to the underground aquifers.

Also existing in the study area are old, privately owned closed and unrecorded landfills. A map of existing landfill sites are presented as Exhibit 5.

3. Septic tanks

In addition, there are still some scattered residences within the area which rely on pit privies or substandard septic tank installations for wastewater disposal.

4. Toxic and hazardous waste

Also of concern is the existence of toxic and hazardous waste contamination areas within and up stream of the study area.

The remote and undeveloped nature of South Bexar County facilitates continued illegal dumping of every kind of waste.

5. Oil and gas wells

Portions of the study area have oil and gas production wells which penetrate both the Edwards and Carrizo Aquifer to depths of 3000 feet or more.

Some of these wells are improperly constructed resulting in gas and oil being introduced into the aquifer.

III. EXISTING WATER PURVEYORS

The study area is served by for profit purveyors, non-profit purveyors and public water purveyors.

A. FOR-PROFIT WATER PURVEYORS

Some of the for-profit water purveyors operate without a Certificate of Convenience and Necessity (CCN) from the TWC.

Information relating to their distribution system and plant facilities is limited or non-existing.

These systems in general have been designed to conform to the states "minimum" standards and may have failed to maintain even these standards.

The for-profit water purveyors are:

NICO-TYME WATER CO-OP

WATERWOOD UTILITIES CCN 12082

WATER SERVICES 3 CCN 10650

Formerly:

KINGSPPOINT WATER CORPORATION

PALO ALTO PARK UNIT 1

TWIN VALLEY WATER CORPORATION

SILVER MOUNTAIN WATER COMPANY CCN 12321

SOUTH OAKS ESTATES NO CCN

WINDY WATER WORKS CCN 10641

PLEASANT OAKS DEVELOPMENT CORPORATION CCN 12266

VOS WATER COMPANY NO CCN

CARDOZA TRAILER PARK

G & G MOBILE HOME PARK

ROBINSON'S TRAILER PARK

WESTERN TRAILS WATER SUPPLY CORPORATION

B. NON-PROFIT WATER PURVEYOR

The non-profit water purveyors have their CCN certificate, they have their own wells, pumping facilities and storage facilities. They maintain their system on a 24 hour basis.

Atascosa Rural Water Supply Corporation
CCN 11366 This 1669 member owned cooperative system conforms to the "minimum" design standards of the TDH.

Bexar Metropolitan Water District
CCN 10675 The entire system meets the requirements for capacity of the Texas Department of Health for Public Water Systems. Fire protection capacity is provided.

C. PUBLIC WATER PURVEYOR

The San Antonio Water Supply System is a municipal owned system, with a CCN certificate, presently serves over 600,000 people. They have their own wells and adequate pumping facilities and storage facilities. The system is maintained on a 24 hour basis, provides adequate water pressure and fire protection. The entire system meets the requirements for capacity of the Texas Department of Health for public water systems.

San Antonio Water System CCN 10640

D. INDIVIDUAL WELL OWNERS

Another water source is the privately owned wells. Many residents in the study area have purchased acreage tracts and have had their individual private wells drilled for their private use. A large number of wells exist, these wells generally are shallow, seldom inspected and many do not meet "the TWC Drinking Water Quality Standards".

E. STATUS OF CERTIFICATES OF CONVENIENCE AND NECESSITY WITHIN THE STUDY AREA

There are 8 existing privately certified water purveyors in the study area and five public purveyor areas. In addition, there are several private purveyors operating without certificates.

The Luckey Road project (#1) is located within the service area of the City of Lytle. If the project were funded, the City would be required to extend mains to this area.

In the alternative, the Atascosa RWSC could provide service by agreement with the City.

Windys Waterworks has an application (Docket 9276C) pending at the Texas Water Commission for additional Service area.

The TANCO group has filed a petition with the Texas Water Commission requesting revocation of the Windy's Water Company certificate in presently unserved areas.

F. Other Purveyor Data

TABLE 5

<u>PUBLIC PURVEYORS</u>	<u>CONNECTIONS</u>	<u>PERSONS</u>
Atascosa Rural Water Supply Corp.	1,608	6,271
Bexar Metropolitan Water Dist.	1,556	6,608
Elmendorf City of	321	1,252
*Lytle City of	20	78
San Antonio Water System	<u>766</u>	<u>2,987</u>
	4,271	16,656
*Estimated (Bexar Co.)		
<u>PRIVATE PURVEYORS</u>		
Cardoza Trailer Park	13	51
G & G Mobile Home Park	18	70
Kings Point Water Corp.	189	737
Nico-Tyme Water Co-Op	31	121
Palm Park Water Co.	248	967
Palo Alto Park Water Co.	48	187
Pleasant Oaks Development Corp.	60	234
Robinson's Trailer Park	16	62
Silver Mountain Water Co.	24	94
South Oaks Estates	28	109
Twin Valley Water Corp.	136	530
Vos Water Co.	102	398
Waterwood Utilities, Inc.	119	464
Western Trails Water Supply Corp.	50	195
Windy's Water Works	<u>590</u>	<u>2,301</u>
	1,672	6,520
GRAND TOTALS	5,943	23,176

Source: Publication entitled "Bexar County Water Purveyors January 1, 1992" by San Antonio Water System and the Metropolitan Health District.

IV. EXISTING WATER SUPPLY AND DISTRIBUTION SYSTEMS

A. WATER SUPPLY AND DISTRIBUTION SYSTEMS

In addition to the applicants information regarding their facilities, the other water purveyors in the study area were contacted and requested to furnish facility information for purpose of this study.

Map and operational data for the for-profit purveyors is included in this report to the extent it was made available by the purveyor.

A narrative description of the public purveyor facilities follows.

1. San Antonio Water System

The San Antonio Water System (SAWS) is the largest water purveyor in Bexar County and serves the Northeast section of the study area. SAWS' existing water distribution system within the study area consists of 6-inch, 8-inch, 12-inch and 16-inch mains. These existing facilities are all located within their Service Level 2 which is a pressure zone designed to keep system pressures within desired maximum and minimum limits. The static hydraulic gradient and design elevations of Service Level 2 are as follows:

Static Hydraulic Gradient - 750 feet
Maximum Ground Elevation - 620 feet
Minimum Ground Elevation - 500 feet

This translates into a static water pressure which ranges between 108 PSI and 56 PSI, depending on the ground elevation.

Service Level 2 is located beyond the Southern boundary of the Edwards Underground Reservoir and groundwater found in this area is highly mineralized. Therefore, the SAWS has chosen to transfer Edwards water from a higher pressure zone, their Service Level 3, into Service Level 2. Pressure between Service Level 3 and Service Level 2 is regulated with pressure reducing valves.

Two (2) primary pump stations located in Service Level 3 supply water to the SAWS portion of the study area. The pump stations and their capacities follow:

<u>Station</u>	<u>No.</u>	<u>Well Pumps</u> <u>Total Capacity</u>	<u>No.</u>	<u>High Service Pumps</u> <u>Total Capacity</u>	<u>Ground</u> <u>Storage</u>
Artesian	4	57.7 MGD	5	57.0 MGD	5.00 MG
Mission	7	77.2 MGD	6	68.0 MGD	5.00 MG

Elevated or floating storage is provided to service Levels 2 and 3 from three (3) reservoirs with a total capacity amounting to 5 million gallons.

2. Atascosa Rural Water Supply Corporation

The Atascosa Rural Water Supply Corporation's service area includes that portion of southwestern Bexar County West of a line extending South from the intersection of Loop 410 and IH 35. This system lays totally within the study area.

The distribution system consists of approximately 140 miles of PVC pipe ranging in size from 1-1/2-inch to 12-inch diameter.

The system is supplied by six (6) pumping stations and two (2) Edwards wells located North of IH 35. One of the wells, No. 1, has developed high iron content and its supply is being treated by a 600 GPM aeration iron removal treatment facility.

Storage for the system is provided by ground storage tanks located at each of the six (6) pump stations, with a total capacity of 390,750 gallons. The Atascosa RWSC also has one 100,000 gallon elevated storage tank located on Ladd Road. The system has five pressure levels varying from ground elevation 681 to 890.

3. Bexar Metropolitan Water District

Bexar Metropolitan Water District's service area includes the Northwestern part of the project area between Watson Road and Loop 410, and between Watson Road and U.S. Hwy. 281. This service area is contiguous to portions of both Atascosa RWSC's and SAWS' service areas.

The distribution network consists of ductile iron pipe ranging from 6-inch to 24-inch diameter pipe. All of the system's supply and storage facilities are located North of Loop 410 and outside of the planning area. The district's water supply wells located North of IH 35 are all Edwards wells.

B. Water System Compliance

The Texas Water Commission conducts an annual onsite survey of every public water system. The inspection of the water source, facilities and operation is conducted for compliance to regulations. The results of this inspection are reported to the facility owner in the form of a compliance letter. The letter lists areas of non-compliance with recommendations for correcting any deficiencies.

The compliance letters for those water purveyors serving South Bexar County are included as Exhibit 4. Some of these letters reflect substantial unresolved non-compliance in the areas of water quality and operation.

V. LOCAL EFFORTS TO PROMOTE ADEQUATE WATER

The Atascosa Rural Water Supply Corporation, Bexar Metropolitan Water District and the San Antonio Water System, (the Purveyors) each have expended considerable effort toward this project.

Each purveyor has prepared and submitted information regarding potential projects, unserved populations, and proposed design solutions.

The applicant purveyor will be required to provide funding for the engineering design and construction phase activities related to a project and thereafter to operate and maintain these facilities in accordance with applicable tariff requirements.

A. ATASCOSA RURAL WATER SUPPLY CORPORATION

The Atascosa Rural Water Supply Corporation, a private non-profit water supply corporation was created in 1969 for the purpose of providing potable water supplies to persons within its service area.

Since that time, this member owned cooperative has secured \$1,908,000 in loan funds from the FmHA for this purpose.

In recent years, the corporation has received two CDBG grants amounting to \$200,000 for extensions of water mains to unserved population groups.

The corporation has identified approximately 400 unserved potential customers within its service area.

Connections to the community drinking water remains impossible for any of several reasons such as:

1. Low income precludes payment of installation and service charges.
2. Upgrade of existing water facilities is needed.
3. Customer location requires a line extension which the customer cannot afford.

Despite loan assistance from the FmHA and economical construction policies, Atascosa RWSC members have the highest monthly charge of the public purveyors in the study area because it has few high density areas and because of the numerous pump stations required to sustain pressures over the large service area using small diameter pipelines.

A study of the Atascosa Rural WSC system prepared in October 1991 identified \$3,312,0000 worth of project which would accomplish several purposes such as extensions to add new customers, correction of calculated pressure deficiencies, improved reliability or correction of storage deficiencies. The study provided for growth through the year 2000.

It is anticipated that the construction on these FmHA funded projects would begin within two years and would take about 12 months to complete.

The final selection of the projects to be constructed with FmHA funds will depend, to some extent, on the results of the funding received from this TWDB program.

The Board of Directors of the Atascosa Rural Water Supply Corporation, on August 15, 1992, authorized the initiation of a loan request to the FmHA to make improvements to the water system in the amount of \$980,000.00.

The project funds would be used to construct pipeline, storage and pumping facilities to provide support for the Texas Water Development Board program facilities.

B. BEXAR COUNTY DEPARTMENT OF COMMUNITY RESOURCES

During the seven years Bexar County has received CDBG funding, Bexar County Commissioners have allocated approximately \$1,139,009 in Community Development Block Grant funds for various water projects in this area. See Exhibit 15.

Listed below are the projects which have been targeted for funding by Community Development Block Grant Funds.

<u>Priority</u>	<u>Project No.</u>	<u>Project Area</u>	<u>CDBG Funding</u>
17	22	Trumbo Road	\$90,000
61	30	US Hwy. 281S	73,000
25	35	*Buena Vista	45,750
7	39	Espada Road	99,225
36/37	54/55	*Laredo Road/Earltown	73,000
			<u>\$ 380,975</u>

*Constructed in 1991 and 1992.

C. BEXAR METROPOLITAN WATER DISTRICT

Bexar Metropolitan Water District has initiated a study relating to possible use of surface water as a supplemental water supply. This "Independent Study" is scheduled for completion in December, 1992.

Thereafter, the District's Southside Master Plan can be updated to reflect acquisition of additional CCN area if needed and coordination of unfunded needs in the study area with the other water purveyors to prevent duplication of effort.

Revisions to the Southside Master Plan should be completed by March, 1993.

<u>1993</u>	<u>LF/Cost</u>
Water Storage Tank and 16" DI Main, 10,500 LF Pleasanton Road - Zarzamora to Mauermann	\$502,000
16" DI Main, 18,000 LF Pleasanton Road - Mauermann Road to Mission Del Lago	\$432,000
16" DI Main, 6,100 LF Zarzamora St. - Applewhite to Loop 1604	\$146,400
16" DI Main, 5,500 LF Hwy. 16 - Zarzamora North West side	\$132,000
8" DI Main, 2,000 LF Hwy. 16 - Zarzamora North West side	\$ 48,000
 <u>1994</u>	
24" DI Main, 1,300 LF Hwy. 16 to Walsh Road	\$ 31,200
16" DI Main, 3,000 LF Zarzamora - Walsh to Applewhite	\$ 72,000
20" DI Main, 3,500 LF Applewhite to Loop 410	\$ 84,000
Future Loop, 18,500 LF 20" DI Main and 16" DI main Zarzamora to US Hwy. 281	\$444,000

The proposed capital improvements by the Bexar Metropolitan Water District are estimated at \$1,891,600 and will be funded from revenue and are considered as capital improvements.

D. SAN ANTONIO WATER SYSTEM

The San Antonio Water System (SAWS) has evaluated the overall needs for providing water service to all unserved areas within their portion of the study area. In order to serve this area, SAWS has proposed two categories of water facility projects, general benefit facility and local benefit facility projects. A general benefit facility is defined as a water main that is 12 inches and larger or a water production facility. A local benefit facility is defined as a water main smaller than 12 inches and service lines with attendant meters and meter boxes.

The cost of general benefit facility projects is proposed to be funded through the SAWS's annual Capital Improvements Program. The funding of local benefit facilities is planned through TWDB grant funds or CDBG funds available through Bexar County. This approach is consistent with the SAWS master planning effort and their Regulations For Water Service.

The general benefit facilities that will provide water service within the study area that the SAWS has funded during 1991 and 1992 and proposes to fund in subsequent years are listed below and are also illustrated on Exhibit 10.

Completed General Benefit Facility Projects

1991 and 1992

12-inch main on Blue Wing Road from Southton to Goethe - 11,300 LF	\$ 346,500
12-inch main on Blue Wing Road from Goethe to FM 1937 - 5,200 LF	98,300
12-inch Main on Streich Road from Old Corpus Christi to Southton - 2,700 LF	128,200
12-inch main on Southton Road from Donop to Streich - 5,100 LF	167,600
16-inch main of Old Corpus Christi from South Presa to Donop - 6,800 LF	277,300

Completed General Benefit Facility Projects (Cont'd.)

1991 and 1992

12-inch main on Pleasanton Road from Laredo to Trumbo - 8,500 LF	319,000
12-inch main on Pleasanton Road from Trumbo to FM 1604 - 8,700 LF	282,700
12-inch main on FM 1604 from Pleasanton to Hwy. 16 - 28,900 LF	861,000
12-inch main on FM 1604 from Hwy. 16 to Senior - 12,700 LF	401,500
12-inch main on FM 1604 from Pleasanton to FM 1937 - 20,800 LF	<u>779,000</u>
	\$3,661,100

Proposed General Benefit Facility Projects

1992

12-inch main on Hwy. 181 from Laguna to Richter - 6,400 LF	\$ 240,000
12-inch main on Old Corpus Christi and Richter from Streich to Railroad Tracks - 9,500 LF	360,000

1993 through 2000

16-inch main on Blue Wing Road from Southton to Hwy. 181 - 8,700 LF	540,000
24-inch main on FM 1937 from Loop 410 to Blue Wing Road - 19,500 LF	2,070,000
24-inch main on an Extension of Blue Wing Road from 1937 to Hwy. 291 - 3,300 LF	210,000
20-inch main on an extension of Blue Wing Road from Hwy. 281 to Pleasanton - 6,600 LF	580,000
12-inch main on Road One from River Road to Southton Road - 4,000 LF	200,000
12-inch main on Richter Road from Railroad Tracts to Hwy. 181 - 5,500 LF	275,000

Proposed General Benefit Facility Projects

1993 through 2000

12-inch main on FM 1604 from Southton to FM 1604 - 24,500 LF	1,225,000
12-inch main on FM 1604 from FM 1937 to IH 37 - 15,500 LF	775,000
12-inch main on FM 1604 from IH 37 to the San Antonio River - 19,000 LF	950,000
16-inch main on SH 16S from Watson Road to FM 1604 - 15,000 LF	940,000
16-inch main on Mauermann Road from Applewhite to existing main on Mauermann - 9,000 LF	560,000
16-inch main on Applewhite Road from Mauermann to Watson - 10,000 LF	630,000
16-inch main on Watson Road from Fischer to Applewhite - 20,000 LF	1,250,000
16-inch main on Fischer Road from Quintana to Watson - 11,000 LF	690,000
16-inch on Quintana Road from Fischer to Loop 410 - 2,500 LF	<u>160,000</u>
	\$11,655,000

VI. PROJECT DEVELOPMENT

A. PUBLIC HEARINGS

The Steering Committee (hereafter referred to as the Committee) caused public hearings to be held throughout the study area for the purpose of locating and identifying unserved populations.

<u>Date</u>	<u>Site</u>	<u>Attendance</u>
April 30, 1992	Southwest School District	90
May 7, 1992	Somerset Multi-Purpose Center	70

<u>Date</u>	<u>Site</u>	<u>Attendance</u>
May 14, 1992	Southside Middle School	120
May 21, 1992	Southside Middle School	80

The public hearings were advertised in area newspapers, leaflet handouts to students, leaflet handouts at public areas and public service announcements on radio. All of the public hearings were well attended, with an average attendance of 90 persons per hearing. A total of 110 persons submitted written testimony. In review of the forms, the following items of concern were noted:

<u>Concern</u>	<u>Testimony</u>
Wells going Brackish	24 each
High Iron Content	25 each
No Fire Protection	12 each
Prohibitive Installation Costs	11 each

54 people provided oral testimony generally regarding these same topics.

B. THELMA AREA NEIGHBORHOOD COMMUNITY ORGANIZATION (TANCO)

The Thelma Area Neighborhood Community Organization conducted a house-to-house survey to document complaints on the existing water service and the need for water service to areas not being served. Their survey shows that the most common complaints noted were: low water pressure, high iron content, staining of clothes and poor maintenance. Many private well owners complained of their wells becoming salty and brackish.

C. IDENTIFICATION OF POPULATED AREAS

Most of the unserved populated areas were located as a result of the public input received through the series of public hearings. Besides the information gathered at the public hearings, other contributors of data were: The Steering Committee members, the Bexar County Department of Community Resources, the Thelma Area Neighborhood Community Organization and the public water purveyors.

The TWDB Emergency Financial Aid to South Bexar County is for the primary purpose of providing potable community water supplies to existing unserved population areas in the study area. The fund allocation provisions include the following conditions:

1. The recipient of funds must be eligible to receive public funds (ie. public or non-profit water purveyor, ie. outside municipalities).
2. The area receiving the funds must conform to the grant provisions.
3. The Texas Department of Health must determine: That the drinking water supply fails to meet the department criteria thereby creating a nuisance dangerous to public health.

The Health Department's letter of determination is included herewith as Exhibit 11.

Existing Texas Water Commission regulations require that water purveyors obtain certificates of convenience and necessity (CCN) for defined areas of service.

Project funds could not be expended in areas already being provided with water service as evidenced by existing water mains.

A base map was prepared to show the identified populated areas. See Exhibit 10.

Each identified populated area was located on the 1991 aerial photos of the South Bexar County Area and the number of dwelling units were verified. A "windshield" survey of the identified populated areas was conducted where needed.

A facility map was prepared for each proposed project. The maps provide information regarding the project number and name, dwelling units served the estimate of probable cost, the size of the main, CCN boundary and the proposed purveyor.

All these factors are pertinent to establishing the project rating.

Some of the proposed projects are located within a private CCN area.

There were identified 47 projects North of FM 1604 which would serve 3,167 persons and 26 projects South of FM 1604 which would serve 2,913 persons.

D. ENGINEERING DESIGN PARAMETERS

1. Texas Water Commission Public Water System Regulations

The Texas Water Commission establishes rules and regulations for Public Water Systems and monitors these systems for compliance.

All water supply and distribution systems must meet the minimum requirements of these rules (31 TAC 290.38-290.49).

The quality of the drinking water and reporting requirements are set out in Section 290.1-290.19 entitled "Drinking Water Standards Governing Drinking Water Quality and Reporting Requirements for Public Water Supply Systems."

These TWC standards allow water purveyors to design their distribution systems for domestic use only (minimum size 2 inches) in accordance with Section 290.45 "Minimum Water System Capacity Requirements."

New subdivisions being developed require plat approvals which may trigger municipal design and construction standards of the water supply and distribution system. These standards require that developers construct pipelines with a minimum size of 6" diameter to accommodate fire flow considerations.

All purveyors are required to maintain minimum pressures of 35 psi. The size and types of storage and pumping facilities is also regulated by the TWC.

Funding agencies such as HUD, FmHA, etc., who make loans or grants may also establish minimum criteria for water systems. The Texas Fire Insurance Commission has established optional standards for water systems where fire insurance is a consideration.

Therefore, when evaluating county wide water systems, the only uniform standard would be the minimum standard of the TWC.

Because most regulatory agencies have adopted the TWC rules relating to water quality and operational practices (including chlorination), these requirements are generally uniform throughout the study area.

For purposes of this study, the applicants have agreed to adopt a 6" diameter pipe with fire hydrants at 1000' centers as a common minimum design.

The type of pipe material (plastic, asbestos cement, or ductile iron) and the construction methods (36"-48" cover, etc.) will be determined by the applicant.

The facility maps and cost estimates for the proposed work generally followed the indicated criteria where possible:

WATER MAINS:

Minimum size - 6" diameter
Maximum spacing - 1200'
Loop where possible

FLOW REQUIREMENTS:

50 connections or less - 3 GPM per connection
50 to 250 connections - 2 GPM per connection

FIRE HYDRANTS:

Size - 6" minimum
Spacing - 1000' maximum with gate valve
Location - Street intersection preferred

VALVES:

Distribution system mains - 1000' spacing

All elements of the water distribution system shall be in accordance with the requirements of the Texas Water Commission Rules and Regulations.

2. Bexar County Model Subdivision Regulations

On July 31, 1991, the Bexar County Commissioners Court passed a resolution amending the "Bexar County Specifications for Subdivision and Public Works Construction" to include Section D - "Additional rules pertaining to subdivisions with lots of one acre or less."

E. PUBLIC PURVEYORS CONSTRUCTION COST DATA

At the beginning of the study, each public purveyor furnished unit prices which represented the anticipated cost of construction based on the purveyors normal construction/material practices.

Each purveyor follows different design and construction practices which are unique to that purveyor. As an example, Atascosa RWSC uses plastic pipe with a bury of 36" whereas the other purveyors use ductile iron buried with 48" cover. Some purveyors use force account construction and others use contractors to install mains.

These cost units were then used to estimate the cost of the proposed facilities within the service area of the applicant purveyor.

Where no public purveyor is identified, prices were selected which best represented the anticipated cost for a bid/construct project following local prevailing construction cost. The effective cost per foot for a 6" line provides some indication of the resulting variable cost.

Atascosa RWSC	\$8.00 to \$9.00 per LF
Bexar Met. Water District	\$13.50 to \$14.50 per LF
SAWS	\$18.50 to \$21.00 per LF
Private Area	\$18.00 to \$18.50 per LF

The cost of individual service connections was not included in the project estimates. Other funds may be available for that purpose. Some purveyors also provide an "Easy Payment Plan" for new connections.

The estimated cost for each project includes a 10% contingency. The unit prices used for the proposed projects are as follows:

ATASCOSA RURAL WATER SUPPLY CORPORATION

<u>ITEM</u>	<u>UNIT PRICE</u>
6" PVC Pipe	\$ 5.00/LF
8" PVC Pipe	7.00/LF
6" Gate Valve	420.00/EA

ATASCOSA RURAL WATER SUPPLY CORPORATION (Cont'd.)

<u>ITEM</u>	<u>UNIT PRICE</u>
8" Gate Valve	550.00/EA
DI Fittings	3200.00/TON
Bore & Case	60.00/LF
Open Cut Crossing	40.00/LF
Trench Protection	2.00/LF
2" Temporary Blow-off	500.00/EA
Pressure Testing	1,500.00/LS
Fire Hydrant	1,300.00/EA
Contingency 10%	/LS

BEXAR METROPOLITAN WATER DISTRICT

<u>ITEM</u>	<u>UNIT PRICE</u>
6" DI Pipe	\$ 12.00/LF
8" DI Pipe	15.00/LF
Fire Hydrant	875.00/EA
Contingency 10%	/LS

The Bexar Metropolitan Water District costs per linear foot are inclusive of Bore and Case, Open Cut Crossing, Trench protection, valves, temporary blow-offs and pressure testing.

SAN ANTONIO WATER SYSTEM

<u>ITEM</u>	<u>UNIT PRICE</u>
6" DI Pipe	\$ 14.25/LF
8" DI Pipe	17.25/LF
6" Gate Valve	350.00/EA
8" Gate Valve	515.00/EA
DI Fittings	2,400.00/TON

SAN ANTONIO WATER SYSTEM (Cont'd.)

<u>ITEM</u>	<u>UNIT PRICE</u>
Bore & Case	36.00/LF
Open Cut Crossing	18.00/LF
Trench Protection	1.50/LF
2" Temporary Blow-off	750.00/EA
Pressure Testing	425.00/EA
Fire Hydrant	1,450.00/EA
Contingency 10%	/LS

VII. RECOMMENDED PROJECT PRIORITY

A. EVALUATION FORM DEVELOPMENT

In order to prioritize each project, an evaluation form was developed. The evaluation process considered the criteria established in the TWDB contract. This criteria included "health risk, overall need and financial feasibility."

The steering committee determined that the health risk to anyone not connected to a community water supply was the same throughout the study area since private wells would be suspect as would be water hauling.

Because some of the projects are within a private purveyor service area, the committee established a check list which reflects the status of the private purveyor facilities compared to TWC minimum requirements.

The committee determined that overall need could best be represented by population and that financial feasibility could be represented by the cost per connection.

Each project was then rated using this standard form (See Exhibit 8).

B. PROPOSED FACILITIES IN PRIORITY ORDER

After ranking all projects, many had the same rank. Prioritization was then accomplished by discernment of:

1. Relationship between projects
2. Potential growth
3. Number of people served
4. Provides looping (improves reliability)

The steering committee determined that projects within private for-profit purveyor areas should be included in the study so that the needs of all unserved population pockets within the study area would be identified.

Projects were segregated on the prioritization list into columns based on the eligibility of the area where the project is located to receive program funds.

The initial list of eighty-nine (89) project areas was condensed to seventy-four (74) project areas during the course of the study. A listing of all projects in priority order follow on pages 35 to 47 of text.

VIII. SUMMARY

The Texas Legislative has appropriated \$4,000,000 to the Texas Water Development Board Water Assistance Fund for the purpose of providing emergency financial assistance to provide water to eligible areas in south Bexar County.

The initial activity funded is this planning and identification phase in which feasible projects for construction of needed water facilities are identified, cost are estimated and priorities assigned.

Included in this initial phase are the tasks of locating unserved populations, determining eligibility for access to this funding, and documentation of the magnitude of this problem.

The second phase of this program will be the design and construction of the identified projects to the extent funds are available.

The initial phase study was conducted by the three larger public water purveyors in the study area who joined together for this purpose with the assistance of the Bexar County Commissioner's Court and the Bexar County Community Resources staff, Community Development Block Grant Program.

Public hearings were held throughout the study area to obtain input from potential customers.

The locations of existing water purveyors both public and private and their facilities within the service area were determined where possible.

Water distribution system mains were planned for extension from the "public" purveyors to the unserved populations.

Where these unserved populations were located in areas certificated for service by private purveyors, the proposed water mains were shown to extend from the nearest public purveyor locations.

This provided a means of indicating hypothetical service and prioritization within the study area.

The cost of water line extensions and the number of people served within the eligible and ineligible areas were determined to be:

	<u>Cost</u>	<u>Unserved Population</u>
Eligible area	\$11,528,139	4268
Ineligible area	<u>\$ 3,208,224</u>	<u>1975</u>
Total	\$14,736,363	6243

These cost do not include the cost of support facilities or some approach mains being provided by the purveyor.

Approximately 2857 total potential connections were determined to exist which are not connected to a community water system.

An examination of the ground water supply in the areas east of the bad water line (IH-35) was made.

The available data shows that in these areas the ground water quality no longer complies with the States Drinking Water Standard.

The records shows that several of the private for-profit purveyors have not been able or willing to operate in compliance with State standards.

The presence of unsealed land-fills and industrial hazards within and upstream of the study area with the possibility of continued degrading of the Carrizo/Wilcox Aquifer was noted.

The cost of extending mains into these unserved areas was determined to range between \$2,500 to \$30,000 per connection. The total cost of lines and facilities needed amounts to approximately \$30,000,000 to \$40,000,000.

Project costs were variable depending on customer density, the location and the purveyor.

Over the years, local efforts to provide water service to these areas has been fruitful but insufficient. Local efforts include FmHA loan funds, SAWS local benefit funds, Bexar Metropolitan capital extensions, and Bexar County Community Development Block Grant funding.

Water System Infrastructure investments by the applicant purveyors within the study area to date are as follows:

Atascosa RWSC	\$2,000,000
Bexar Met. Water Dist.	1,500,000
Bexar County Dept. of Comm. Res.	1,401,234
San Antonio Water System	<u>3,661,100</u>
Subtotal System Investments to Date	\$ 8,562,334

Private purveyors have also expended funds toward developer related water facilities.

By the year 2000 additional funds are already planned for this area as follows:

Atascosa RWSC	\$ 980,000
Bexar Met. Water Dist.	1,891,600
Bexar County DCR (CDBG)	*
San Antonio Water System	15,316,000
Texas Water Development Board	<u>4,000,000</u>
Subtotal identified needs	\$22,187,600

FUTURE IDENTIFIED BUT UNFUNDED NEEDS WITHIN THE STUDY AREA ARE:

Atascosa RWSC	\$ 2,000,000
Bexar Metropolitan Water District	undetermined
Bexar County DCR (CDBG)	undetermined
San Antonio Water Systems	undetermined
Study Area Prioritized Elig. Projects	<u>7,526,324</u>
Subtotal identified unfunded needs	\$ 9,526,324

More than 50 percent of the population in study area is in the low to moderate income level as evidence by their eligibility in qualifying for CDBG funding (See also Exhibit 16). These lower income groups would not be able to fund the estimated \$5,000 to \$10,000 cost per connection even if long term, low interest rates were available.

The average monthly charges from public purveyors for water service range from \$12.00/month to \$23.10/month. This is anticipated to increase as new debt and new quality standards are encountered.

* Future CDBG funding for water infrastructure projects is contingent upon several factors including but not limited to: Bexar County's ability to qualify for Community Development Block Grant funds and the prioritization and allocation authority of the Bexar County Commissioners Court.

IX. CONCLUSION

Census data indicates that 35,230 people live within the study area and this study has identified over 12,000 people within the study area who are not connected to a community water system.

Approximately 6080 persons were identified as not having access to existing community supplies who could be served by these projects.

Other unserved populations exist which at least have theoretical access to a community water supply.

Ground water availability for individuals over the Edwards Aquifer in the western part of the study area is precluded by excessive depth (2200') and TWC regulations.

Ground water availability for individuals over the Carrizo/Wilcox aquifer is generally available however, this source now requires expensive treatments before it can be used as a domestic supply. Because of existing pollution in the up stream areas, this source will continue to degrade in quality.

A significant portion of the study area near the City of Somerset has no underlying potable ground water.

A large part of the study area (30%) with approximately 46% of the identified unserved population groups (1908 persons) lies within an area presently certificated to private purveyors.

Use of TWDB funds or other public funds to extend community water service to those areas is therefore precluded.

Efforts by local purveyors to extend mains into unserved areas continues but is hampered by the considerable cost of line extensions. More than \$20,000,000 will be needed to install a basic network distribution system.

The low income levels in the study area will require significant grant type assistance be made available so that actual connections to the water systems can be accomplished.

Purveyors using the Carrizo - Wilcox Aquifer will continue to have difficulty in providing adequate treatment facilities in view of the likely degrading of the groundwater and increasingly stringent water quality standards.

X. RECOMMENDATIONS

- A. TWDB construction grant funds be provided to eligible areas following the priority of projects as listed.
- B. Local public purveyors provide engineering design and construction phase services as local share cost along with construction funds from other sources.
- C. Applicants for funds should be obligated to complete these projects within 3 years. Projects which cannot be completed within 3 years should be deferred until the next funding opportunity.
- D. Additional funds should be appropriated by the legislature for assistance to this South Bexar County area in order to be able to complete all the eligible projects.

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN

POPULATION AND COST DATA

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>
1	LUCKEY ROAD IH 35 to Briggs Rd.	96	24	\$ 59,598	\$ 2,483
2	BRIGGS ROAD Luckey Rd. to Shepherd Rd.	164	41	92,466	2,255
3	ESS ROAD Jarratt Rd. to South	52	13	50,545	3,888
4	IH 35 NORTHSIDE Buck Rd. to Kinney Rd. to Fowler Rd.	92	23	186,912	8,126
5	IH 35 SOUTHSIDE Luckey Rd. to Shepherd Rd.	56	14	121,594	8,685
6	SHEPHERD ROAD Jarratt Rd. to Pearsall Rd.	20	5	65,560	13,112
7	PEARSALL ROAD FM 1604 to Medina River	20	5	180,788	36,158
8	FM 1604 Kinney Rd. TO Macdona-LaCoste Rd.	8	2	81,180	40,590
9	KENAGY ROAD Jarratt Rd. to North	40	10	29,700	2,970
10	PEARSALL ROAD Jarratt Rd. to Blanchard Rd.	CANCELLED	--	--	--

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>
11	KINNEY ROAD AND BRIGGS ROAD Fowler Rd. to Benton City Rd.	48	12	80,619	6,718
12	TRAWALTER LANE Quintana Rd. to North	60	15	32,428	2,161
13	IH 35 AND FM 1604 Quintana Rd. to IH 35 to West	28	7	109,274	15,610
14	WATSON ROAD SH 16 to Somerset Rd.	140	35	222,640	6,361
15	* PALO ALTO NO. 1				
16	* TWIN VALLEY TERRACE				
17	* KINGS POINT				
18	BRENTWOOD HILLS	68	17	154,935	9,113
19	JETT ROAD FM 1604 to Applewhite	68	17	212,201	12,482
20	CURRAN ROAD at FM 1604	104	26	174,873	6,725
21	** OAK ISLAND	60	15	99,577	6,638
22	TRUMBO ROAD FM 1604 to North	148	37	231,083	6,245
23	SH 16 FM 1604 to Watson Rd.	96	24	344,718	14,363
24	** DUKES RD. & ROBERT JARED RD.	248	62	100,430	1,620

* Private Purveyor Area with Existing Water Mains

** Private Purveyor Area with No Water Mains

OZUNA & ASSOCIATES, INC.
CONSULTING ENGINEERS

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>	
25	*	WHISPERING WINDS		\$	\$	
26	*	SHADY OAK MISSION				
27	*	WOODRIDGE PARK				
28	*	WOODLAND FOREST				
29	**	CAMPBELLTON ROAD & HARDY RD.	396	99	620,405	6,267
30		US HWY. 281 S FM 1604 to North	52	13	378,053	29,081
31		LAGUNA ROAD WEST at US Hwy. 181	224	56	154,957	2,767
32		QUESENBERRY ROAD Somerset Rd. to Medina River	52	13	168,520	12,963
33		SENIOR ROAD, SMITH ROAD and Morin Rd.	220	55	528,330	9,606
34		MORIN ROAD Smith Rd. to County Line	COMBINED WITH NO. 33			
35		BUENA VISTA	84	21	178,310	8,490
36		WESTERN TRAILS	224	56	225,500	4,026
37		SOUTHTON AREA at Center Rd.	64	16	876,975	54,810
38		SOUTHTON AREA at Blue Wing Rd.	132	33	212,487	6,439
39		ESPADA ROAD Loop 410 to South	128	32	70,813	2,212

* Private Purveyor Area with Existing Water Mains

** Private Purveyor Area with No Water Mains

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>
40	FEST ROAD SH 16 to East	108	27	\$ 143,489	\$ 5,314
41	LABUS ROAD at FM 1604	40	10	168,742	16,874
42	WRIGHT-CARPENTER ROAD S. Flores Rd. to East	48	12	149,545	12,462
43	RABEL ROAD S. Flores Rd. to East	32	8	209,698	26,212
44	LEAL ROAD FM 1604 to N. of Martinez- Losoya Rd.	92	23	152,762	6,641
45 *	US 281 S FM 1604 to South				
46	US HWY. 181S Loop 410 to Max Rd.	48	12	389,669	32,472
47	DONOP ROAD Southton Rd. to South	156	39	329,268	8,442
48	SHADY FALLS ROAD Richter Rd. to South	36	9	219,626	24,402
49	PRIEST ROAD Labus Rd. to FM 1604	4	1	18,287	18,287
50	FM 1937 FM 3499 to FM 1604	48	12	133,677	11,139
51	FM 3499 FM 1604 to FM 1937	20	5	55,176	11,035

* Private Purveyor Area with Existing Water Mains

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>
52	LOSOYA	40	10	\$ 63,448	\$ 6,344
53	FARM ROAD Southton Rd. to East	28	7	62,651	8,950
54	LAREDO ROAD Railroad to Leal St.	24	6	26,533	4,422
55	FOWLER ROAD Laredo Rd. to Pleasanton Rd.	28	7	14,718	2,102
56	TEJEDA ROAD FM 1604 to North	28	7	243,479	34,782
57	S. FLORES ROAD FM 3499 to FM 1937	CANCELLED			
58	FM 1604 W Senior Rd. to West	32	8	77,104	9,638
59	NOYES ROAD SH 16 to West	32	8	201,091	25,136
60	SMITH ROAD Hickman Rd. to East	COMBINED WITH NO. 33			
61	ERNST ROAD AND PAYNE ROAD Smith Rd. to North	40	10	122,182	12,218
62	** PLEASANTON ROAD FM 1604 to Peaceful Lane	448	112	508,068	4,536
63	NEAL ROAD Applewhite to Pleasanton Rd.	96	24	409,007	17,041
64	LAGUNA ROAD EAST US 181 to North	28	7	53,845	7,692

** Private Purveyor Area with No Water Mains

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>
65	STREICH ROAD at Donop Rd.	68	17	\$ 96,063	\$ 5,650
66	FM 1937 Blue Wing Rd. to South	88	22	373,213	16,964
67	LEAL ROAD FM 1937 to South	72	18	128,535	7,140
68	GOETHE ROAD FM 1937 to Blue Wing Rd.	24	6	278,195	46,365
69	APPLEWHITE ROAD FM 1604 to Watson Rd.	56	16	373,637	23,352
70	** TRUMBO ROAD FM 1604 to Englehart	104	26	165,643	6,371
71	** ENGLEHART ROAD Pleasanton Rd. to Trumbo Rd.	64	16	83,468	5,217
72	** TRUMBO TRAIL AREA Trumbo Rd. & Trumbo Trail	72	18	237,622	13,201
73	* PEACEFUL LANE Pleasanton Rd. to County Line				
74	HENDRICKS ROAD FM 1604 to North	16	4	82,683	20,670
75	LIEDECKE ROAD FM 1604 to North	4	1	83,440	83,440
76	SOUTHTON ROAD Donop Rd. to South	24	6	91,305	15,217
77	IH 37 (East Side) US 181 S to FM 1604	88	22	813,807	36,991

* Private Purveyor Area with Existing Water Mains
** Private Purveyor Area with No Water Mains

OZUNA & ASSOCIATES, INC.
CONSULTING ENGINEERS

<u>Project No.</u>	<u>Project Area</u>	<u>Area Population</u>	<u>Dwelling Units</u>	<u>Constr. Costs</u>	<u>Cost per Connection</u>
78	IH 37 (West Side) US 181 S to Southton Rd.	4	1	\$ 294,685	\$ 294,685
79	FRIO CITY ROAD Greenwood to West	32	8	47,377	5,922
80 **	ROCKPORT ROAD US HWY 281 to FM 1604	52	13	65,186	5,014
81 **	TOUDOUZE ROAD Rockport Rd. to South	28	7	200,024	28,575
82 **	HARDY ROAD Campbellton Rd. to IH 37	COMBINED WITH NO. 29			
83 **	SPANISH GRANT ROAD FM 1604 to South	64	16	197,818	12,364
84	LAMM ROAD AREA	200	50	394,328	7,886
85 **	APPLEWHITE ROAD FM 1604 to South	76	19	185,146	9,745
86 **	JETT ROAD (South) FM 1604 to SH 16	208	52	438,130	8,426
87 **	VINE ROAD AREA	88	22	151,772	6,899
88 *	FM 1604 (South Side) Applewhite Rd. to SH 16 S				
89	PRAIRIE ROAD at FM 1604	164	41	156,750	3,823
				TOTAL	\$14,736,363

* Private Purveyor Area with Existing Water Mains

** Private Purveyor Area with No Water Mains

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
PRIORITIZATION RANKING**

<u>Priority</u>	<u>Project No.</u>	<u>Project Area</u>	<u>Project Costs</u>	
			<u>Eligible Areas</u>	<u>Ineligible Areas</u>
1	62	PLEASANTON ROAD FM 1604 to Peaceful Lane	\$ --	\$ 508,068
2	29	CAMPBELLTON ROAD & HARDY RD.	--	620,405
3	24	DUKES ROAD & ROBERT JARED RD.	--	100,430
4	89	PRAIRIE ROAD at FM 1604	156,750	--
5	31	LAGUNA ROAD WEST at US Hwy. 181	154,957	--
6	36	WESTERN TRAILS	225,500	--
7	2	BRIGGS ROAD Luckey Rd. to Shepherd Rd.	92,466	--
8	39	ESPADA ROAD Loop 410 to South	70,813	--
9	47	DONOP ROAD Southton Rd. to South	329,268	--
10	86	JETT ROAD (South) FM 1604 to SH 16	--	438,130
11	84	LAMM ROAD AREA	394,328	--
12	33	SENIOR ROAD, SMITH and Morin Rd.	528,330	--

<u>Priority</u>	<u>Project No.</u>	<u>Project Area</u>	<u>Project Costs</u>	
			<u>Eligible Areas</u>	<u>Ineligible Areas</u>
13	38	SOUTHTON AREA at Blue Wing Rd.	212,487	--
14	40	FEST ROAD SH 16 to East	143,489	--
15	70	TRUMBO ROAD FM 1604 to Englehart	--	165,643
16	14	WATSON ROAD SH 16 to Somerset Rd.	222,640	--
17	20	CURRAN ROAD at FM 1604	174,873	--
18	22	TRUMBO ROAD FM 1604 to North	231,083	
19	1	LUCKEY ROAD IH 35 to Briggs Rd.	59,598	--
20	12	TRAWALTER LANE Quintana Rd. to North	32,428	--
21	3	ESS ROAD Jarratt Rd. to South	50,545	--
22	71	ENGLEHART ROAD Pleasanton Rd. to Trumbo Rd.	--	83,468
23	44	LEAL ROAD FM 1604 to N. of Martinez- Losoya Rd.	152,762	--
24	87	VINE ROAD AREA	--	151,772

<u>Priority</u>	<u>Project No.</u>	<u>Project Area</u>	<u>Project Costs</u>	
			<u>Eligible Areas</u>	<u>Ineligible Areas</u>
25	4	IH 35 NORTHSIDE Buck Rd. to Kinney Rd. to Fowler Rd.	186,912	--
26	35	BUENA VISTA	178,310	--
27	85	APPLEWHITE ROAD FM 1604 to South	--	185,146
28	21	OAK ISLAND	--	99,577
29	67	LEAL ROAD FM 1937 to South	128,535	--
30	18	BRENTWOOD HILLS	--	154,935
31	5	IH 35 SOUTHSIDE Luckey Rd. to Shepherd Rd.	121,594	--
32	80	ROCKPORT ROAD US HWY 281 to FM 1604	--	65,186
33	83	SPANISH GRANT ROAD FM 1604 to South	--	197,818
34	72	TRUMBO TRAIL AREA Trumbo Rd. & Trumbo Trail	--	237,622
35	65	STREICH ROAD at Donop Rd.	96,063	--
36	9	KENAGY ROAD Jarratt Rd. to North	29,700	--
37	55	FOWLER ROAD Laredo Rd. to Pleasanton Rd.	14,718	--
38	54	LAREDO ROAD Railroad to Leal St.	26,533	--

Priority	Project No.	Project Area	Project Costs	
			Eligible Areas	Ineligible Areas
39	19	JETT ROAD FM 1604 to Applewhite	212,201	--
40	23	SH 16 FM 1604 to Watson Rd.	344,718	--
41	32	QUESENBERRY ROAD Somerset Rd. to Medina River	168,520	--
42	11	KINNEY ROAD AND BRIGGS ROAD Fowler Rd. to Benton City Rd.	80,619	--
43	52	LOSOYA	63,448	--
44	79	FRIO CITY ROAD Greenwood to West	47,377	--
45	64	LAGUNA ROAD EAST US 181 to North	53,845	--
46	53	FARM ROAD Southton Rd. to East	62,651	--
47	58	FM 1604 W Senior Rd. to West	77,104	--
48	50	FM 1937 FM 3499 to FM 1604	133,677	--
49	42	WRIGHT-CARPENTER ROAD S. Flores Rd. to East	149,545	--

<u>Priority</u>	<u>Project No.</u>	<u>Project Area</u>	<u>Project Costs</u>	
			<u>Eligible Areas</u>	<u>Ineligible Areas</u>
50	61	ERNST ROAD AND PAYNE ROAD Smith Rd. to North	122,182	--
51	51	FM 3499 FM 1604 to FM 1937	55,176	--
52	6	SHEPHERD ROAD Jarratt Rd. to Pearsall Rd.	65,560	--
53	63	NEAL ROAD Applewhite to Pleasanton Rd.	409,007	--
54	66	FM 1937 Blue Wing Rd. to South	373,213	--
55	69	APPLEWHITE ROAD FM 1604 to Watson Rd.	373,637	--
56	41	LABUS ROAD at FM 1604	168,742	--
57	13	IH 35 AND FM 1604 Quintana Rd. to IH 35 to West	109,274	--
58	76	SOUTHTON ROAD Donop Rd. to South	91,305	--
59	81	TOUDOUZE ROAD Rockport Rd. to South	--	200,024
60	74	HENDRICKS ROAD FM 1604 to North	82,683	--
61	48	SHADY FALLS ROAD Richter Rd. to South	219,626	--
62	30	US HWY. 281 S FM 1604 to North	378,053	--

<u>Priority</u>	<u>Project No.</u>	<u>Project Area</u>	<u>Project Costs</u>	
			<u>Eligible Areas</u>	<u>Ineligible Areas</u>
63	77	IH 37 (East Side) US 181 S to FM 1604	813,807	--
64	37	SOUTHTON AREA at Center Rd.	876,975	--
65	59	NOYES ROAD SH 16 to West	201,091	--
66	43	RABEL ROAD S. Flores Rd. to East	209,698	--
67	46	US HWY. 181 S Loop 410 to Max Rd.	389,669	--
68	7	PEARSALL ROAD FM 1604 to Medina River	180,788	--
69	56	TEJEDA ROAD FM 1604 to North	243,479	--
70	68	GOETHE ROAD FM 1937 to Blue Wing Rd.	278,195	--
71	49	PRIEST ROAD Labus Rd. to FM 1604	18,287	--
72	8	FM 1604 Kinney Rd. to Macdona-LaCoste Rd.	81,180	--
73	75	LIEDECKE ROAD FM 1604 to North	83,440	--
74	78	IH 37 (West Side) US 181 S to Southton Rd.	<u>294,685</u>	<u>--</u>
TOTAL			\$11,528,139	\$ 3,208,224

XI. REFERENCES

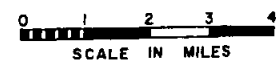
1. Rules and Regulations For Public Water Systems; Texas Department of Health, Austin, Texas, 1988.
2. Bexar County Water Purveyors, San Antonio City Water Board and San Antonio Metropolitan Health District, San Antonio, Texas, January 1, 1992.
3. Records of Wells, Water Levels, Pumpage and Chemical Analysis of Water from the Carrizo Aquifer in the Winter Garden Area, Texas, 1970 through 1977, Report 254, Texas Department of Water Resources, Austin, Texas, September, 1980.
4. Records of Wells, Chemical Analysis and Water Levels of Selected Edwards Wells, Bexar County, Texas, report 237, Texas Department of Water Resources, Austin, Texas, July 1979.
5. Compilation of Hydrological Data for the Edwards Aquifer, San Antonio Area, Texas, U.S. Geological Survey, 1990.
6. Ground Water Quality Monitoring Results in the Winter Garden Area, Report 335, Texas Water Development Board, February, 1992.
7. The National Safe Drinking Water Act, Dr. John W. Hernandez and Dr. William A. Barkley, March, 1976.
8. Ground Water Resources of the Carrizo Aquifer in the Winter Garden Area of Texas, Report 210, Volume 1, Texas Water Development Board, September 1976.
9. Ground Water Resources of the Carrizo Aquifer in the Winter Garden Areas of Texas, Report 210, Volume 2, Texas Water Development Board, April, 1977.
10. Edwards Aquifer Study Phase One Report, City of San Antonio, Texas, Metcalf & Eddy, Inc., November, 1976.
11. Interim Population, Employment and Land Use Projections for the San Antonio Areawide Waste Treatment Management Plan, Alamo Area Council of Governments, July, 1976.

VII. EXHIBITS

1. Project Area Map
2. Aquifer Map
3. Water Well Map
4. Compliance Letters
5. Landfill Map
6. Major Thoroughfare Map
7. Citizen Response Forms
8. Project Evaluation Form
9. Facility Maps and Cost Estimates
10. Base Map
11. Texas Department of Health Letter of Determination
12. Chemical Analysis of Public Water Systems
13. Texas Water Development Board - Record of Bexar County Wells
14. Water Supply Data By Census Tract
15. CDBG Funded Projects Map

OZUNA & ASSOCIATES, INC.
CONSULTING ENGINEERS

EXHIBIT 1
PROJECT AREA MAP



LEGEND

-  PROJECT BOUNDARY
-  SURVEYOR BOUNDARIES

EXHIBIT I

PROJECT AREA MAP
FOR
SOUTH BEXAR COUNTY
REGIONAL WATER STUDY

 **Ozuna & Associates, Inc.**
Consulting Engineers

DATE: NOV. 1, 1992	MAP NO.	PAGE NO.
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EXHIBIT 2
AQUIFER MAP

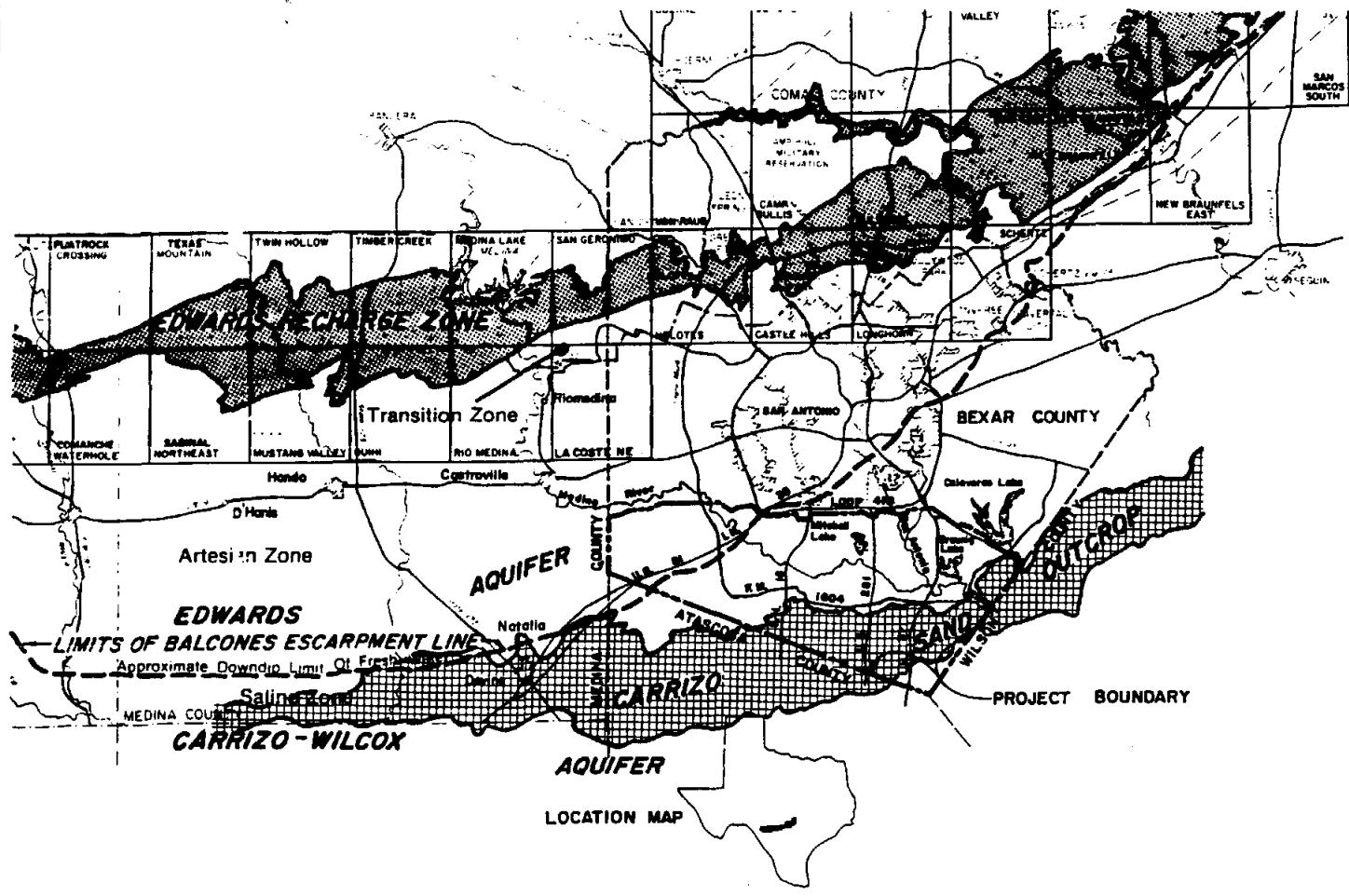


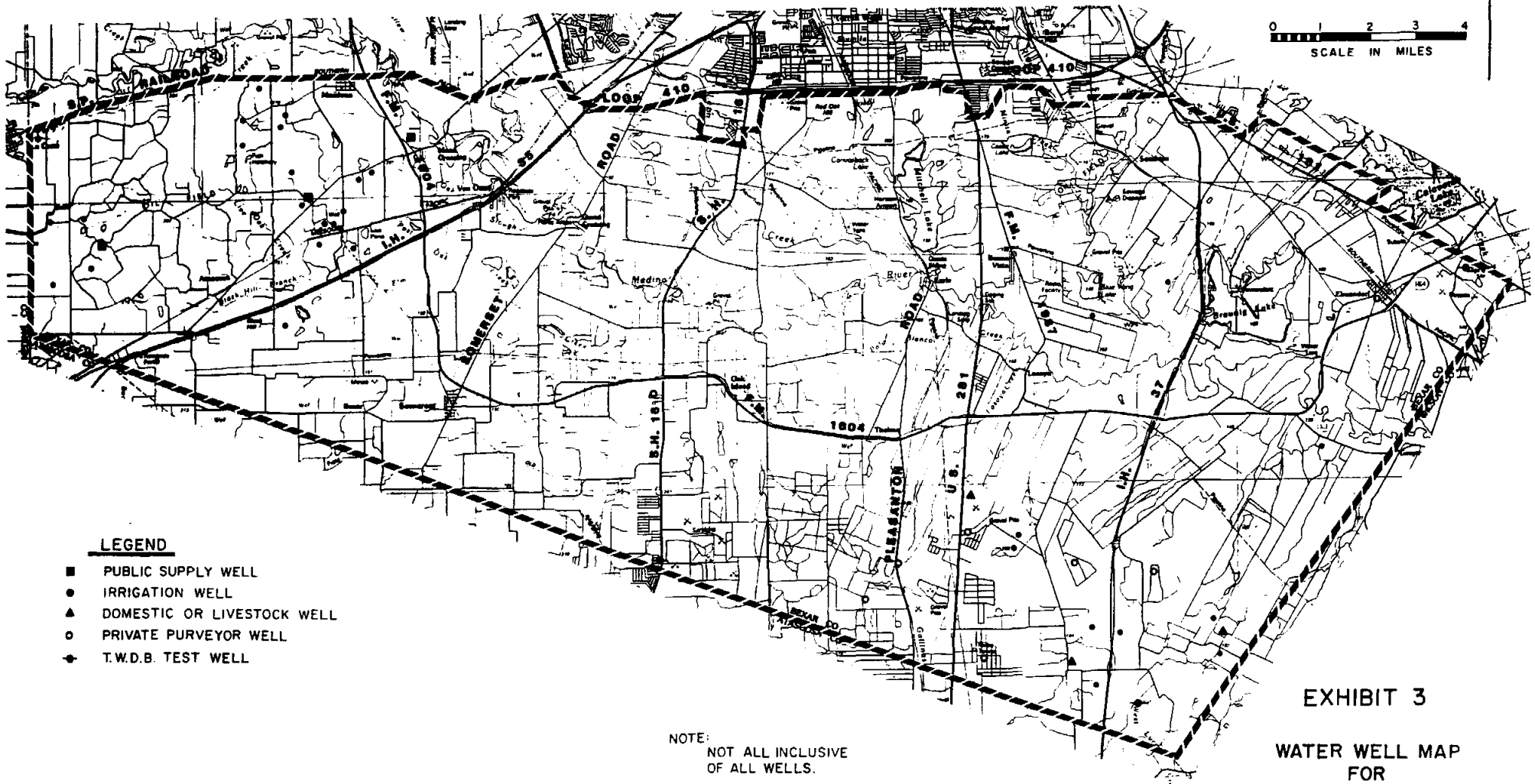
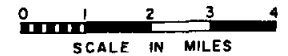
EXHIBIT 2

**AQUIFER MAP
FOR
SOUTH BEXAR COUNTY
REGIONAL WATER STUDY**

 **Ozuna & Associates, Inc.**
Consulting Engineers

DATE: NOV. 1, 1992	MAP NO.	PAGE NO.
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EXHIBIT 3
WATER WELL MAP



LEGEND

- PUBLIC SUPPLY WELL
- IRRIGATION WELL
- ▲ DOMESTIC OR LIVESTOCK WELL
- PRIVATE PURVEYOR WELL
- ◆ T.W.D.B. TEST WELL

NOTE:
NOT ALL INCLUSIVE
OF ALL WELLS.

EXHIBIT 3

**WATER WELL MAP
FOR
SOUTH BEXAR COUNTY
REGIONAL WATER STUDY**

 **Ozuna & Associates, Inc.**
Consulting Engineers

DATE: NOV. 1, 1992	MAP NO.	PAGE NO.
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EXHIBIT 4
COMPLIANCE LETTERS



Texas Department of Health

6 SA

[Handwritten initials]

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

April 26, 1991

Mr. Ronald B. May, President
Water Services, Inc.
P. O. Box 791325
San Antonio, Texas 78279-1325

Subject: Public Drinking Water System
Kings Point Water System, I.D.# 0150146
Bexar County, Texas

Dear Mr. May:

On March 26, 1991, our representative, Jay Don Jobson, R.S, in company with Brian Hood, conducted a sanitary survey of the subject water system. We are pleased to note the corrections which have been made since the previous survey and we wish to commend you and your personnel for your efforts. In order to bring the system into full compliance with our regulations, you must endeavor to correct this remaining deficiency.

Your water system fails to meet this Department's "Minimum Water System Capacity Requirements." These requirements include the following:

a total storage capacity of 200 gallons per connection

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact Raymond Whitley, P.E. in Uvalde at (512) 278-7173.

Sincerely,

Raymond B. Whitley
Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

JDJ/sb

ccs: San Antonio Metropolitan Health District
Public Health Region 6, Uvalde
Public Health Region 6, San Antonio



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

6-8A
D
R

November 20, 1991

Honorable John McGinnis, Jr., Mayor
City of Lytle
P. O. Box 743
Lytle, Texas 78052

Subject: Public Drinking Water System
City of Lytle, I.D. #0070004
Atascosa County, Texas

Dear Mayor McGinnis:

On September 24, 1991, our representatives, Jay Don Jobson, R.S., in company with Scott Traeger, conducted a sanitary survey of the subject water system. As a result of this survey, we find that your water system is currently being operated and maintained in general compliance with State Statutes and this Department's regulations and continues to merit its recognition as a State "Approved" system. We wish to commend you and your operating personnel for your continued efforts.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. If we can be of assistance, in the future please contact our Austin office at 512/458-7497 or our regional office at 512/278-7173.

Sincerely,

A handwritten signature in cursive script that reads "Raymond B. Whitley".

Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

JDJ/sb

ccs: Atascosa County Health Authority
Public Health Region 6, San Antonio
Public Health Region 6, Uvalde
FmHA, Seguin



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

June 10, 1991

Mr. Ronald B. May, President
Utility Management Systems
P. O. Box 791325
San Antonio, Texas 78279-1325

Subject: Public Drinking Water Supply
Waterwood Utilities, Inc. - I.D. #0150488
Bexar County, Texas

Dear Mr. May:

On May 9, 1991, our representative, Jay Don Jobson, R.S., in company with Brian Hood, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. Gas chlorination facilities must be housed in a separate, above ground level room or building with adequate floor level and high level ventilation to prevent damage to electrical equipment and as a measure of safety in the event of chlorine gas leakage. If properly protected from adverse weather conditions and vandalism, such facilities may be installed on the outside of a building.
2. Scales must be provided for determining the amount of disinfectant used daily, as well as the amount of disinfectant remaining for use.
3. All pressure tanks must be provided with a pressure release device.
4. The pressure tank with a capacity 5000 gallons must be equipped with a sight glass or some other sanitary means of determining the air-to-water ratio.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact us at 512/458-7497 or our regional office in Uvalde at 512/278-7173 or our regional office in San Antonio at 512/342-3300.

Sincerely,

Steve Waddler, for
James E. Pope, P.E., Director
Division of Water Hygiene

TLB/DLW/pw

ccs: Public Health Region - Uvalde
Public Health Region - San Antonio ✓
San Antonio Metro. Health District

[Handwritten signature]



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

May 1, 1991

Mr. Ronald B. May, President
Water Services, Inc.
P. O. Box 791325
San Antonio, Texas 78279-1325

Subject: Public Drinking Water Supply
Twin Valley Water System - I.D. No. 0150147
Bexar County, Texas

Dear Mr. May:

On March 26, 1991, our representative, Jay Don Jobson, R.S., in company with Mr. Brian Hood, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations.

1. The chlorination facilities must be operated so as to maintain a free chlorine residual of 0.2 mg/l in the far reaches of the distribution system at all times.
2. The concrete ground storage tank must be made tight against seepage.
3. Your water system fails to meet this Department's "Minimum Water System Capacity Requirements." These requirements include:
 - a total storage capacity of 200 gallons per connection.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact Raymond Whitley, P.E. at (512) 278-7173.

Sincerely,

A handwritten signature in cursive script that reads "Raymond B. Whitley".

Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

JDJ/sb

ccs: San Antonio Metropolitan Health District
Public Health Region 6, Uvalde
Public Health Region 6, San Antonio



6-San Antonio
gms
[Signature]

Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

February 25, 1991

Vos Water Company
c/o Ron May, President
Water Services, Inc.
P. O. Box 791325
San Antonio, Texas 78279-1325

Subject: Public Drinking Water Supply
Vos Water Co. - I.D.# 0150007
Bexar County, Texas

Dear Mr. May:

On February 6, 1991, our representative, Jay Don Jobson, R.S., in company with Mr. Brian Hood, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations.

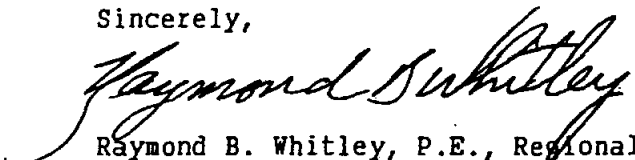
1. The last chemical analysis report of a sample of water collected from the water system indicated a nitrate content of 17.42 mg/l, which exceeds the maximum limit of 10 mg/l as set by this Department's "Drinking Water Standards." This nitrate level may cause methemoglobinemia in infants and, therefore, must not be used in infant feeding. Your customers must be notified in writing of this potential hazard and a copy of this notification must be submitted to this Department for our files.
2. When Well #2 is reworked, the casing must be extended to a point at least 18 inches above ground level.
3. Well #2 must be provided with a concrete sealing block extending at least 3 feet from the well in all directions, with a minimum thickness of 6 inches, sloped to drain away at not less than 0.25 inches per foot from the well head.
4. Well # 2 must be provided with a screened casing vent, which is faced downward and located and elevated so as to minimize the drawing of contaminants into the well. The screening must be 16-mesh or finer corrosion-resistant screen.

Mr. Ron May, President
Vos Water Company
Page Two - February 25, 1991

5. A suitable sampling tap must be provided on Well #2 discharge to facilitate the collection of samples for chemical and bacteriological analysis directly from the well.
6. A flow meter must be installed on each well pump discharge line to provide water usage records and to assist in more efficient system operation. This meter, in conjunction with tests of water levels in the well, can provide valuable information on the condition of the well and well pump.
7. The well units must be protected by intruder-resistant fences or enclosed in locked, ventilated well houses to exclude possible contamination or damage to the facilities by trespassers.
8. The ground storage tank must be made tight against seepage.
9. All pressure tanks must be provided with a pressure release device and an easily readable pressure gauge.

Should clarification of this letter be desired or if we may be of other assistance, please contact Raymond Whitley, P.E. at (512) 278-7173.

Sincerely,



Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

JDJ/sb

ccs: San Antonio Metropolitan Health District
Ronald B. May, Water Superintendent
Public Health Region 6, Uvalde
Public Health Region 6, San Antonio



6-4A

A handwritten signature in the top right corner of the page.

Texas Department of Health

Robert A. MacLean, M.D.
Acting Commissioner

1100 West 49th Street
Austin, Texas 78756-3192
(512) 458-7497

November 26, 1991

Mr. Delmar E. Windhorst, Owner
South Oaks Estates Water System
C/O Windy's Water Works
Route 30, Box 822
San Antonio, Texas 78221

Subject: Public Drinking Water Supply
South Oaks Estates Water System
I.D. #0150478
Bexar County, Texas

Dear Mr. Windhorst:

On October 29, 1991, our representatives, Gordon I. Townsend, E.I.T. and Jay Don Jobson, R.S., in company with you and Mr. George Freitag of the Texas Water Commission, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. The chlorination facilities must be operated so as to maintain a free chlorine residual of 0.2 mg/l in the far reaches of the distribution system at all times.
2. A map of the distribution system must be prepared and kept up to date in order that valves and mains may be easily located during emergencies.
3. Red water was observed at the corner of Native Oaks and Star Oaks during the survey. The coloration is probably due to the elevated levels of iron and manganese in your raw water supply. Based on these observations, it is the opinion of this Department that your current treatment scheme for these constituents is not completely effective. We, therefore, expect you and your consultants to review your current treatment scheme and evaluate possible alternatives. Areas you should evaluate include but are not limited to improved oxidation through enhanced aeration, use of alternate oxidants such as Potassium Permanganate or Chlorine Dioxide, and adjustment of raw water pH to decrease iron solubility for improved filtration.

Mr. Delmar E. Windhorst
South Oaks Estates
November 26, 1991
Page 2

Also, all dead end mains must be flushed monthly, or more often if required, to maintain water quality. The slugs of red water noted at customer faucets indicate that your flushing program may not be adequate. Increased diligence with your flushing program and more frequent monitoring by your operational staff is recommended to maintain a more consistent water quality.

4. The storage tank must be inspected at least annually to determine that the vents are in place and properly screened, the roof hatches closed and locked, flap valves provide adequate protection against insects, rodents, and other vermin, and that the interior and exterior coating systems are continuing to provide adequate protection to all metal surfaces. More frequent inspections and repairs may be necessary if a single annual inspection does not assure continuous treated water protection.
5. The well casing air vent opening must be covered with 16-mesh or finer corrosion resistant screening.
6. Elevated storage capacity is defined as that portion of water which can be stored at least 80 feet above the highest service connection in the pressure plane served by the storage tank. A review of our files indicates that the base of your standpipe is approximately 653' above sea level, the height of your standpipe is approximately 48', and your distribution system is served by gravity flow from the standpipe. Based on this information, service to any connection above 621' would effectively eliminate your elevated storage capacity.

You must provide this Department with the elevation of the highest service connection served by your system. This information will allow us to compute the total elevated storage capacity of your system. If our calculations determine a deficiency in elevated storage capacity, then you would be required to take the appropriate corrective action.

Due to the nature of the deficiencies noted, we ask that you please advise this Department in writing within 30 days as to the action to be taken on each item except item No. 3. Your reply must contain a detailed explanation of the course of action to be followed and a timetable for correction of all deficiencies.

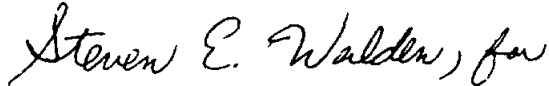
Item No. 3 deals with the effectiveness of your treatment scheme and your flushing program. Please contact this Department within 60 days as to your plan for improving your treatment scheme and flushing program.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey.

Mr. Delmar E. Windhorst
South Oaks Estates
November 26, 1991
Page 3

Should clarification of this letter be desired or if we may be of other assistance, please contact us at (512) 458-7497 or our regional sub-office in San Antonio at (512) 342-3300.

Sincerely,



James E. Pope, P.E., Director
Division of Water Hygiene

GIT:ll

ccs: San Antonio Metropolitan Health District
Public Health Region 6
Public Health Region 6 - San Antonio
Atascosa County Health Department
Texas Water Commission, Water Rates Division
ATTN: George Freitag, P.E.
Texas Water Commission, Water Rates Division
ATTN: Jorge Arroyo, P.E.
Texas Water Commission, Legal Division
ATTN: Irene L. Montelongo, Staff Attorney
Texas Water Commission
ATTN: Heidi Jackson, Hearings Examiner
Mr. Randall C. Jackson, Jr., Attorney at Law
Thelma Area Neighborhood Corporation
2600 NCNB Plaza, 300 Convent Street
San Antonio, Texas 78205



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200
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Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

Public Health Region 6
P.O. Box 630
Uvalde, Texas 78801-0630
(512) 278-7173

Henry C. Moritz, Jr., M.D., M.P.H.
Regional Director

Robert A. MacLean, M.D.
Deputy Commissioner
Professional Services

Thomas L. Miller
Deputy Commissioner
Management and Administration

July 11, 1991

**Mr. Landon Martin, Owner
Silver Mountain Water Company
Route 1, Box 401-T
San Antonio, Texas 78221**

**Subject: Public Drinking Water System
Silver Mountain Water Company
I.D. No. 0150429
Bexar County, Texas**

Dear Mr. Martin:

On April 26, 1991, our representative, Ralph Gomez, R.S., in company with you and Mr. Jim De Loach, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations.

1. Scales must be provided for determining the amount of disinfectant used daily, as well as the amount of disinfectant remaining for use.
2. A flow meter must be installed on each well pump discharge line to provide water usage records and to assist in more efficient system operation. This meter, in conjunction with tests of water levels in the well, can provide valuable information on the condition of the well and well pump.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact Raymond Whitley, P.E. at (512) 278-7173.

Sincerely,

Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

RG:cw

ccs: Jim De Loach, Manager
San Antonio Metropolitan Health Dist.
Public Health Region 6, San Antonio
Public Health Region 6, Uvalde



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

Mr. Lowell Roberts, General Manager
San Antonio City Water Board
1001 East Market
San Antonio, Texas 78298

Subject: Public Drinking Water Supply
San Antonio City Water Board - I.D. # 0150018
Bexar County, Texas

Dear Mr. Roberts:

On December 3, 1991, our representatives, Richard Deinhammer, P.E., Thomas Phillips, R.S., Terry Jones, R.S., Jay Jobson, R.S., and Ralph Gomez, R.S., in company with Alvin Shraer, Harold Skrdlant, Tommy Fisk, Edward Pawlick, and Valentin Ruiz, conducted a sanitary survey of the subject public water system. We were pleased to note the Water Board's ongoing efforts to eliminate the capacity deficiencies which were identified in previous surveys. In order to assure compliance with this Department's requirements for "Approved" public water supplies, future improvements must include:

1. A total storage capacity of 200 gallons per connection in Service Level 9.
2. An elevated storage capacity of 100 gallons per connection in Service Level 7.
3. Two or more service pumps with a total rated capacity of 2.0 gallons per minute per connection in Service Levels 3, 4 and 9.

In last year's survey, a deficiency in Service Level 3 elevated storage was noted but it was later waived based on several considerations. One of the major considerations was an apparent excess of 22 MGD in service pump capacity in Service Level 3. This year, our survey indicates a service pump deficiency, not an excess, in Service Level 3. This is mainly because three service pumps (21 MGD) at the 34th Street Pump Station actually pump to Service Level 4, and thus cannot be counted in Service Level 3 capacities. If a valid excess pumping capacity is not established in Service Level 3, we may have to reevaluate the elevated storage waiver given last year.

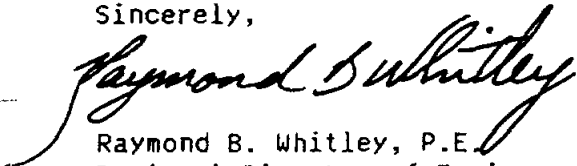
Mr. Lowell Roberts, General Manager
San Antonio City Water Board
Page Two

In addition to the Board's efforts to comply with our capacity requirements, we noted that many other improvements are being made to the system to enhance customer service and to prolong the economic life of the existing facilities. In order to assist you in this endeavor, we have enclosed a list of deficiencies which were discussed with your personnel following the survey.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey.

Should clarification of this letter be desired or if we may be of other assistance, please contact us at (512) 458-7497 or our regional office at (512) 278-7173).

Sincerely,



Raymond B. Whitley, P.E.
Regional Director of Environmental
and Consumer Health Protection
Public Health Region 6

RD:cw

Enclosure

cc: Public Health Region 6, San Antonio
Public Health Region 6, Uvalde
San Antonio Metropolitan Health District

SAN ANTONIO CITY WATER BOARD

DECEMBER 3, 1991

I. FACILITIES NOT PROPERLY MAINTAINED

1. Lady of The Lake: Repair wellhouse wall
2. Lackland #6: Repair wellhouse
3. 34th Street #3: Paint discharge line
4. Marbach: Meter leaking on discharge line of service pump #3
5. Marbach: Leak at line to pressure transmitter on service pump #2
6. Braun: Standpipe leaking around base
7. Excessive packing leaks on wells
 - a. Wurzbach # 1 & 2
 - b. Maltzberger # 5
 - c. Artesia # 3
 - d. Marbach # 1

II. WELL CONSTRUCTION ITEMS

1. Wells in pits or casing not extended a minimum of 18".
 - a. Basse
 - b. Northwood
 - c. Ramsey
 - d. Vance Jackson
 - e. Sunshine
 - f. Lackland # 1
 - g. Market #3
 - h. Mission # 3 & 4
2. Deficient Sealing Block
 - a. Lady of The Lake: cracked
 - b. Ramsey: cracked
 - c. Vance Jackson: cracked
 - d. Lackland #1: cracked
 - e. Woodlake: cracked
 - f. 34th Street # 3: partially missing

3. No Well or Master Meters at Numerous Wells
4. Wells Not Fenced or Housed
 - a. Barbet # 1
 - b. West Avenue
 - c. Market # 3 & 4
 - d. Artesia: partial
 - e. Seale: barb wire incomplete
 - f. Bandera: barb wire incomplete
 - g. Mission: Party area must be fenced off from wells and tanks
5. Add or Replace Well Casing Vent Screen
 - a. Maltzberger #2
 - b. Lady of The Lake
 - c. Klaus
 - d. Bandera
 - e. Lackland City # 6
6. Add Screen to Air Release Line
 - a. Maltzberger # 5
 - b. Marbach # 2
 - c. Lackland City # 6A
7. Turn Well Casing Vent to Face Downward
 - a. Lady of The Lake
 - b. Edison
 - c. Anderson # 5

8. Miscellaneous

- a. Lady of The Lake: Adjust flush line flap valve
- b. Basin # 3: Lower drain hole in packing leak reservoir
- c. Maltsberger # 2: Unclog drain hole in packing leak reservoir
- d. Ramsey: Seal wellhead
- e. Barbet # 2: Seal wellhead
- f. Lubricating oil for vertical turbines must have "H-1" rating, i.e., be approved for incidental food contact.
- g. Wedgewood # 1: Abandoned well not plugged.

III. STORAGE RESERVOIRS

1. Water Level Indicators Missing or Inoperative

- a. Basin
- b. 34th Street
- c. Broadview
- d. Pipers Meadow
- e. Lackland
- f. Pipestone
- g. Encino Park
- h. Indian Hill

2. Vents

- a. 34th Street: Screening not proper size
- b. Broadview: Screening not proper size and not adequately connected to base
- c. Randolph: Absent
- d. University: No screens

3. Flap Valves

- a. Highland: Absent
- b. Gap over 1/16 inch
 - (1) Foster
 - (2) Naco
 - (3) Hills

4. Storage Facilities in Need of Painting

- | | |
|----------------|---------------------|
| a. Lions | h. Pipers Meadow |
| b. Basin | i. Lackland |
| c. Wurzbach | j. Fite |
| d. Maltsberger | k. Helotes Elevated |
| e. 34th Street | l. Braun Standpipe |
| f. Lockhill | m. Faun |
| g. Medical | |

5. Reservoirs Not Fenced

- a. Klaus: Surge Tank
- b. Dreamhill: Surge Tank
- c. Northwood: Surge Tank
- d. West Avenue: Surge Tank
- e. Ramsey: Surge Tank
- f. Barbet # 1 & 2: Surge Tank
- g. Inwood: Add barb wire to stone fence
- h. Broadview: Repair hole in fence to right of gate
- i. Callaghan: Repair hole in fence to right of gate

6. Miscellaneous

- a. Highland: Overflow discharge submerged in flooded manhole
- b. Medical: Overflow discharge submerged in flooded manhole
- c. Hildebrand: No overflow
- d. Broadview: No lock on hatches

IV. CHLORINATION FACILITIES

- a. Numerous facilities lack scales for weighing cylinders.
- b. Lions Tank: No chlorine residual
- c. Highland Tank: No chlorine residual
- d. Repair and/or relocate vent fan to blow air in from upper vent
 - (1) Basin
 - (2) Wurzbach
 - (3) Maltberger
 - (4) 34th Street
 - (5) Barbet # 2
 - (6) Encino Booster # 1
- e. No Forced-air Ventilation and/or Adequate Vents
 - (1) Klaus
 - (2) Stahl
 - (3) Turtle Creek # 2 & 3
 - (4) Barbet # 1
 - (5) West Avenue
 - (6) Pipers Meadow
 - (7) Sunshine
 - (8) Babcock
 - (9) Dreamhill
 - (10) Lackland City # 6
 - (11) Lackland # 1 & 2



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Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

August 21, 1991

Mr. C. K. Oliver, President
Pleasant Oaks Development Corporation
153 Peaceful Lane
San Antonio, Texas 78211

Subject: Public Drinking Water System
Pleasant Oaks Development Corp.
I.D. NO. 0150225
Bexar County, Texas

Dear Mr. Oliver:

On June 26, 1991, our representative, Ralph Gomez, R.S., in company with you, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. The most recent chemical analysis conducted by our Austin laboratory indicates that the quality of water produced by the system does not meet the Department's minimum standard. Specifically, the Iron concentration of 2.93 mg/l exceeds the maximum contamination level for this constituent which is 0.3 mg/L.
2. Consequently, facilities must be provided to sequester the iron or to reduce the concentration of the constituent to acceptable levels. Please be aware that if sequestering facilities prove to be ineffective, the Department will require the concentration of the contaminant to be reduced.
3. All pressure tanks must be provided with a pressure release device and an easily readable pressure gauge.
4. The pressure tank with a capacity greater than 1000 gallons must be equipped with a sight glass or some other sanitary means of determining the air-to-water ratio.

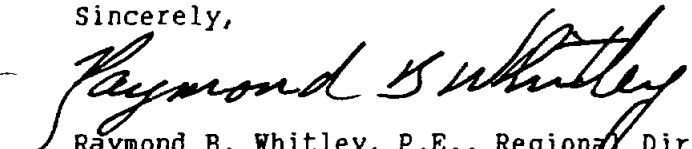
August 21, 1991

Mr. C. K. Oliver, President
Pleasant Oaks Development Corp.
Page 2

5. A sanitary easement covering that portion of the lands within 150 feet of the well location must be secured from adjacent landowners and recorded at the county courthouse to insure that hazards will not develop in the well area. A copy of the recorded document must be submitted for our records. For your convenience, we have enclosed a sample easement document.
6. Accurate information pertaining to the well must be obtained and kept on file for future reference. This information should include a log of the ground formation encountered, casing records, material settings, water levels, etc. A copy of the well completion data must be submitted for our records.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact our Austin office at 512/458-7497 or our regional office at 512/278-7173.

Sincerely,


Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

RG:mjh

ccs: San Antonio Metropolitan Health Dist. ✓
Public Health Region 6, San Antonio ✓
Public Health Region 6, Uvalde



6. San Antonio

[Handwritten signature]

Texas Department of Health

Robert A. MacLean, M.D.
Acting Commissioner

1100 West 49th Street
Austin, Texas 78756-3192
(512) 458-7497

November 26, 1991

Mr. Delmar E. Windhorst, Owner
Palo Alto Park Water System
C/O Windy's Water Works
Route 30, Box 822
San Antonio, Texas 78221

Subject: Public Drinking Water Supply
Palo Alto Park WS - I.D. #0150083
Bexar County, Texas

Dear Mr. Windhorst:

On October 30, 1991, our representatives, Gordon I. Townsend, E.I.T., and Jay Don Jobson, R.S., in company with you and Mr. George Freitag of the Texas Water Commission, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. A map of the distribution system must be prepared and kept up to date in order that valves and mains may be easily located during emergencies.
2. Each ground storage tank must be provided with a vent of the gooseneck or roof ventilator type, excluding turbine ventilators, designed to prevent possible entry of dust, birds, insects or any contaminants, with the opening protected by 16-mesh or finer corrosion resistant screening.
3. Each ground storage tank must be inspected at least annually to determine that the vents are in place and properly screened, the roof hatches closed and locked, flap valves provide adequate protection against insects, rodents, and other vermin, and that the interior and exterior coating systems are continuing to provide adequate protection to all metal surfaces.
4. The barbed wire on the top of the fence at the pump station must be repaired to make the facility more intruder-resistant.
5. The well must be provided with a screened casing vent, which is faced downward and located and elevated so as to minimize the drawing of contaminants into the well. The screening must be 16-mesh or finer and corrosion-resistant.

Mr. Delmar E. Windhorst
Palo Alto Park WS
November 26, 1991
Page 2

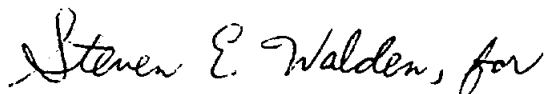
6. Our most recent chemical analysis of the water from this system reveals that the sulfate, dissolved solids and manganese concentrations are 552 mg/l, 1323 mg/l and 0.33 mg/l, respectively. The maximum permissible levels for these constituents are 300 mg/l, 1000 mg/l and 0.05 mg/l.

Consequently, you must either continue to sequester the manganese or reduce its concentration to acceptable levels. If sequestering facilities prove to be ineffective, the Department will require the concentration of the contaminant to be reduced.

Please be aware that should an alternate source of water with acceptable quality become available, the system must install facilities to treat your water, blend your water with the acceptable source, or abandon your source and rely entirely on the alternate supply. At that time, the quality of the water delivered to the distribution system would be required to meet our minimum quality standards.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact us at (512) 458-7497.

Sincerely,



James E. Pope, P.E., Director
Division of Water Hygiene

GIT:11

ccs: San Antonio Metropolitan Health District
Public Health Region 6
Public Health Region 6 - San Antonio
Atascosa County Health Department
Texas Water Commission, Water Rates Division
ATTN: George Freitag, P.E.
Texas Water Commission, Water Rates Division
ATTN: Jorge Arroyo, P.E.
Texas Water Commission, Legal Division
ATTN: Irene L. Montelongo, Staff Attorney
Texas Water Commission
ATTN: Heidi Jackson, Hearings Examiner
Mr. Randall C. Jackson, Jr., Attorney at Law
Thelma Area Neighborhood Corporation
2600 NCNB Plaza, 300 Convent Street
San Antonio, Texas 78205



San Antonio

Don
Robert

Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

June 25, 1991

Mr. Jim Arnold, President
Nico-Tyme Water Co-op
4749 Hardy Rd.- Well
San Antonio, Texas 78264

Subject: Public Drinking Water System
Nico-Tyme Water Co-op, I.D. # 0150486
Bexar County, Texas

Dear Mr. Arnold:

On May 6, 1991, our representative, Jay Don Jobson, R.S., in company with Ray Knapp and Larry Blankenchip, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. State Statutes require that public water supply systems such as yours be at all times under the supervision of a competent water works operator holding a valid certificate of competency issued under the direction of the Texas Department of Health. To assist you in complying with this statutory requirement, we are enclosing the following material: (a) application for water works operator's certificate, and (b) certification information. Please have your operator complete and return the application so that arrangements can be made for the examination.
2. This Department's Drinking Water Standards require that at least one sample of water collected from the distribution system be submitted regularly each month to a Texas Department of Health Laboratory for bacteriological analysis. These samples may be submitted to San Antonio Metropolitan Health District Lab, 332 W. Commerce, San Antonio, Tx. 78285.
3. The chlorination facilities must be operated so as to maintain a free chlorine residual of 0.2 mg/l in the far reaches of the distribution system at all times.
4. A flow meter must be installed on the well pump discharge line to provide water usage records and to assist in more efficient system operation. This meter, in conjunction with tests of water levels in the well, can provide valuable information on the condition of the well and well pump.

Mr. Jim Arnold, President
Nico-Tyme Water Co-op
Page Two
June 25, 1991

5. The well unit must be protected by an intruder-resistant fence or enclosed in a locked, ventilated well house to exclude possible contamination or damage to the facilities by trespassers.
6. A sanitary easement covering that portion of the lands within 150 feet of the well location must be secured from adjacent landowners and recorded at the county courthouse to insure that hazards will not develop in the well area. A copy of the recorded document must be submitted for our records. For your convenience, we have enclosed a sample easement document.
7. All pressure tanks must be provided with a pressure release device.
8. The ground storage tank must be equipped with a water level indicator located at the tank site. The indicator may be a float with a moving target, an ultrasonic level indicator, or a pressure gauge calibrated in feet of water. Pressure gauges must be not less than 3 inches in diameter and calibrated at not more than 2 foot intervals.
9. The ground storage tank must be made tight against seepage.
10. Your water system fails to meet this Department's "Minimum Water System Capacity Requirements." These requirements include the following:

 pressure tank capacity of 20 gallons per connection.
11. The most recent chemical analysis conducted by our Austin laboratory indicates that the quality of the water produced by the system does not meet the Department's minimum standards. Specifically, the iron concentration of 0.35 mg/l exceeds the maximum contaminant level for this constituent which is 0.30 mg/l.

Should clarification of this letter be desired or if we may be of other assistance, please contact our Austin office at 512/458-7497 or our regional office at 512/278-7173.

Sincerely,



Raymond B. Whitley, P.E., Regional Director
Environmental and Consumer Health Protection
Public Health Region 6

ccs: San Antonio Metropolitan Health District
Public Health Region 6, Uvalde and San Antonio ✓

Enclosure



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

Robert A. MacLean, M.D.
Deputy Commissioner
Professional Services

Thomas L. Miller
Deputy Commissioner
Management and Administration

Public Health Region 6
P.O. Box 630
Uvalde, Texas 78801-0630
(512) 278-7173

Henry C. Moritz, Jr., M.D., M.P.H.
Regional Director

October 1, 1991

Mr. Jim Arnold, President
Nico-Tyme Water Cooperative
4749 Hardy Road - Well
San Antonio, Texas 78264

Dear Mr. Arnold:

On September 23, 1991, our representative, Jay Don Jobson, R.S., in company with Ray Knapp and Larry Blankenchip, conducted an inspection of the subject water system. We are pleased to note the following corrections, which have been made since the previous survey, and we wish to commend you and your personnel for your efforts.

Item #1: Ray Knapp has obtained a "D" certificate.

Item #2: Water samples are currently being submitted in accordance with this Department's regulations.

Item #3: A free chlorine residual is currently being maintained.

Item #4: A flow meter has been installed.

Item #5: An intruder-resistant fence has been erected.

Item #7: The pressure tanks have been provided with pressure release devices.

Item #8: A water level indicator has been installed.

Item #9: The seeping ground storage tank has been sealed.

Item #10: An additional 525 gallon pressure tank has been placed on line bringing provided capacity to 1050 gallons.

If we may be of other assistance, please contact our regional office at 512/342-3300.

Sincerely,

A handwritten signature in cursive script that reads "Raymond B. Whitley".

Raymond B. Whitley, P.E.
Regional Director of Environmental
and Consumer Health Protection
Public Health Region 6

cc: San Antonio Metropolitan Health Dist.
✓ Public Health Region 6, San Antonio

JDJ:cwv



11-10-92 *6-SA*
TM *gog* *[Signature]*

Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

Robert A. MacLean, M.D.
Deputy Commissioner

February 28, 1992

Honorable Simon Tarin
Mayor of Elmendorf
P. O. Box 247
Elmendorf, Texas 78112

Subject: Public Drinking Water System
City of Elmendorf - ID# 0150048
Bexar County, Texas

Dear Mayor Tarin:

On December 16, 1991, our representative, Ralph Gomez, R.S., in company with Robert Downs, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. Plants #2 and #3: The chlorination room must be equipped with both high level and floor level screened vents. If the room contains more than one 150 pound cylinder of chlorine, a fan which is located at and draws air in through the top vent and discharges through the floor vent must be provided, with the fan switch located outside the enclosure.
2. Plants #2 and #3: Although the upper level vent and outside fan switch are required immediately, the relocation of the fan to the upper vent may be postponed until the time that the low level fan requires replacement.
3. Well #1: A suitable sampling tap must be provided on the well discharge to facilitate the collection of samples for chemical and bacteriological analysis directly from the well.
4. Plant #2: All pressure tanks must be provided with a pressure release device.
5. The water level indicator at Plant #1 needs to be repaired or replaced.

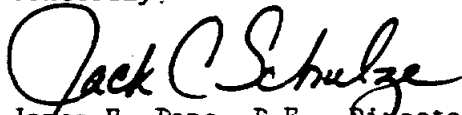
Honorable Simon Tarin, Mayor
City of Elmendorf
February 25, 1992
Page Two

6. Monthly Reports of Water Works Operation must be compiled and a copy submitted regularly each month to the Division of Water Hygiene, Texas Department of Health, 1100 West 49th Street, Austin, Texas 78756-3192. The monthly operation report must include daily entries for the following data:
 - a. The amount of water pumped.
 - b. The disinfectant residual in the far reaches of the distribution system.
 - c. The amount of chlorine, in pounds, injected into the system as a disinfectant.
7. Our most recent chemical analysis of the water from this system reveals that the sulfate and dissolved solids concentrations are 322 mg/l and 1053 mg/l, respectively. The maximum permissible levels for these constituents are 300 mg/l and 1000 mg/l.

Please be aware that should an alternate source of water with acceptable quality become available, the City must install facilities to treat your water, blend your water with the acceptable source, or abandon your source and rely entirely on the alternate supply. Whatever remedial measures are taken, the quality of the water delivered to the distribution system must meet our minimum quality standards.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact us at 512/834-6662, or our regional office in Uvalde at 512/275-7173, or our Sub-Office in San Antonio at 512/342-3300.

Sincerely,



for James E. Pope, P.E., Director
Division of Water Hygiene

GIT/RG/pw

ccs: Public Health Region 6 - Uvalde
Public Health Region 6 - San Antonio ✓
San Antonio Metropolitan Health District

John Hall, Chairman
Pam Reed, Commissioner
Peggy Garner, Commissioner



TEXAS WATER COMMISSION

PROTECTING TEXANS' HEALTH AND SAFETY BY PREVENTING AND REDUCING POLLUTION

June 1, 1992

Mr. Curtis Gann, President
Atascosa Rural Water Supply Corporation
P.O. Box 9
Atascosa, TX 78002

Re: Public Drinking Water Supply
Atascosa Rural Water Supply Corporation - ID# 0150040
Bexar County, TX

Dear Mr. Gann:

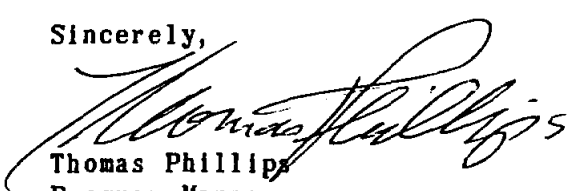
On May 5, 1992, our representative, Ralph Gomez, R.S., in company with Mr. Don Dalros, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this agency's regulations:

1. Please be aware that pump station #1 is at its maximum capacity and any additional service connection will require additional pressure tank capacity; a pressure tank capacity of 20 gallons per connection with a maximum of 30,000 gallons.
2. The ground storage tank located at pump station #6 at 13625 Quintana Road must be provided with a properly designed roof access opening. The primarily used roof access opening shall not be less than 30 inches in diameter. Each access opening shall have a raised curbing of at least 4 inches in height and shall be provided with a cover that overlaps and terminates in a downward direction for at least 2 inches with arrangements for keeping it locked in place.

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey.

Should clarification of this letter be desired, or if we may be of other assistance, please contact Ralph Gomez, R.S., at our San Antonio District 8 office at 512/490-3096.

Sincerely,


Thomas Phillips
Program Manager

TP:RG/sl

cc: Javier Maldonado, P.E., Coordinator
Public Water Supply Program
Field Operations Division

REPLY TO: DISTRICT 8 / 140 HEIMER RD., SUITE 360 / SAN ANTONIO, TEXAS 78232-5042 / AREA CODE 512/490-3096

John Hall, Chairman
Pam Reed, Commissioner
Peggy Garner, Commissioner



TEXAS WATER COMMISSION

PROTECTING TEXANS' HEALTH AND SAFETY BY PREVENTING AND REDUCING POLLUTION

April 27, 1992

Mr. Thomas Moreno, General Manager
Bexar Metropolitan Water District - South San Antonio
P.O. Box 3577
San Antonio, TX 78211-0577

Subject: Public Drinking Water System
Bexar Metropolitan Water District - South San Antonio
ID# 0150249
Bexar County, TX

Dear Mr. Moreno:

On April 9, 1992, our representative, Jay Don Jobson, R.S., in company with Desi Raygosa, conducted a sanitary survey of the subject water system. As a result of this survey, remedial measures must be taken to correct the following deficiencies so that the water system may be operated and maintained in accordance with the requirements for a "Superior" public water supply.

1. When the wells at stations #4 and #8 are reworked, the casing must be extended to a point at least 18 inches above ground level.
2. A maintenance and beautification program should be initiated to facilitate cleanliness, improve the general appearance of all plant facilities and reduce costly repairs due to a lack of proper maintenance. This program should include painting the building at station #6 and storage tanks at stations #3 and #5.

REPLY TO: DISTRICT 8 / 140 HEIMER RD., SUITE 360 / SAN ANTONIO, TEXAS 78232-5042 / AREA CODE 512/490-3096

P.O. Box 13087 • 1700 North Congress Avenue • Austin, Texas 78711-3087 • 512/463-7830

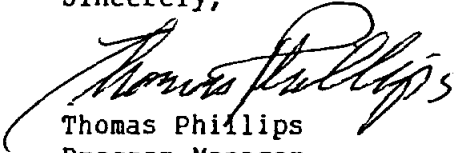
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Mr. Thomas Moreno, General Manager
Bexar Metro. Water District - South San Antonio
Page Two

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey.

Should clarification of this letter be desired or if we may be of other assistance, please contact Jay Don Jobson, R.S., at 512/490-3096.

Sincerely,



Thomas Phillips
Program Manager

TP:JDJ/sl

cc: Javier Maldonado
P.E. Coordinator



Texas Department of Health

Robert A. MacLean, M.D.
Acting Commissioner

1100 West 49th Street
Austin, Texas 78756-3192
(512) 458-7497

November 26, 1991

Mr. Delmar E. Windhorst, President
Windy's Water Works
Route 30, Box 822
San Antonio, Texas 78221

Subject: Public Drinking Water Supply
Windy's Water Works
I.D. #0150183
Bexar County, Texas

Dear Mr. Windhorst:

On October 29 and 30, 1991 our representatives, Gordon I. Townsend, E.I.T. and Jay Don Jobson, R.S., in company with you and Mr. George Freitag, P.E., of the Texas Water Commission, conducted a sanitary survey of the subject water system. As a result of this survey, your attention is directed to the following items of noncompliance with State Statutes and this Department's regulations:

1. The water distribution system must be designed and maintained so as to provide at all times a minimum residual pressure of 20 pounds per square inch at each service outlet or connection under any and all conditions or demands that can be placed on the system. Under normal operating conditions, minimum pressures must not be less than 35 psi. At the time of this survey, the lowest pressure found in the system was 19 psi at 1303 DuPont Road.

Elevated storage capacity is defined as that portion of water which can be stored at least 80 feet above the highest service connection in the pressure plane served by the storage tank. No elevated storage capacity can be credited to your system based on the elevation of the connections you serve on DuPont Road and the current configuration of your system. Immediate action must be taken to either correct this deficiency so that adequate elevated storage is provided to your system, or provide necessary auxiliary power to produce and deliver water to the distribution system in the event of the loss of normal power supply.

Also, a review of our files indicates that several customer complaints concerning periodic low water pressure were attributed to your flushing program. Please note that your system must be designed so that the minimum residual pressure of 20 psi is maintained during flushing.

2. The chlorination facilities must be operated so as to maintain a free chlorine residual of 0.2 mg/l in the far reaches of the distribution system at all times. An adequate chlorine residual was not found at the following locations during the survey:
 - a. Crestwood Acres pump station discharge,
 - b. 22941 Petwood (Crestwood Acres area),
 - c. 25029 Whispering Winds (Whispering Winds area),
 - d. Highland Oaks plant discharge, and
 - e. 1303 DuPont (Highland Oaks area).

Mr. Delmar E. Windhorst, President
Windy's Water Works
November 25, 1991
Page 2

Increased diligence with chlorine monitoring throughout your system is recommended to correct this deficiency and to prevent its reoccurrence.

3. Disinfection equipment must have a capacity that is at least 50 percent greater than the highest expected dosage to be applied at any time. During the survey, Mr. Townsend noted that several of your chlorinators were being operated at near maximum capacity while the chlorine residuals in the distribution system were less than adequate. The capacity of your chlorination facilities must be increased as necessary to meet this requirement.
4. Red water was observed at the following locations during the survey:
 - a. Sherwood Forest pump station discharge
 - b. 10069 Nottingham Drive (Sherwood Forest area)
 - c. 1303 DuPont Road (Highland Oaks area)
 - d. 22941 Petwood (Crestwood Acres area)

The coloration is probably due to the elevated levels of iron and manganese in your raw water supply. Based on these observations, it is the opinion of this Department that your current treatment scheme for these constituents is not completely effective. We, therefore, expect you and your consultants to review your current treatment scheme and evaluate possible alternatives. Areas you should evaluate include but are not limited to improved oxidation through enhanced aeration, use of alternate oxidants such as Potassium Permanganate or Chlorine Dioxide, and adjustment of raw water pH to decrease iron solubility for improved filtration.

5. All dead end mains must be flushed monthly, or more often if required, to maintain water quality. The slugs of red water noted at several customer faucets indicate that your flushing program may not be adequate. Increased diligence with your flushing program and more frequent monitoring by your operational staff is recommended to maintain a more consistent water quality.
6. All storage tanks must be inspected at least annually to determine that the vents are in place and properly screened, the roof hatches closed and locked, flap valves provide adequate protection against insects, rodents, and other vermin, and that the interior and exterior coating systems are continuing to provide adequate protection to all metal surfaces. More frequent inspections and repairs may be necessary if a single annual inspection does not assure continuous treated water protection.
7. Each well must be provided with a screened casing vent, which is faced downward and located and elevated so as to minimize the drawing of contaminants into the well. The screening must be 16-mesh or finer and corrosion-resistant. This deficiency was noted at Well No. 1 which is located at the Crestwood Acres pump station.
8. Each roof access hatch and air vent hatch on your storage tanks must be provided with suitable gasketing.
9. The air release device at the center of the thief hatch on the Highland Oaks storage tank must be sealed shut so that it can not operate.

10. The old steel storage tank at the Whispering Winds pump station is provided with a single inlet/outlet pipe connection that can result in short circuiting and stagnation of the stored water. Please evaluate this situation to determine if a short circuiting condition does exist. If yes, then you must correct the deficiency or take the storage tank out of service.
11. All roof hatches on storage tanks must be kept locked at all times to prevent unauthorized access. To assure that the lock provides the anticipated level of security, the hinges must also be secure. In this respect, you must correct the following deficiencies:
 - a. The hinge on the Highland Oaks storage tank must be modified so that it cannot be easily removed.
 - b. The hinge on the Pleasanton Road pump station is severely corroded and must be replaced with a secure hinge.
 - c. The bolts which function as hinges on the galvanized steel storage tank at the Whispering Winds pump station must be secured so that they cannot be easily removed.
12. A map of the distribution system must be prepared and kept up to date in order that valves and mains may be easily located during emergencies. Also, this map should include line sizes and elevations.
13. The monthly operation report must include daily entries for the following data:
 - a. the amount of water pumped,
 - b. the disinfectant residual in the far reaches of the distribution system, and
 - c. the amount of chlorine, in pounds, injected into the system as a disinfectant.

Item No. 1 discusses your low pressure problems and how it has effectively eliminated your elevated storage capacity. Item No. 5 discusses your flushing program. Item No. 16 discusses the lack of an adequate distribution map. Based on these items, this Department requests that you secure the services of a registered professional engineer so that a hydraulic analysis of your system can be conducted. Please notify this Department of the results of the analysis.

Because of the numerous items listed, we ask that you please advise this Department in writing within 30 days as to the action to be taken on each item except item no. 4. Your reply must contain a detailed explanation of the course of action to be followed and a timetable for correction of all deficiencies.

Item No. 4 deals with the effectiveness of your water treatment scheme. Please contact this Department within 60 days as to your plan for improving your treatment scheme.



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Yolanda Marruffo
Water Division
City of Corpus Christi
5352 Ayers, Bldg. 12
Corpus Christi TX 78415

Dear Ms. Marruffo:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the City of Corpus Christi for your continued support of the Major Rivers fourth-grade water education program. Your city's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

A handwritten signature in cursive script that reads "Allen Beinke".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noc Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Mike Bukala
Brazos River Authority
Post Office Box 7555
Waco TX 76714-7555

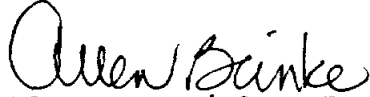
Dear Mr. Bukala:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Brazos River Authority for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

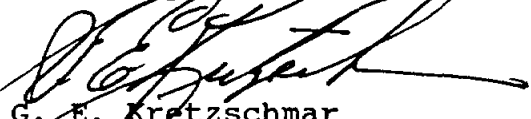
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If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Lester Hash
General Manager
Water Board
City of San Antonio
1001 E. Market
San Antonio TX 78298

Dear Mr. Hash:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the City of San Antonio for your continued support of the Major Rivers fourth-grade water education program. Your city's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

A handwritten signature in cursive script that reads "Allen Beinke".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
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Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Milton Randle
Public Service
City of San Antonio
Post Office Box 1771
San Antonio TX 78296

Dear Mr. Randle:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the City of San Antonio for your continued support of the Major Rivers fourth-grade water education program. Your city's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

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A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

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G.E. (Somy) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

O.H. Ivie
Colorado River M.W.A.
Post Office Box 869
Big Spring TX 79721-0869

Dear Mr. Ivie:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Colorado River M.W.A. for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

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Sincerely,

A handwritten signature in cursive script that reads "Allen Beinke".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Rebecca Cedillo
Director
Planning
City of San Antonio Water Resources Management
114 West Commerce, Suite 324
San Antonio TX 78283

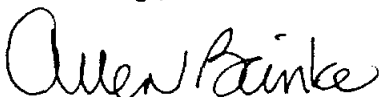
Dear Ms. Cedillo:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the City of San Antonio for your continued support of the Major Rivers fourth-grade water education program. Your city's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

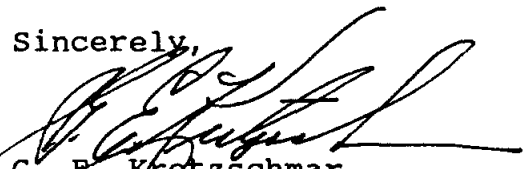
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Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Floyd Mechler
Cypress Forest PUD
7620 Louetta Road
Spring TX 77379

Dear Mr. Mechler:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Cypress Forest PUD for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

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Sincerely,

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

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G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Ron Garrison
City of Sinton
301 East Market
Sinton TX 78387


Dear Mr. Garrison:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the City of Sinton for your continued support of the Major Rivers fourth-grade water education program. Your city's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

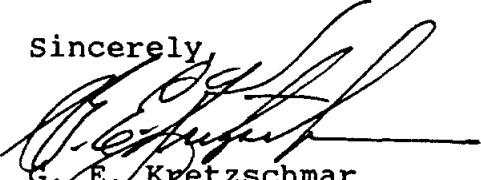
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Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Mary McVeigh
Cypresswood Utility District
One Greenway Plaza, Suite 330
Houston TX 77046

Dear Ms. McVeigh:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Cypresswood Utility District for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

A handwritten signature in cursive script that reads "Allen Beinke".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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William B. Madden, *Member*

April 30, 1991

Danny Johnson
Director
Public Works
City of Stephenville
354 N. Belknap
Stephenville TX 76401

Dear Mr. Johnson:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the City of Stephenville for your continued support of the Major Rivers fourth-grade water education program. Your city's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

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G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardswell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Sue Baker
Colorado River M.W.A.
Post Office Box 869
Big Spring TX 79721-0869

Dear Ms. Baker:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Colorado River M.W.A. for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

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Sincerely,

Handwritten signature of Allen P. Beinke, Jr.

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

Handwritten signature of G. E. Kretzschmar.

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Rebecca Raabe
Evergreen Underground Water
1306 Simmons
Jourdanton TX 78026

Dear Ms. Raabe:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Evergreen Underground Water for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

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G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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Executive Administrator

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Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Karen O'Neal
Harris-Galveston Coastal Subsidence District
1660 West Bay Area Boulevard
Friendswood TX 77546

Dear Ms. O'Neal:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Harris-Galveston Coastal Subsidence District for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

A handwritten signature in cursive script that reads "Allen Beinke".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

James Cooper
President
Fountainhead MUD & Harris Co. WCID #109
Post Office Box 7
Cypress TX 77429

Dear Mr. Cooper:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Fountainhead MUD & Harris Co. WCID #109 for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Lisa Young
Hill Country Underground WCD
1906 North Llano, Suite 102
Fredricksburg TX 78624

Dear Ms. Young:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Hill Country Underground WCD for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Tami Malatek
Assistant to Director
Planning & Development
Guadalupe-Blanco River Authority
Post Office Box 271
Sequin TX 78156

Dear Ms. Malatek:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Guadalupe-Blanco River Authority for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

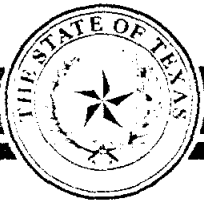
A handwritten signature in cursive script that reads "Allen P. Beinke, Jr.".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Margaret Cox
Harris County Utility District #33
14138 Magnolia Springs
Houston TX 77066

Dear Ms. Cox:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Harris County Utility District #33 for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

Handwritten signature of Allen P. Beinke, Jr.

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

Handwritten signature of G.E. (Sonny) Kretzschmar.

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Gary Stanford
Jones County 4-H
Post Office Box 167
Anson TX 79501


Dear Mr. Stanford:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Jones County 4-H for your continued support of the Major Rivers fourth-grade water education program. Your organization's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

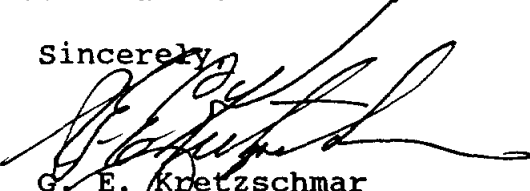
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If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

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Noc Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Dan Copps
Harris County Utility District #5
Post Office Box 5447
Kingwood TX 77325

Dear Mr. Copps:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Harris County Utility District #5 for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

Handwritten signature of G. E. Kretzschmar.

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



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G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Gardschell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Emmett Gloyna
General Manager
Lavaca-Navidad River Authority
Post Office Box 429
Edna TX 77957

Dear Mr. Gloyna:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Lavaca-Navidad River Authority for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

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Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE • P. O. BOX 7555 • TELEPHONE AREA CODE 817 776-1441

WACO, TEXAS 76714-7555

July 23, 1991

Each Fourth Grade Teacher
Brazos River Basin

Dear Teacher:

The Brazos River Authority, in cooperation with the Texas Water Development Board and the Texas Water Commission, is pleased to offer, free of charge, the MAJOR RIVERS water education program for use in fourth grade classrooms. I am enclosing a reply form for your convenience in ordering these materials, which are already in use in school districts throughout the State.

If you have taught MAJOR RIVERS before, please indicate that on the order form, so we can send you only the consumable student materials you will need. If you have not taught MAJOR RIVERS before, we will send you a complete classroom set, including both teacher and student materials. If there are other teachers in your school who would like to use the MAJOR RIVERS program, but who did not receive an order form, please feel free to duplicate the enclosed form for their use.

The MAJOR RIVERS program has a proven record of acceptance and accomplishment. The Brazos River Authority is pleased to make these materials available without cost in order to further awareness of and appreciation for conservation and wise use of one of our most essential natural resources.

If you have questions or would like to see a sample copy of the MAJOR RIVERS materials, please contact Mr. Mike Bukala at (817) 776-1441.

Sincerely,

A handwritten signature in dark ink, appearing to be "R" or "A", representing Roy A. Roberts, P.E.

ROY A. ROBERTS, P.E.
General Manager

RAR:jwj
Enclosure

cc: Ea. Mbr. Bd. of Dir., BRA
Each Member, TWDB
Each Member, TWC
Mr. Craig Pedersen, TWDB
Mr. Allen P. Beinke, Jr., TWC
Ms. Donna Darling, TWDB
Ms. Ann Crafton, EDS

COPY



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

Craig Pedersen,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
William B. Madden, *Member*

July 26, 1991

John Sutton
El Paso Water Utilities
320 S. Campbell
El Paso, Texas 79901

Dear John:

Just as follow-up to our conversation yesterday, I wanted to be sure you were aware of the two ways you can consider sponsoring "Major Rivers" for the fourth-grade classrooms in your area.

Using the enclosed postcard, you can send for a cost proposal for supplying classroom sets (\$50 per set) to all the fourth-grade classrooms in your area. If the amount shown on the proposal is overwhelming, you can designate a budget and then mail the enclosed flyer to all the fourth-grade teachers in your district telling them that classroom sets will be provided on a first-come, first served basis until your budget is exhausted. So, if you have any spare money in this year's budget, you could use this approach to get going.

Or, you may want to mail the flyers stating that you are preparing next year's budget and need to get a handle on the level of teacher interest in using the program. EDS can supply the flyers.

I have enclosed the Brazos River Authority's letter as support for your presenting this concept to your supervisors. I am also sending a copy of BRA's letter and this letter to Ann Saenz.

Thanks for your interest in the program, and don't hesitate to call if I can provide further support for your presentation.

Sincerely,

A handwritten signature in cursive script that reads "Donna D. Darling".

Donna D. Darling
Coordinator, Major Rivers Program

CC: Ann Saenz
Ann Crafton, EDS



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1485

April 18, 1991

Donna Darling
Texas Water Development Board
Post Office Box 13087
Austin, TX 78711-3087

Dear Donna:

Enclosed are the mailing labels for all of the *Major Rivers* program sponsors, excluding LCRA.

You also asked me for the number of *Major Rivers* sets distributed throughout Texas, (including those in LCRA's service area) and the number of students reached. My calculations indicate that to date we have sent out a total of 6,821 *Major Rivers* kits, which accounts for approximately 170,525 Texas students being educated with the *Major Rivers* instructional unit since the introduction of the program.

Please let me know if I can provide you with any additional information.

Sincerely,

Ann M. Crafton
Director of Marketing

Enclosure

INFORMATION REQUESTED FROM ASSOCIATION OF WATER BOARD DIRECTORS' CONFERENCE IN CORPUS CHRISTI, TEXAS JULY 11 - JULY 13, 1991

1. Mr. David Myers
Harris County Utility District No.6
15931 Walnut Wood
Houston, Texas 77024

713-855-8716

Wanted information on the Major Rivers Education Program, please call first.

2. The following individuals wanted water conservation statement stuffers. (call first)

A)Gail F. Duke, Manager
McGee, Wheeler & Co., P.C.
4321 Directors Row, Suite 100
Houston, Texas 77092

713- 680-8120

Gail Duke is on the Board of Harris County Municipal Utility District No. 119

B)Susan Seveik
Northwest Travis County MUD No.1
10601 McFarlie Cove
Austin, Texas 78750

C)Mandy Meredith
Bayfield FUD
16110 Piperview Drive
Houston, Texas 77598

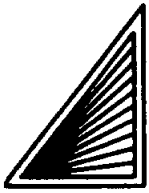
731-480-2468

D)D.D. Roberts
4023 Laverock
Spring, Texas 77388

713-353-3555

3. The following individual requested an order form for water conservation material and statement stuffers.

Bobby K. Wilson
922 Bayoaks
Houston, Texas 77009



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1485

December 10, 1991

Mr. Lionel Meno
Commissioner
Texas Education Agency
1701 North Congress Drive
Austin, TX 78701

Dear Commissioner Meno:

My organization is working with a consortium of air quality boards, water agencies, sanitation districts, utilities, and other environmental agencies to develop *Think Earth*, an environmental education curriculum for elementary schools. We were also involved in developing the Major Rivers Texas Water Education Program, which reaches about 200,000 Texas fourth graders annually with the support of the Texas Water Commission. TEA's Barbara tenBrink was involved in the Major Rivers project.

I have enclosed a copy of the *Think Earth* K-3 units and video, and I am requesting that TEA review these materials, with the possible outcome being a letter of support. It is conceivable that various environmental agencies and companies in Texas would be willing to provide *Think Earth* units free to schools.

Thank you for your help.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk
Enclosure

cc: Dr. tenBrink, TEA
Donna Darling, TWDB

Oil Information Committee
of the



TEXAS MID-CONTINENT
OIL & GAS ASSOCIATION

1115 SAN JACINTO BOULEVARD • SUITE 275 • AUSTIN, TEXAS 78701-1906 • 512/478-6631 • FAX: 512/472-3859

May 12, 1992

Ms. Donna D. Darling
Texas Water Development Board
P. O. Box 13231
1700 N. Congress Ave.
Austin, TX 78711-3231

Dear Donna:

Thank you for your letter dated May 1, 1992 concerning the Governor's Conference on Science, Technology & Mathematics.

I will make sure your comments will be forwarded to the necessary people on the executive board.

I appreciate your constructive criticism and the time you have taken to point out ways we might improve our conference in the future. It is our desire to maintain a very professional and well organized conference. Your suggestions will be carefully reviewed.

Sincerely,

Alan B. Sowards
Vice-President for Education

cc: Dr. Bob James
Ms. Lyn Johnson
ABS:cle

THIS SAME LETTER WAS SENT TO 133 FOURTH GRADE SCHOOL TEACHERS THROUGHOUT THE BRAZOS RIVER BASIN.



BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE • P. O. BOX 7555 • TELEPHONE AREA CODE 817 776-1441

WACO, TEXAS 76714-7555

August 7, 1992

Dear <Last Name>:

Last school year, the Brazos River Authority supplied you with materials for teaching MAJOR RIVERS, the water education package for fourth grade. You indicated that you would like to use the materials again this year. We will be pleased to send them to you.

Please fill out and return the enclosed reply slip in the postage-paid envelope provided, indicating the street address of the school where you will be teaching and the number of students for whom you need materials. We will forward the requested materials to you by return mail.

If there are other fourth grade teachers in your school who would like to use MAJOR RIVERS, but who have not received an order form, please feel free to copy the reply slip and let them send us their orders.

Thank you for your cooperation and for your continuing interest in the MAJOR RIVERS program.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Bukala".

MIKE BUKALA
Administrative Assistant/
Records Management Officer

MB:jwj

Enclosure

cc: Ea. Mbr. Bd. of Dir., BRA
Each Member, TWDB
Each Member TWC
Mr. Craig Pedersen, TWDB
Mr. Jesus Garza, TWC
Ms. Donna Darling, TWDB ✓
Ms. Ann Crafton, EDS

COPY



BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE • P. O. BOX 7555 • TELEPHONE AREA CODE 817 776-1441

WACO, TEXAS 76714-7555

August 6, 1992

Each Fourth Grade Teacher
Brazos River Basin

Dear Teacher:

The Brazos River Authority, in cooperation with the Texas Water Development Board and the Texas Water Commission, is pleased to offer, free of charge, the MAJOR RIVERS water education program for use in fourth grade classrooms. I am enclosing a reply form for your convenience in ordering these materials, which are already in use in school districts throughout the State.

If you have taught MAJOR RIVERS before, please indicate that on the order form, so we can send you only the consumable student materials you will need. If you have not taught MAJOR RIVERS before, we will send you a complete classroom set, including both teacher and student materials. If there are other teachers in your school who would like to use the MAJOR RIVERS program, but who did not receive an order form, please feel free to duplicate the enclosed form for their use.

The MAJOR RIVERS program has a proven record of acceptance and accomplishment. The Brazos River Authority is pleased to make these materials available without cost in order to further awareness of and appreciation for conservation and wise use of one of our most essential natural resources.

If you have questions or would like to see a sample copy of the MAJOR RIVERS materials, please contact Mr. Mike Bukala at (817) 776-1441.

Sincerely,

A handwritten signature in cursive script that reads "Roy A. Roberts".

ROY A. ROBERTS, P.E.
General Manager

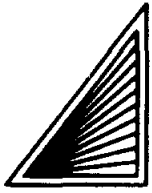
RAR:jjw
Enclosure

cc: Ea. Mbr. Bd. of Dir., BRA
Each Member, TWDB
Each Member, TWC
Mr. Craig Pedersen, TWDB
Mr. Jesus Garza, TWC
Ms. Donna Darling, TWDB ✓
Ms. Ann Crafton, EDS

RECEIVED AUG 06 1992

RECEIVED AUG 06 1992

COPY



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1485

January 21, 1993

Donna D. Darling
Texas Water Development Board
1700 N. Congress
Austin, TX 78701

Dear Donna:

Periodically we review and update our educational programs before we reprint the materials. We have been looking at *Major Rivers* and believe this spring would be a good time to revise this unit.

Since this is *your* program, we would like to include you in the revision process. We will be hosting a meeting on Friday, March 12, 1993, at the Radisson Hotel on Town Lake in Austin and hope you will plan to join us. The meeting will begin at 9:00 a.m. and will end with a luncheon from noon until 1:30 p.m. Attending will be representatives from the sponsoring river authorities and water companies, the Water Commission, the Water Development Board, the Department of Health, the Texas Education Agency, and, of course, EDS.

At the meeting, we'll review suggested revisions and discuss any additional ideas from the group. Kay Ice, the developer of *Major Rivers*, will be with us. We'll also have a brief roundtable to share our experiences and successes. Feel free to bring examples from your area to share.

Please return the enclosed reply card to let us know if you will attend. We will be sending a list of possible revisions soon. I hope to see you March 12 in Austin!

Sincerely,

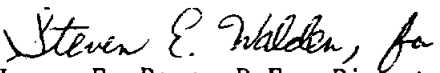
Ann M. Crafton
Director of Marketing

cc: Donna Darling, TWDB

Mr. Delmar E. Windhorst, President
Windy's Water Works
November 25, 1991
Page 4

In conclusion, we wish to express our thanks and appreciation for the courtesies extended during the survey. Should clarification of this letter be desired or if we may be of other assistance, please contact us at (512) 458-7497.

Sincerely,


James E. Pope, P.E., Director
Division of Water Hygiene

GIT:ll

ccs: San Antonio Metropolitan Health District
Public Health Region 6
Public Health Region 6 - San Antonio
Atascosa County Health Department
Texas Water Commission, Water Rates Division
ATTN: George Freitag, P.E.
Texas Water Commission, Water Rates Division
ATTN: Jorge Arroyo, P.E.
Texas Water Commission, Legal Division
ATTN: Irene L. Montelongo, Staff Attorney
Texas Water Commission
ATTN: Heidi Jackson, Hearings Examiner
Mr. Randall C. Jackson, Jr., Attorney at Law
Thelma Area Neighborhood Corporation
2600 NCNB Plaza, 300 Convent Street
San Antonio, Texas 78205

EXHIBIT 5
LANDFILL MAP

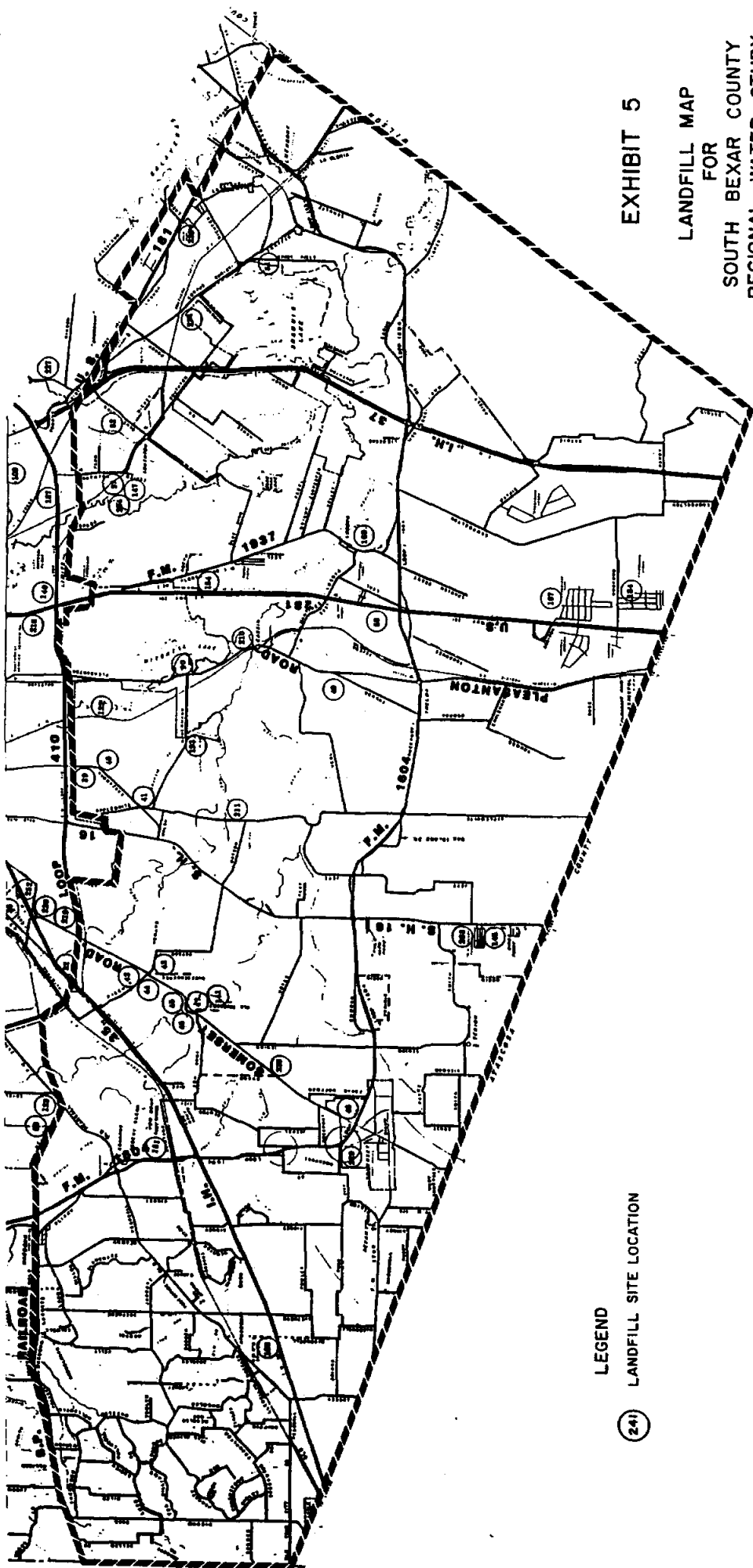
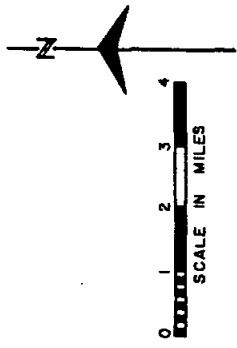


EXHIBIT 5

LANDFILL MAP
 FOR
 SOUTH BEXAR COUNTY
 REGIONAL WATER STUDY



OZUNA & ASSOCIATES, INC.
CONSULTING ENGINEERS

EXHIBIT 6
MAJOR THOROUGHFARE MAP

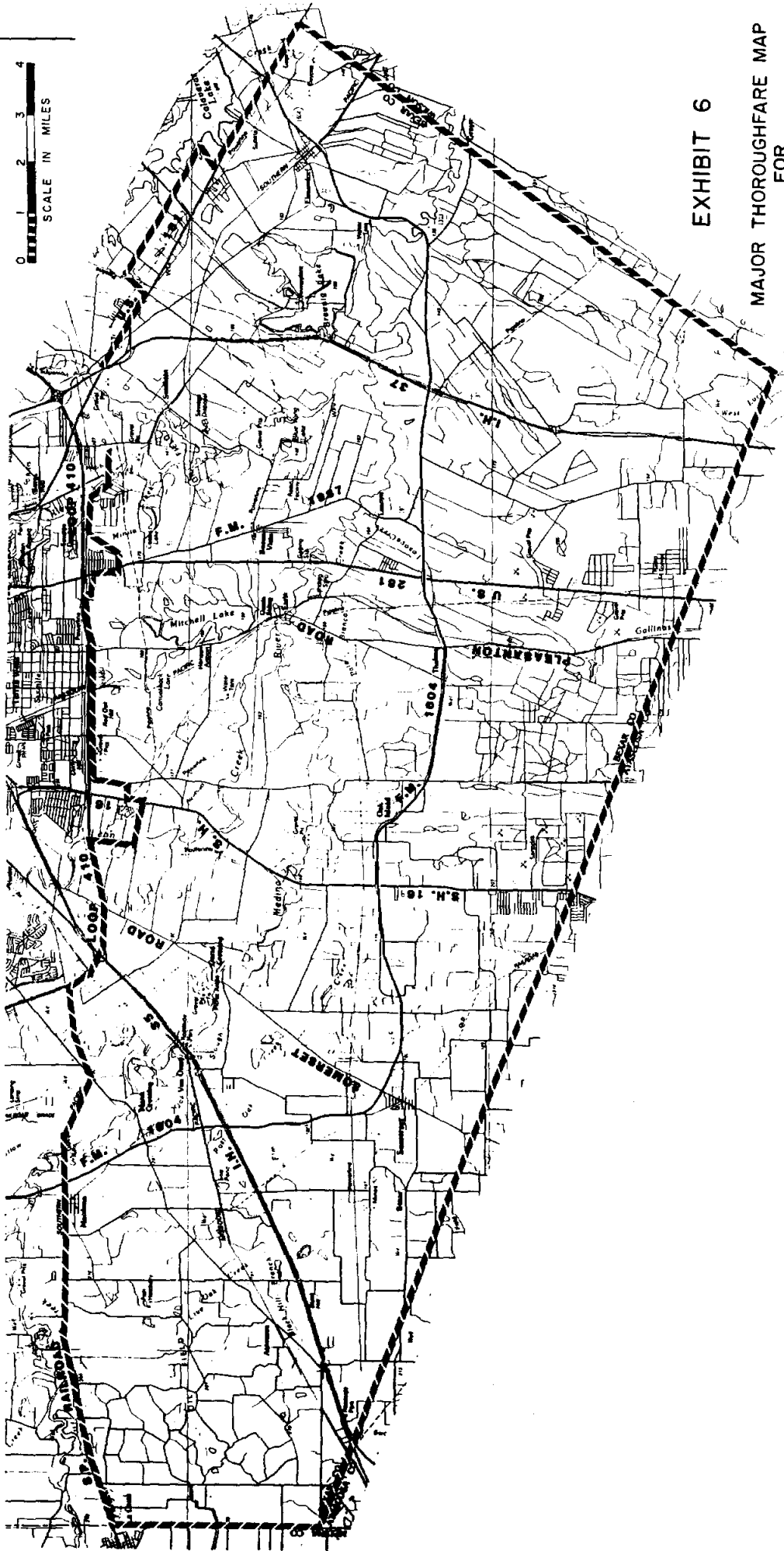


EXHIBIT 6

MAJOR THOROUGHFARE MAP
FOR
SOUTH BEXAR COUNTY
REGIONAL WATER STUDY

Ozuna & Associates, Inc.
Consulting Engineers

DATE: NOV. 1, 1992 | MAP NO. | PAGE NO.

EXHIBIT 7
CITIZEN RESPONSE FORMS

BEXAR COUNTY WATER STEERING COMMITTEE

WRITTEN TESTIMONY SUMMARY

Public comment meetings are being held at the following locations and dates:

April 30, 1992	Southwest High School
May 7, 1992	Somerset Multi-purpose Center, "K" St.
May 14, 1992	Southside Middle Schl.
May 21, 1992	Southside Middle Schl.

All meetings will begin promptly at 7:00 p.m.

Speakers will be limited to three (3) minutes of testimony or comments. It is not necessary to submit this form if you are testifying or giving comments in person, however if you wish to use this form to summarize your verbal comments you may do so. This form will give interested persons who are not able to give verbal testimony or comments, the chance to provide written testimony or comments. Written testimony/comments will be summarized and will serve as a substitute for oral testimony or as a supplement to oral testimony provided to the Steering Committee.

YOU MAY TURN IN YOUR WRITTEN COMMENTS AT ANY OF THE PUBLIC MEETINGS OR YOU CAN MAIL THEM TO COMMISSIONER ROBERT TEJEDA, CHAIRMAN OF THE WATER PROJECT STEERING COMMITTEE, BEXAR COUNTY COURTHOUSE, SAN ANTONIO, TEXAS 78204.

NAME: _____ PHONE _____

ADDRESS: _____ CITY/ZIP _____

ORGANIZATION (if any) _____

Comments should be printed legibly:

Signature _____ Date _____

BEXAR COUNTY WATER STEERING COMMITTEE

WRITTEN TESTIMONY SUMMARY

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NAME: FREDERICK & MARY LOU KLEMCKE PHONE 624-2089
ADDRESS: 6790 Smith Rd CITY/ZIP VonOrmy, 78073
ORGANIZATION (if any) Senior-Smith-Hickman Water Watch

Comments should be printed legibly:

We carry drinking water from Somerset.
Our water is extremely damaging to fixtures
and they require replacement frequently.

We are concerned about the volume of
water in case of fire. Our area has
long been interested in acquiring better
water for health & safety reasons.

Signature Mary Lou Klemcke Date 5-18-92

BEXAR COUNTY WATER STEERING COMMITTEE

WRITTEN TESTIMONY SUMMARY

Public comment meetings are being held at the following locations and dates:

April 30, 1992	Southwest High School
May 7, 1992	Somerset Multi-purpose Center, "K" St.
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NAME: Gilbert P. Arredondo SR PHONE 626-1406
ADDRESS: 23229 Pleasanton Rd - Rt 7 Box 537BE CITY/ZIP SAN ANTONIO TX 78221
ORGANIZATION (if any) S.S.I.S.D. - School Board -

Comments should be printed legibly:

We have been residences since 1979 - Ever since we moved here, we have had problem with the water to much iron. It rust the pipes and its not very good drinking water - Stains our clothes. Some of our neighbors are in worst shape with no water at all, having to bring water in barrels from town. Creating a health hazard.

Signature Gilbert P. Arredondo Date 5-21-92

EXHIBIT 8
PROJECT EVALUATION FORM

TEXAS WATER DEVELOPMENT BOARD
EMERGENCY FINANCIAL ASSISTANCE

August 6, 1992

SOUTH BEXAR COUNTY
WATER PROJECT EVALUATION SHEET

Project #/Name _____ Project Number _____

Purveyor (Bexar Metropolitan W. D., SAWS, ARWSC) (Other: _____)

ELIGIBLE FOR FUNDING	YES	NO	
	Non-Profit Purveyor Public Water Purveyor	For Profit Purveyor	

AREA HEALTH RISK STATUS

IPP* is connected to a centralized water system.	YES	NO	UNK
Purveyor's water system (supply, storage, distribution, operations) substantially meets the criteria prescribed by the TWC Drinking Water Standards 290.40 - 290.46, 290.48	YES	NO	UNK
Purveyor has a water storage, water pumping, and water distribution system which substantially complies with the requirements of the TWC Criteria 290.43, 290.44, 290.45 and 290.46 (Operations).	YES	NO	UNK
Purveyor's current sanitary review letter from the TWC/TDH reflect significant deficiencies exist in the water supply for the IPP.	YES	NO	UNK
IPP* uses private wells or hauls water which practices are significant health risks.	YES	NO	UNK

*Identified Population Pocket

A - OVERALL NEED

Project area has population 0 - 10	1
Project area has population 11 - 50	2
Project area has population 51 - 100	3
Project area has population 101 - 250	4
Project area has population 251 - 500	5
Project area has population 501 +	6

B - FINANCIAL FEASIBILITY

Cost per connection each line \$1 - \$5,000	5
Cost per connection each line \$5,000 - \$10,000	4
Cost per connection each line \$10,000 - \$15,000	3
Cost per connection each line \$15,000 - \$25,000	2
Cost per connection each line \$25,000 +	1

POINT SYSTEM: (A x B) TOTAL PTS. _____

WATER PURVEYOR CRITERIA

Purveyor has local share available	YES	NO
------------------------------------	-----	----

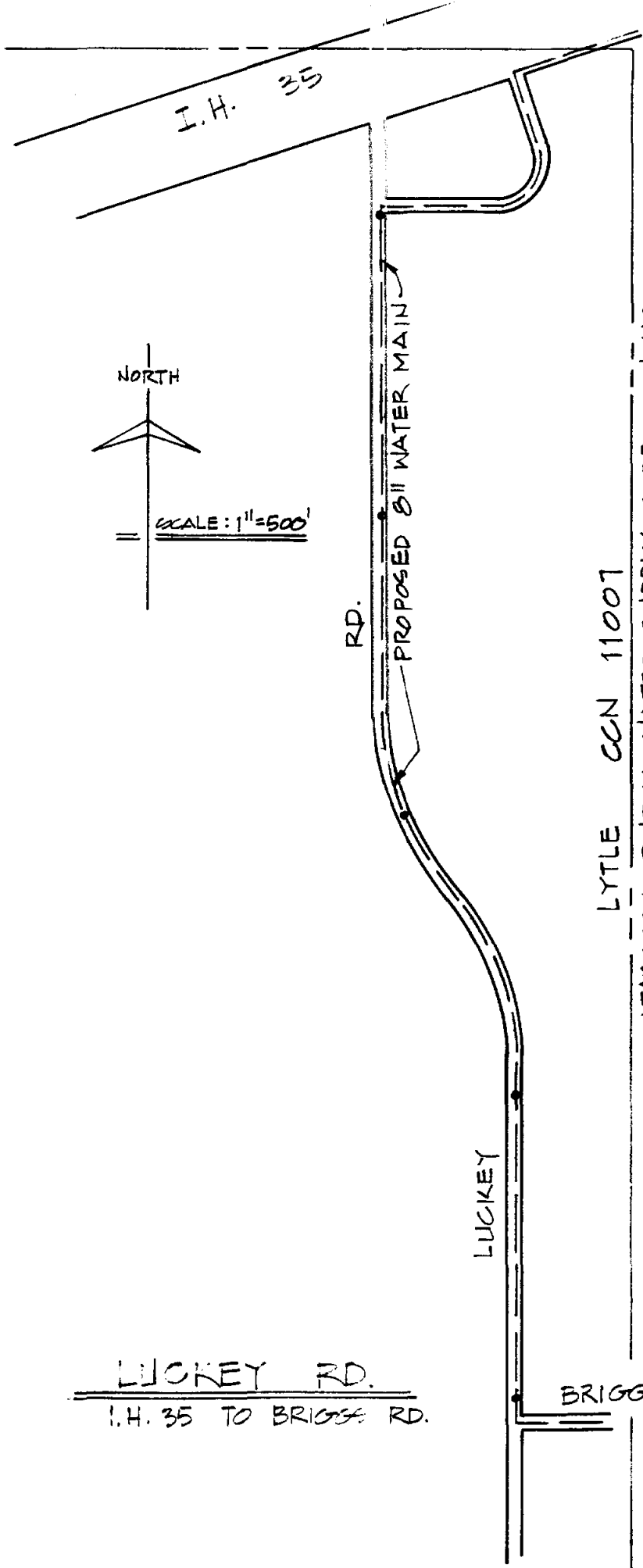
EXHIBIT 9
FACILITY MAPS AND COST ESTIMATES

PROJECT NAME: LUCKEY RD.

DWELLING UNITS: 24

CONSTRUCTION COSTS: \$59,598

8" DIA. WATER LINE - 5,440 L.F.



NOTE:
LOCATED WITHIN
LYTLE CCN AREA.
ASSUMES SERVICE
FROM ATASCOSA

August 20, 1992

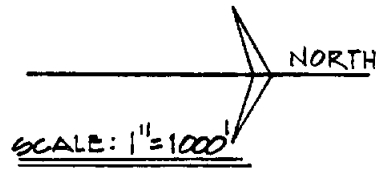
**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Luckey Road
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	----	LF	\$ 5.00	\$ ----
8" PVC Water line	5,440	LF	7.00	38,080
6" Gate Valve	----	EA	420.00	----
8" Gate Valve	8	EA	550.00	4,400
D1 Fittings	1	TON	3,200.00	3,200
Bore & Case	----	LF	60.00	----
Open Cut Crossing	----	LF	40.00	----
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	5	EA	1,300.00	6,500
Contingency 10%	1	LS	5,418.00	5,418
Total				\$59,598

Project No. 1

LUCKEY RD.



PROJECT NAME: BRIGGS RD.

DWELLING UNITS: 41

CONSTRUCTION COSTS: \$ 92,466

LYTLE CCN 11007
 ATASCOSA RURAL WATER SUPPLY CORP. CCN 113000
 6" DIA. WATER LINE - 10,500 L.F.

RD.

BRIGGS

PROPOSED 6" WATER MAIN

MC CONNELL

FOWLER RD.

BRIGGS RD.

LUCKEY RD. TO SHEPHERD RD.

SHEPHERD RD.

EXIST. 6" WATER MAIN

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Briggs Road

Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	10,500	LF	\$ 5.00	\$52,500
8" PVC Water line	----	LF	7.00	----
6" Gate Valve	8	EA	420.00	3,360
8" Gate Valve	----	EA	550.00	----
D1 Fittings	1	TON	3,200.00	3,200
Bore & Case	----	LF	60.00	----
Open Cut Crossing	250	LF	40.00	10,000
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	10	EA	1,300.00	13,000
Contingency 10%	1	LS	8,406.00	8,406

Total \$92,466

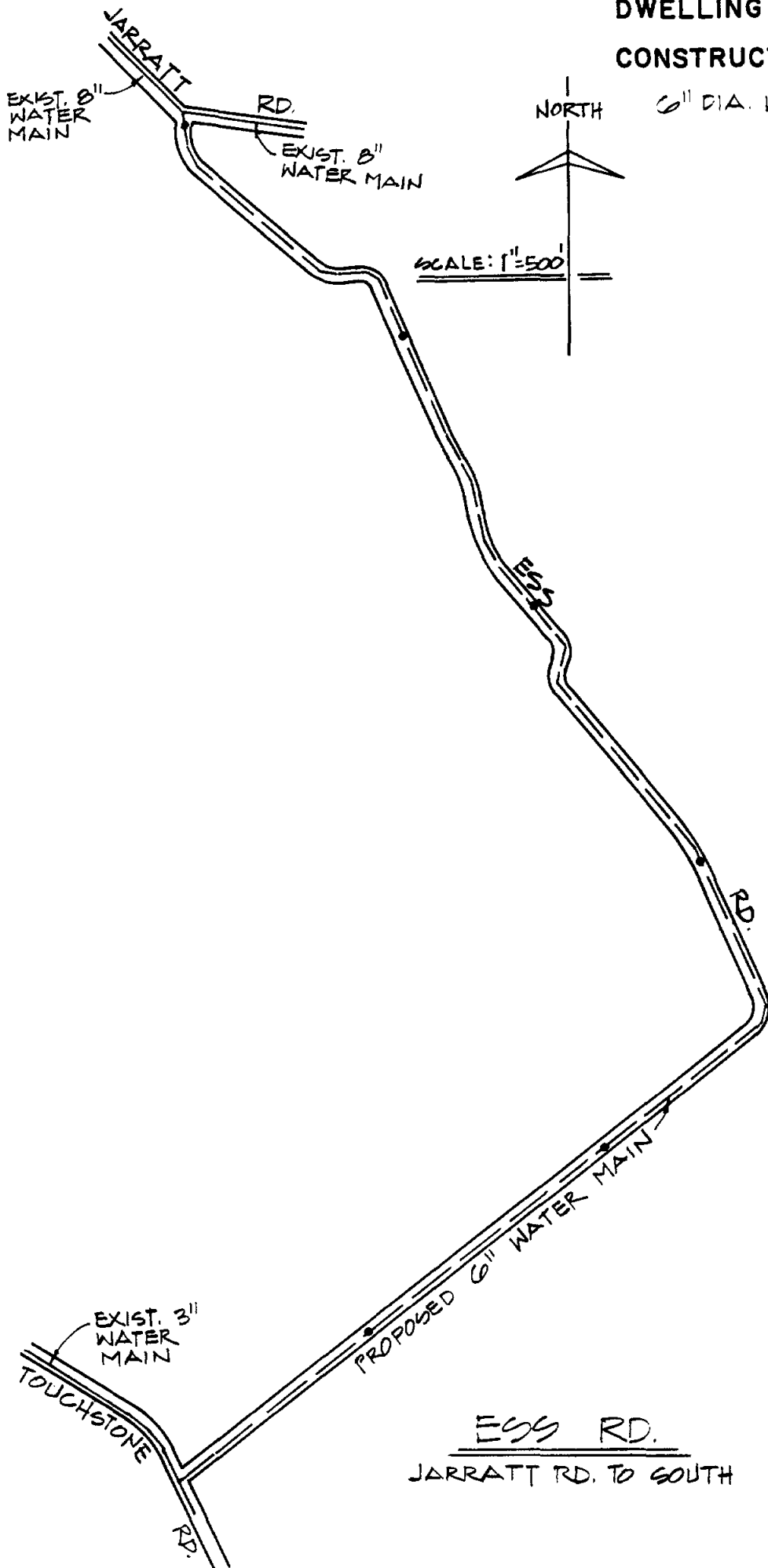
Project No. 2

PROJECT NAME: ESS ROAD

DWELLING UNITS: 13

CONSTRUCTION COSTS: \$ 50,545

6" DIA. WATER LINE - 6,170 L.F.



ESS RD.
JARRATT RD. TO SOUTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Ess Road
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	6,170	LF	\$ 5.00	\$30,850
8" PVC Water line	----	LF	7.00	----
6" Gate Valve	5	EA	420.00	2,100
8" Gate Valve	----	EA	550.00	----
D1 Fittings	1	TON	3,200.00	3,200
Bore & Case	----	LF	60.00	----
Open Cut Crossing	----	LF	40.00	----
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	6	EA	1,300.00	7,800
Contingency 10%	1	LS	4,595.00	4,595
Total				\$50,545

Project No. 3

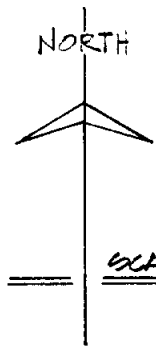
PROJECT NAME: I.H. 35 (NORTHSIDE)

DWELLING UNITS: 23

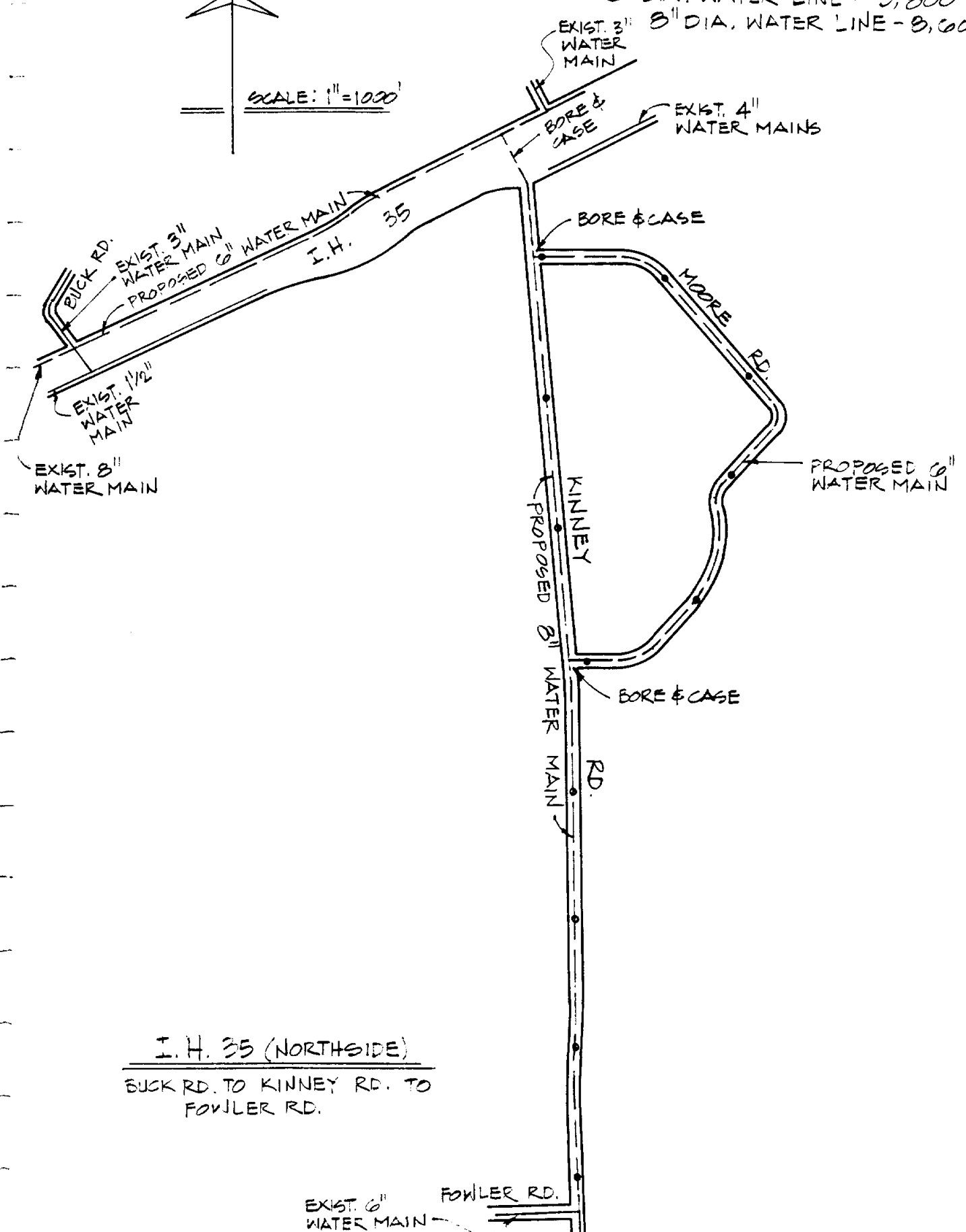
CONSTRUCTION COSTS: \$ 186,912

6" DIA. WATER LINE - 9,800 L.F.

EXIST. 3" 8" DIA. WATER LINE - 8,600 L.F.



SCALE: 1" = 100'



I. H. 35 (NORTHSIDE)
BUCK RD. TO KINNEY RD. TO
FOWLER RD.

EXIST. 6" WATER MAIN FOWLER RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area IH 35 Northside
 Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	9,800 LF		\$ 5.00	\$ 49,000
8" PVC Water line	8,600 LF		7.00	60,200
6" Gate Valve	8 EA		420.00	3,360
8" Gate Valve	8 EA		515.00	4,120
D1 Fittings	1.5 TON		3,200.00	4,800
Bore & Case	380 LF		60.00	22,800
Open Cut Crossing	---- LF		40.00	----
Trench Protection	120 LF		2.00	240
2" Temporary Blow-off	1 EA		500.00	500
Pressure Testing	1 LS		1,500.00	1,500
Fire Hydrant	18 EA		1,300.00	23,400
Contingency 10%	1 LS		16,992.00	16,992
Total				\$186,912

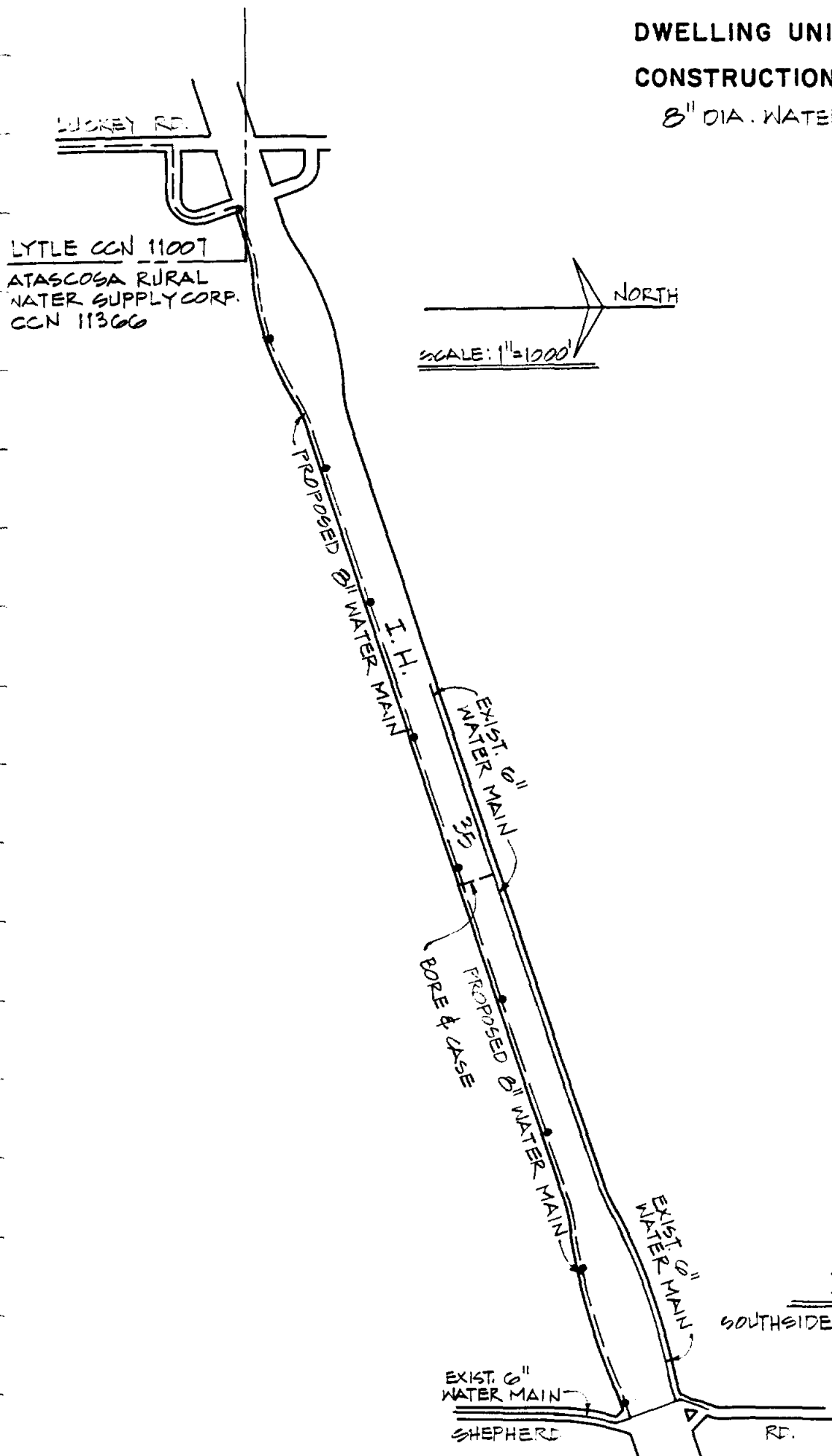
Project No. 4

PROJECT NAME: I.H. 35 SOUTHSIDE

DWELLING UNITS: 14

CONSTRUCTION COSTS: \$ 121,594

8" DIA. WATER LINE - 9,600 L.F.



I. H. 35
SOUTHSIDE - LUCKEY RD. TO SHEPHERD RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area IH 35 Southside
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	----	LF	\$ 5.00	\$ ----
8" PVC Water line	9,600	LF	7.00	67,200
6" Gate Valve	----	EA	420.00	----
8" Gate Valve	8	EA	550.00	4,400
D1 Fittings	2	TON	3,200.00	6,400
Bore & Case	280	LF	60.00	16,800
Open Cut Crossing	----	LF	40.00	----
Trench Protection	120	LF	2.00	240
2" Temporary Blow-off	2	EA	500.00	1,000
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	10	EA	1,300.00	13,000
Contingency 10%	1	LS	11,054.00	11,054
Total				\$121,594

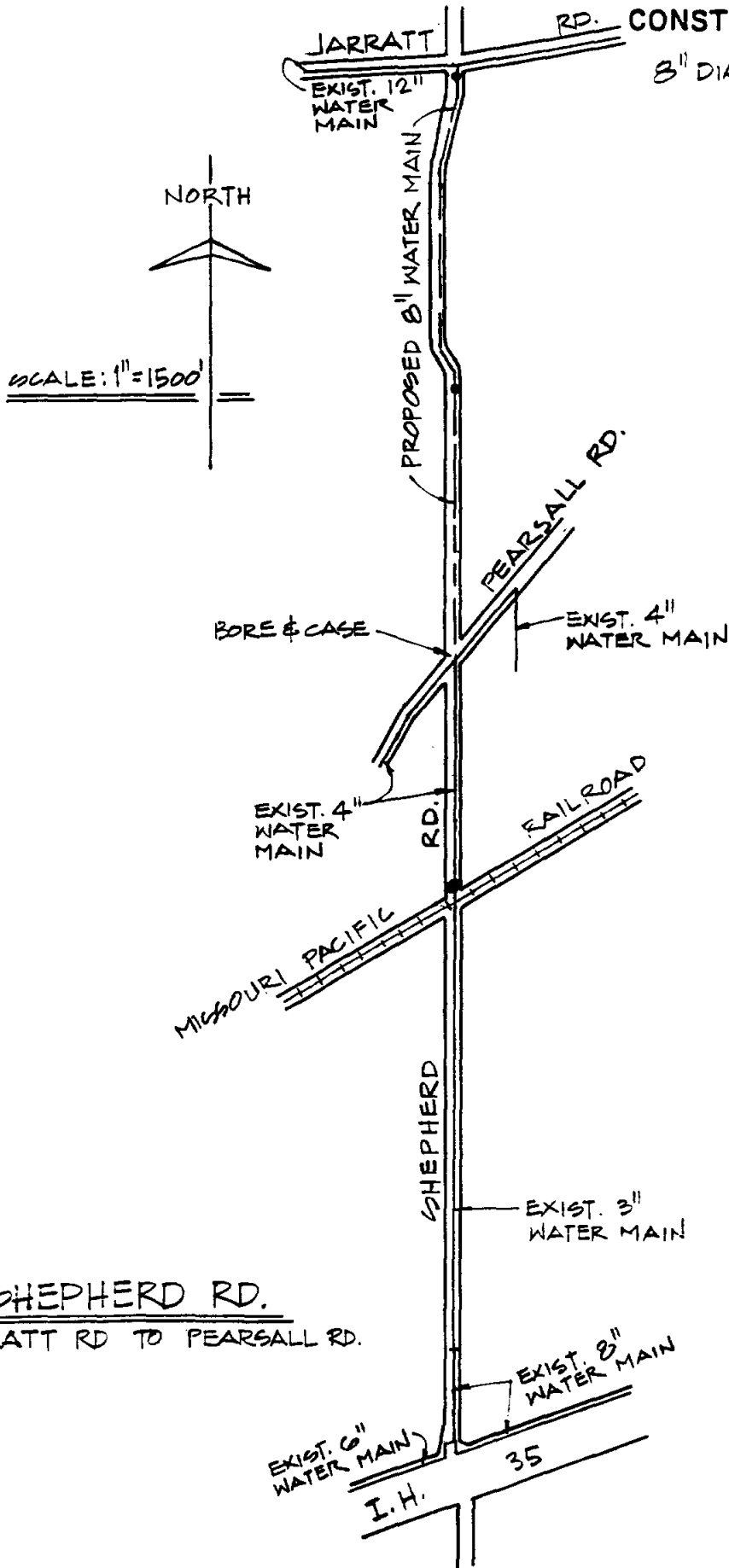
Project No. 5

PROJECT NAME: SHEPHERD RD.

DWELLING UNITS: 5

CONSTRUCTION COSTS: \$ 65,560

8" DIA. WATER LINE - 5,500 L.F.



SHEPHERD RD.
JARRATT RD TO PEARSALL RD.

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area Shepherd Road
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	---- LF		\$ 5.00	\$ ----
8" PVC Water line	5,500 LF		7.00	38,500
6" Gate Valve	---- EA		420.00	----
8" Gate Valve	6 EA		550.00	3,300
D1 Fittings	1 TON		3,200.00	3,200
Bore & Case	80 LF		60.00	4,800
Open Cut Crossing	---- LF		40.00	----
Trench Protection	---- LF		2.00	----
2" Temporary Blow-off	1 EA		500.00	500
Pressure Testing	1 LS		1,500.00	1,500
Fire Hydrant	6 EA		1,300.00	7,800
Contingency 10%	1 LS		5,960.00	5,960

Total \$65,560

Project No. 6

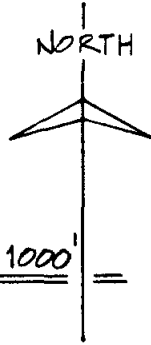
PROJECT NAME: PEARSALL ROAD

DWELLING UNITS: 5

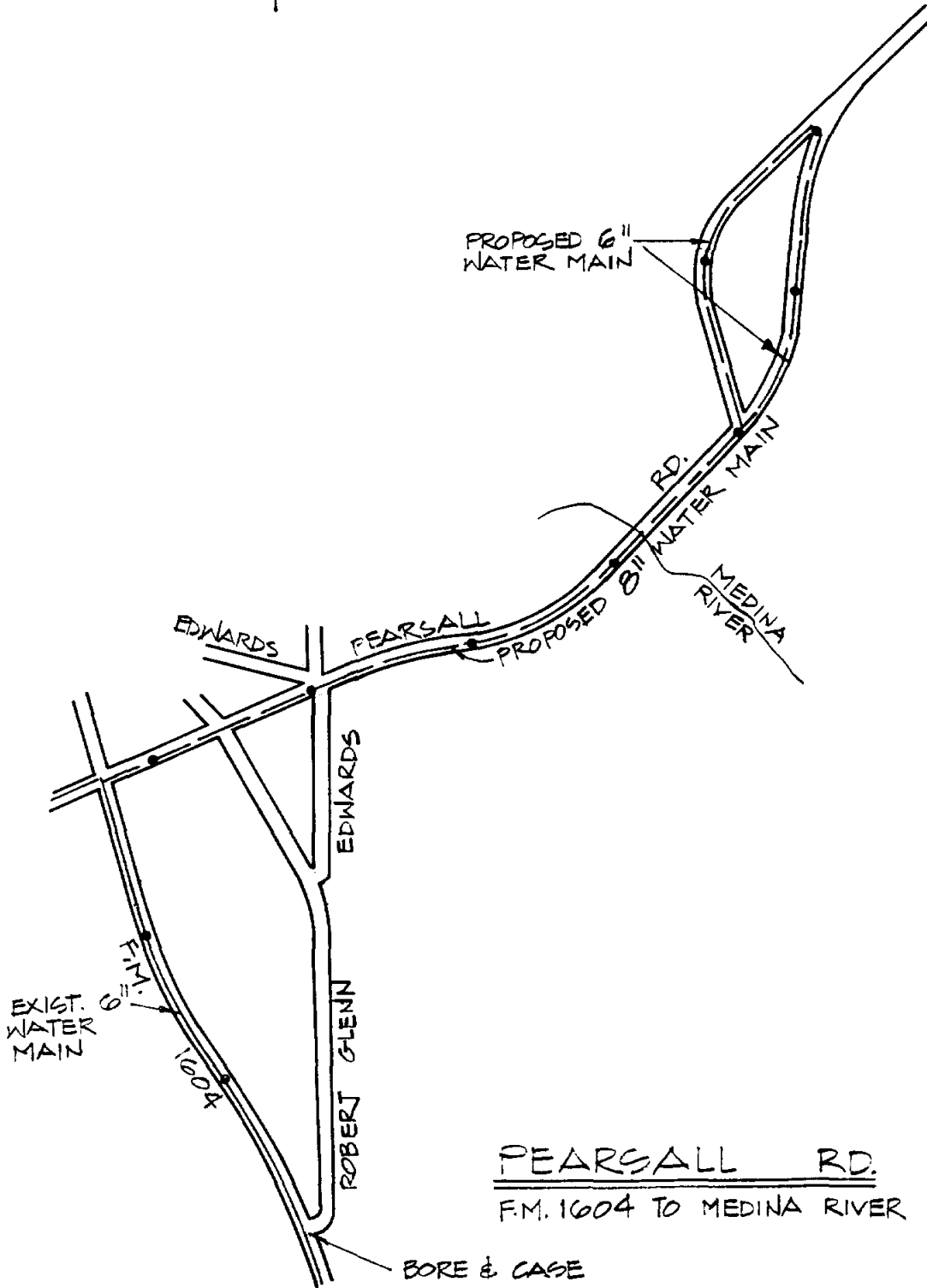
CONSTRUCTION COSTS: \$180,788

6" DIA. WATER LINE - 4,200 L.F.

8" DIA. WATER LINE - 4,600 L.F.



SCALE: 1" = 1000'



PEARSALL RD.
F.M. 1604 TO MEDINA RIVER

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Pearsall Road
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	4,200	LF	\$ 5.00	\$ 21,000
8" PVC Water line	4.600	LF	7.00	32,200
6" Gate Valve	4	EA	420.00	1,680
8" Gate Valve	4	EA	550.00	2,200
D1 Fittings	1	TON	3,200.00	3,200
Bore & Case	192	LF	60.00	11,520
Open Cut Crossing	----	LF	40.00	----
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	8	EA	1,300.00	10,400
River Crossing	1	LS	80,000.00	80,000
Contingency 10%	1	LS	16,588.00	16,588
			Total	\$180,788

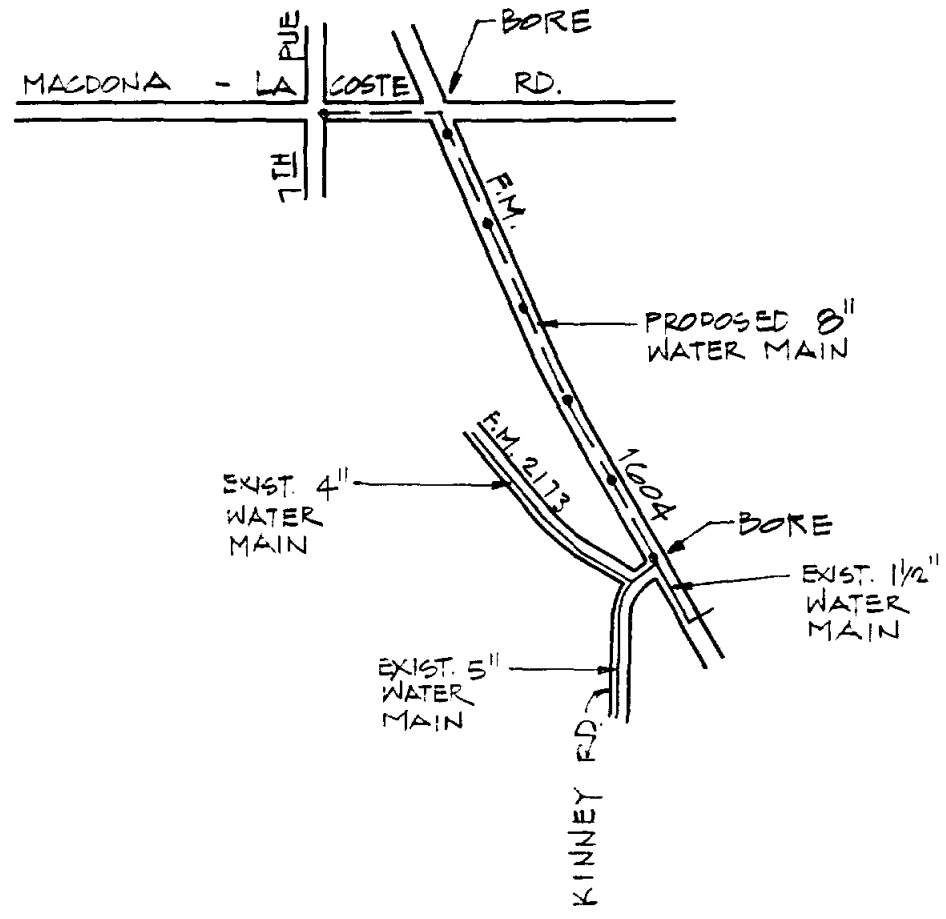
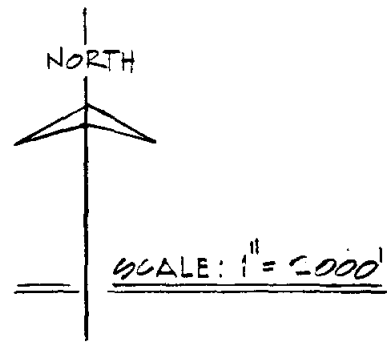
Project No. 7

PROJECT NAME: F.M. 1604

DWELLING UNITS: 2

CONSTRUCTION COSTS: \$ 51,130

6" DIA. WATER LINE - 6,700 L.F.



F.M. 1604
KINNEY RD. TO MACDONA-LA COSTE RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area FM 1604

Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	----	LF	\$ 5.00	\$ ----
8" PVC Water line	6,700	LF	7.00	46,900
6" Gate Valve	----	EA	420.00	----
8" Gate Valve	6	EA	550.00	3,300
D1 Fittings	1	TON	3,200.00	3,200
Bore & Case	150	LF	60.00	9,000
Open Cut Crossing	----	LF	40.00	----
Trench Protection	150	LF	2.00	300
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	7	EA	1,300.00	9,100
Contingency 10%	1	LS	7,380.00	7,380

Total \$81,180

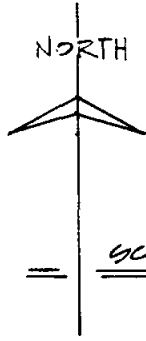
Project No. 8

PROJECT NAME: KENAGY RD.

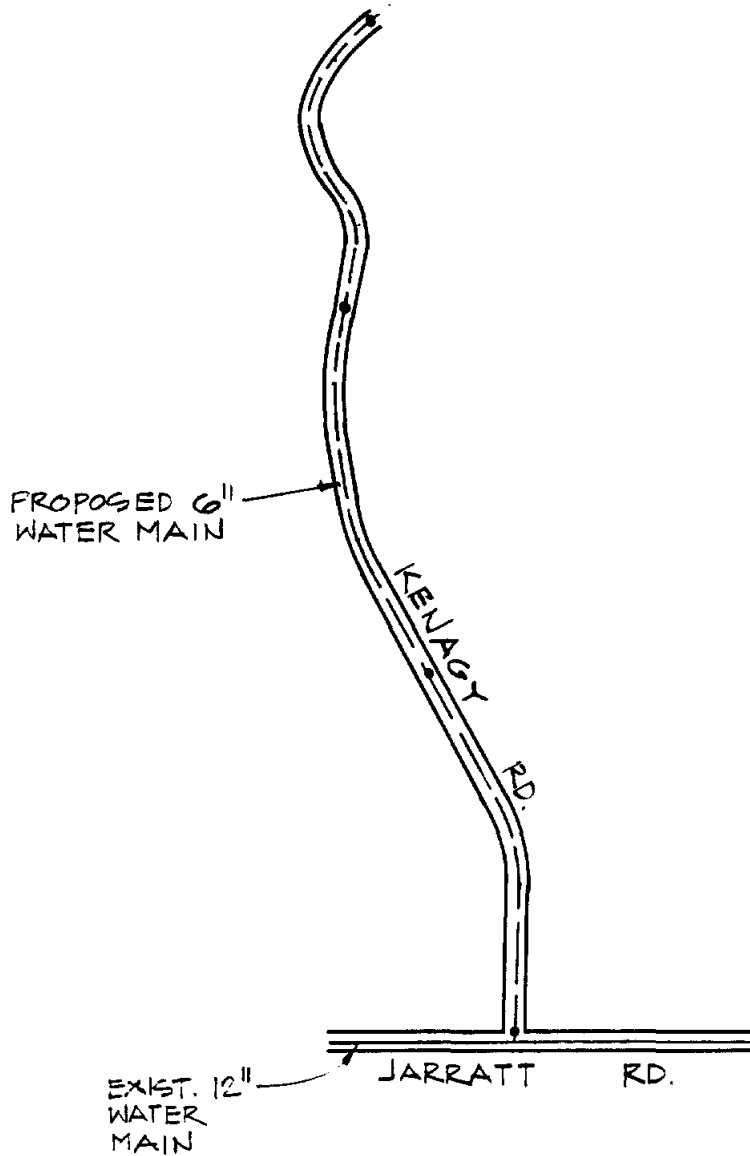
DWELLING UNITS: 10

CONSTRUCTION COSTS: \$ 29,700

6" DIA. WATER LINE - 2,900 L.F.



SCALE: 1" = 500'



KENAGY RD.
JARRATT RD TO NORTH

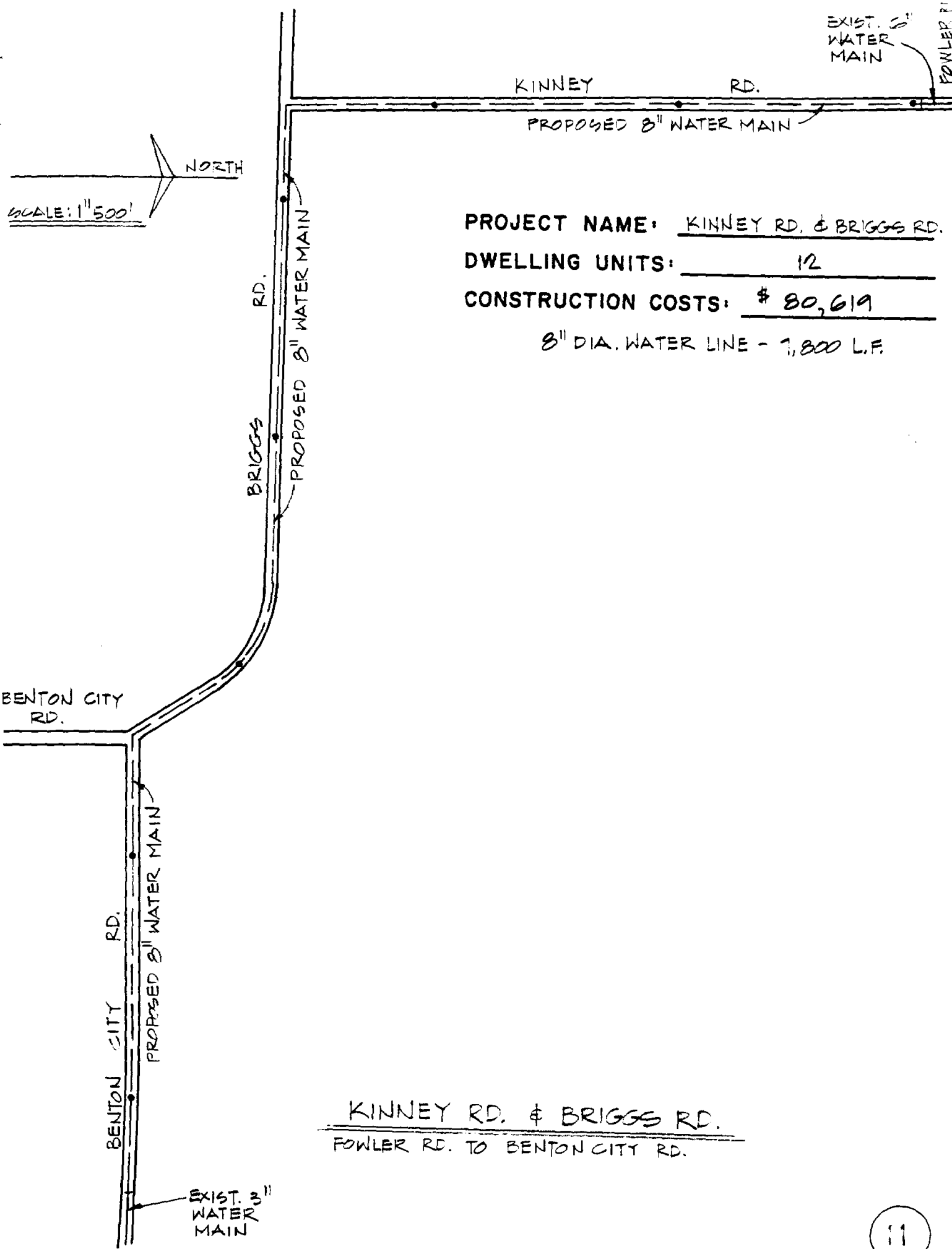
August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Kenagy Rd.
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	2,900 LF		\$ 5.00	\$14,500
8" PVC Water line	---- LF		7.00	----
6" Gate Valve	5 EA		420.00	2,100
8" Gate Valve	---- EA		550.00	----
D1 Fittings	1 TON		3,200.00	3,200
Bore & Case	---- LF		60.00	----
Open Cut Crossing	---- LF		40.00	----
Trench Protection	---- LF		2.00	----
2" Temporary Blow-off	1 EA		500.00	500
Pressure Testing	1 LS		1,500.00	1,500
Fire Hydrant	4 EA		1,300.00	5,200
Contingency 10%	1 LS		2,700.00	2,700
			Total	\$29,700

Project No. 9



PROJECT NAME: KINNEY RD. & BRIGGS RD.

DWELLING UNITS: 12

CONSTRUCTION COSTS: \$ 80,619

8" DIA. WATER LINE - 1,800 L.F.

KINNEY RD. & BRIGGS RD.
FOWLER RD. TO BENTON CITY RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Kinney Road & Briggs Road

Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	----	LF	\$ 5.00	\$ ----
8" PVC Water line	7,800	LF	7.00	54,600
6" Gate Valve	----	EA	420.00	----
8" Gate Valve	6	EA	550.00	3,090
D1 Fittings	1	TON	3,200.00	3,200
Bore & Case	----	LF	60.00	----
Open Cut Crossing	----	LF	40.00	----
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	8	EA	1,300.00	10,400
Contingency 10%	1	LS	7,329.00	7,329
			Total	\$80,619

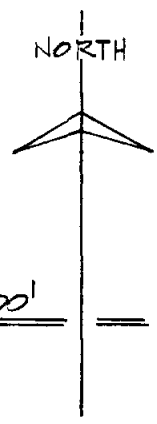
Project No. 11

PROJECT NAME: TRAWALTER LN.

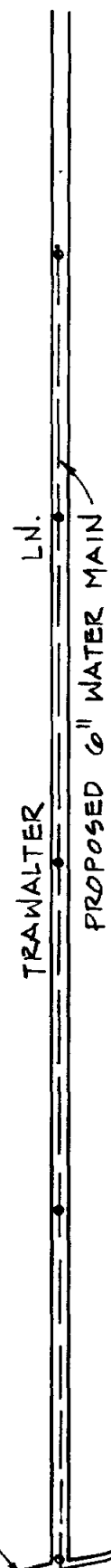
DWELLING UNITS: 15

CONSTRUCTION COSTS: \$ 32,428

6" DIA. WATER LINE - 3,800 L.F.

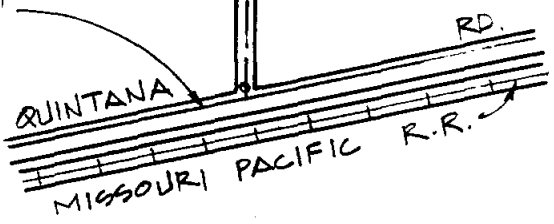


SCALE: 1" = 500'



TRAWALTER LN.
QUINTANA RD. TO NORTH

EXIST. 6"
WATER
MAIN



August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Trawalter Lane
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	3,800	LF	\$ 5.00	\$19,000
8" PVC Water line	----	LF	7.00	----
6" Gate Valve	4	EA	420.00	1,680
8" Gate Valve	----	EA	550.00	----
D1 Fittings	0.5	TON	3,200.00	1,600
Bore & Case	----	LF	60.00	----
Open Cut Crossing	----	LF	40.00	----
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	4	EA	1,300.00	5,200
Contingency 10%	1	LS	2,948.00	2,948
			<hr/>	
			Total	\$32,428

Project No. 12

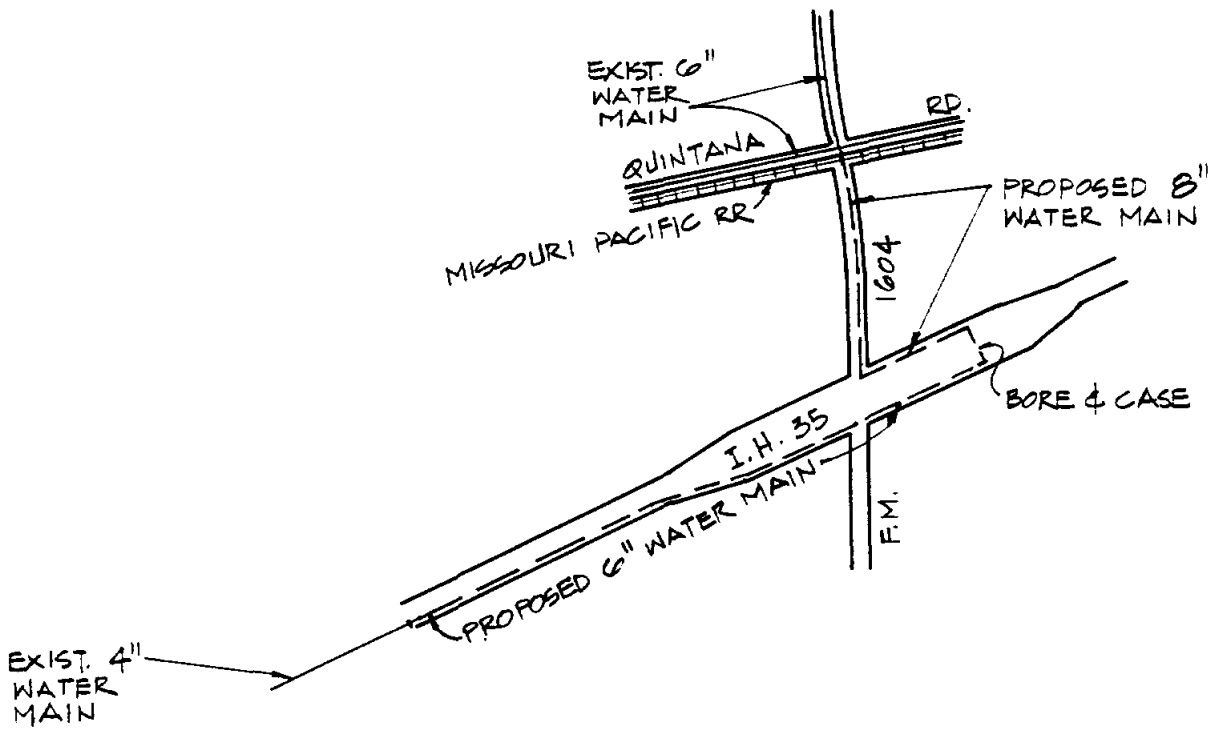
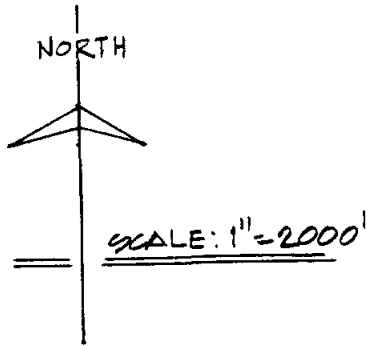
PROJECT NAME: I.H. 35 & F.M. 1604

DWELLING UNITS: 1

CONSTRUCTION COSTS: \$ 109,274

6" DIA. WATER LINE - 6,600 L.F.

8" DIA WATER LINE - 3,500 L.F.



I.H. 35 & F.M. 1604
QUINTANA RD. TO I.H. 35 (SOUTH SIDE)
TO WEST

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area IH 35 & FM 1604

Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	6,600 LF		\$ 5.00	\$ 33,000
8" PVC Water line	3,500 LF		7.00	24,500
6" Gate Valve	4 EA		420.00	1,680
8" Gate Valve	4 EA		515.00	2,060
D1 Fittings	0.5 TON		3,200.00	1,600
Bore & Case	400 LF		60.00	24,000
Open Cut Crossing	---- LF		40.00	----
Trench Protection	100 LF		2.00	200
2" Temporary Blow-off	3 EA		500.00	1,500
Pressure Testing	2 LS		1,500.00	3,000
Fire Hydrant	6 EA		1,300.00	7,800
Contingency 10%	1 LS		9,934.00	9,934
			Total	\$109,274

Project No. 13

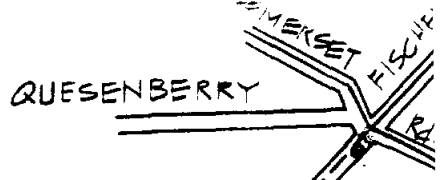
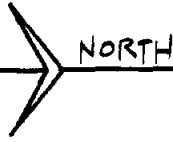
PROJECT NAME: WATSON ROAD

DWELLING UNITS: 35

CONSTRUCTION COSTS: \$ 222,640

6" DIA. WATER LINE - 15,700 L.F.

SCALE: 1"=1000'



HOWARD

PROPOSED 6" WATER MAIN ?

WATSON ROAD

WATSON ROAD AREA
S.H. 16 to SOMERSET RD.

HWY. 16

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area Watson Road

Purveyor Bexar Metropolitan Water District

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water Line	15,700 LF	\$ 12.00	\$188,400
8" DI Water Line	---- LF	15.00	----
Fire Hydrant	16 EA	875.00	14,000
Contingency 10%	1 LS	20,240.00	20,240
		<u>Total</u>	<u>\$222,640</u>

Project No. 14

PROJECT NAME: BRENTWOOD HILLS

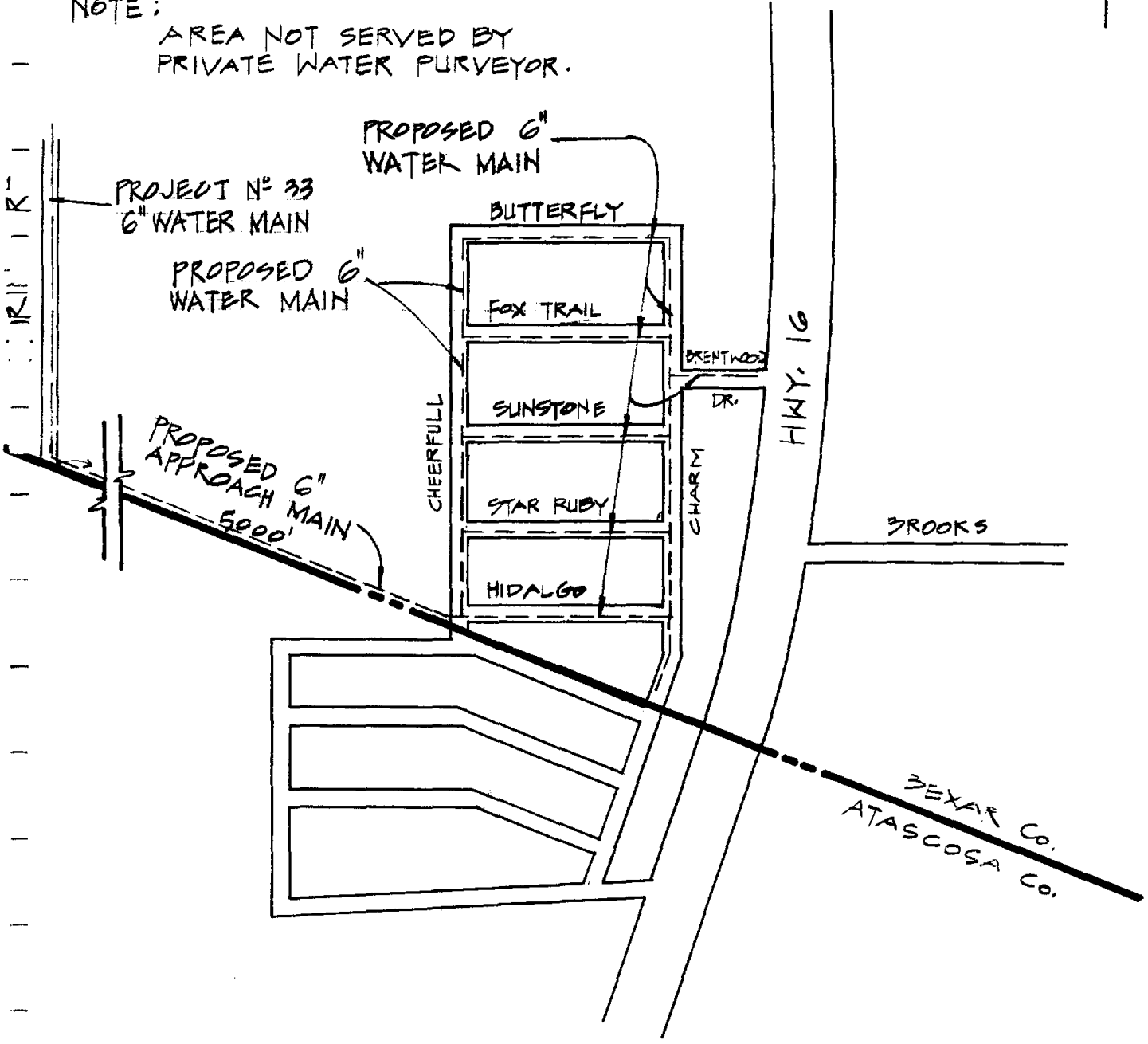
DWELLING UNITS: 17

CONSTRUCTION COSTS: \$154,935

6" DIA. WATER LINE - 11,300 L.F.



NOTE:
AREA NOT SERVED BY
PRIVATE WATER PURVEYOR.



BRENTWOOD HILLS

NOTE:
APPROACH MAIN
REQUIRED, 5000 L.F.

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area Brentwood Hills

Purveyor Bexar Metropolitan Water District

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water Line	11,300 LF	\$ 12.00	\$155,600
8" DI Water Line	---- LF	15.00	----
Fire Hydrant	6 EA	875.00	5,250
Contingency 10%	1 LS	14,085.00	14,085
		<u>Total</u>	<u>\$154,935</u>

Project No. 18

PROJECT NAME: JETT ROAD

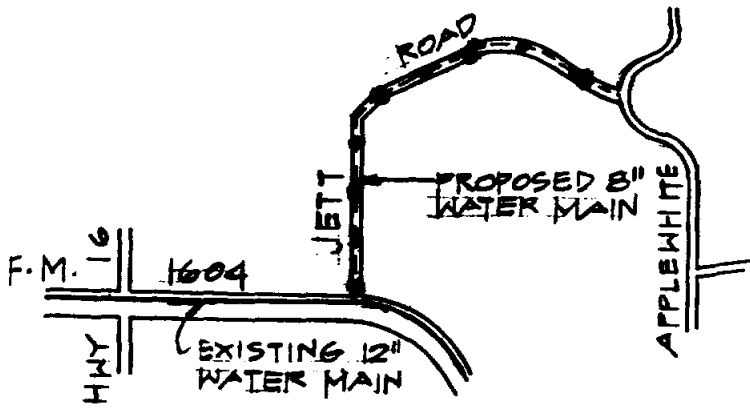
DWELLING UNITS: 17

CONSTRUCTION COSTS: \$ 212,201

8" DIA. WATER LINE - 10,100 L.F.



SCALE: 1" = 4000'



JETT ROAD AREA
F.M. 1604 to APPLEWHITE RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Jett Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	10,000 LF	17.25	174,225
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	4 EA	515.00	2,060
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	9 EA	1,450.00	13,050
Contingency 10%	1 LS	19,291.00	19,291
Total			\$212,201

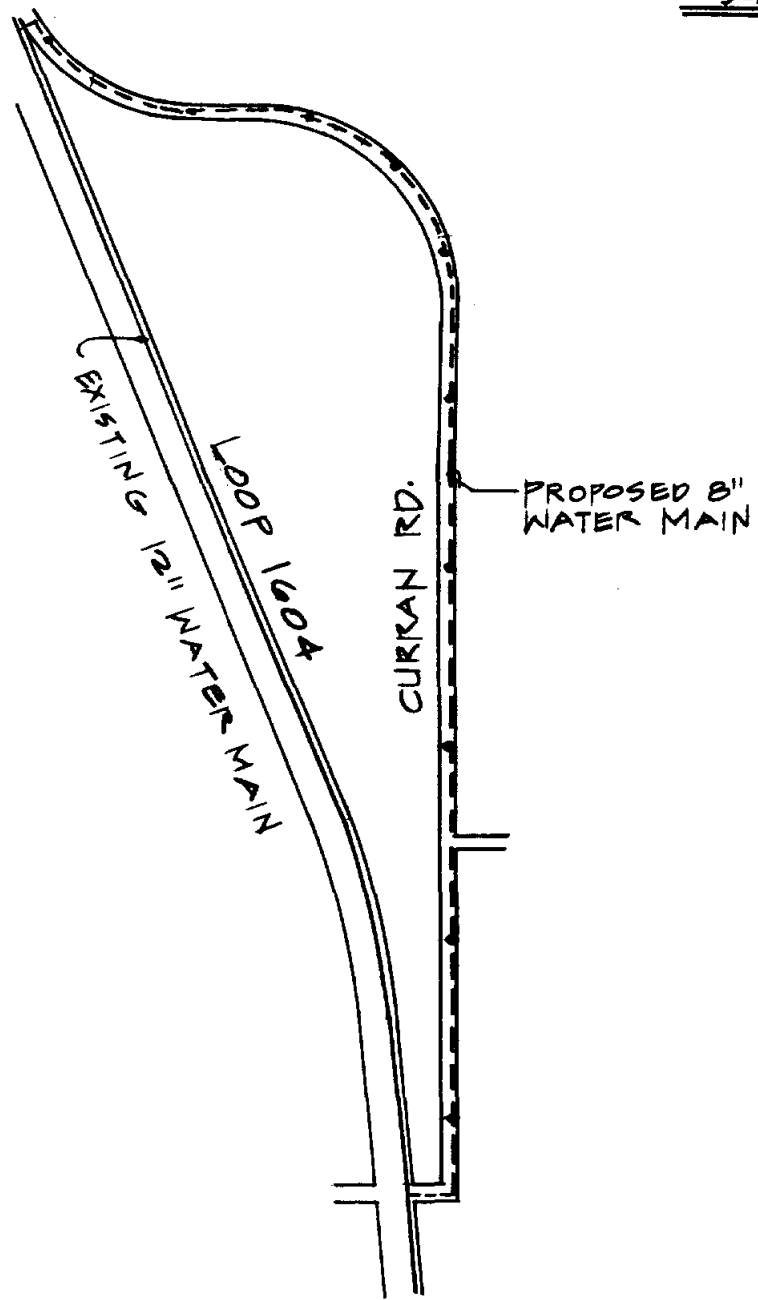
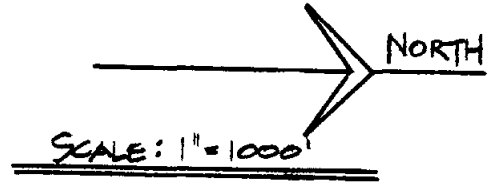
Project No. 19

PROJECT NAME: CURRAN ROAD

DWELLING UNITS: 26

CONSTRUCTION COSTS: \$ 174,873

8" DIA. WATER LINE - 7,800 L.F.



CURRAN ROAD AREA
@ F.M. 1604

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Curran Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	7,800 LF		17.25	134,550
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	10 EA		515.00	5,150
DI Fittings	1.5 TON		2,400.00	3,600
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	10 EA		1,450.00	14,500
Contingency 10%	1 LS		15,898.00	15,898
			Total	\$174,873

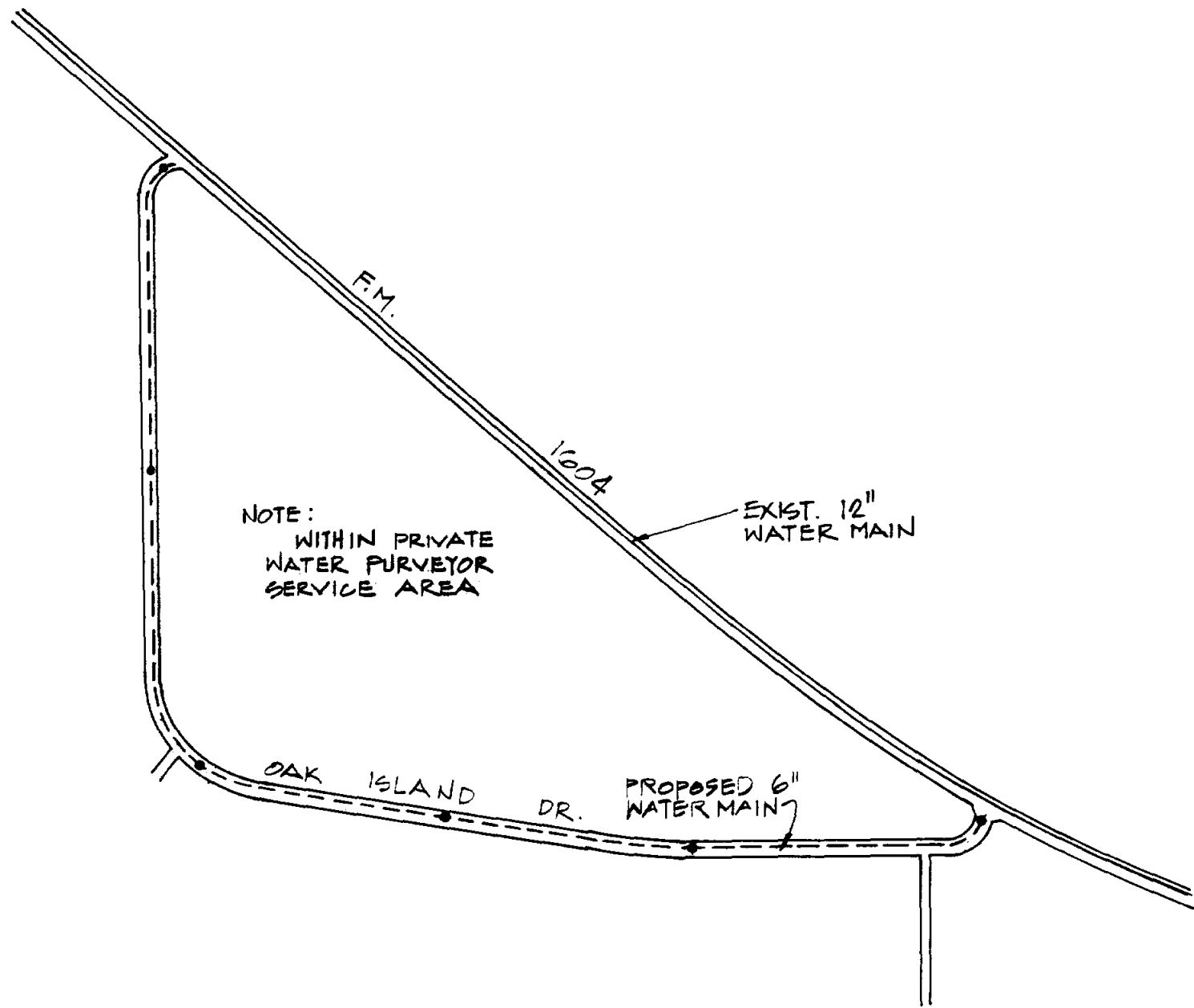
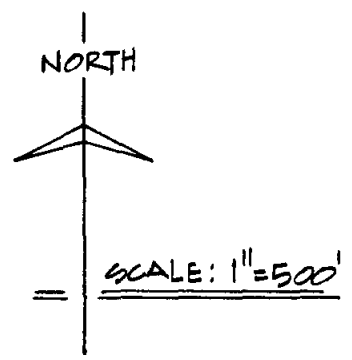
Project No. 20

PROJECT NAME: OAK ISLAND

DWELLING UNITS: 15

CONSTRUCTION COSTS: \$ 99,577

6" DIA. WATER LINE - 5,200 L.F.



OAK ISLAND

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Oak Island

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	5,200 LF	\$	14.25	\$74,100
8" D1 Water line	---- LF		17.25	----
6" Gate Valve	7 EA		350.00	2,450
8" Gate Valve	---- EA		515.00	----
D1 Fittings	0.5 TON		2,400.00	1,200
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	8 EA		1,450.00	11,600
Contingency 10%	1 LS		9,052.00	9,052

Total \$99,577

Project No. 21

PROJECT NAME: TRUMBO RD.

DWELLING UNITS: 37

CONSTRUCTION COSTS: \$231,083

8" DIA. WATER LINE - 10,800 L.F.



SCALE: 1" = 1000'

TRUMBO ROAD

PROPOSED 8" WATER MAIN

PLEASANTON RD.

EXISTING 12" WATER MAIN

F.M. 1604

EXISTING 12" WATER MAIN

TRUMBO RD.

F.M. 1604 TO NORTH

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN

CONSTRUCTION COST ESTIMATE

Project Area Thelma Area

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	10,800 LF	17.25	186,300
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	10 EA	515.00	3,500
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	1 EA	425.00	425
Fire Hydrant	11 EA	1,450.00	15,950
Contingency 10%	1 LS	21,008.00	21,008
Total			\$231,083

Project No. 22

PROJECT NAME: S. HWY. 16 S

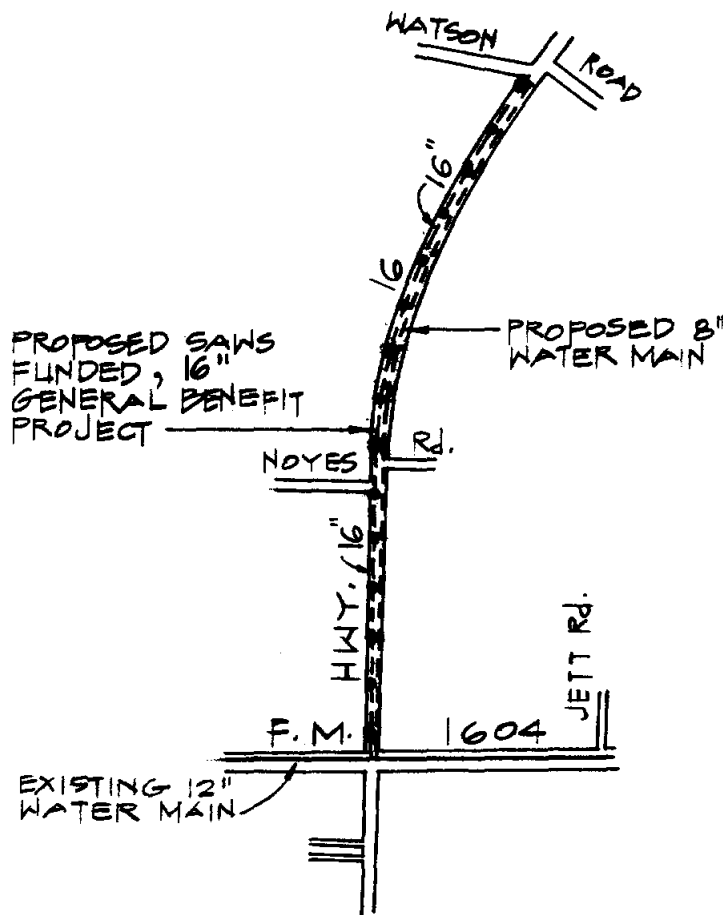
DWELLING UNITS: 24

CONSTRUCTION COSTS: \$ 344,718

8" DIA. WATER LINE - 15,000 L.F.



SCALE: 1" = 4000'



S. HWY. 16; F.M. 1604 to WATSON Rd.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area SH 16

Purveyor San Antonio Water System

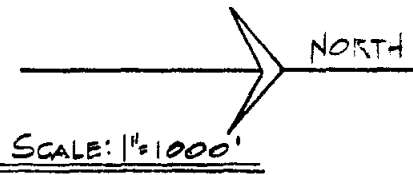
<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	---- LF	\$ 14.25	\$ ----
8" D1 Water line	15,000 LF	17.25	258,750
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	8 EA	515.00	4,120
D1 Fittings	2 TON	2,400.00	4,800
Bore and Case	560 LF	36.00	20,160
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	2 EA	425.00	850
Fire Hydrant	16 EA	1,450.00	23,200
Contingency 10%	1 LS	31,338.00	31,338
Total			\$344,718

Project No. 23

DWELLING UNITS: 62

CONSTRUCTION COSTS: \$ 100,430

6" DIA. WATER LINE-5,400 L.F. FOREST RD



PEACEFUL LANE

ROAD

ROBERT JARED

PROPOSED 6" WATER MAIN

DUKES

PROPOSED 6" WATER MAIN

NOTE:
APPROACH MAIN
REQUIRED 19,200 L.F.

NOTE:
WITHIN PRIVATE
WATER PURVEYOR
SERVICE AREA

PLEASANTON ROAD

PROPOSED 8" LINE
PROJECT N° 62

MISSOURI PACIFIC R.R.

DUKES Rd. and ROBERT JARED

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

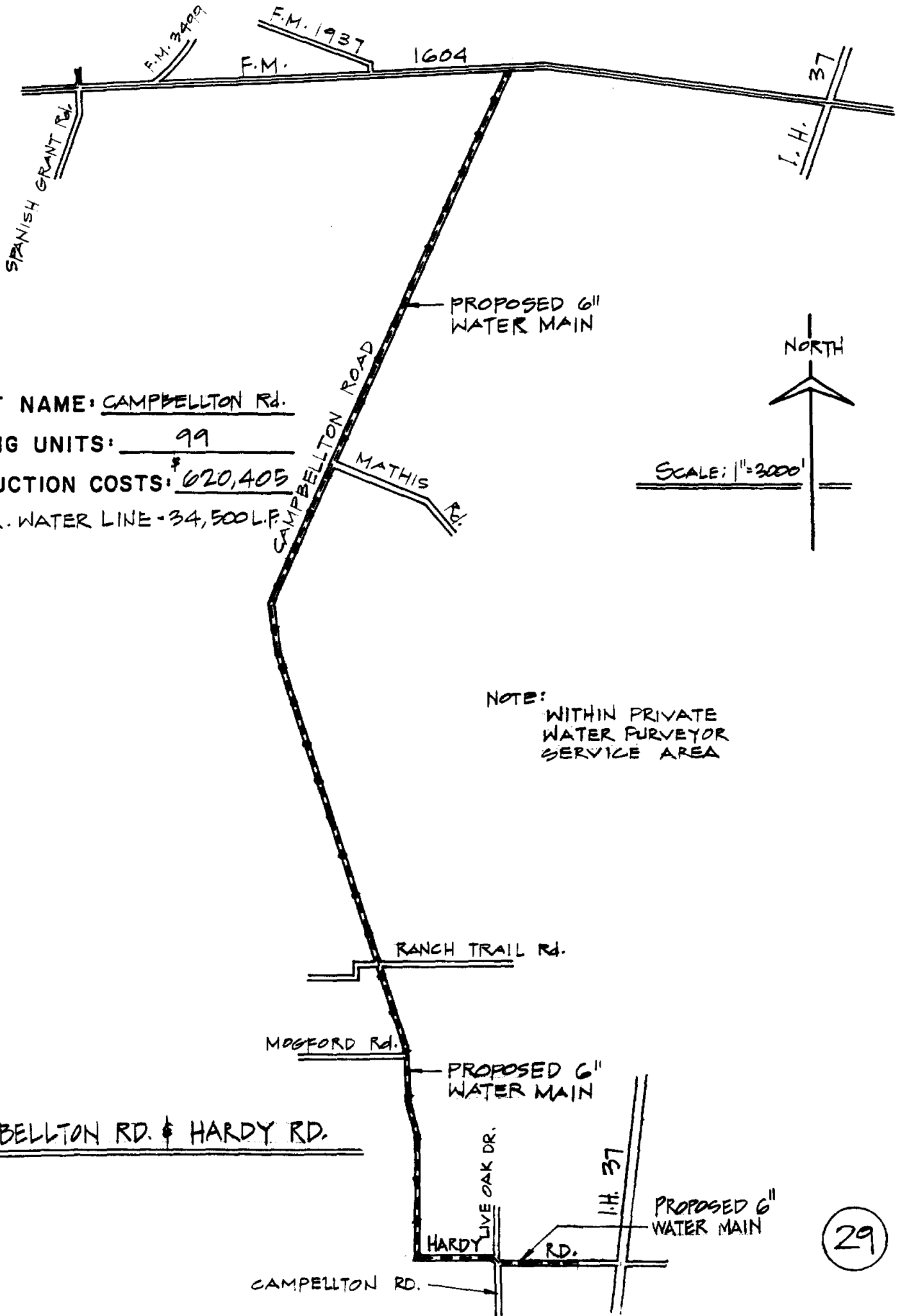
Project Area Dukes Road and Robert Jared

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	5,400	LF	\$ 14.25	\$ 76,950
8" D1 Water line	----	LF	17.25	----
6" Gate Valve	6	EA	350.00	2,100
8" Gate Valve	----	EA	515.00	----
D1 Fittings	.50	TON	2,400.00	1,200
Bore and Case	----	LF	36.00	----
Open Cut Crossing	----	LF	18.00	----
Trench Protection	----	LF	1.50	----
2" Temporary Blow-off	2	EA	750.00	1,500
Pressure Testing	2	EA	425.00	850
Fire Hydrant	6	EA	1,450.00	8,700
Contingency 10%	1	LS	9,130.00	9,130

Total \$100,430

Project No. 24



PROJECT NAME: CAMPBELLTON Rd.
 VELLING UNITS: 99
 CONSTRUCTION COSTS: \$620,405
 6" DIA. WATER LINE - 34,500 LF.

NOTE:
 WITHIN PRIVATE
 WATER PURVEYOR
 SERVICE AREA

CAMPBELLTON RD. & HARDY RD.

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Campbellton Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	34,500 LF	\$ 14.25	\$491,625
8" DI Water line	---- LF	17.25	----
6" Gate Valve	8 EA	350.00	2,800
8" Gate Valve	---- EA	515.00	----
DI Fittings	2 TON	2,400.00	4,800
Bore and Case	280 LF	36.00	10,080
Open Cut Crossing	---- LF	18.00	----
Trench Protection	100 LF	1.50	150
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	2 EA	425.00	850
Fire Hydrant	36 EA	1,450.00	52,200
Contingency 10%	1 LS	56,400.00	56,400
		Total	\$620,405

Project No. 29

PROJECT NAME: U.S. HWY. 281 S

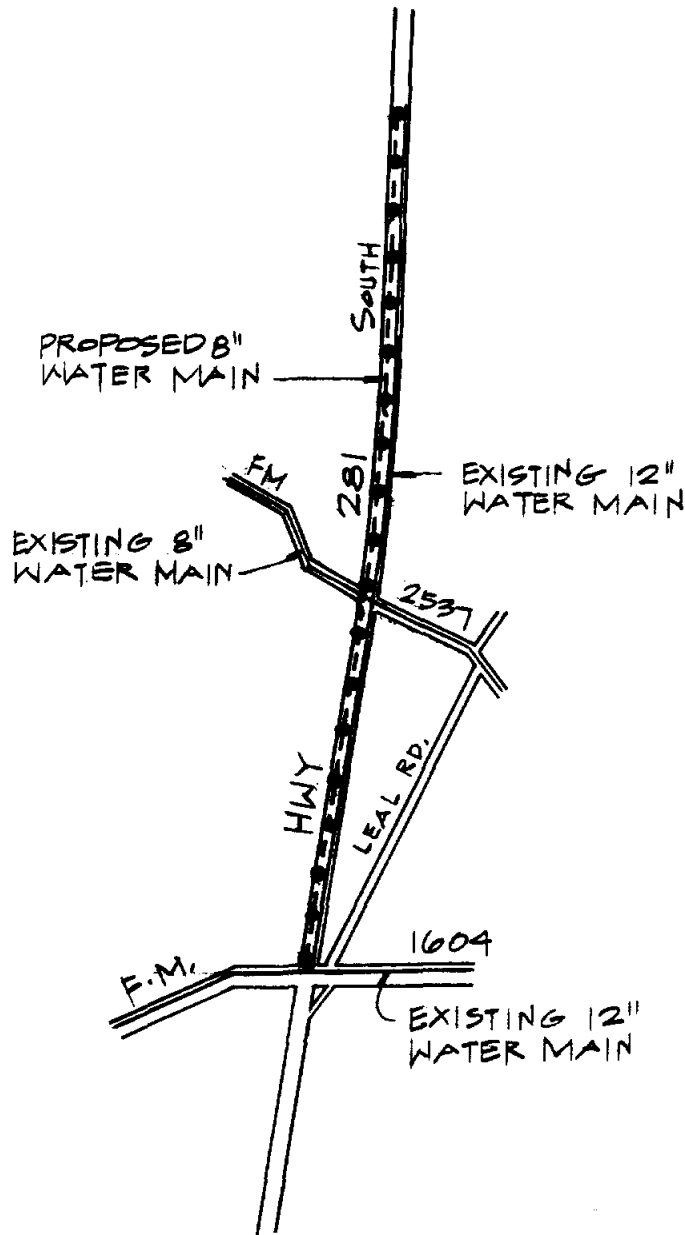
DWELLING UNITS: 13

CONSTRUCTION COSTS: \$ 378,053

8" DIA. WATER LINE - 18,000 L.F.



SCALE: 1" = 4000'



U.S. HWY. 281 S.
F.M. 1604 to NORTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area US Hwy. 281 S

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	18,000 LF	17.25	310,500
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	4 EA	515.00	2,060
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	19 EA	1,450.00	27,550
Contingency 10%	1 LS	34,368	34,368
Total			\$378,053

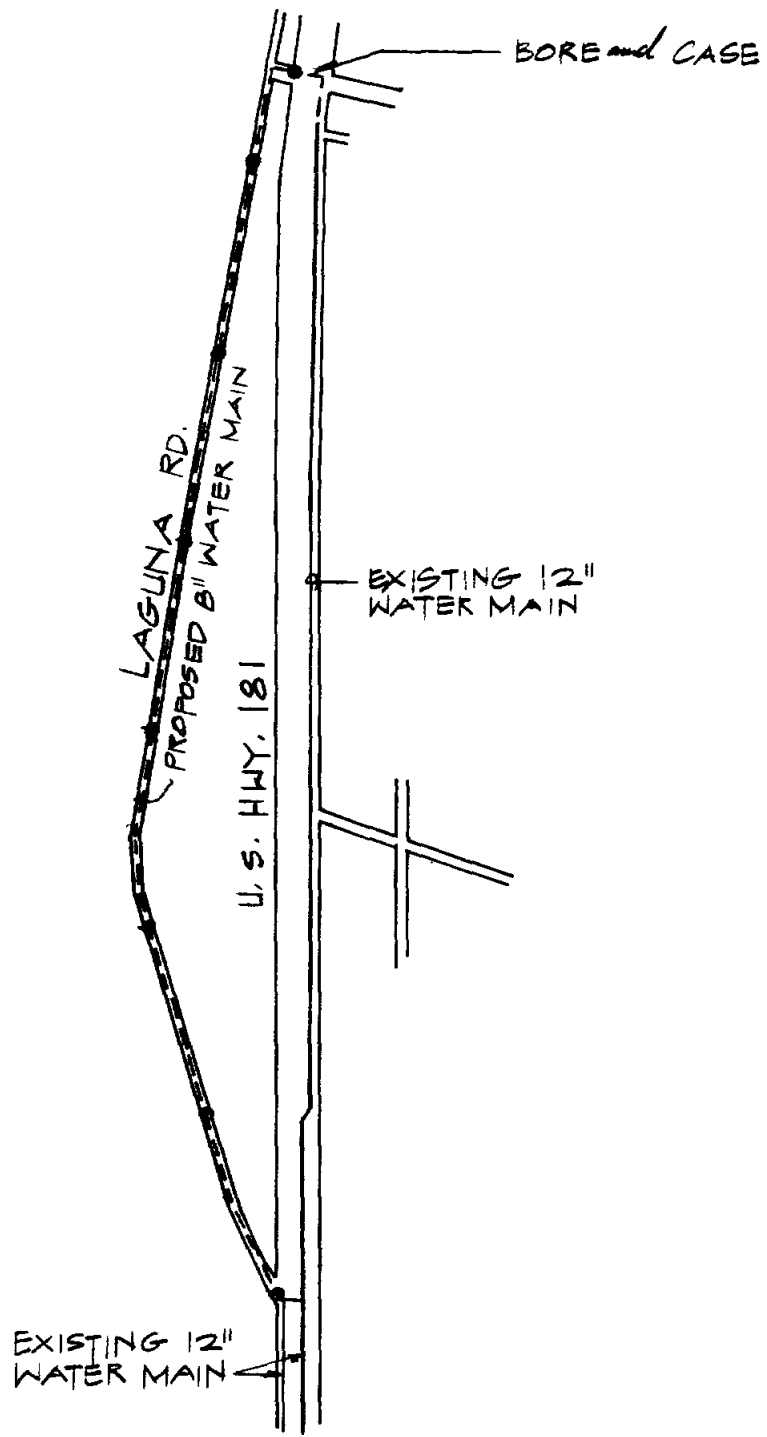
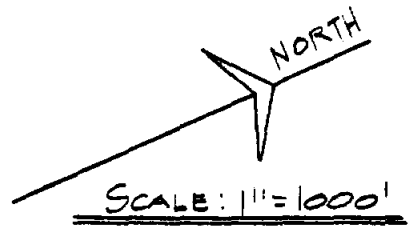
Project No. 30

PROJECT NAME: LAGUNA WEST

DWELLING UNITS: 56

CONSTRUCTION COSTS: \$ 154,957

3" DIA. WATER LINE - 6,540 L.F.



LAGUNA ROAD WEST
@ U.S. HIGHWAY 181

August 20, 1992

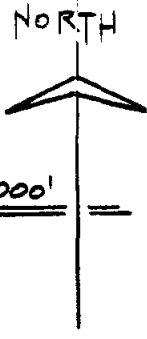
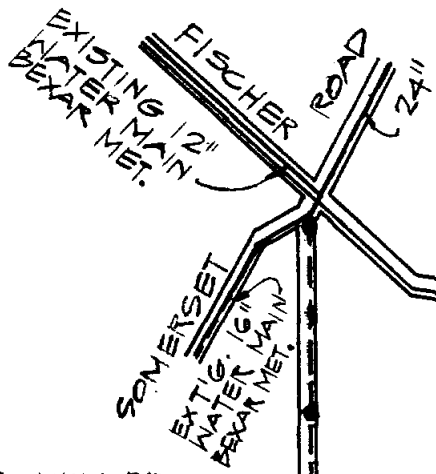
**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Laguna W.

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	6,540 LF	17.25	112,815
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	8 EA	515.00	2,800
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	280 LF	36.00	10,080
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	8 EA	1,450.00	11,600
Contingency 10%	1 LS	14,087.00	14,087
Total			\$154,957



SCALE: 1"=1000'

PROPOSED SANS FUNDED 16" GENERAL BENEFIT MAIN

PROJECT NAME: QUESENBERY RD.

DWELLING UNITS: 13

CONSTRUCTION COSTS: \$168,520

8" DIA. WATER LINE - 7,900 L.F.

QUESENBERY RD.

PROPOSED 8" WATER MAIN

QUESENBERY ROAD AREA
SOMERSET RD. TO MEDINA RIVER

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Quesenberry Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	7,900 LF	17.25	136,275
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	5 EA	515.00	1,750
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	8 EA	1,450.00	11,600
Contingency 10%	1 LS	15,320.00	15,320
		Total	\$168,520

Project No. 32

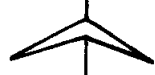
PROJECT NAME: SENIOR RD., SMITH RD., and MORIN RD.

DWELLING UNITS: 55

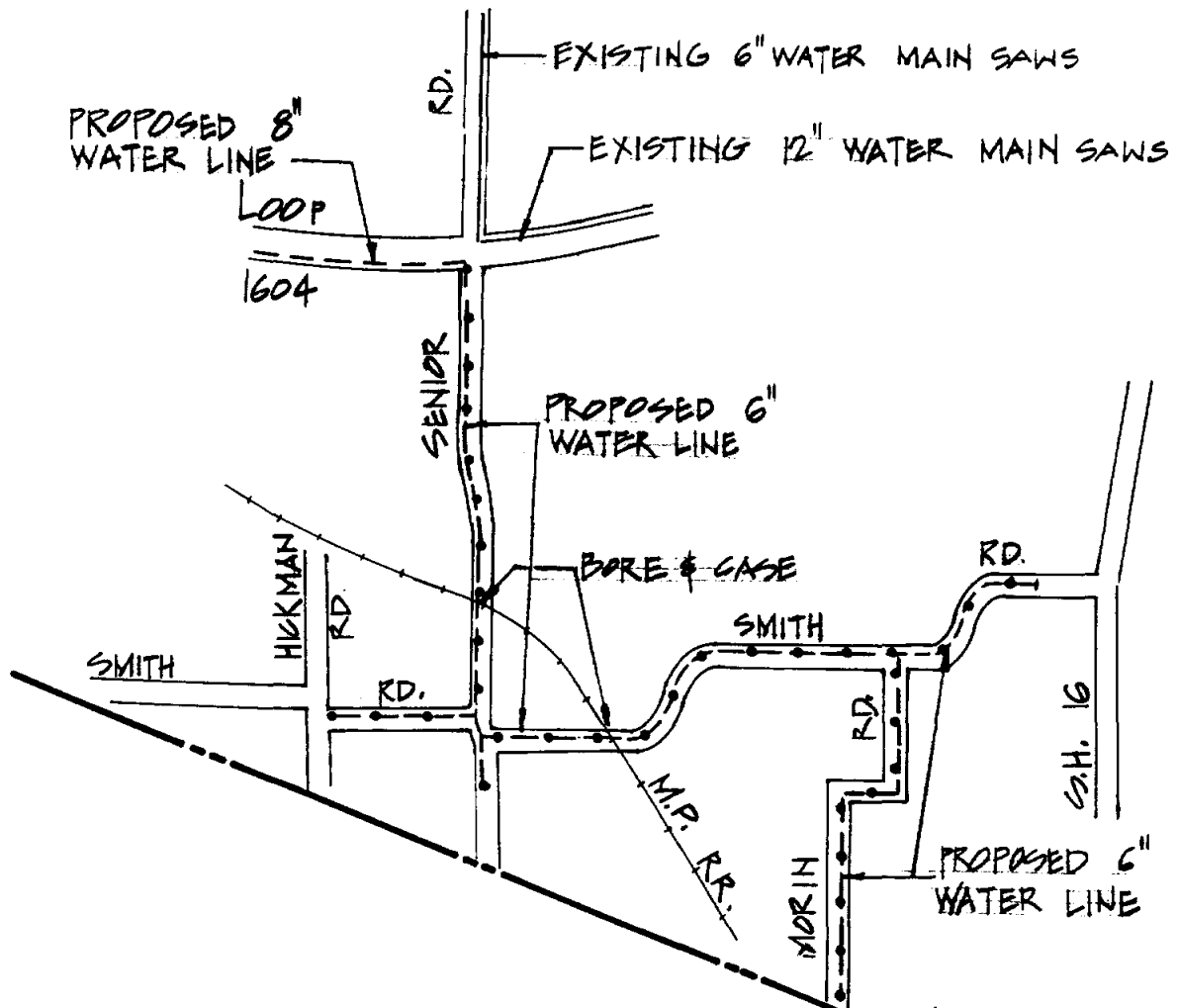
CONSTRUCTION COSTS: \$ 528,330

6" DIA. WATER LINE ~ 37,400 L.F.

NORTH



SCALE: 1" = 4000'



SENIOR RD., SMITH RD.,
and MORIN RD.

BEXAR CO.
ATASCOOSA CO.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Senior Road

Purveyor Bexar Metropolitan Water District

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water Line	---- LF		\$ 12.00	\$ ----
8" DI Water Line	37,400 LF		15.00	448,800
Fire Hydrant	36 EA		875.00	31,500
Contingency 10%	1 LS		48,030.00	48,030
				<hr/>
			Total	\$528,330

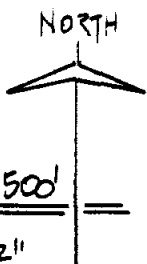
Project No. 33

PROJECT NAME: BUENA VISTA

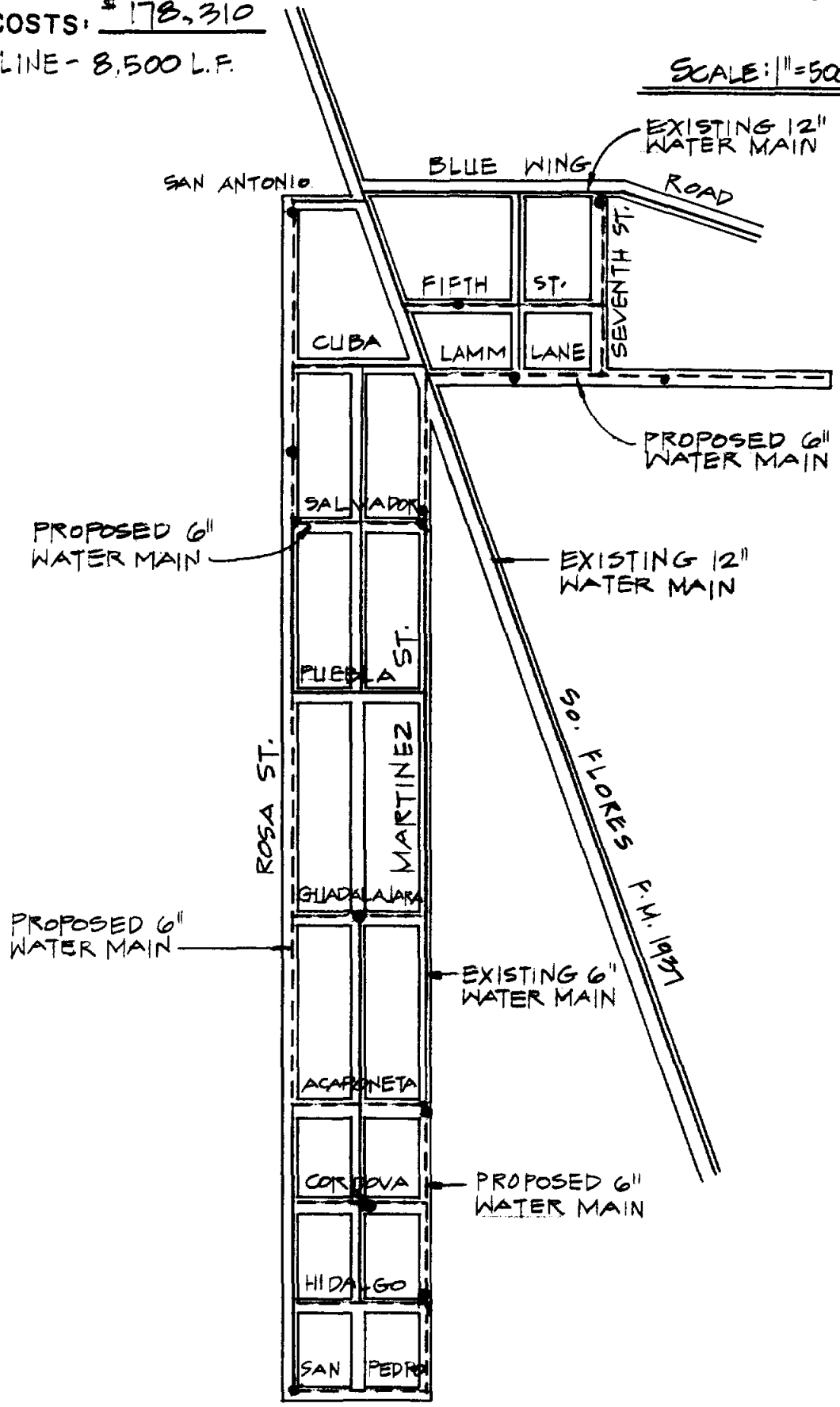
DWELLING UNITS: 21

CONSTRUCTION COSTS: \$178,310

6" DIA. WATER LINE - 8,500 L.F.



SCALE: 1" = 50'



BUENA VISTA AREA

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Buena Vista

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	8,500 LF	\$ 14.25	\$121,125
8" D1 Water line	---- LF	17.25	----
6" Gate Valve	42 EA	350.00	14,700
8" Gate Valve	---- EA	515.00	----
D1 Fittings	3.5 TON	2,400.00	8,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	1 EA	425.00	425
Fire Hydrant	11 EA	1,450.00	15,950
Contingency 10%	1 LS	16,210.00	16,210
Total			\$178,310

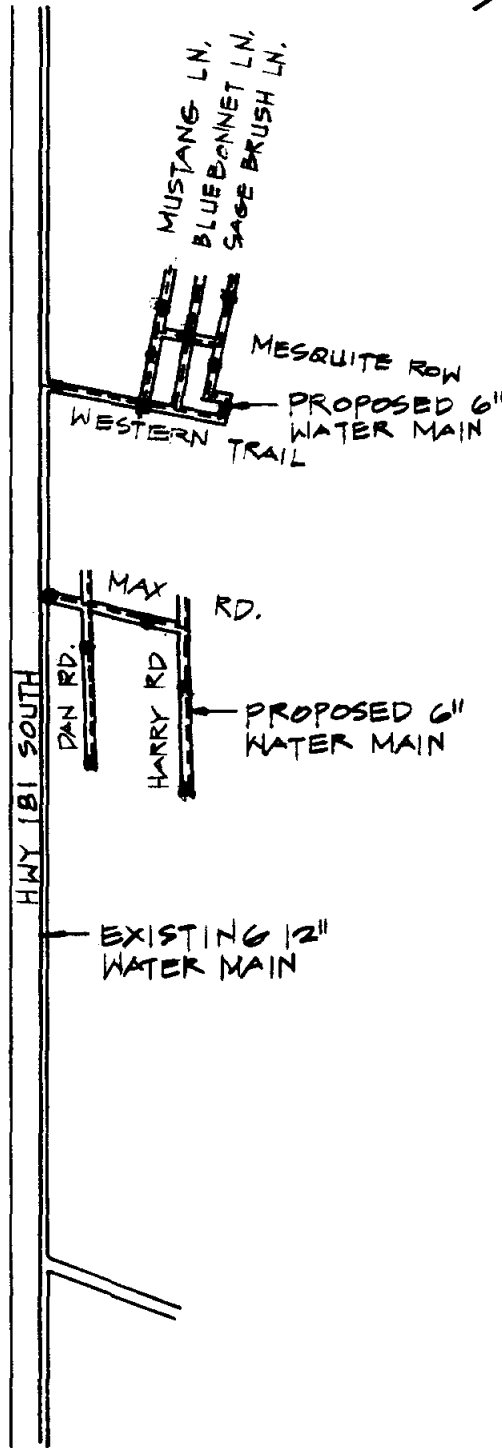
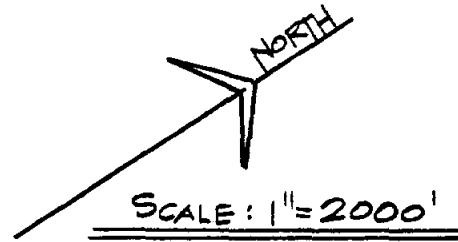
Project No. 35

PROJECT NAME: WESTERN TRAILS

DWELLING UNITS: 56

CONSTRUCTION COSTS: \$225,500

6" DIA. WATER LINE - 11,800 L.F.



WESTERN TRAILS

August 20, 1992

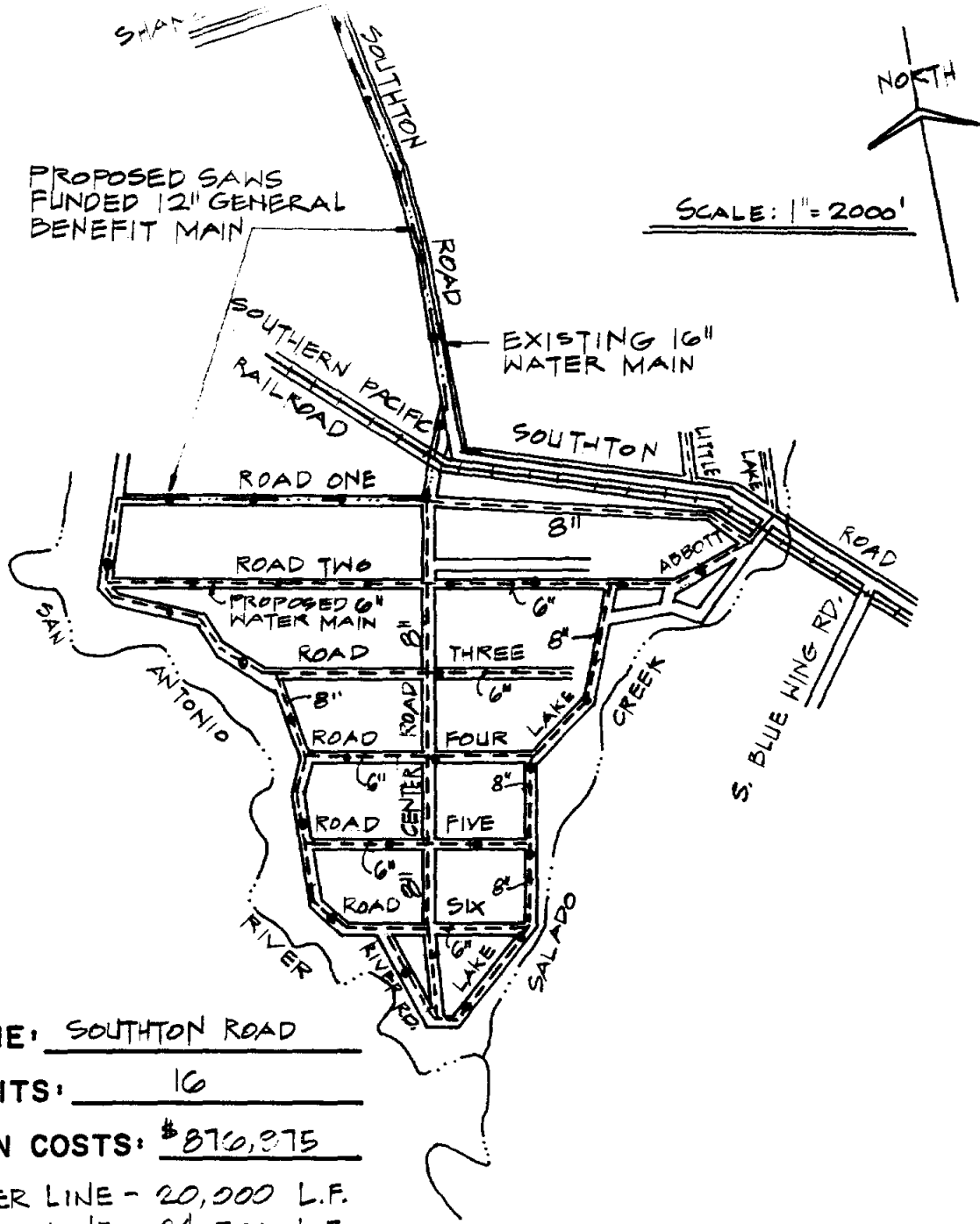
**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Western Trials

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	11,800	LF	\$ 14.25	\$168,150
8" DI Water line	----	LF	17.25	----
6" Gate Valve	31	EA	350.00	10,850
8" Gate Valve	----	EA	515.00	----
DI Fittings	2	TON	2,400.00	4,800
Bore and Case	----	LF	36.00	----
Open Cut Crossing	----	LF	18.00	----
Trench Protection	----	LF	1.50	----
2" Temporary Blow-off	2	EA	750.00	1,500
Pressure Testing	2	EA	425.00	850
Fire Hydrant	13	EA	1,450.00	18,850
Contingency 10%	1	LS	20,500.00	20,500
Total				\$225,500



PROJECT NAME: SOUTHTON ROAD

DWELLING UNITS: 10

CONSTRUCTION COSTS: \$870,975

6" DIA. WATER LINE - 20,000 L.F.

8" DIA. WATER LINE - 24,500 L.F.

SOUTHTON RD. AREA
@ CENTER ROAD

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Southton Area

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	20,000 LF	\$	14.25	\$285,000
8" DI Water line	24,500 LF		17.25	422,625
6" Gate Valve	40 EA		350.00	14,000
8" Gate Valve	40 EA		515.00	20,600
DI Fittings	4 TON		2,400.00	9,600
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	1 EA		425.00	425
Fire Hydrant	30 EA		1,450.00	43,500
Contingency 10%	1 LS		79,725.00	79,725
Total				\$876,975

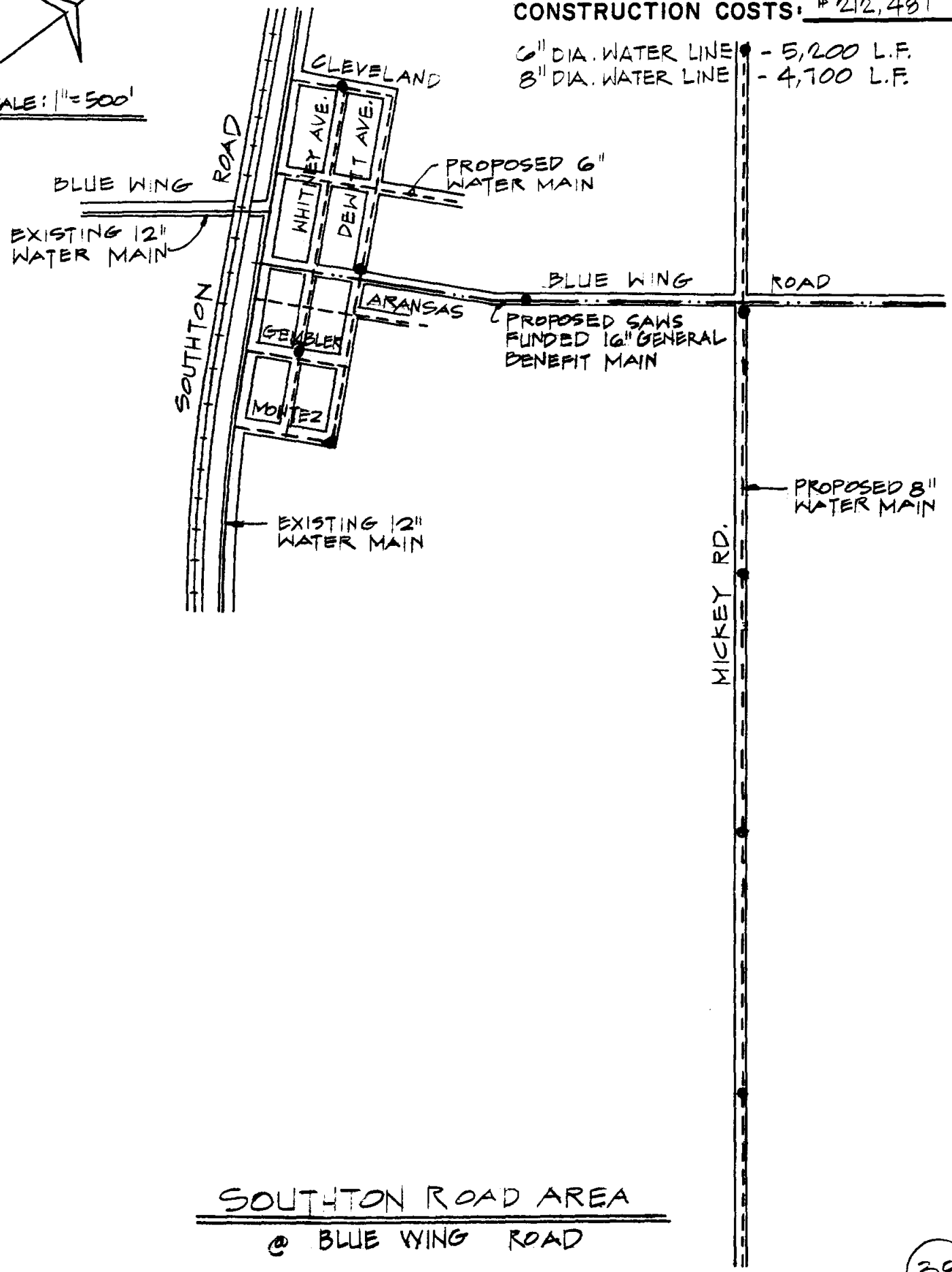
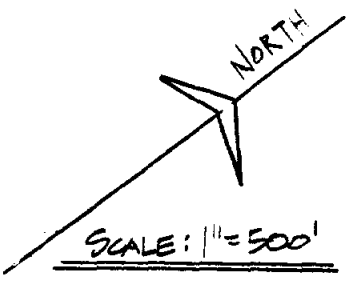
Project No. 37

PROJECT NAME: SOUTHTON AREA

DWELLING UNITS: 33

CONSTRUCTION COSTS: \$ 212,487

6" DIA. WATER LINE - 5,200 L.F.
8" DIA. WATER LINE - 4,700 L.F.



SOUTHTON ROAD AREA
@ BLUE WING ROAD

August 20, 1992

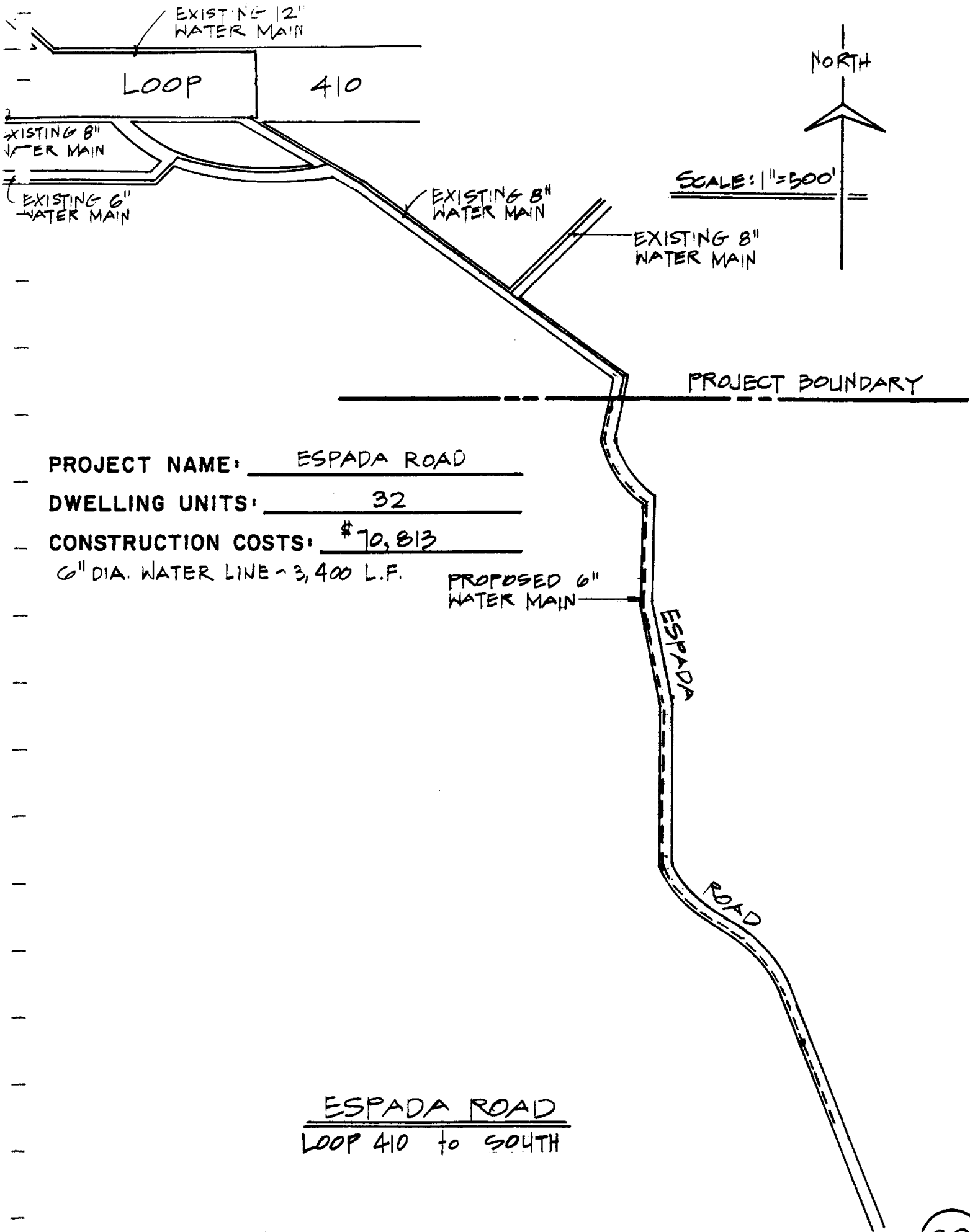
**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Southon Area

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	5,200 LF	\$	14.25	\$ 74,100
8" D1 Water line	4,700 LF		17.25	81,075
6" Gate Valve	32 EA		350.00	11,200
8" Gate Valve	8 EA		515.00	4,120
D1 Fittings	2 TON		2,400.00	4,800
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	1 EA		425.00	425
Fire Hydrant	11 EA		1,450.00	15,950
Contingency 10%	1 LS		19,317.00	19,317
Total				\$212,487

Project No. 38



SCALE: 1" = 500'

PROJECT NAME: ESPADA ROAD
 DWELLING UNITS: 32
 CONSTRUCTION COSTS: \$70,813
 6" DIA. WATER LINE ~ 3,400 L.F.

PROPOSED 6" WATER MAIN

ESPADA ROAD
 LOOP 410 to SOUTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Espada Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	3,400 LF	\$	14.25	\$48,450
8" D1 Water line	---- LF		17.25	----
6" Gate Valve	7 EA		350.00	2,450
8" Gate Valve	---- EA		515.00	----
D1 Fittings	1.5 TON		2,400.00	3,600
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	6 EA		1,450.00	8,700
Contingency 10%	1 LS		6,438.00	6,438
Total				\$70,813

Project No. 39

NOYER ROAD

BORE & CASE

NORTH

HWY. 16

SCALE: 1"=500'

SAWS FUNDED 16" GENERAL BENEFIT MAIN.

- PROJECT NAME: FEST RD.
- DWELLING UNITS: 27
- CONSTRUCTION COSTS: \$ 143,489
- 8" DIA. WATER LINE - 5,800 L.F.

PROPOSED 8" WATER MAIN

FEST ROAD

FEST ROAD AREA
S.H. 16 TO EAST

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Fest Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	----
8" DI Water line	5,800 LF	17.25	\$100,050
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	10 EA	515.00	5,150
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	320 LF	36.00	11,520
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	7 EA	1,450.00	10,150
Contingency 10%	1 LS	13,044.00	13,044
Total			\$143,489

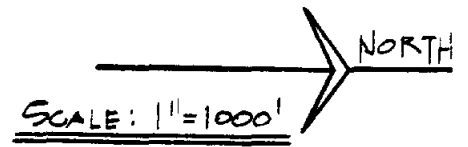
Project No. 40

PROJECT NAME: LABUS ROAD

DWELLING UNITS: 10

CONSTRUCTION COSTS: \$ 168,742

8" DIA. WATER LINE - 7,750 L.F.



PROPOSED SAWS
FUNDED 12" GENERAL
BENEFIT MAIN

F.M. 1604

PROPOSED 8" WATER MAIN

LABUS

ROAD

LABUS RD. AREA

F.M. 1604 TO F.M. 1604

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Labus Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	7,750 LF		17.25	133,687
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	6 EA		515.00	3,090
DI Fittings	1 TON		2,400.00	2,400
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	9 EA		1,450.00	13,050
Contingency 10%	1 LS		15,340.00	15,340
Total				\$168,742

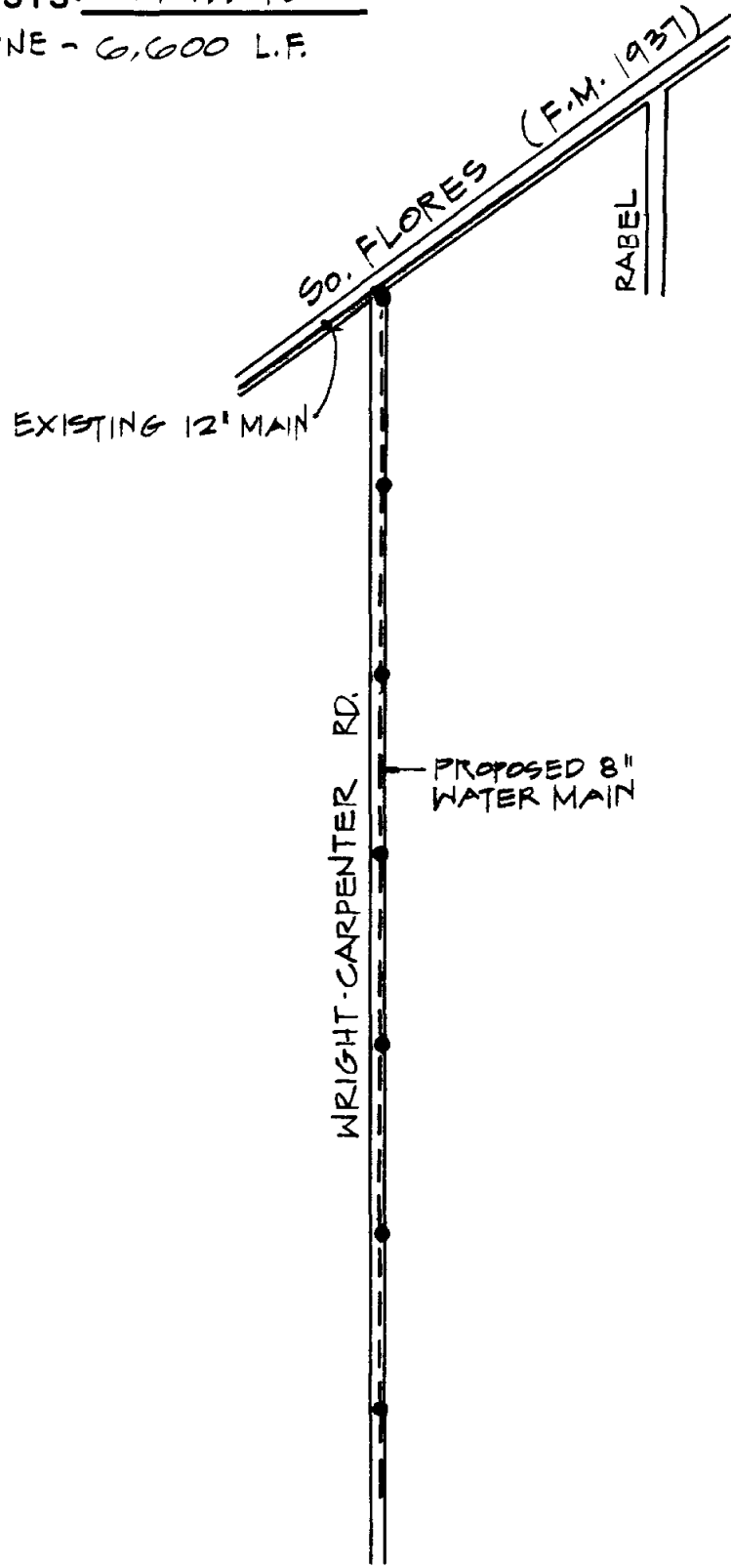
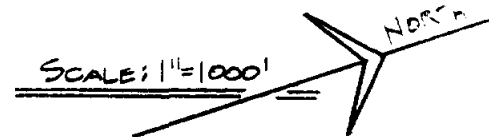
Project No. 41

PROJECT NAME: WRIGHT-CARPENTER RD.

DWELLING UNITS: 12

CONSTRUCTION COSTS: \$149,545

8" DIA. WATER LINE - 6,600 L.F.



WRIGHT-CARPENTER RD.
SOUTH FLORES RD. TO EAST

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Wright-Carpenter Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	6,600 LF	17.25	113,850
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	5 EA	515.00	2,575
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	11 EA	1,450.00	15,950
Contingency 10%	1 LS	13,595.00	13,595
		Total	\$149,545

Project No. 42

PROJECT NAME: RABEL RD.

DWELLING UNITS: 8

CONSTRUCTION COSTS: \$209,698

8" DIA. WATER LINE -
9,800 L.F.

So. FLORES (F.M. 1937)

WRIGHT-CARPENTER RD.

EXISTING 12" WATER MAIN



SCALE: 1" = 100'

RABEL RD.

PROPOSED 8" WATER MAIN

RABEL RD.

SOUTH-FLORES RD. TO EAST

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Rabel Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	9,800 LF		17.25	169,050
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	4 EA		515.00	2,060
DI Fittings	1 TON		2,400.00	2,400
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	11 EA		1,450.00	15,950
Contingency 10%	1 LS		19,063.00	19,063
Total				\$209,698

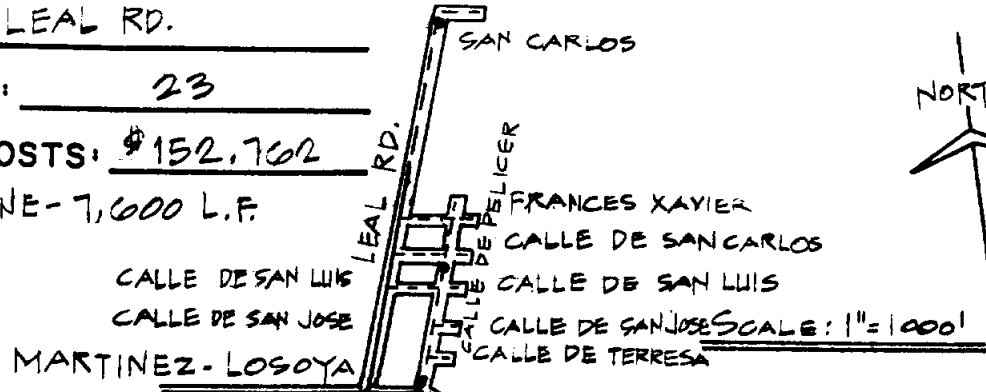
Project No. 43

PROJECT NAME: LEAL RD.

DWELLING UNITS: 23

CONSTRUCTION COSTS: \$152,702

6" DIA. WATER LINE - 7,000 L.F.



EXISTING 8" WATER MAIN

EXISTING 6" WATER MAIN

LEAL RD.

PROPOSED 6" WATER MAIN

EXISTING 6" WATER MAIN

PROPOSED 6" WATER MAIN

PROPOSED SWS
FUNDED 12" GENERAL
BENEFIT MAIN

EXISTING 8" WATER MAIN

U.S. HIGHWAY 187

EXISTING 12" WATER MAIN

LOOP 1604

ROCKPORT

LEAL ROAD

F.M. 1604 TO NORTH OF
MARTINEZ-LOSOYA ROAD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Leal Road

Purveyor San Antonio Water System

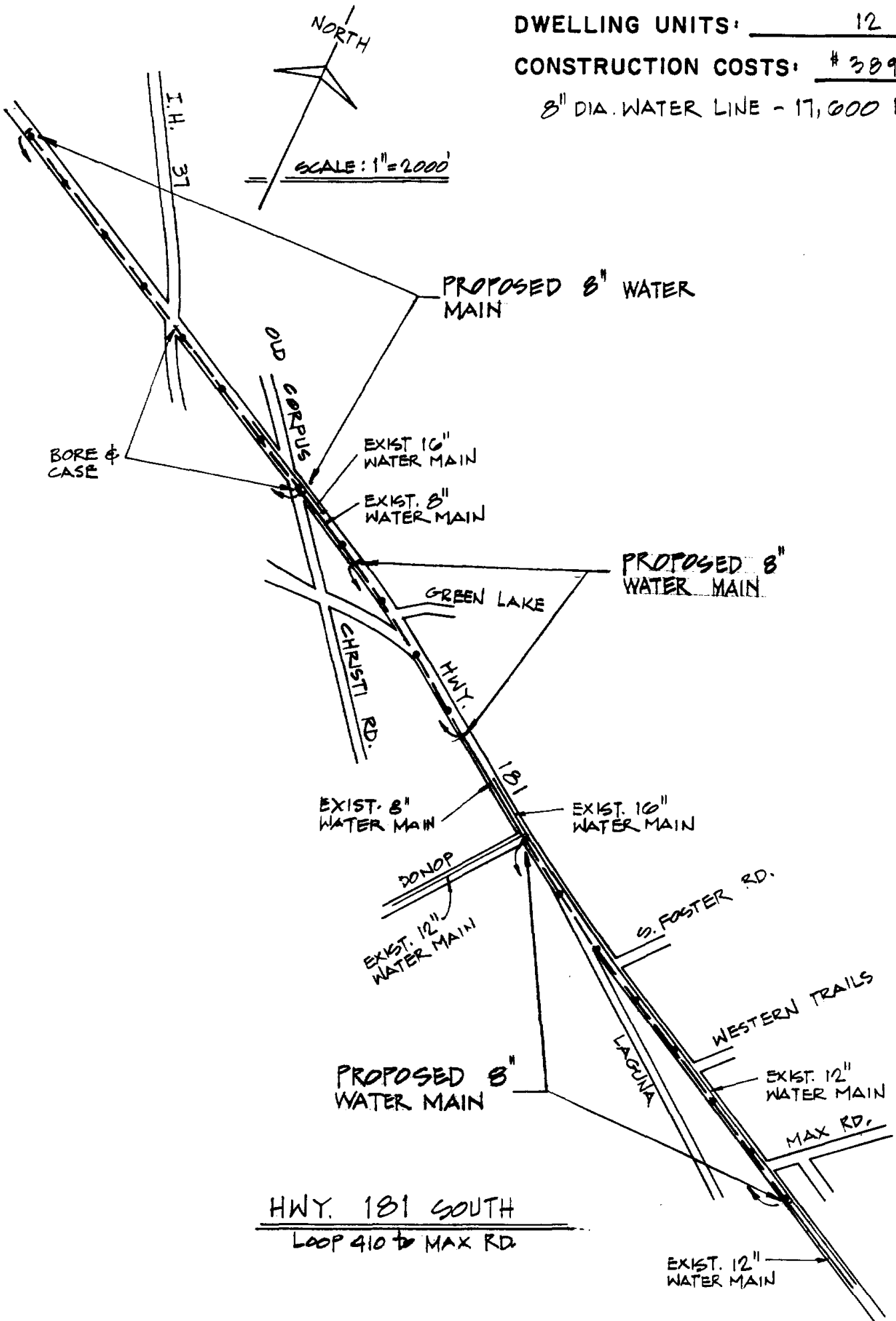
<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	7,600	LF	\$ 14.25	\$108,300
8" DI Water line	----	LF	17.25	----
6" Gate Valve	35	EA	350.00	12,250
8" Gate Valve	----	EA	515.00	----
DI Fittings	2	TON	2,400.00	4,800
Bore and Case	----	LF	36.00	----
Open Cut Crossing	----	LF	18.00	----
Trench Protection	----	LF	1.50	----
2" Temporary Blow-off	2	EA	750.00	1,500
Pressure Testing	1	EA	425.00	425
Fire Hydrant	8	EA	1,450.00	11,600
Contingency 10%	1	LS	13,887.00	13,887
Total				\$152,762

PROJECT NAME: HWY. 181 SOUTH

DWELLING UNITS: 12

CONSTRUCTION COSTS: \$ 389,609

8" DIA. WATER LINE - 17,000 L.F.



HWY. 181 SOUTH
LOOP 410 to MAX RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area US Hwy 181 S

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	17,600 LF		17.25	303,600
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	8 EA		515.00	4,120
DI Fittings	0.5 TON		2,400.00	1,200
Bore and Case	400 LF		36.00	14,400
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	1 EA		425.00	425
Fire Hydrant	20 EA		1,450.00	29,000
Contingency 10%	1 LS		35,424.00	35,424
Total				\$389,669

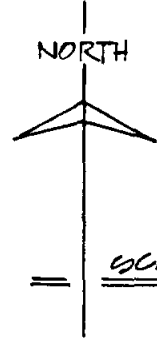
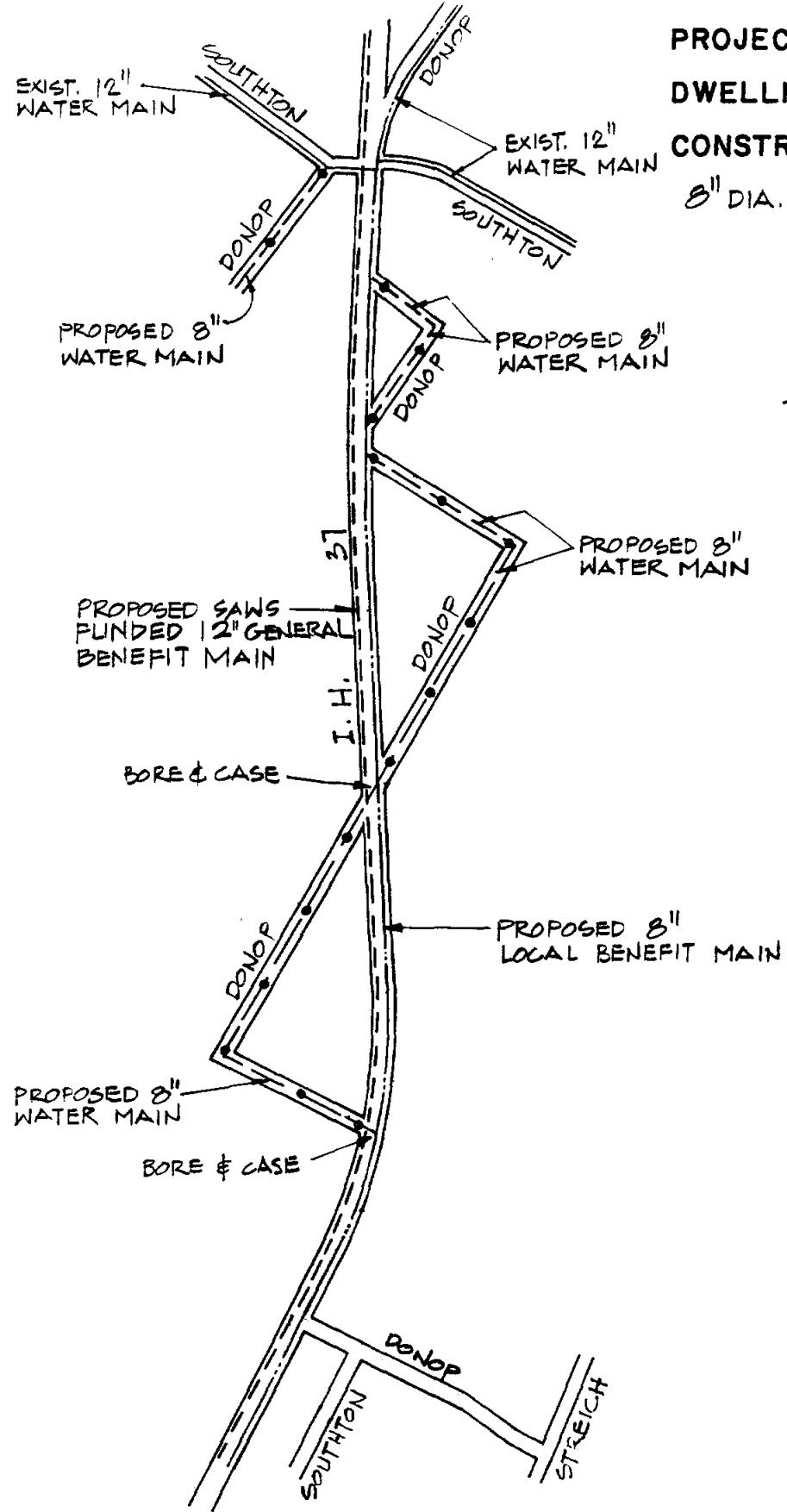
Project No. 46

PROJECT NAME: DONOP

DWELLING UNITS: 39

CONSTRUCTION COSTS: \$329,268

8" DIA. WATER LINE - 14,400 L.F.



SCALE: 1" = 2000'

DONOP RD.
SOUTHTON RD. TO SOUTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Donop Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	14,400 LF		17.25	248,400
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	11 EA		515.00	3,850
DI Fittings	1 TON		2,400.00	2,400
Bore and Case	560 LF		36.00	20,160
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	3 EA		425.00	1,275
Fire Hydrant	15 EA		1,450.00	21,750
Contingency 10%	1 LS		29,933.00	29,933
Total				\$329,268

Project No. 47

PROJECT NAME: SHADY FALLS RD.

DWELLING UNITS: 9

CONSTRUCTION COSTS: \$219,626

8" DIA. WATER LINE - 10,200 L.F.

PROPOSED SAWS
12" GENERAL BENEFIT
MAIN

RICHTER
RD.

CORPUS CHRISTI
RD.

EXIST. 3"
WATER MAIN
(CITY OF ELMENDORF)

RD.

SHADY
FALLS

RD.

PROPOSED 8"
WATER MAIN



SHADY FALLS ROAD
RICHTER ROAD TO SOUTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Shady Falls Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	10,200 LF	17.25	175,950
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	9 EA	515.00	4,635
DI Fittings	0.5 TON	2,400.00	1,200
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	1 EA	425.00	425
Fire Hydrant	11 EA	1,450.00	15,950
Contingency 10%	1 LS	19,966.00	19,966
Total			\$219,626

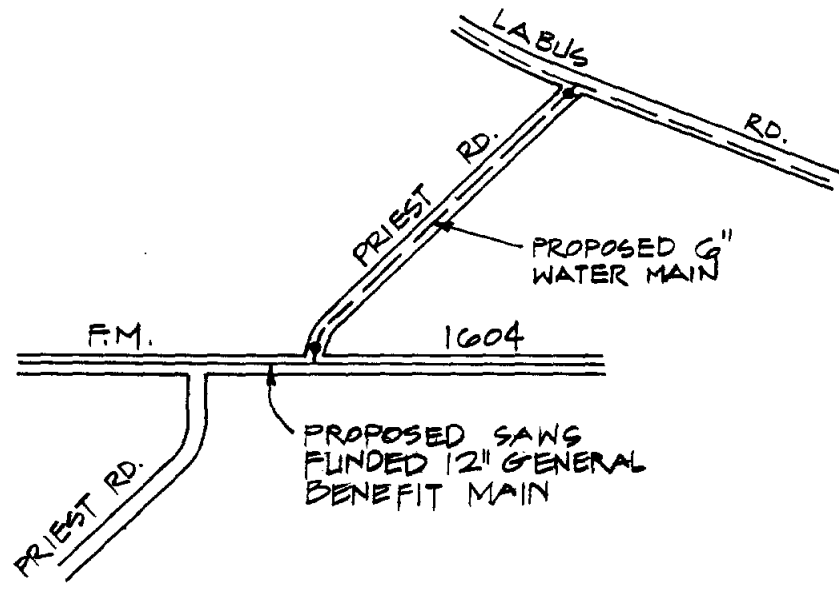
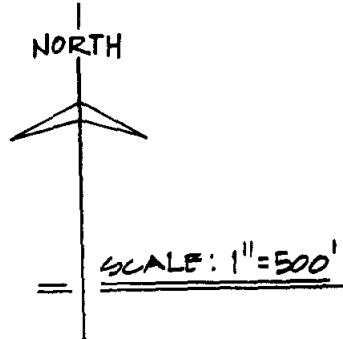
Project No. 48

PROJECT NAME: PRIEST RD.

DWELLING UNITS: 1

CONSTRUCTION COSTS: \$18,287

6" DIA. WATER LINE - 800 L.F.



PRIEST RD.
LABUS ROAD TO F.M. 1604

August 20, 1992

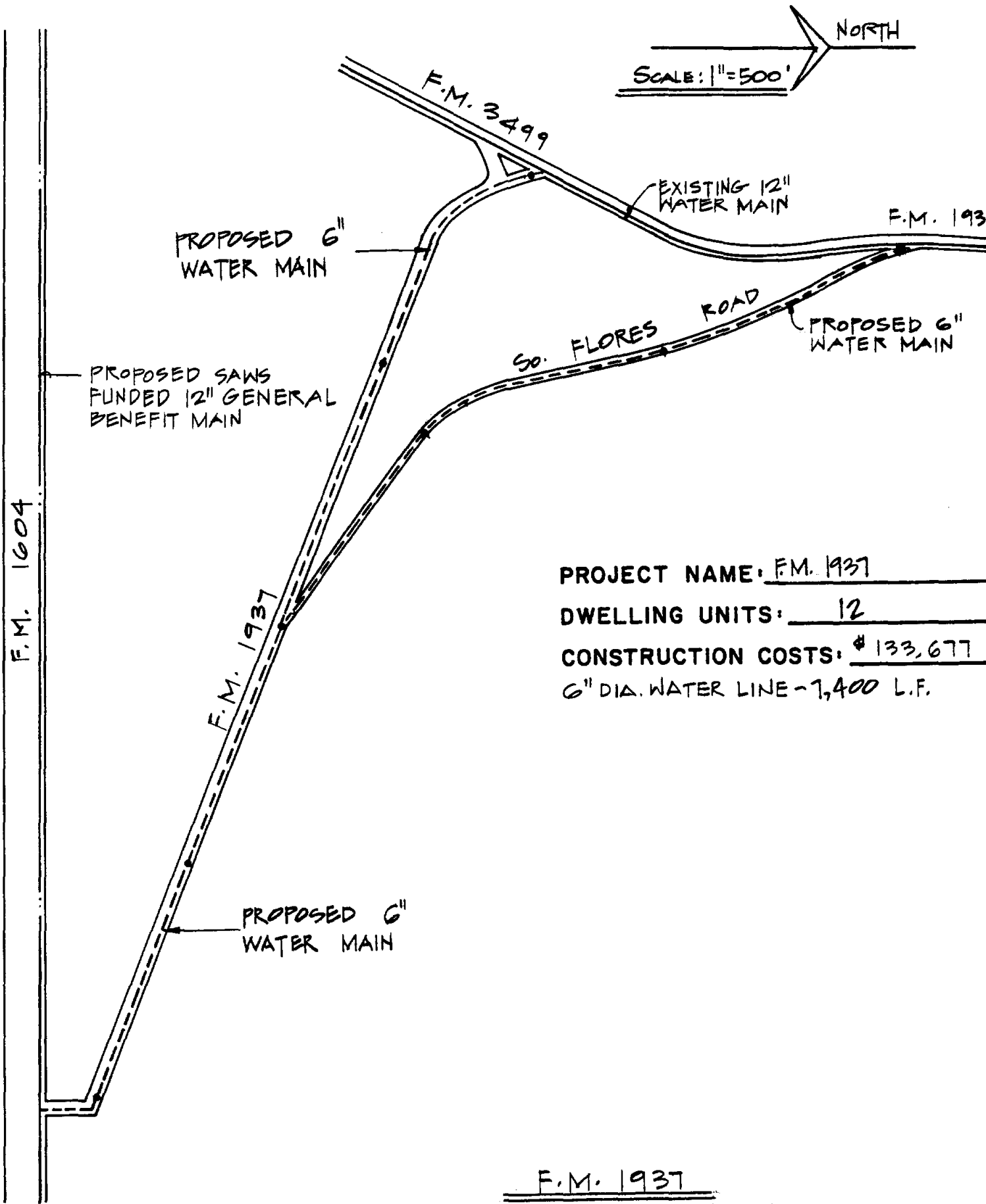
**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**


Project Area Priest Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	800 LF	\$	14.25	\$11,400
8" DI Water line	---- LF		17.25	----
6" Gate Valve	2 EA		350.00	700
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.5 TON		2,400.00	1,200
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	---- EA		750.00	----
Pressure Testing	1 EA		425.00	425
Fire Hydrant	2 EA		1,450.00	2,900
Contingency 10%	1 LS		1,662.00	1,662
Total				\$18,287

Project No. 49



 NORTH
 SCALE: 1" = 500'

PROJECT NAME: F.M. 1937
 DWELLING UNITS: 12
 CONSTRUCTION COSTS: \$ 133,677
 6" DIA. WATER LINE - 1,400 L.F.

F.M. 1937
 F.M. 3499 to F.M. 1604

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area FM 1937

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	7,400 LF	\$ 14.25	\$105,450
8" DI Water line	---- LF	17.25	----
6" Gate Valve	6 EA	350.00	2,100
8" Gate Valve	---- EA	515.00	----
DI Fittings	0.5 TON	2,400.00	1,200
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	8 EA	1,450.00	11,600
Contingency 10%	1 LS	12,152.00	12,152
Total			\$133,677

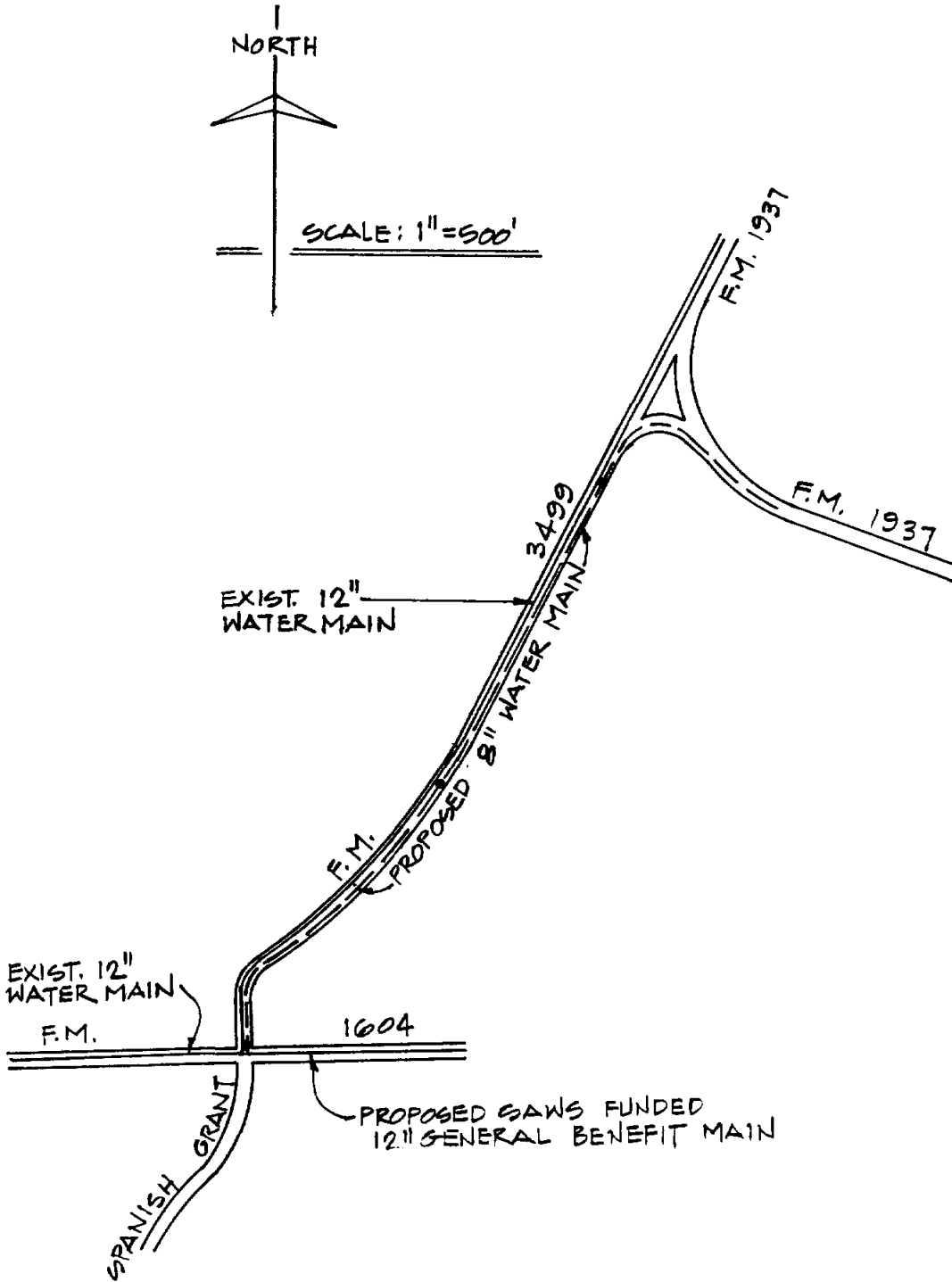
Project No. 50

PROJECT NAME: F.M. 3499

DWELLING UNITS: 5

CONSTRUCTION COSTS: \$ 55,176

8" DIA. WATER LINE - 2,500 L.F.



F.M. 3499
F.M. 1604 TO F.M. 1937

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area FM 3499

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	2,500 LF	17.25	43,125
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	2 EA	515.00	1,030
DI Fittings	0.2 TON	2,400.00	480
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	3 EA	1,450.00	4,350
Contingency 10%	1 LS	5,016.00	5,016
Total			\$55,176

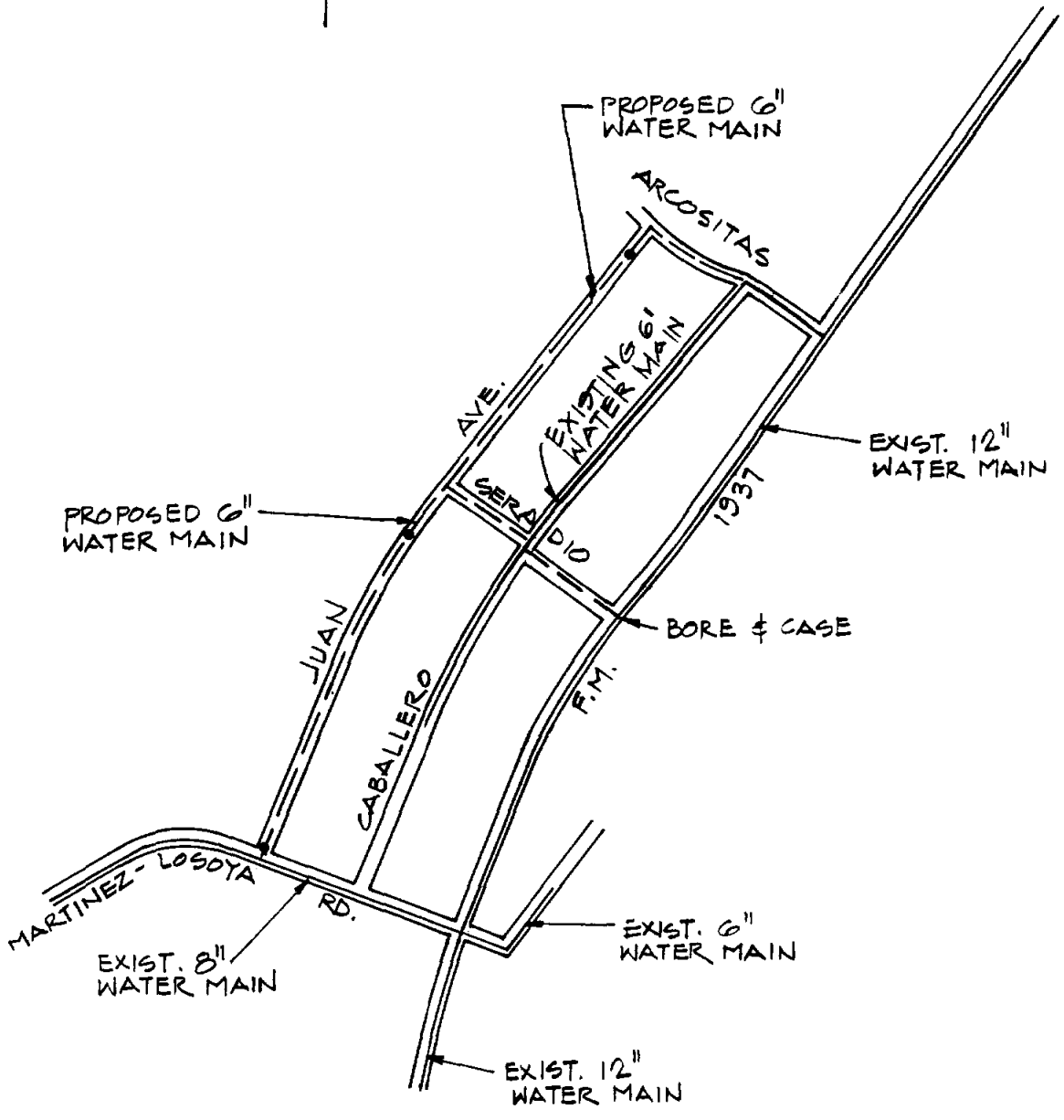
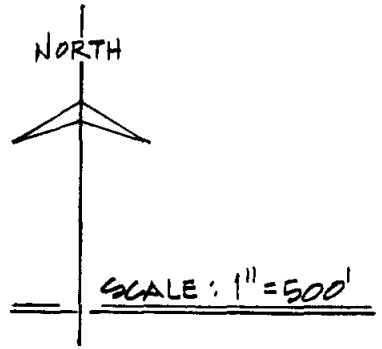
Project No. 51

PROJECT NAME: LOSoya

DWELLING UNITS: 10

CONSTRUCTION COSTS: \$ 63,448

6" DIA. WATER LINE - 3,100 L.F.



LOSoya

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area Losoya

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	3,100 LF	\$ 14.25	\$44,175
8" DI Water line	---- LF	17.25	----
6" Gate Valve	7 EA	350.00	2,450
8" Gate Valve	---- EA	515.00	----
DI Fittings	0.5 TON	2,400.00	1,200
Bore and Case	80 LF	36.00	2,880
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	4 EA	1,450.00	5,800
Contingency 10%	1 LS	5,768.00	5,768
Total			\$63,448

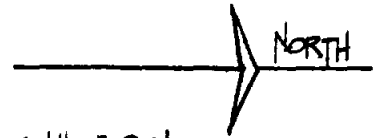
Project No. 52

PROJECT NAME: FARM ROAD

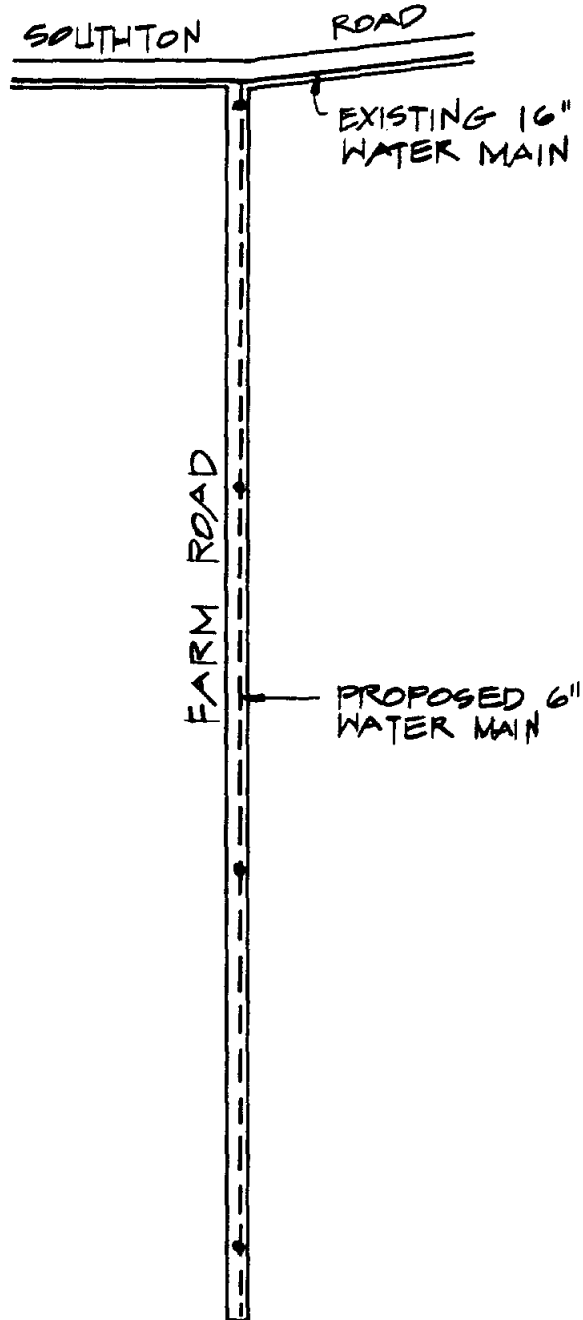
DWELLING UNITS: 7

CONSTRUCTION COSTS: \$ 62,651

6" DIA. WATER LINE - 3,400 L.F.



SCALE: 1" = 500'



FARM ROAD
SOUTHTON ROAD TO EAST

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Farm Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	3,400 LF	\$ 14.25	\$48,450
8" DI Water line	---- LF	17.25	----
6" Gate Valve	3 EA	350.00	1,050
8" Gate Valve	---- EA	515.00	----
DI Fittings	0.2 TON	2,400.00	480
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	4 EA	1,450.00	5,800
Contingency 10%	1 LS	5,696.00	5,696
Total			\$62,651

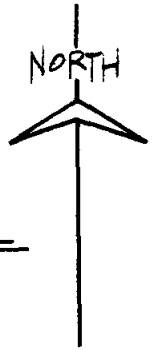
Project No. 53

PROJECT NAME: LAREDO ROAD

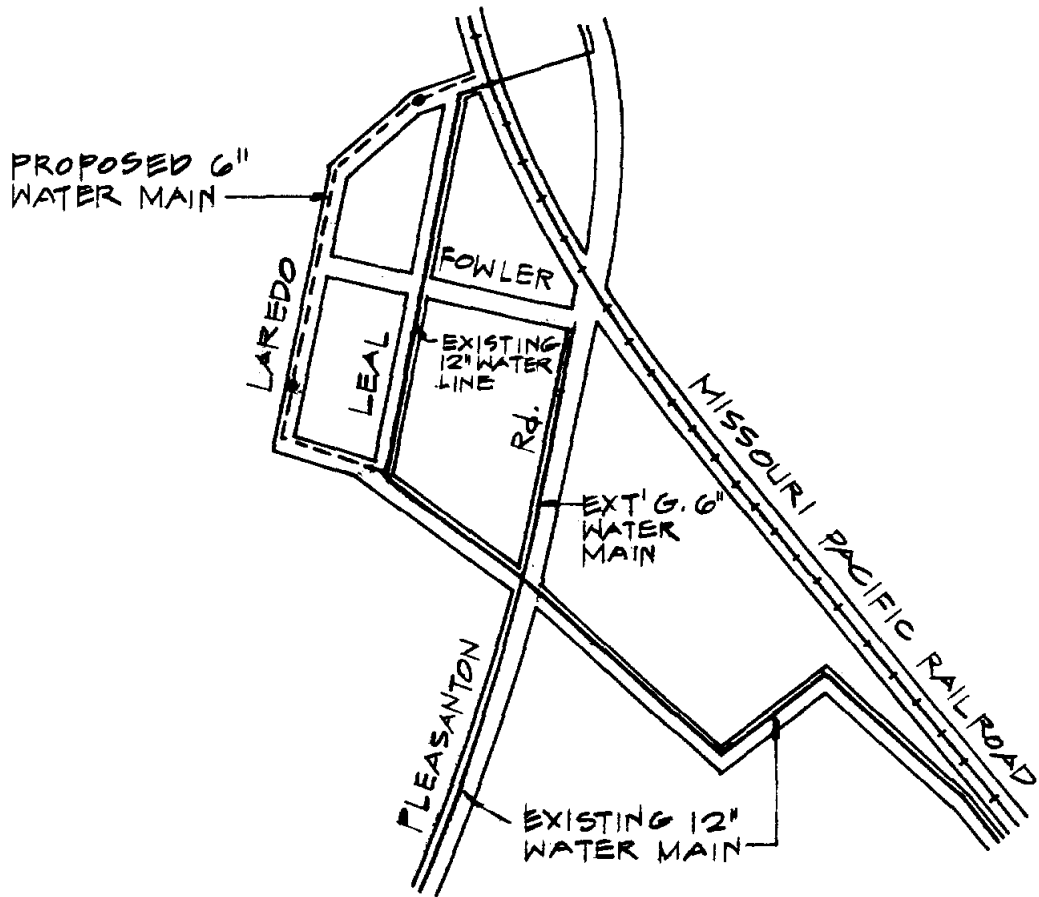
DWELLING UNITS: 6

CONSTRUCTION COSTS: \$ 26,533

6" DIA. WATER LINE - 1,135 L.F.



SCALE: 1" = 500'



LAREDO ROAD
RAILROAD TO LEAL ST.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Laredo Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	1,135 LF	\$	14.25	\$16,173
8" DI Water line	---- LF		17.25	----
6" Gate Valve	8 EA		350.00	2,800
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.5 TON		2,400.00	1,200
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	2 EA		1,450.00	2,900
Contingency 10%	1 LS		2,285.00	2,285
Total				\$26,533

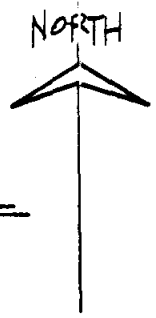
Project No. 54

PROJECT NAME: FOWLER ROAD

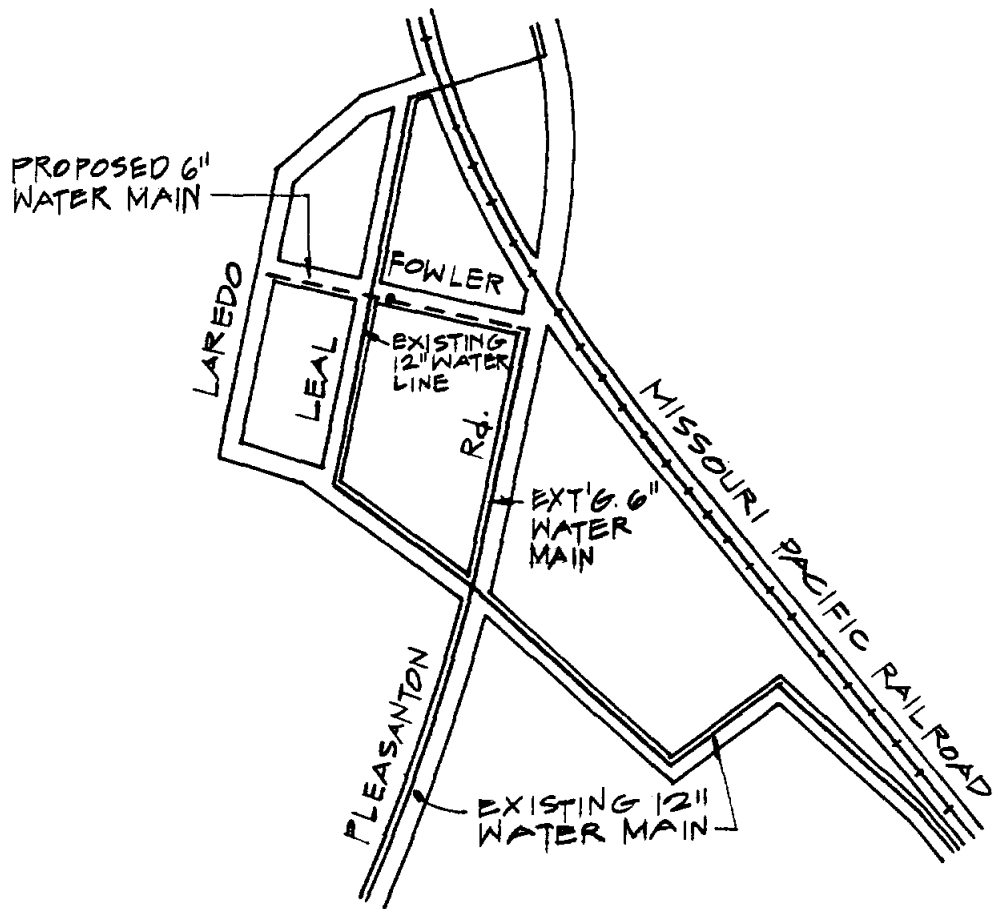
DWELLING UNITS: 7

CONSTRUCTION COSTS: \$14,718

6" DIA. WATER LINE - 700 L.F.



SCALE: 1"=500'



FOWLER ROAD
LAREDO Rd. TO PLEASANTON Rd.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

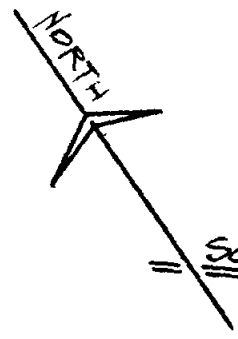
CONSTRUCTION COST ESTIMATE

Project Area Fowler Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	700 LF	\$	14.25	\$ 9,975
8" DI Water line	---- LF		17.25	----
6" Gate Valve	3 EA		350.00	1,050
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	---- EA		750.00	----
Pressure Testing	1 EA		425.00	425
Fire Hydrant	1 EA		1,450.00	1,450
Contingency 10%	1 LS		1,338.00	1,338
Total				\$14,718

Project No. 55



SCALE: 1" = 100'

PROJECT NAME: TEJEDA ROAD
DWELLING UNITS: 7
CONSTRUCTION COSTS: \$ 243,479
8" DIA. WATER LINE - 11,000 L.F.

PROPOSED 8" WATER MAIN ——— BORE & CASE

MISSOURI PACIFIC

TEJEDA ROAD RAILROAD

F.M. 1604
EXISTING 12" WATER MAIN

TEJEDA ROAD
F.M. 1604 TO NORTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Tejeda Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit</u>	<u>Price</u>	<u>Cost</u>
6" DI Water line	---- LF		\$ 14.25	\$ ----
8" DI Water line	11,000 LF		17.25	189,750
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	5 EA		515.00	1,750
DI Fittings	0.5 TON		2,400.00	1,200
Bore and Case	320 LF		36.00	11,520
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	11 EA		1,450.00	15,950
Contingency 10%	1 LS		22,134.00	22,134
Total				\$243,479

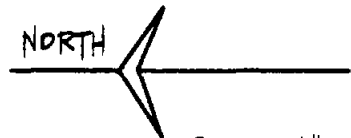
Project No. 56

PROJECT NAME: F.M. 1604 WEST

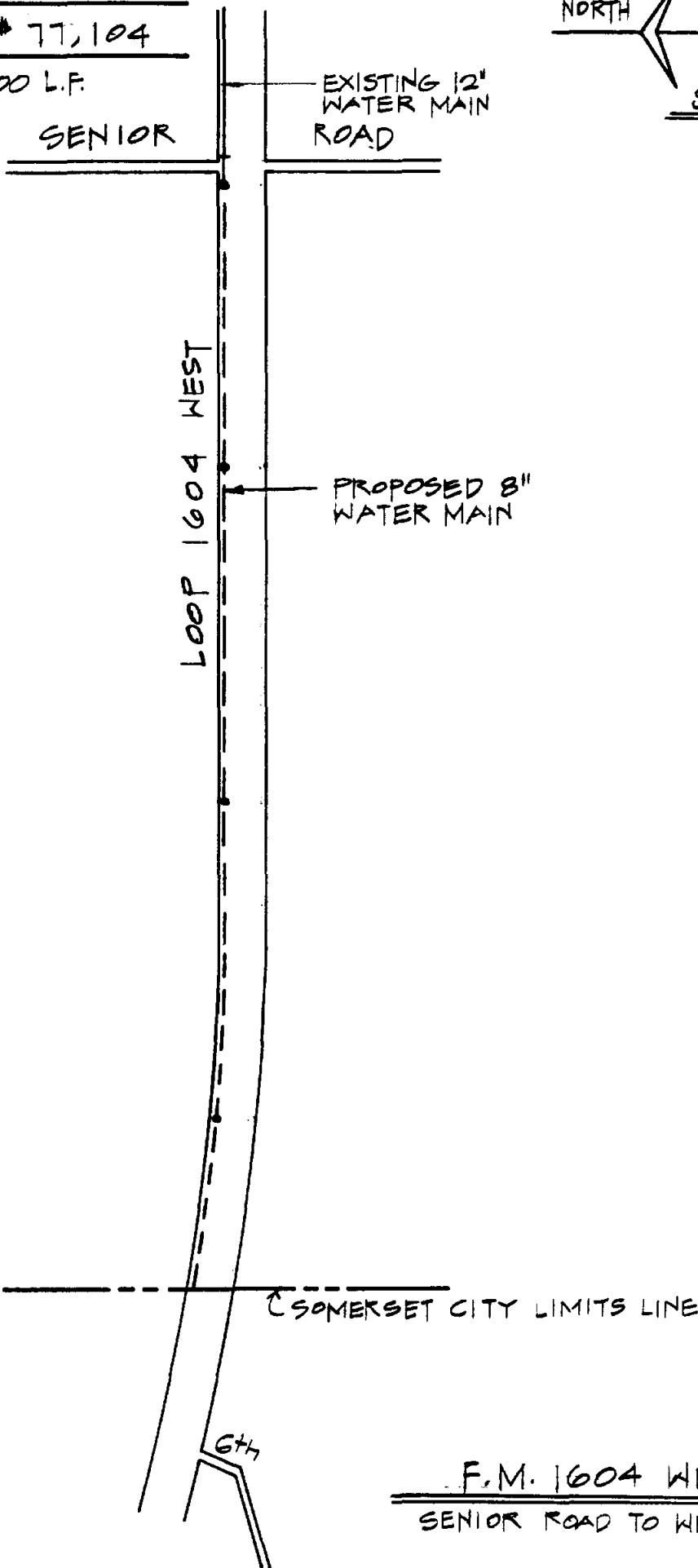
DWELLING UNITS: 8

CONSTRUCTION COSTS: * 77,104

8" DIA. WATER LINE - 3,500 L.F.



SCALE: 1"=500'



F.M. 1604 WEST
SENIOR ROAD TO WEST

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area FM 1604 W

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	----- LF	\$	14.25	-----
8" DI Water line	3,500 LF		17.25	\$60,375
6" Gate Valve	----- EA		350.00	-----
8" Gate Valve	3 EA		515.00	1,545
DI Fittings	0.5 TON		2,400.00	1,200
Bore and Case	----- LF		36.00	-----
Open Cut Crossing	----- LF		18.00	-----
Trench Protection	----- LF		1.50	-----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	4 EA		1,450.00	5,800
Contingency 10%	1 LS		7,009.00	7,009
			<u>Total</u>	<u>\$77,104</u>

Project No. 58

PROJECT NAME: NOYES ROAD

DWELLING UNITS: 8

CONSTRUCTION COSTS: \$201,091

8" DIA. WATER LINE - 9,500 L.F.

FEST RD. HWY. 16

PROPOSED 9AWS
FUNDED 16"
GENERAL BENEFIT
MAIN

PROPOSED 8"
WATER MAIN

NOYES ROAD

PROPOSED 8"
WATER MAIN

NORTH

SCALE: 1"=100'

QUESENBERY RD.

NOYES ROAD
S.H. 16 TO WEST

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Noyes Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	9,500 LF	17.25	163,875
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	4 EA	515.00	2,060
DI Fittings	0.5 TON	2,400.00	1,200
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	1 EA	425.00	425
Fire Hydrant	10 EA	1,450.00	14,500
Contingency 10%	1 LS	18,281.00	18,281
Total			\$201,091

Project No. 59

PROJECT NAME: ERNST & PAYNE Rd.

DWELLING UNITS: 10

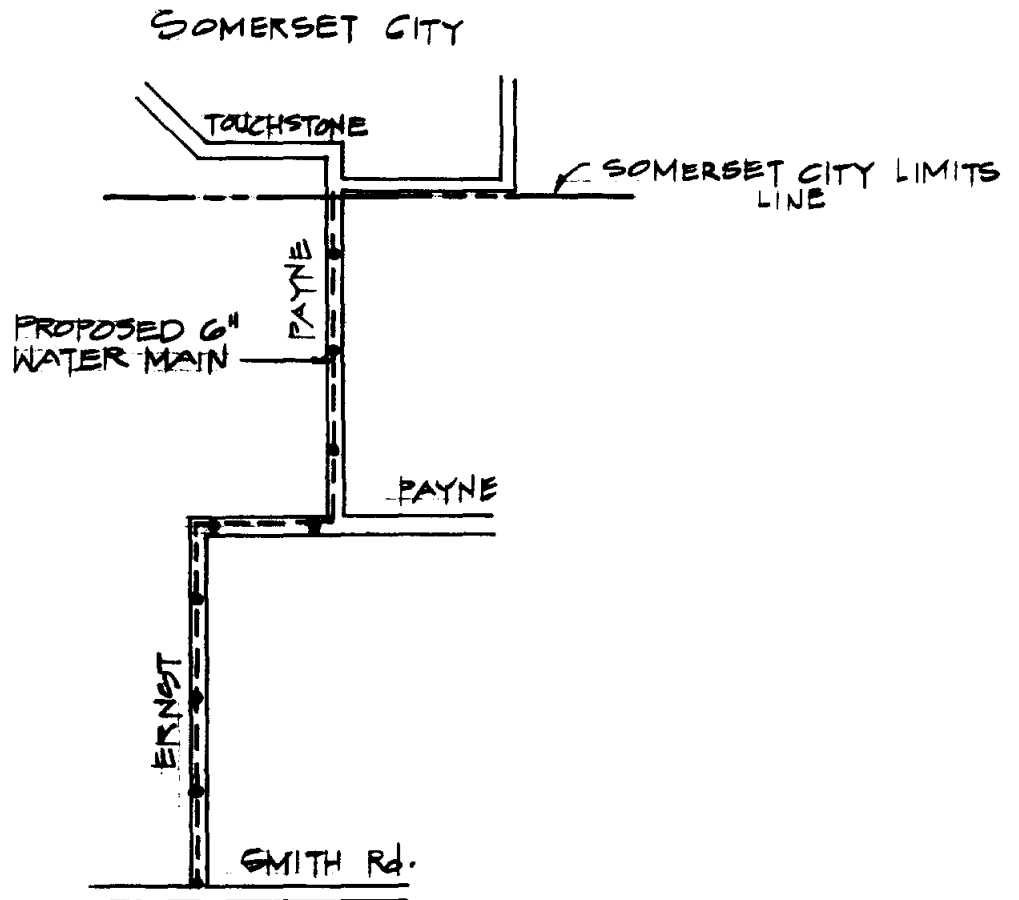
CONSTRUCTION COSTS: \$ 122,182

6" DIA. WATER LINE - 8,600 L.F.

NORTH



SCALE: 1" = 2000'



ERNST & PAYNE Rd.
SMITH RD. to NORTH

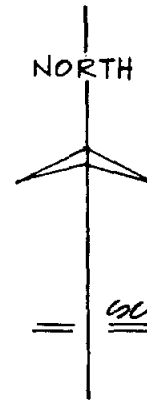
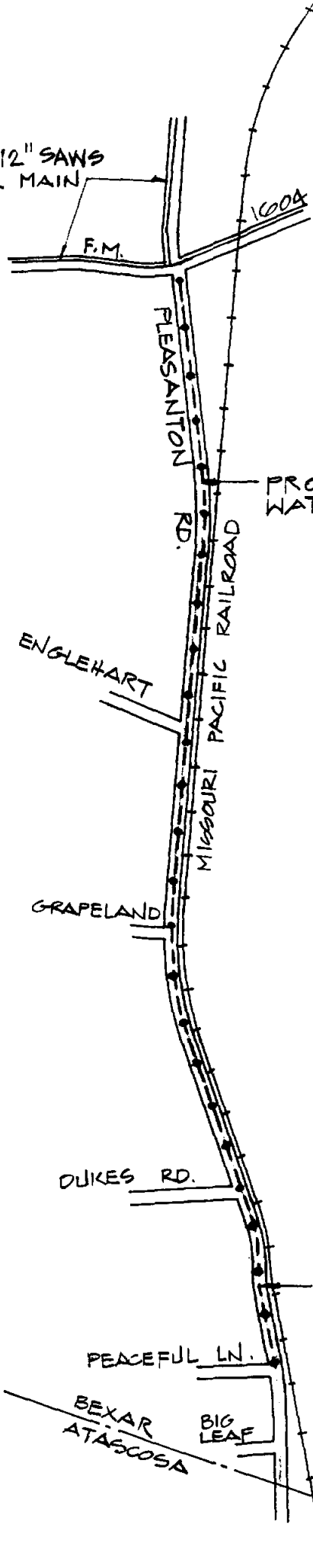
PROJECT NAME: PLEASANTON ROAD

DWELLING UNITS: 112

CONSTRUCTION COSTS: \$508,068

8" DIA. WATER LINE - 23,600 L.F.

EXIST. 12" SANS
WATER MAIN



NOTE:
WITHIN PRIVATE
WATER PURVEYOR
SERVICE AREA

PLEASANTON ROAD
F.M. 1604 TO PEACEFUL LANE

BEXAR
ATASCOSA

BIG LEAF

COUNTY
COUNTY

62

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Pleasanton Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	23,600 LF		17.25	407,100
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	10 EA		515.00	5,150
DI Fittings	1 TON		2,400.00	2,400
Bore and Case	280 LF		36.00	10,080
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	2 EA		425.00	850
Fire Hydrant	24 EA		1,450.00	34,800
Contingency 10%	1 LS		46,188.00	46,188
			Total	\$508,068

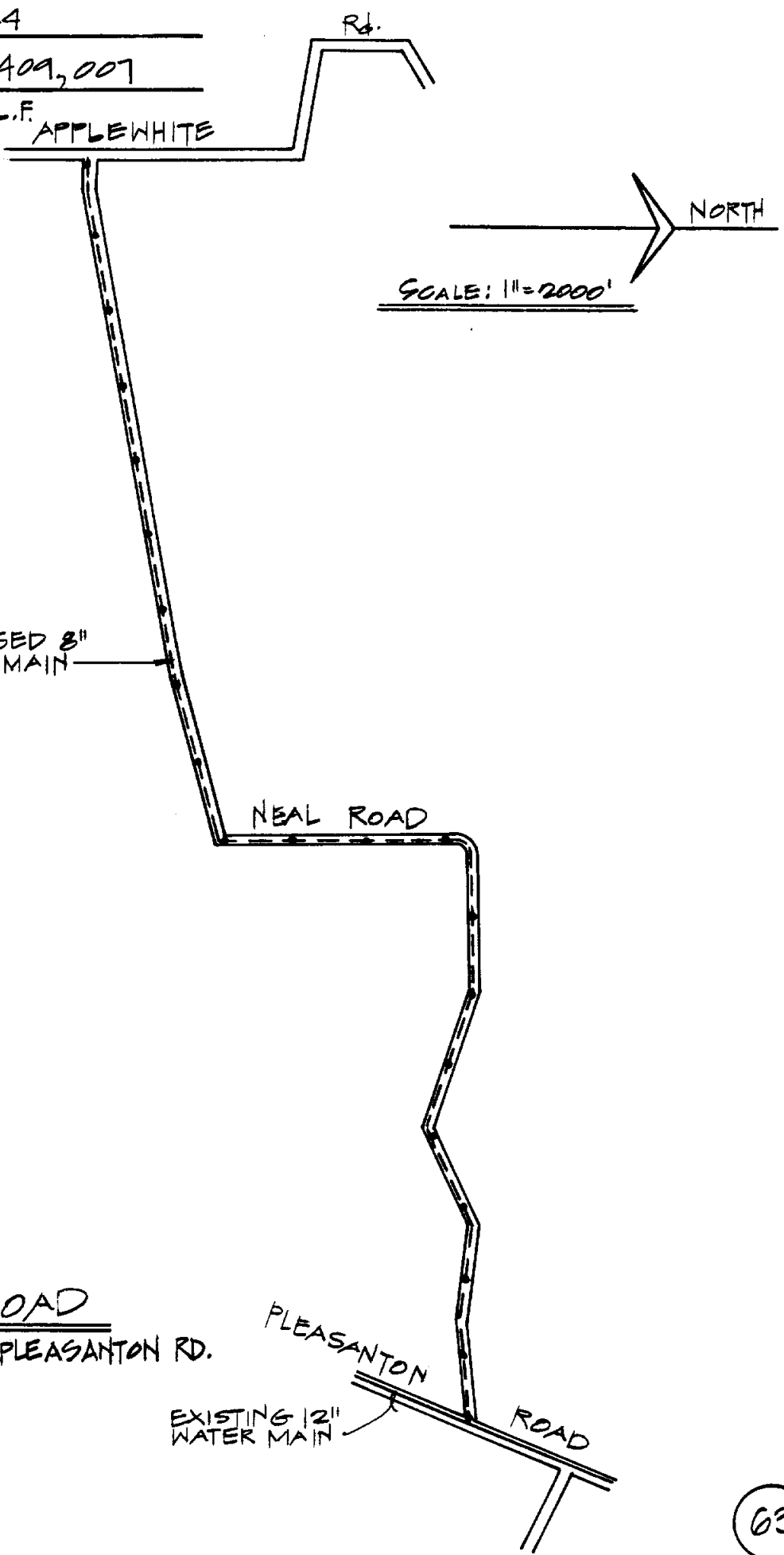
Project No. 62

PROJECT NAME: NEAL ROAD

DWELLING UNITS: 24

CONSTRUCTION COSTS: \$409,007

8" DIA. WATER LINE - 19,300 L.F.



NEAL ROAD
APPLEWHITE RD. TO PLEASANTON RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

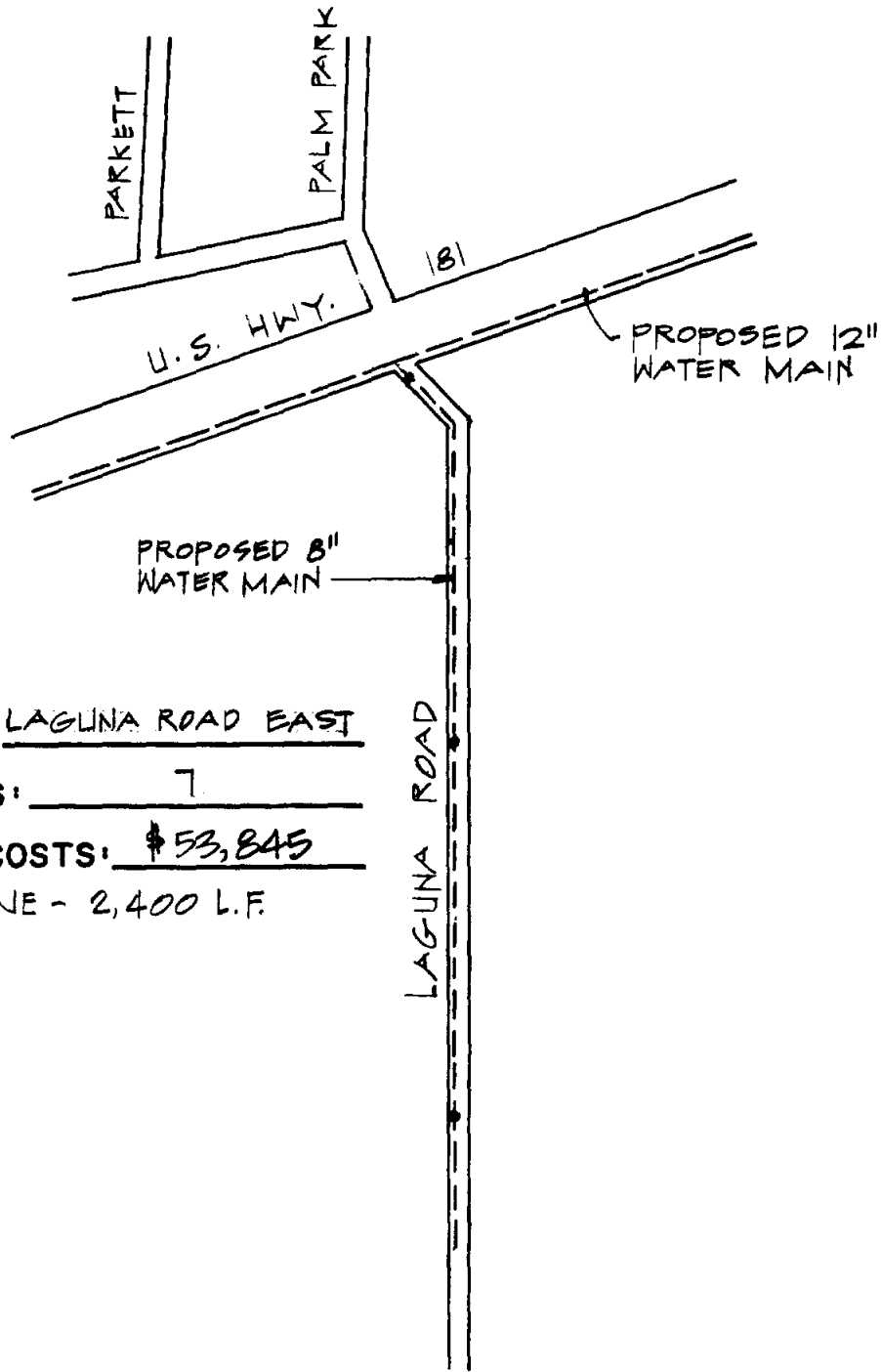
Project Area Neal Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	----	LF	\$ 14.25	----
8" D1 Water line	19,300	LF	17.25	332,925
6" Gate Valve	----	EA	350.00	----
8" Gate Valve	10	EA	515.00	5,150
D1 Fittings	1	TON	2,400.00	2,400
Bore and Case	----	LF	36.00	----
Open Cut Crossing	----	LF	18.00	----
Trench Protection	----	LF	1.50	----
2" Temporary Blow-off	2	EA	750.00	1,500
Pressure Testing	2	EA	425.00	850
Fire Hydrant	20	EA	1,450.00	29,000
Contingency 10%	1	LS	37,182.00	37,182
Total				\$409,007

Project No. 63

SCALE: 1" = 500'



PROJECT NAME: LAGUNA ROAD EAST

- DWELLING UNITS: 7

CONSTRUCTION COSTS: \$53,845

- 8" DIA. WATER LINE - 2,400 L.F.

LAGUNA ROAD EAST

U.S. 181 TO NORTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Laguna Road East

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	2,400 LF		17.25	41,400
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	3 EA		515.00	1,545
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	3 EA		1,450.00	4,350
Contingency 10%	1 LS		4,895.00	4,895
			Total	\$53,845

Project No. 64

PROJECT NAME: STREICH ROAD

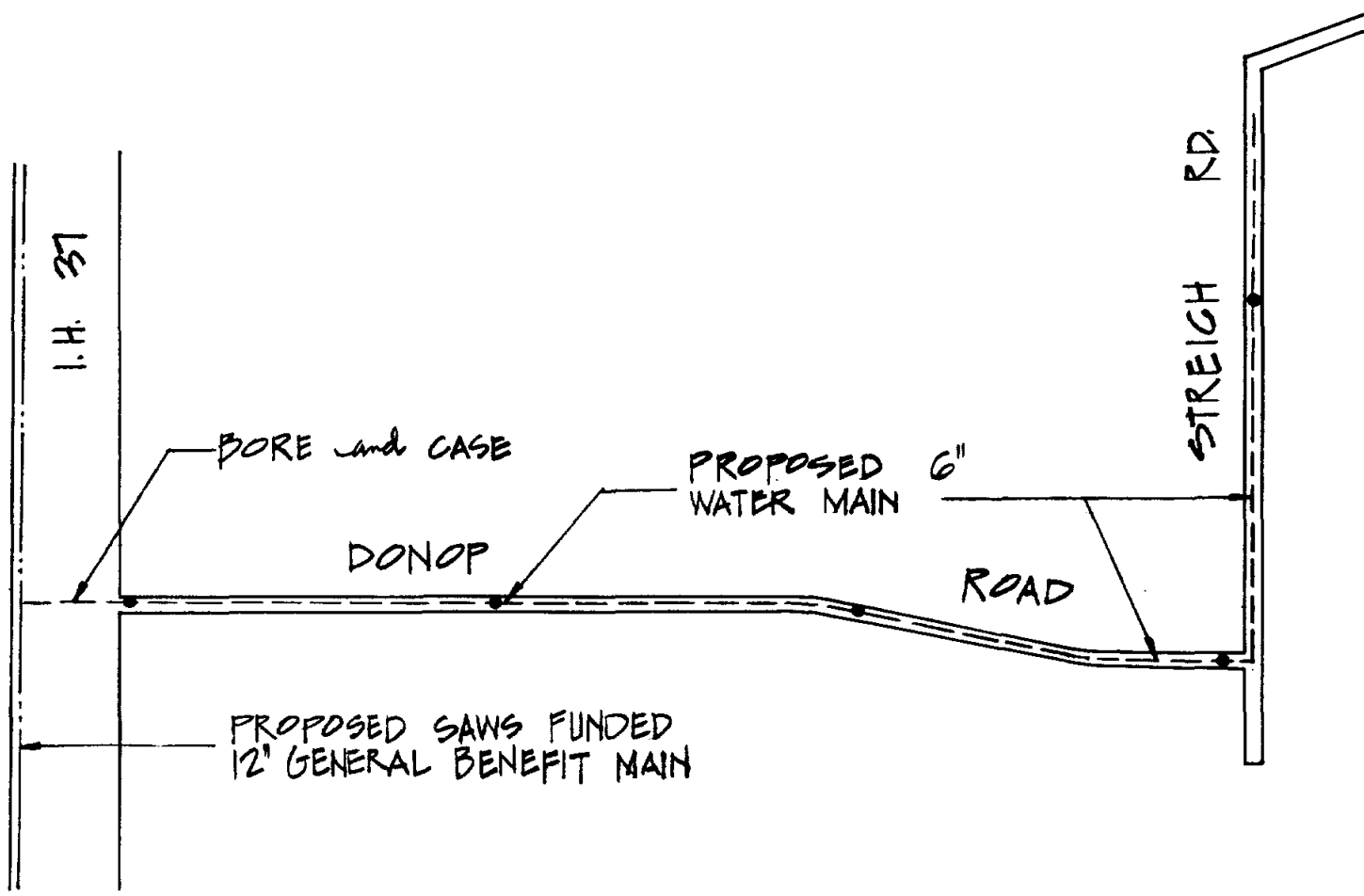
DWELLING UNITS: 17

CONSTRUCTION COSTS: \$ 90,063

6" DIA. WATER LINE - 4,900 L.F.



SCALE: 1" = 500'



STREICH ROAD
@ DONOP ROAD

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Streich Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	4,900 LF	\$	14.25	\$69,825
8" DI Water line	---- LF		17.25	----
6" Gate Valve	2 EA		350.00	700
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	300 LF		36.00	10,800
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	3 EA		1,450.00	4,350
Contingency 10%	1 LS		8,733.00	8,733
Total				\$96,063

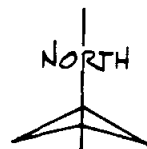
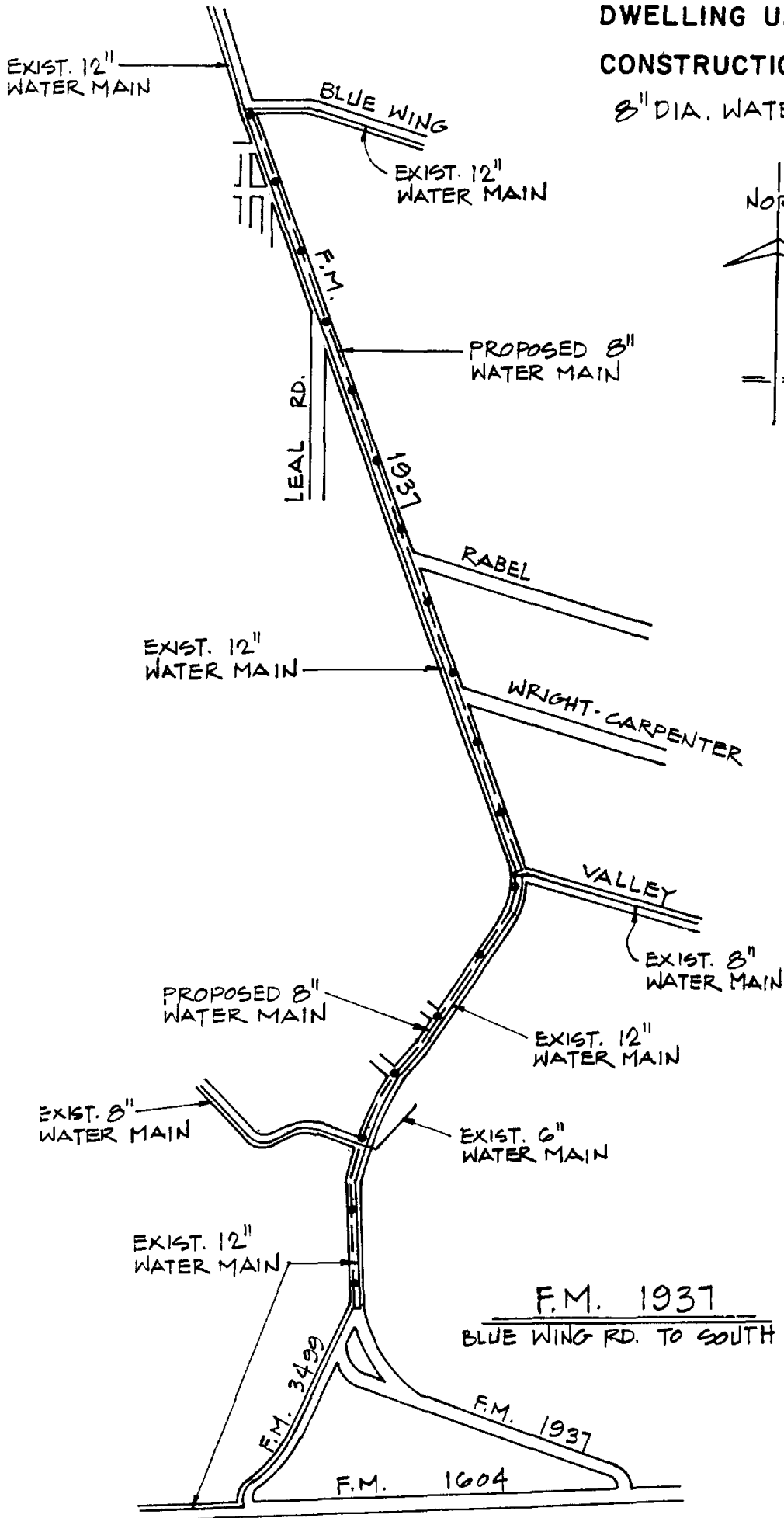
Project No. 65

PROJECT NAME: F.M. 1937

DWELLING UNITS: 22

CONSTRUCTION COSTS: \$ 373,213

8" DIA. WATER LINE - 17,500 L.F.



SCALE: 1" = 2000'

F.M. 1937
BLUE WING RD. TO SOUTH



August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area FM 1937
Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	17,500 LF	17.25	301,875
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	10 EA	515.00	5,150
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	60 LF	36.00	2,160
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	1 EA	750.00	750
Pressure Testing	2 EA	425.00	850
Fire Hydrant	18 EA	1,450.00	26,100
Contingency 10%	1 LS	33,928.00	33,928
Total			\$373,213

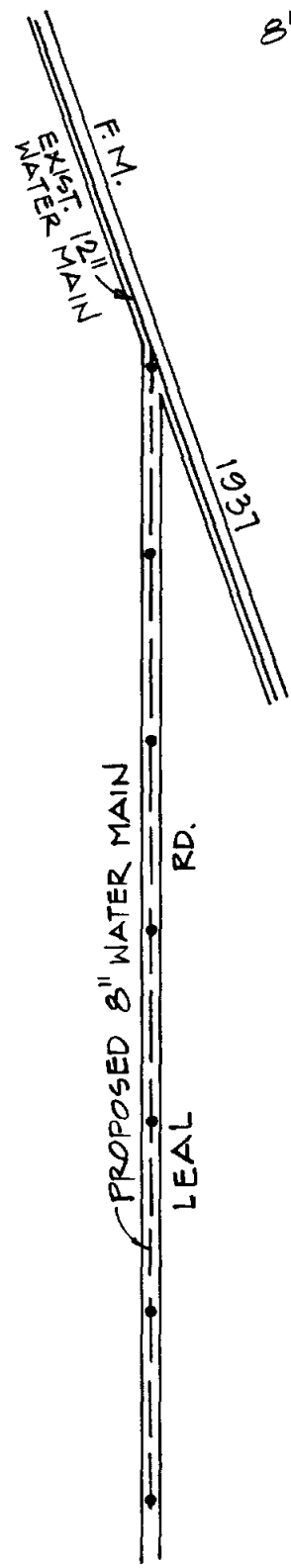
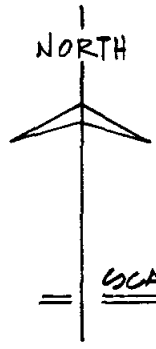
Project No. 66

PROJECT NAME: LEAL RD.

DWELLING UNITS: 18

CONSTRUCTION COSTS: \$128,535

8" DIA. WATER LINE - 6,000 L.F.



LEAL RD.
F.M. 1937 TO SOUTH

August 20, 1992

SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE

Project Area Leal Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	6,000 LF		17.25	103,500
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	3 EA		515.00	1,545
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	7 EA		1,450.00	10,150
Contingency 10%	1 LS		11,685.00	11,685
Total				\$128,535

Project No. 67

PROJECT NAME: GOETHE RD.

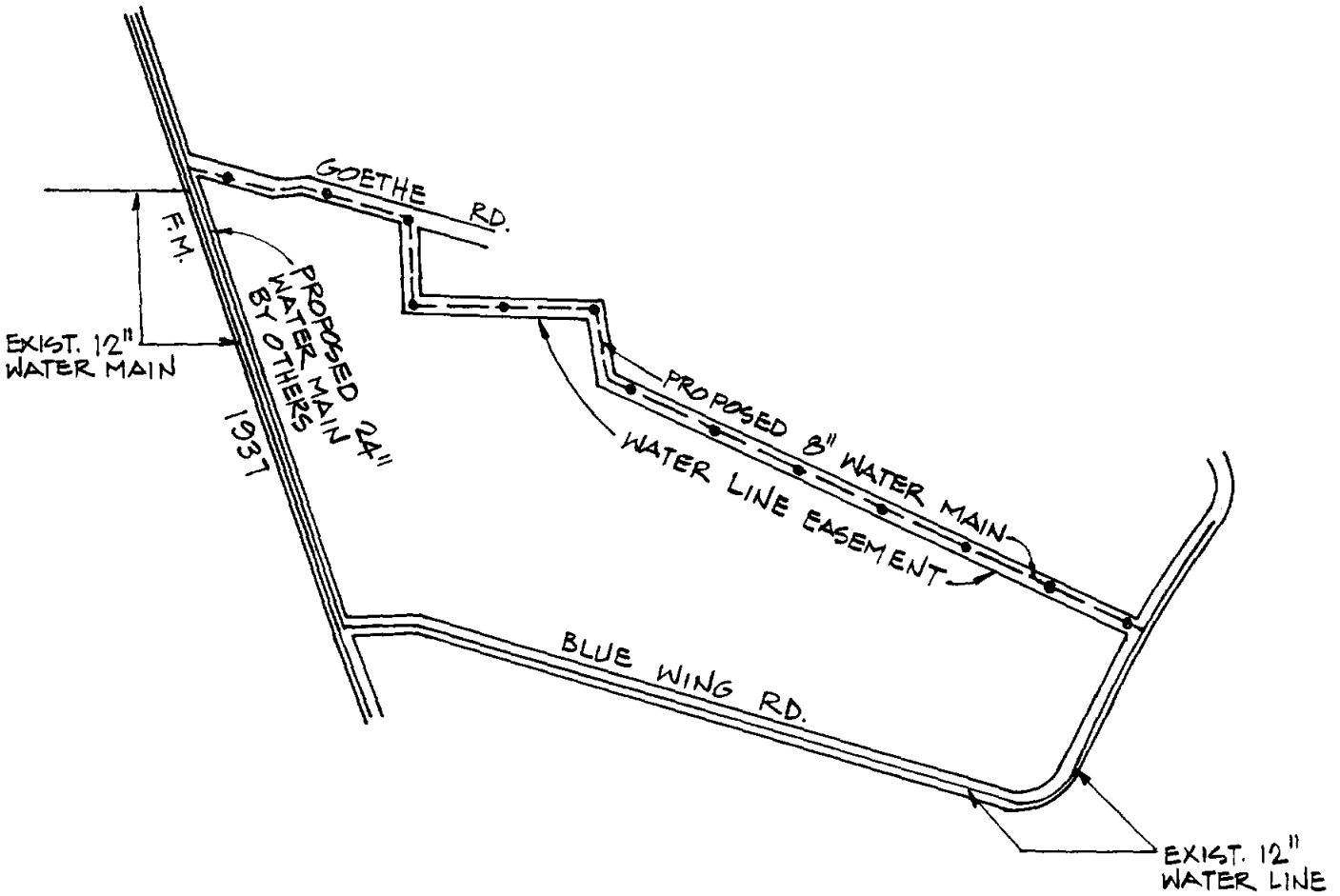
DWELLING UNITS: 6

CONSTRUCTION COSTS: \$278,195

8" DIA. WATER LINE - 13,000 L.F.



SCALE: 1" = 2000'



GOETHE RD.
F.M. 1937 to BLUE WING RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Goethe Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	13,000 LF	17.25	224,250
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	7 EA	515.00	3,605
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	2 EA	425.00	850
Fire Hydrant	14 EA	1,450.00	20,300
Contingency 10%	1 LS	25,290.00	25,290
Total			\$278,195

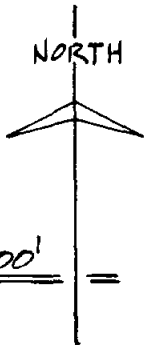
Project No. 68

PROJECT NAME: APPLEWHITE RD.

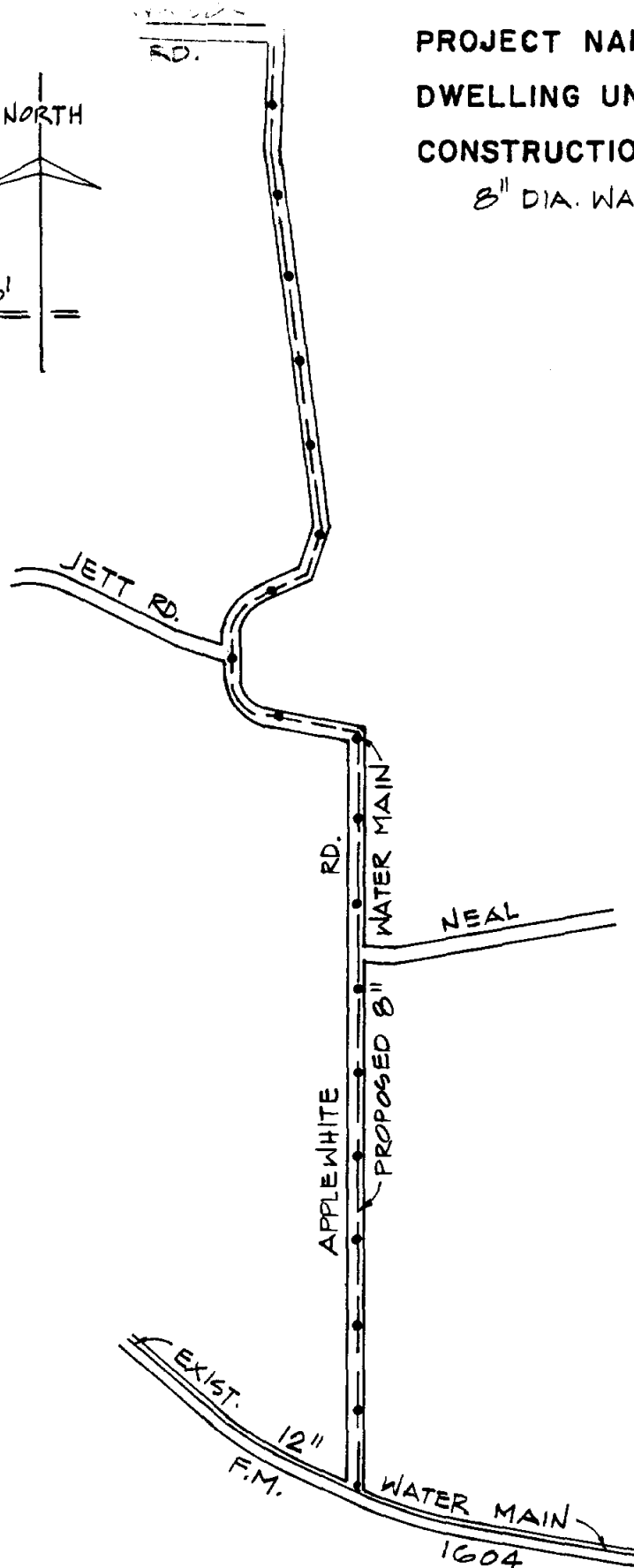
DWELLING UNITS: 10

CONSTRUCTION COSTS: \$ 373,631

8" DIA. WATER LINE - 18,000 L.F.



SCALE: 1" = 2000'



APPLEWHITE RD.

F.M. 1604 TO WATSON RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Applewhite Road
Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$ 14.25	\$ ----
8" DI Water line	18,000 LF	17.25	310,500
6" Gate Valve	---- EA	350.00	----
8" Gate Valve	8 EA	515.00	4,120
DI Fittings	1 TON	2,400.00	2,400
Bore and Case	---- LF	36.00	----
Open Cut Crossing	---- LF	18.00	----
Trench Protection	---- LF	1.50	----
2" Temporary Blow-off	2 EA	750.00	1,500
Pressure Testing	2 EA	425.00	850
Fire Hydrant	14 EA	1,450.00	20,300
Contingency 10%	1 LS	33,967.00	33,967
Total			\$373,637

Project No. 69

PROJECT NAME: TRUMBO RD.

DWELLING UNITS: 20

CONSTRUCTION COSTS: \$165,643

8" DIA. WATER LINE - 7,800 L.F.

EXISTING 9AUGS
12" WATER LINE

F.M.

TRUMBO RD.

1604

TRUMBO RD.

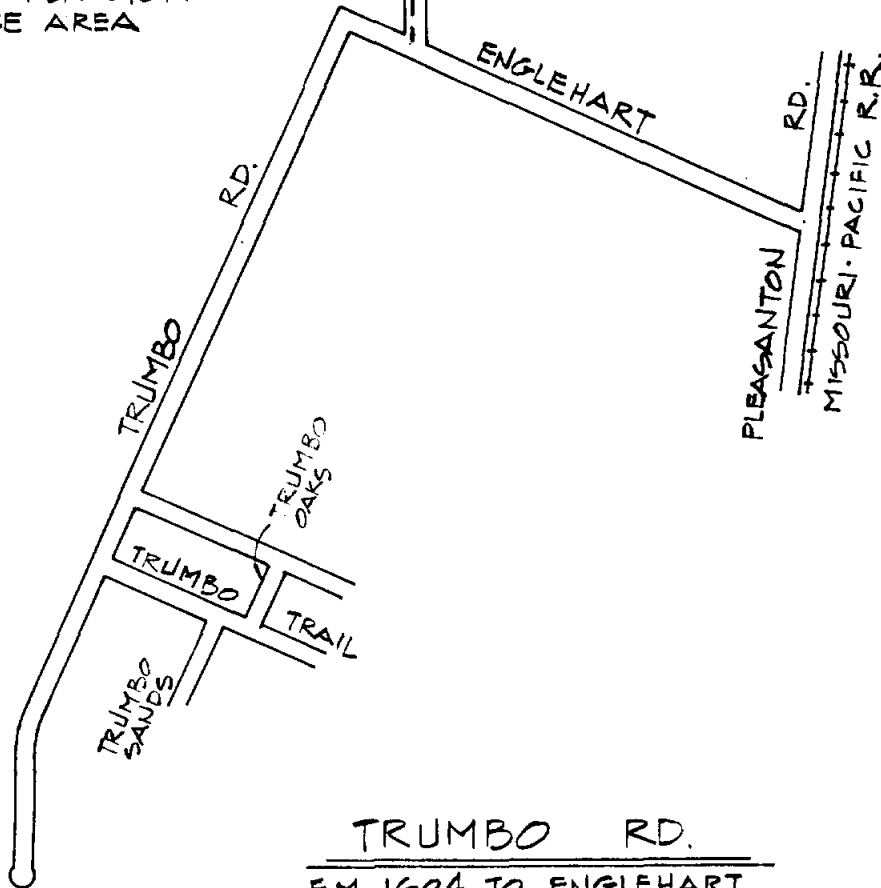
PROPOSED 8" WATER MAIN

NORTH

SCALE: 1" = 2000'

NOTE:

WITHIN PRIVATE
WATER PURVEYOR
SERVICE AREA



TRUMBO RD.
F.M. 1604 TO ENGLEHART

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Trumbo Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	---- LF	\$	14.25	\$ ----
8" D1 Water line	7,800 LF		17.25	134,550
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	4 EA		515.00	2,060
D1 Fittings	0.5 TON		2,400.00	1,200
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	8 EA		1,450.00	11,600
Contingency 10%	1 LS		15,058.00	15,058

Total \$165,643

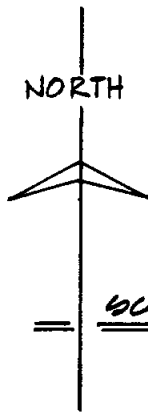
Project No. 70

PROJECT NAME: ENGLEHART RD.

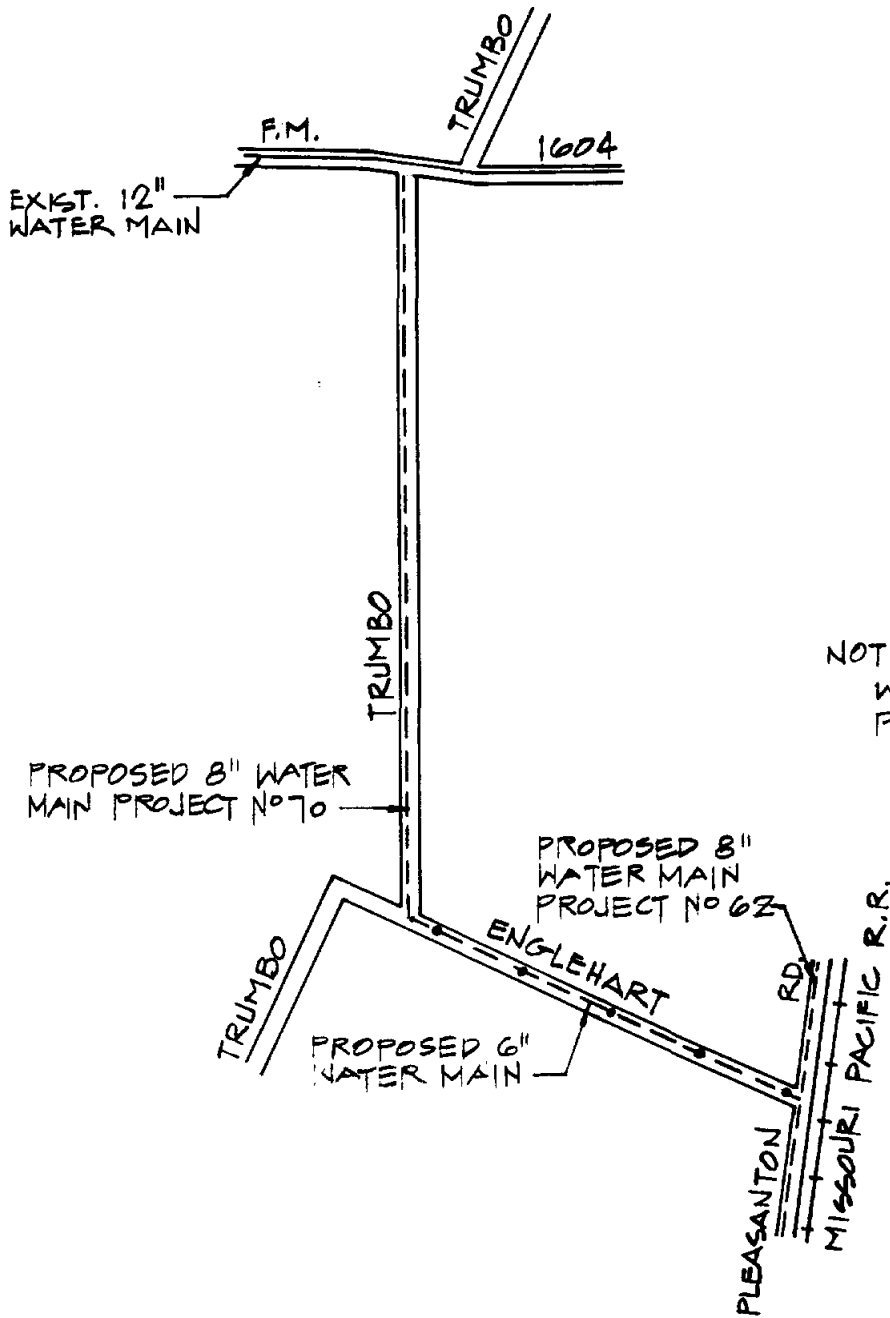
DWELLING UNITS: 16

CONSTRUCTION COSTS: \$ 83,468

6" DIA. WATER LINE - 4,500 L.F.



SCALE: 1" = 2000'



NOTE:
WITHIN PRIVATE WATER
PURVEYOR SERVICE AREA

ENGLEHART RD.
PLEASANTON RD. TO TRUMBO RD.

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Englehart Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>	<u>Unit</u>	<u>Price</u>	<u>Cost</u>
6" DI Water line	4,500 LF	\$	14.25	\$64,125
8" DI Water line	---- LF		17.25	----
6" Gate Valve	4 EA		350.00	1,400
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	6 EA		1,450.00	8,700
Contingency 10%	1 LS		7,588.00	7,588
			<u>Total</u>	<u>\$83,468</u>

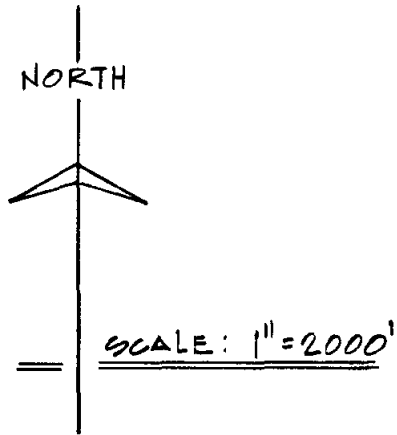
Project No. 71

PROJECT NAME: TRUMBO TRAIL AREA

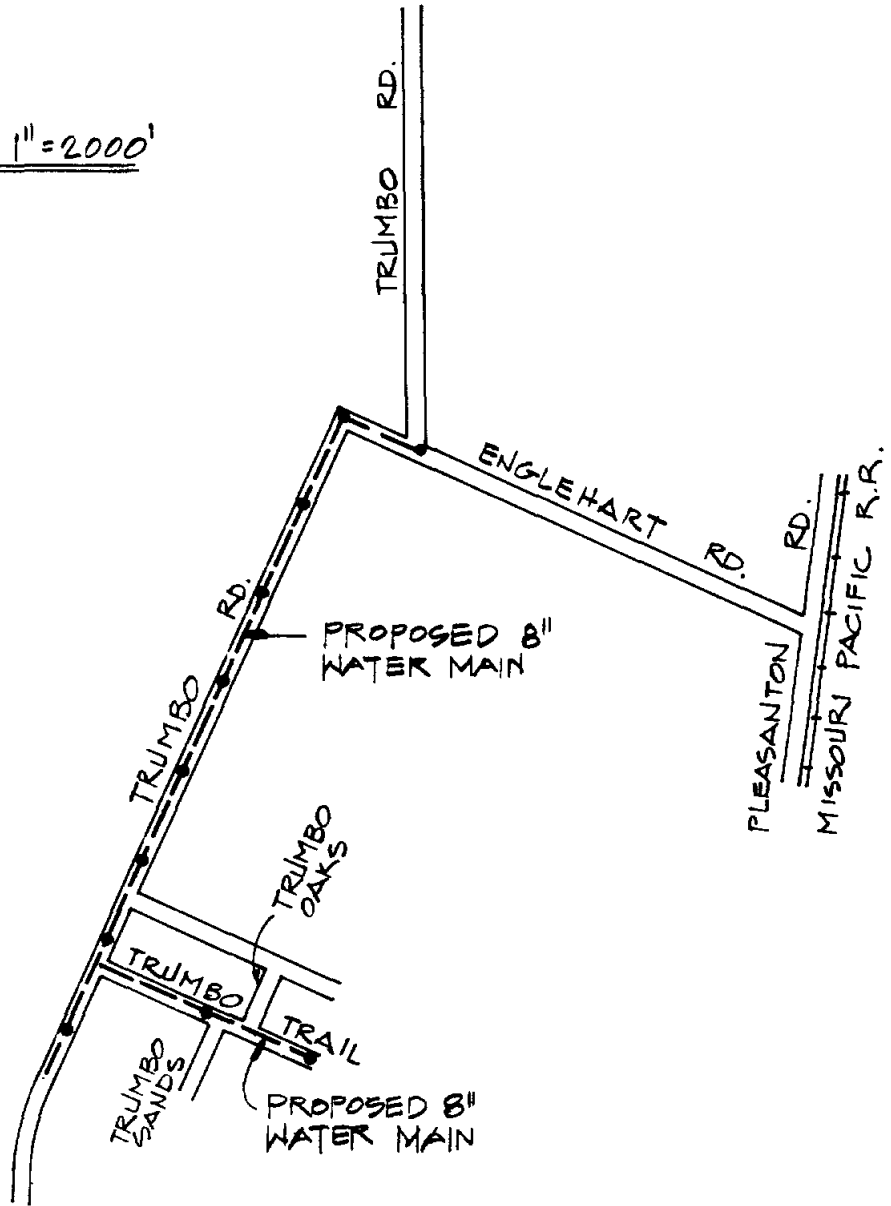
DWELLING UNITS: 18

CONSTRUCTION COSTS: \$ 237,622

8" DIA. WATER LINE 11,000 L.F.



NOTE:
WITHIN PRIVATE
WATER PURVEYOR
SERVICE AREA



TRUMBO TRAIL AREA
TRUMBO ROAD and TRUMBO TRAIL

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Trumbo Trail Area

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	----	LF	\$ 14.25	\$ ----
8" DI Water line	11,000	LF	17.25	189,750
6" Gate Valve	----	EA	350.00	----
8" Gate Valve	8	EA	515.00	4,120
DI Fittings	1	TON	2,400.00	2,400
Bore and Case	----	LF	36.00	----
Open Cut Crossing	----	LF	18.00	----
Trench Protection	----	LF	1.50	----
2" Temporary Blow-off	2	EA	750.00	1,500
Pressure Testing	2	EA	425.00	850
Fire Hydrant	12	EA	1,450.00	17,400
Contingency 10%	1	LS	21,602.00	21,602

Total \$237,622

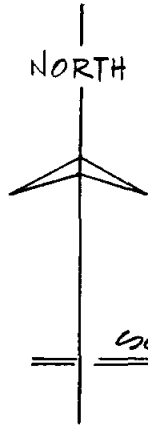
Project No. 72

PROJECT NAME: HENDRICKS RD.

DWELLING UNITS: 4

CONSTRUCTION COSTS: \$82,683

6" DIA. WATER MAIN - 4,450 L.F.



SCALE: 1" = 100'

PROPOSED 6" WATER MAIN

LIEDECKE

PROPOSED S&W
FUNDED 12" GENERAL
BENEFIT MAIN

F.M.

37

HENDRICKS RD.

PROPOSED 6" WATER MAIN

1604

I.H.

FLORES

LAMM

HENDRICKS RD.

F.M. 1604 TO NORTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Hendricks Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	4,450 LF	\$	14.25	\$63,412
8" DI Water line	---- LF		17.25	----
6" Gate Valve	4 EA		350.00	1,400
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	6 EA		1,450.00	8,700
Contingency 10%	1 LS		7,516.00	7,516
Total				\$82,683

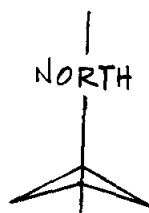
Project No. 74

PROJECT NAME: LIEDECKE RD.

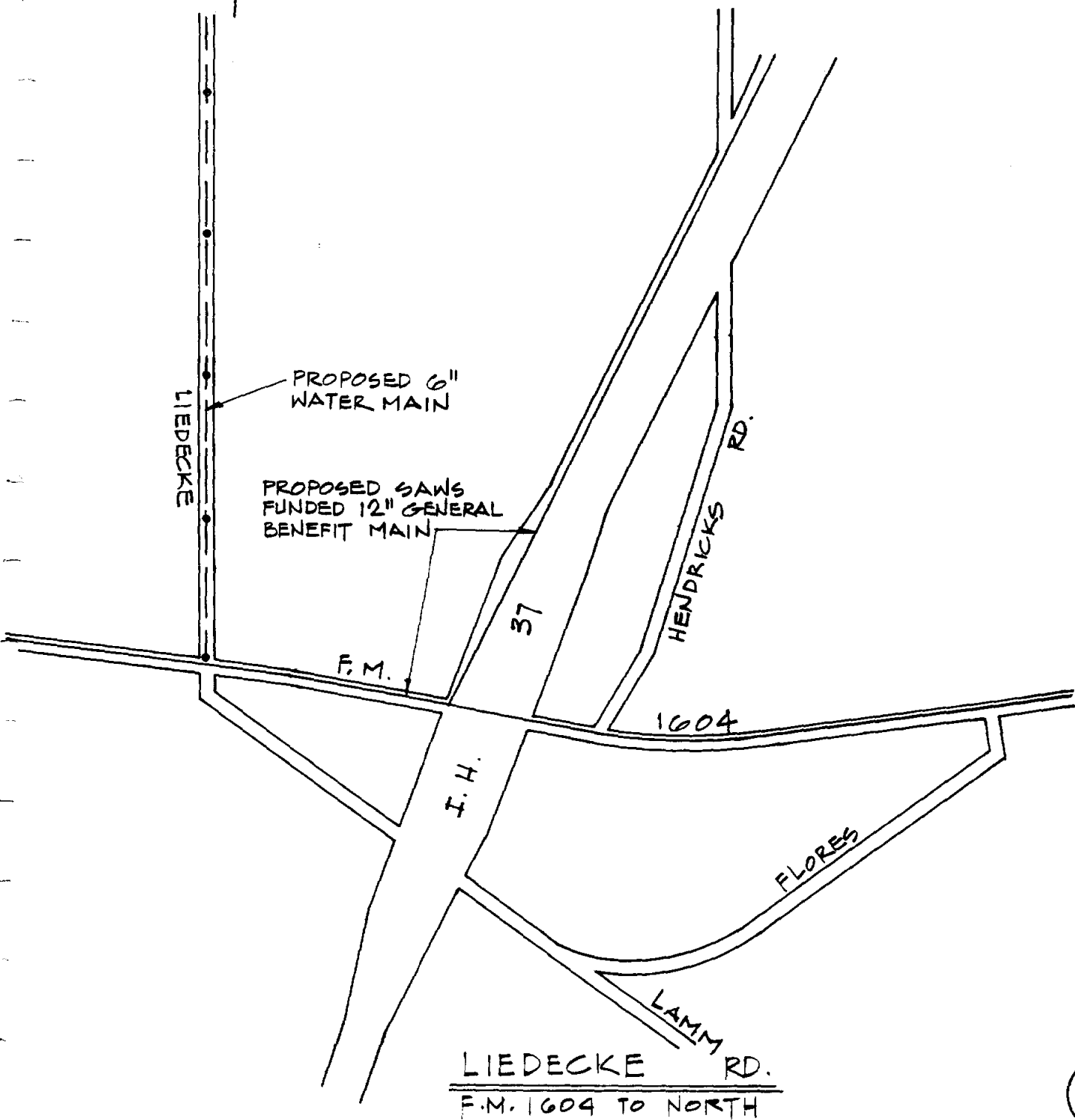
DWELLING UNITS: 1

CONSTRUCTION COSTS: \$ 83,440

6" DIA. WATER LINE - 4,600 L.F.



SCALE: 1" = 1000'



LIEDECKE RD.
F.M. 1604 TO NORTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Liedecke Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	4,600 LF	\$	14.25	\$65,550
8" DI Water line	---- LF		17.25	----
6" Gate Valve	4 EA		350.00	1,400
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	5 EA		1,450.00	7,250
Contingency 10%	1 LS		7,585.00	7,585
Total				\$83,440

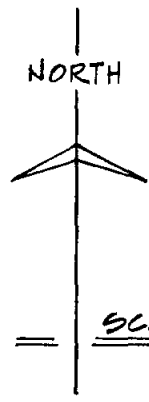
Project No. 75

PROJECT NAME: SOUTHTON RD.

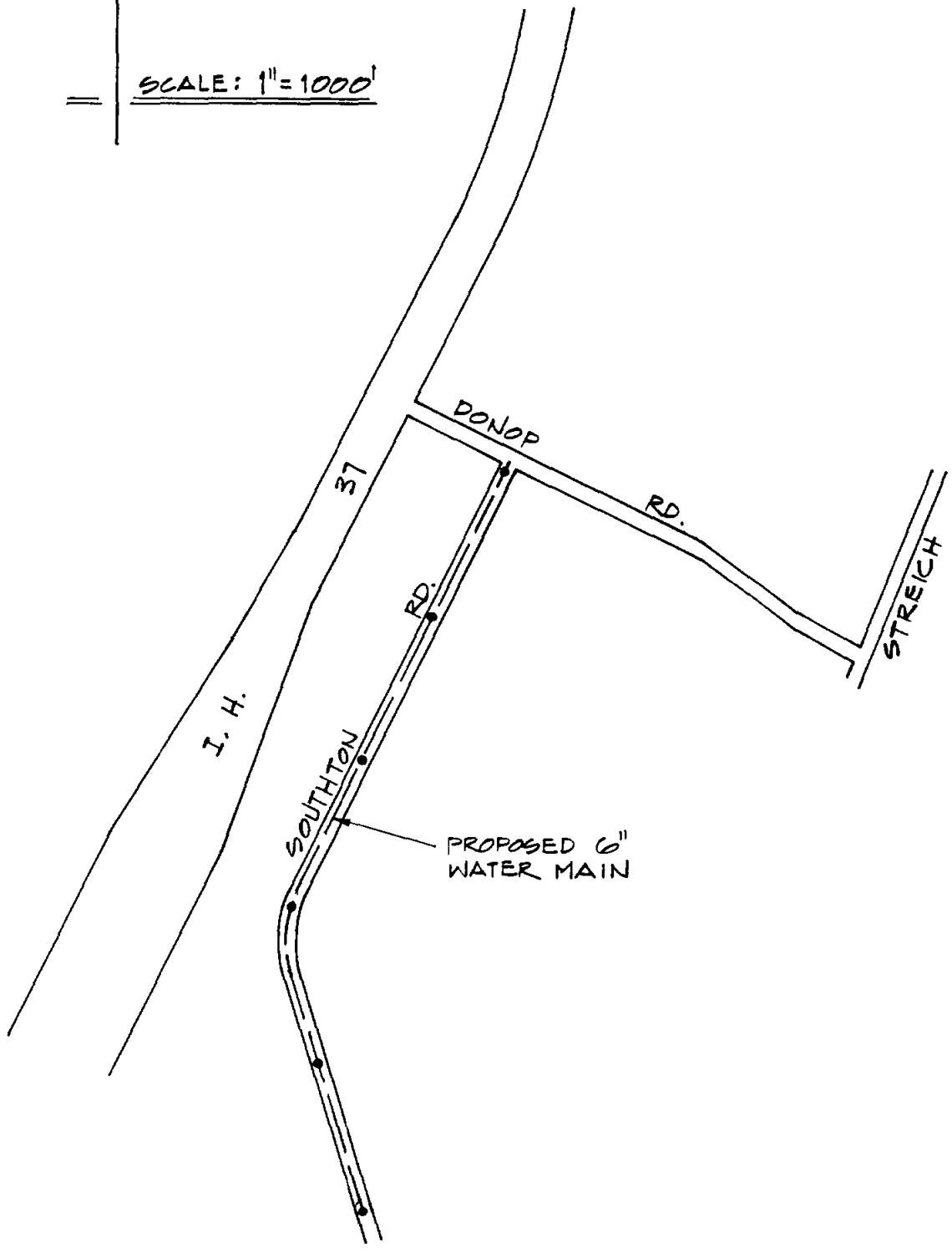
DWELLING UNITS: 6

CONSTRUCTION COSTS: \$91,305

6" DIA. WATER LINE - 5,000 L.F.



SCALE: 1" = 1000'



SOUTHTON RD.
DONOP RD. TO SOUTH

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

CONSTRUCTION COST ESTIMATE

Project Area Southton Road

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	5,000 LF	\$	14.25	\$71,250
8" DI Water line	---- LF		17.25	----
6" Gate Valve	4 EA		350.00	1,400
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	6 EA		1,450.00	8,700
Contingency 10%	1 LS		8,300.00	8,300
Total				\$91,305

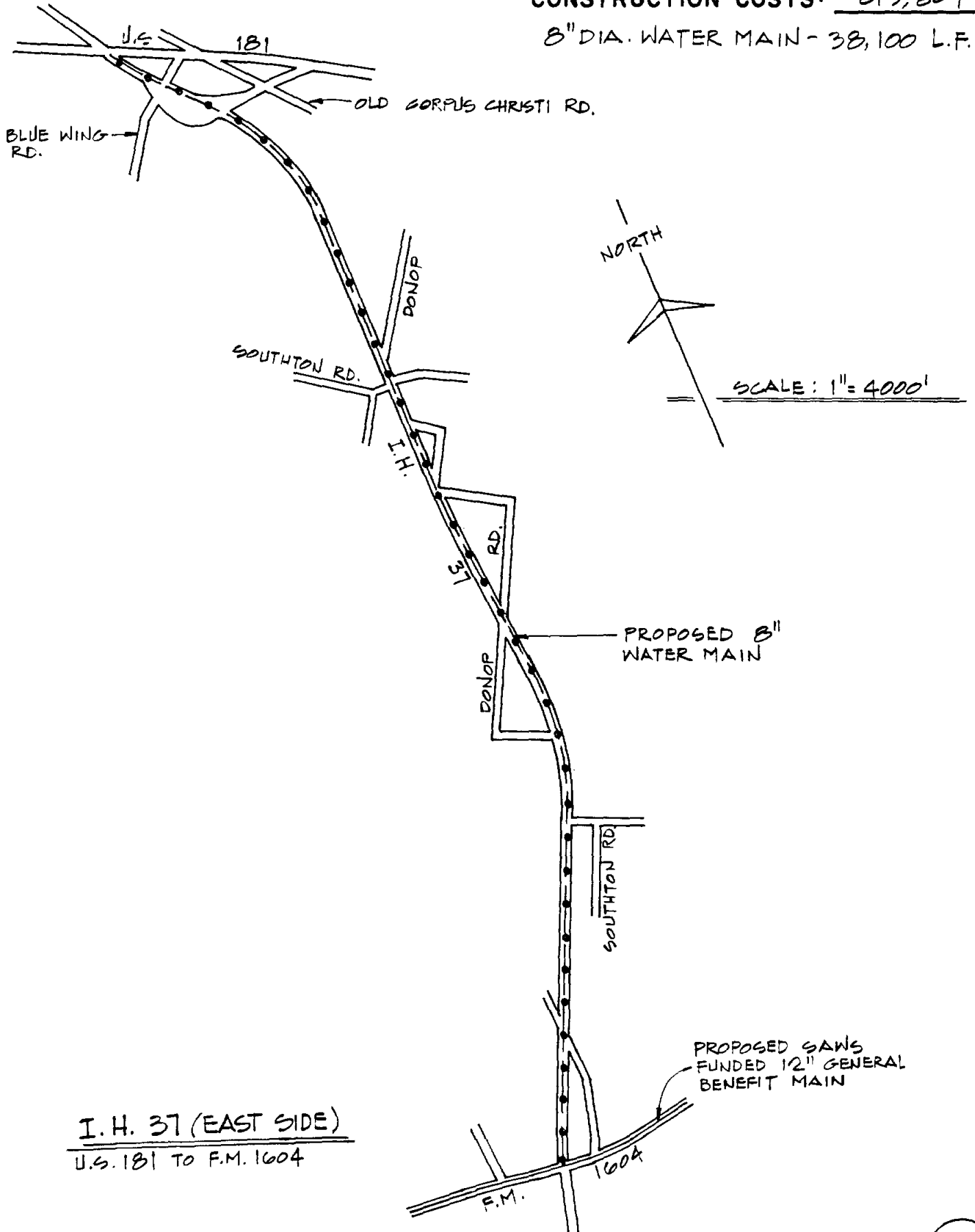
Project No. 76

PROJECT NAME: I.H. 37 (EAST SIDE)

DWELLING UNITS: 22

CONSTRUCTION COSTS: \$813,807

8" DIA. WATER MAIN - 38,100 L.F.



I.H. 37 (EAST SIDE)
U.S. 181 TO F.M. 1604

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area IH 37 (East Side)

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	----
8" DI Water line	38,100 LF		17.25	\$657,225
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	20 EA		515.00	10,300
DI Fittings	4 TON		2,400.00	9,600
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	4 EA		750.00	3,000
Pressure Testing	4 EA		425.00	1,700
Fire Hydrant	40 EA		1,450.00	58,000
Contingency 10%	1 LS		73,982.00	73,982
Total				\$813,807

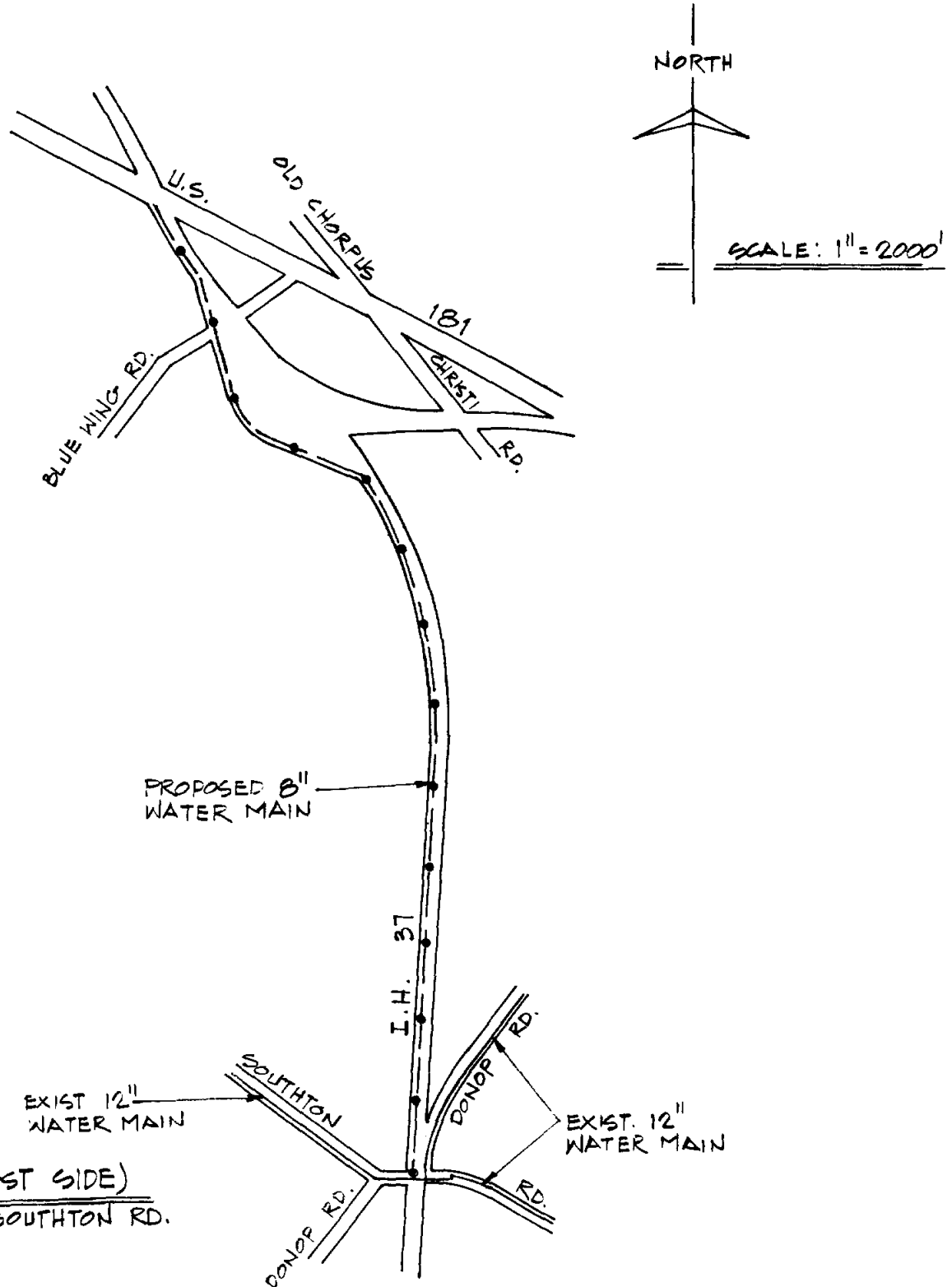
Project No. 77

PROJECT NAME: I.H. 37 (WEST SIDE)

DWELLING UNITS: 1

CONSTRUCTION COSTS: \$294,685

8" DIA. WATER LINE ~ 13,700 L.F.



I.H. 37 (WEST SIDE)
J.S. 181 TO SOUTHTON RD.

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area IH 37 (West Side)

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	13,700 LF		17.25	236,325
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	8 EA		515.00	4,120
DI Fittings	2.0 TON		2,400.00	4,800
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	2 EA		425.00	850
Fire Hydrant	14 EA		1,450.00	20,300
Contingency 10%	1 LS		26,790.00	26,790
Total				\$294,685

EXIST. 4" WATER MAIN

RD.

FRIO CITY

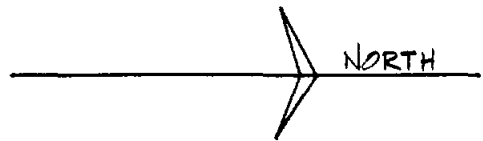
PROPOSED 8" WATER MAIN

PROJECT NAME: FRIO CITY RD.

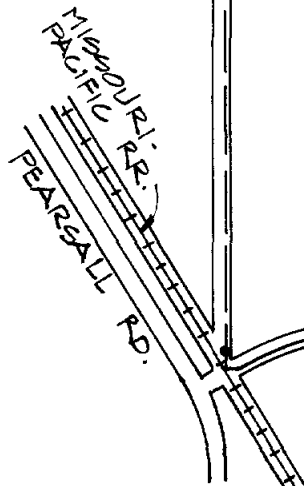
DWELLING UNITS: 8

CONSTRUCTION COSTS: \$47,377

8" DIA. WATER LINE - 4,700 L.F.



SCALE: 1" = 500'



GREENWOOD RD.

EXIST. 4" WATER MAIN

FRIO CITY RD.
GREENWOOD RD. TO WEST

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Frio City Road
Purveyor Atascosa Rural Water Supply Corporation

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" PVC Water line	----	LF	\$ 5.00	\$ ----
8" PVC Water line	4,700	LF	7.00	32,900
6" Gate Valve	----	EA	420.00	----
8" Gate Valve	2	EA	550.00	1,030
D1 Fittings	0.2	TON	3,200.00	640
Bore & Case	----	LF	60.00	----
Open Cut Crossing	----	LF	40.00	-----
Trench Protection	----	LF	2.00	----
2" Temporary Blow-off	1	EA	500.00	500
Pressure Testing	1	LS	1,500.00	1,500
Fire Hydrant	5	EA	1,300.00	6,500
Contingency 10%	1	LS	4,307.00	4,307
			Total	\$47,377

Project No. 79

PROJECT NAME: ROCKPORT RD.

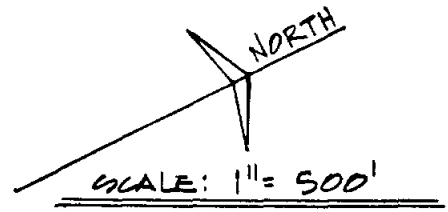
DWELLING UNITS: 13

CONSTRUCTION COSTS: \$ 65,186

8" DIA. WATER LINE - 2,300 L.F.

TOUDOUZE
RD.

F.M. 1604



ROCKPORT
EXISTING 8" WATER LINE BY
KINDY'S WATER WORKS

EXIST. 12" WATER MAIN

281
EXIST. 8" WATER MAIN

U.S.

LEAL

RD.

PROPOSED 8" WATER MAIN

RD.

F.M. 1604

ROCKPORT RD.

U.S. HWY. 281 TO F.M. 1604

80

NOTE:
WITHIN PRIVATE WATER
PURVEYOR SERVICE AREA

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Rockport Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	2,300 LF		17.25	39,675
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	4 EA		515.00	2,060
DI Fittings	0.2 TON		2,400.00	480
Bore and Case	320 LF		36.00	11,520
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	3 EA		1,450.00	4,350
Contingency 10%	1 LS		5,926.00	5,926

Total \$65,186

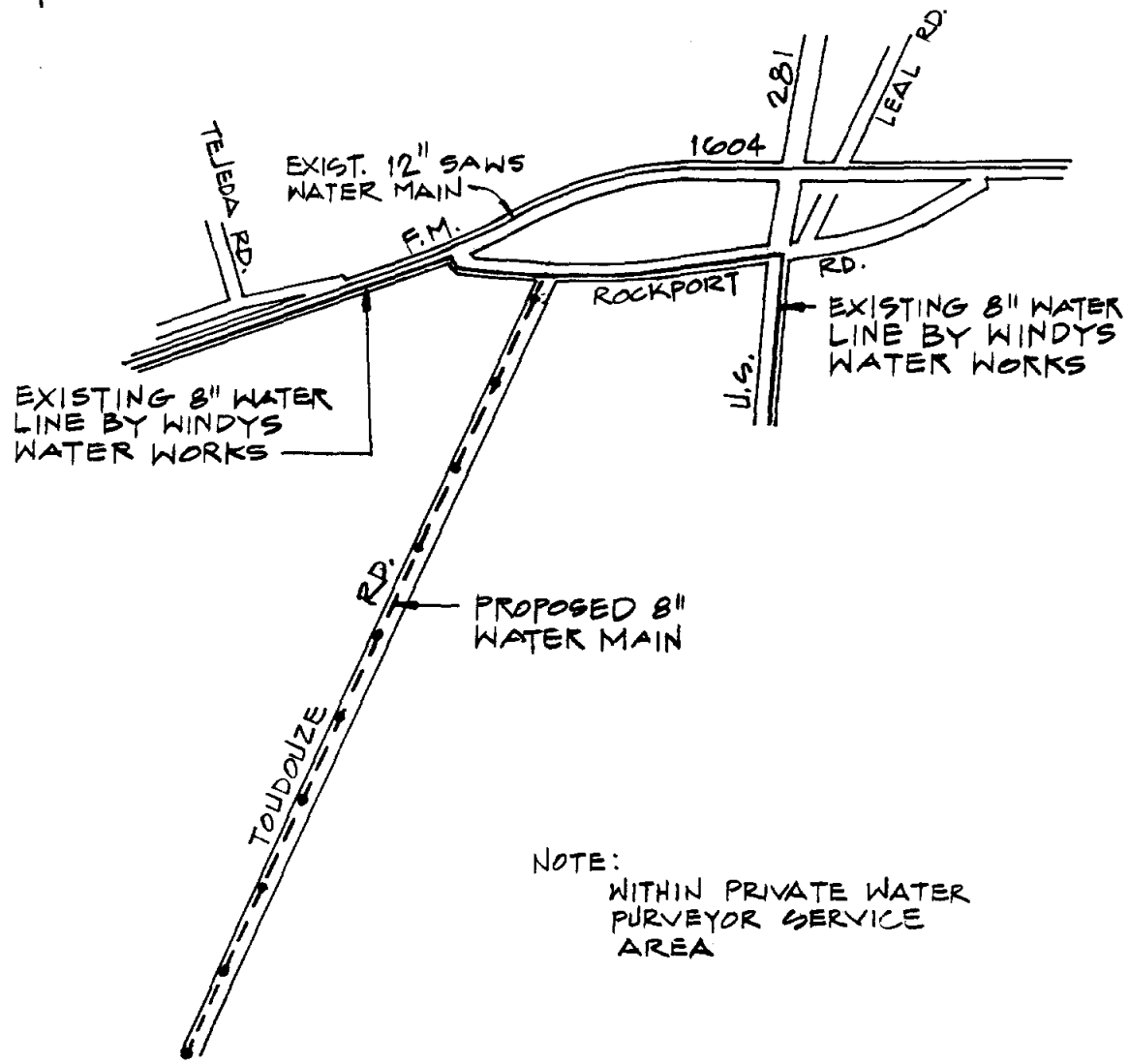
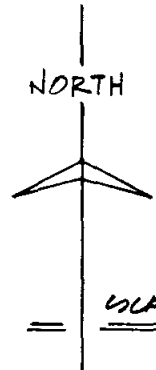
Project No. 80

PROJECT NAME: TOUDOUZE RD.

DWELLING UNITS: 1

CONSTRUCTION COSTS: \$ 200,024

8" DIA. WATER LINE - 9,300 L.F.



NOTE:
WITHIN PRIVATE WATER
PURVEYOR SERVICE
AREA

TOUDOUZE RD.
ROCKPORT RD. TO SOUTH

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Toudouze Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	---- LF	\$	14.25	\$ ----
8" D1 Water line	9,300 LF		17.25	160,425
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	6 EA		515.00	3,090
D1 Fittings	0.5 TON		2,400.00	1,200
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	11 EA		1,450.00	15,950
Contingency 10%	1 LS		18,184.00	18,184
			Total	\$200,024

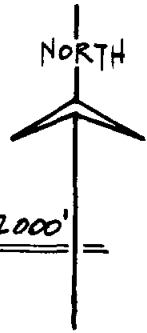
Project No. 81

PROJECT NAME: SPANISH GRANT ROAD

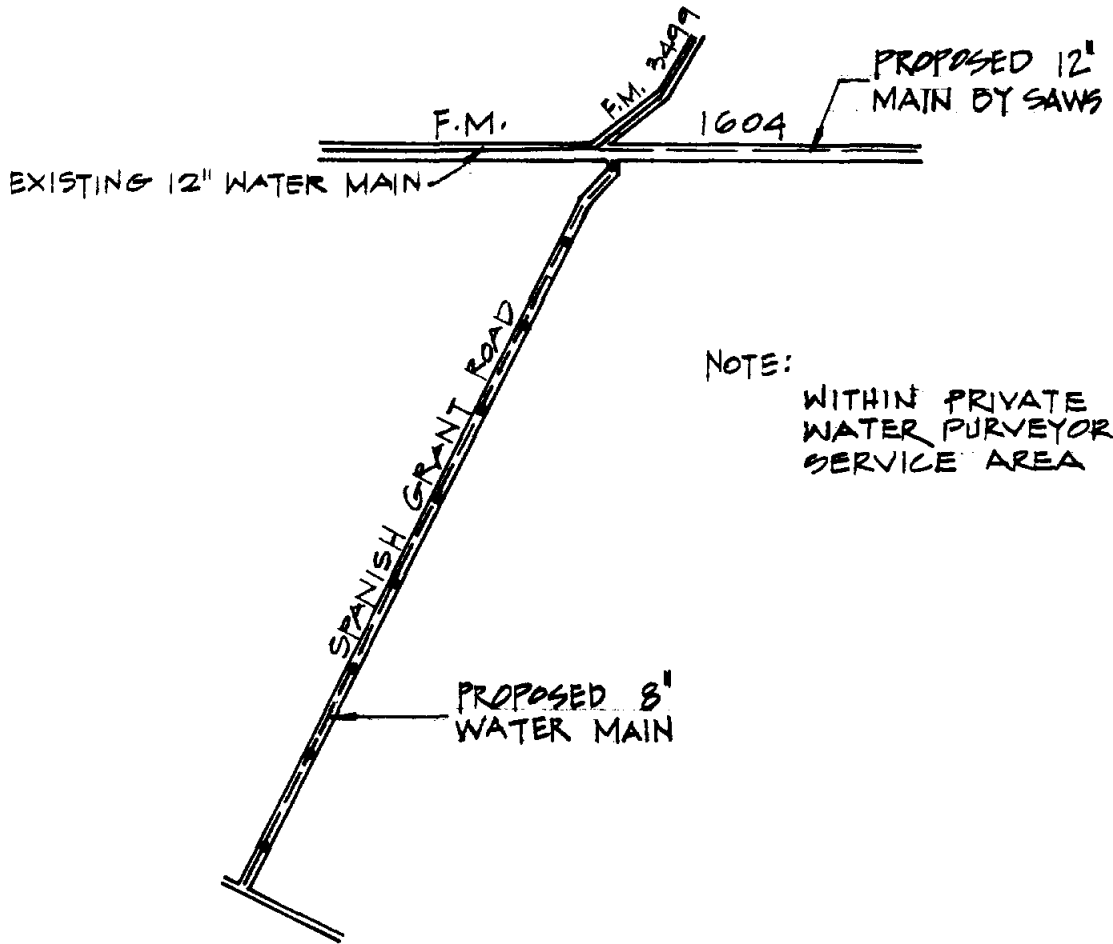
DWELLING UNITS: 16

CONSTRUCTION COSTS: \$197,818

8" DIA. WATER LINE - 8,600 L.F.



SCALE: 1" = 2000'



SPANISH GRANT ROAD

F.M. 1604 TO SOUTH

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Spanish Grant Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" D1 Water line	---- LF	\$	14.25	\$ ----
8" D1 Water line	8,600 LF		17.25	148,350
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	6 EA		515.00	3,090
D1 Fittings	0.5 TON		2,400.00	1,200
Bore and Case	320 LF		36.00	11,520
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	10 EA		1,450.00	14,500
Contingency 10%	1 LS		17,983.00	17,983
			Total	\$197,818

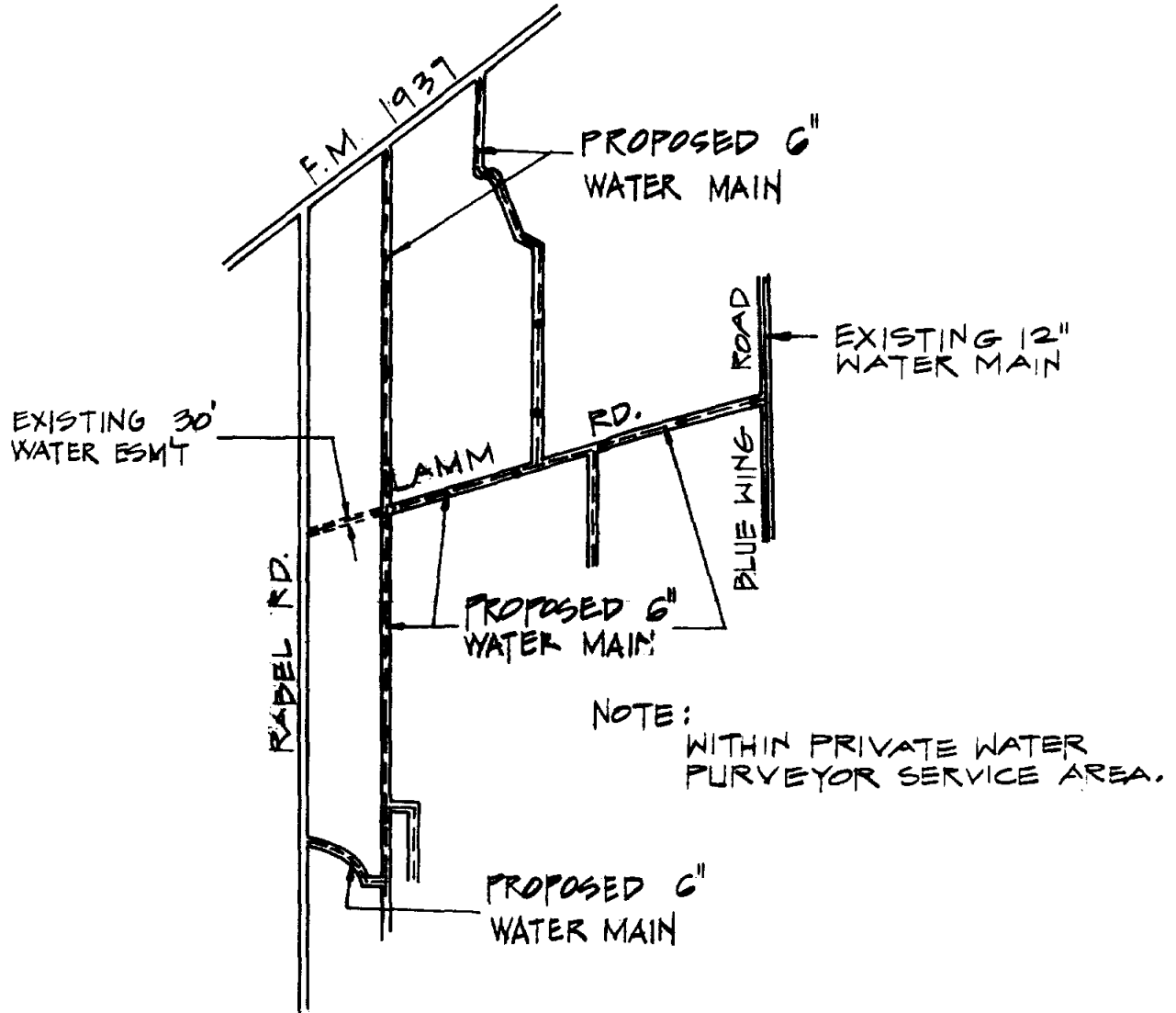
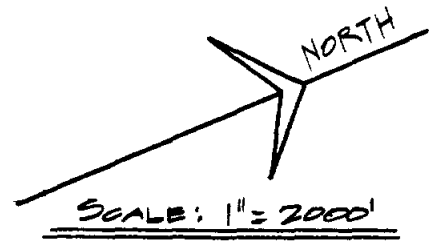
Project No. 83

PROJECT NAME: LAMM ROAD AREA

DWELLING UNITS: 50

CONSTRUCTION COSTS: \$ 394,328

6" DIA. WATER LINE ~ 22,500 L.F.



LAMM RD. AREA

August 20, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Lamm Road Area

Purveyor San Antonio Water System

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	22,500	LF	\$ 14.25	\$320,625
8" DI Water line	----	LF	17.25	----
6" Gate Valve	4	EA	350.00	1,400
8" Gate Valve		EA	515.00	
DI Fittings	0.20	TON	2,400.00	480
Bore and Case	----	LF	36.00	----
Open Cut Crossing	----	LF	18.00	----
Trench Protection	----	LF	1.50	----
2" Temporary Blow-off	1	EA	750.00	750
Pressure Testing	1	EA	425.00	425
Fire Hydrant	24	EA	1,450.00	34,800
Contingency 10%	1	LS	35,848.00	35,848
Total				\$394,328

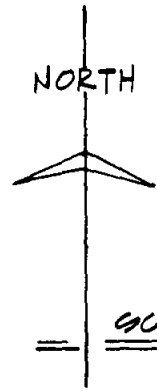
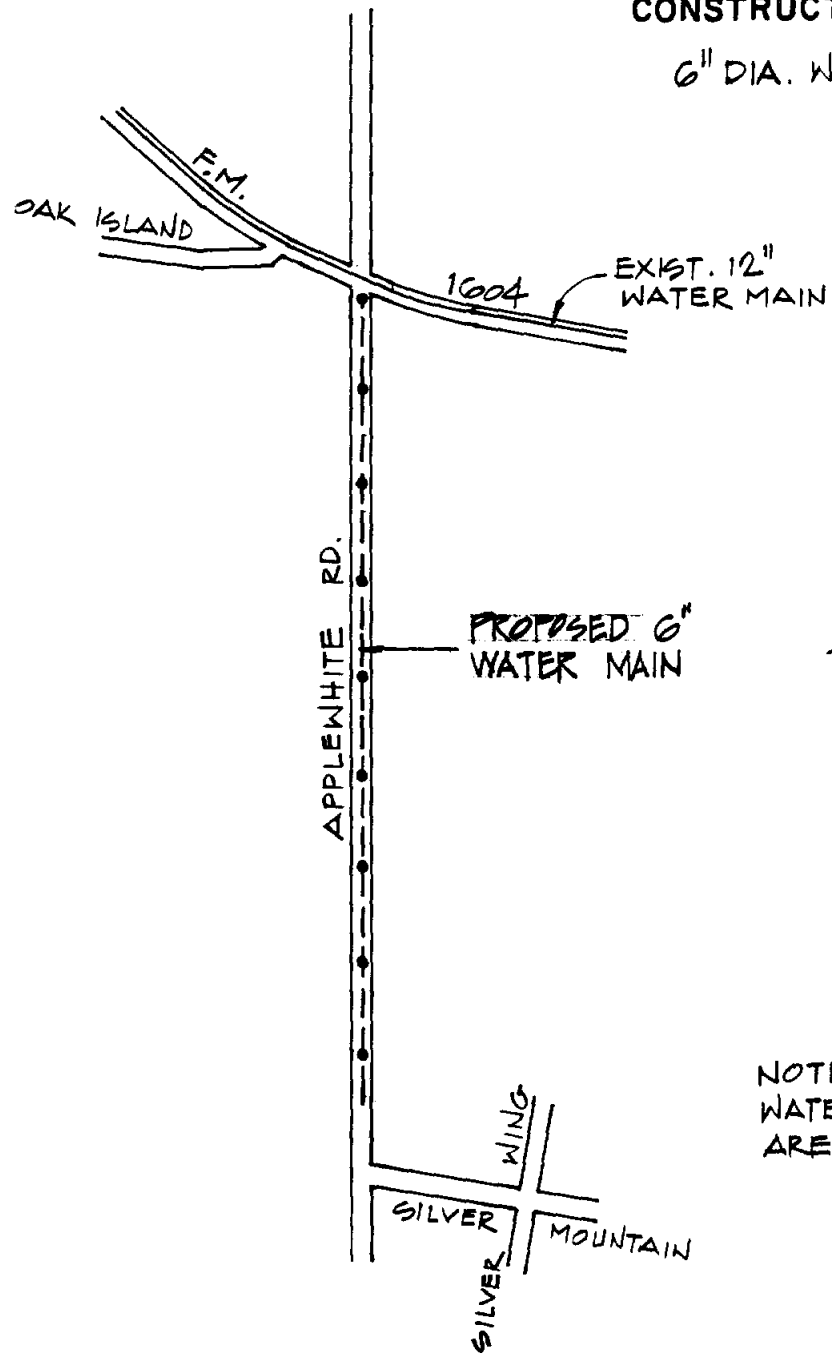
Project No. 84

PROJECT NAME: APPLEWHITE RD.

DWELLING UNITS: 19

CONSTRUCTION COSTS: \$185,146

6" DIA. WATERLINE - 8,600 L.F.



NOTE: WITHIN PRIVATE WATER PURVEYOR SERVICE AREA

APPLEWHITE RD.
F.M. 1604 TO SOUTH

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Applewhite Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	8,600 LF		17.25	148,350
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	6 EA		515.00	3,090
DI Fittings	0.5 TON		2,400.00	1,500
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	10 EA		1,450.00	14,500
Contingency 10%	1 LS		16,831.00	16,831

Total \$185,146

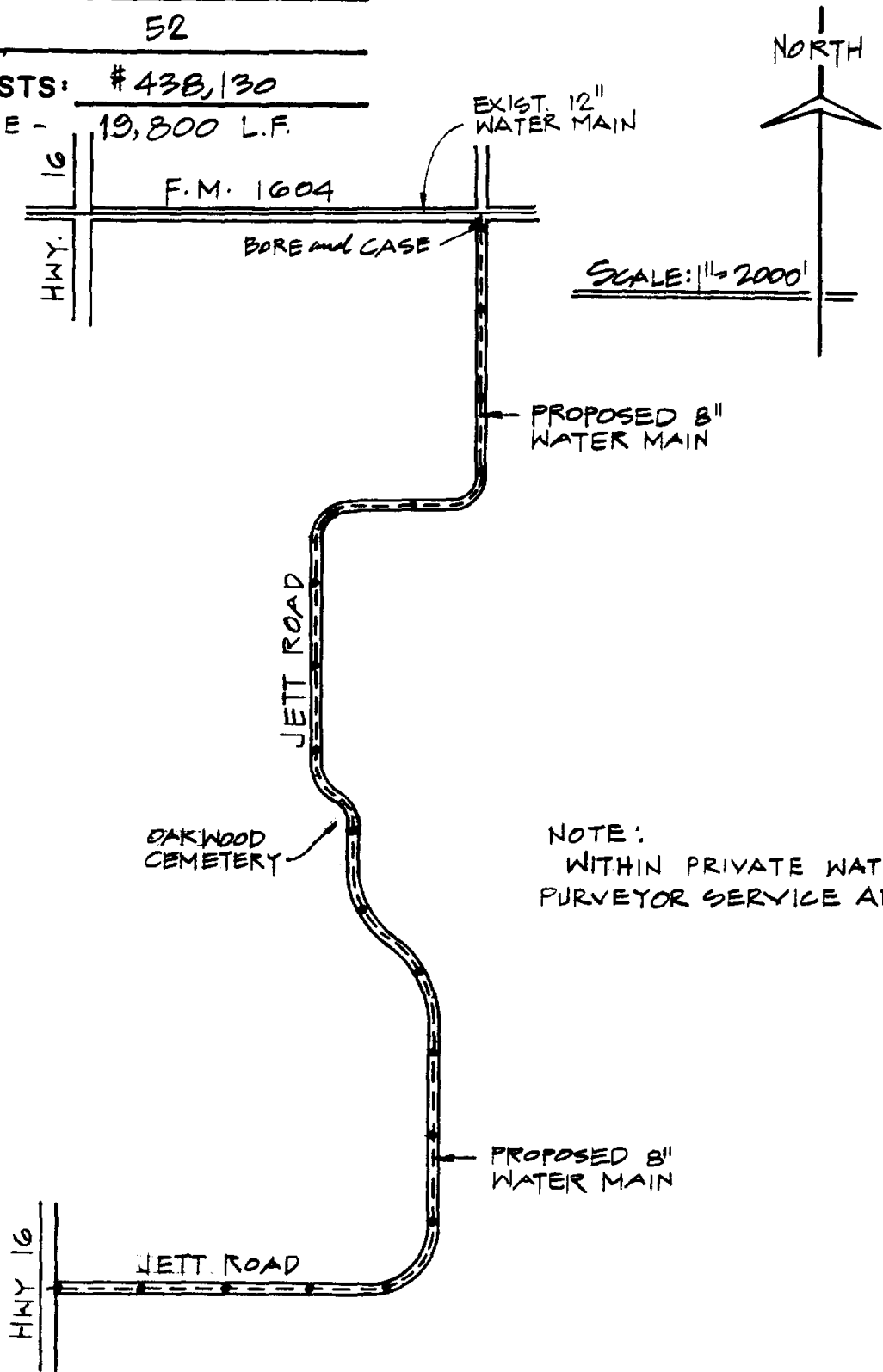
Project No. 85

PROJECT NAME: JETT Rd. (SOUTH)

DWELLING UNITS: 52

CONSTRUCTION COSTS: \$438,130

8" DIA. WATER LINE - 19,800 L.F.



NOTE:
WITHIN PRIVATE WATER
PURVEYOR SERVICE AREA

JETT Rd. (SOUTH)
F.M. 1004 TO S.H. 16

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Jett Road South

Purveyor _____

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	---- LF	\$	14.25	\$ ----
8" DI Water line	19,800 LF		17.25	341,550
6" Gate Valve	---- EA		350.00	----
8" Gate Valve	12 EA		515.00	6,180
DI Fittings	2 TON		2,400.00	4,800
Bore and Case	320 LF		36.00	11,520
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	2 EA		750.00	1,500
Pressure Testing	2 EA		425.00	850
Fire Hydrant	22 EA		1,450.00	31,900
Contingency 10%	1 LS		39,830.00	39,830
			Total	\$438,130

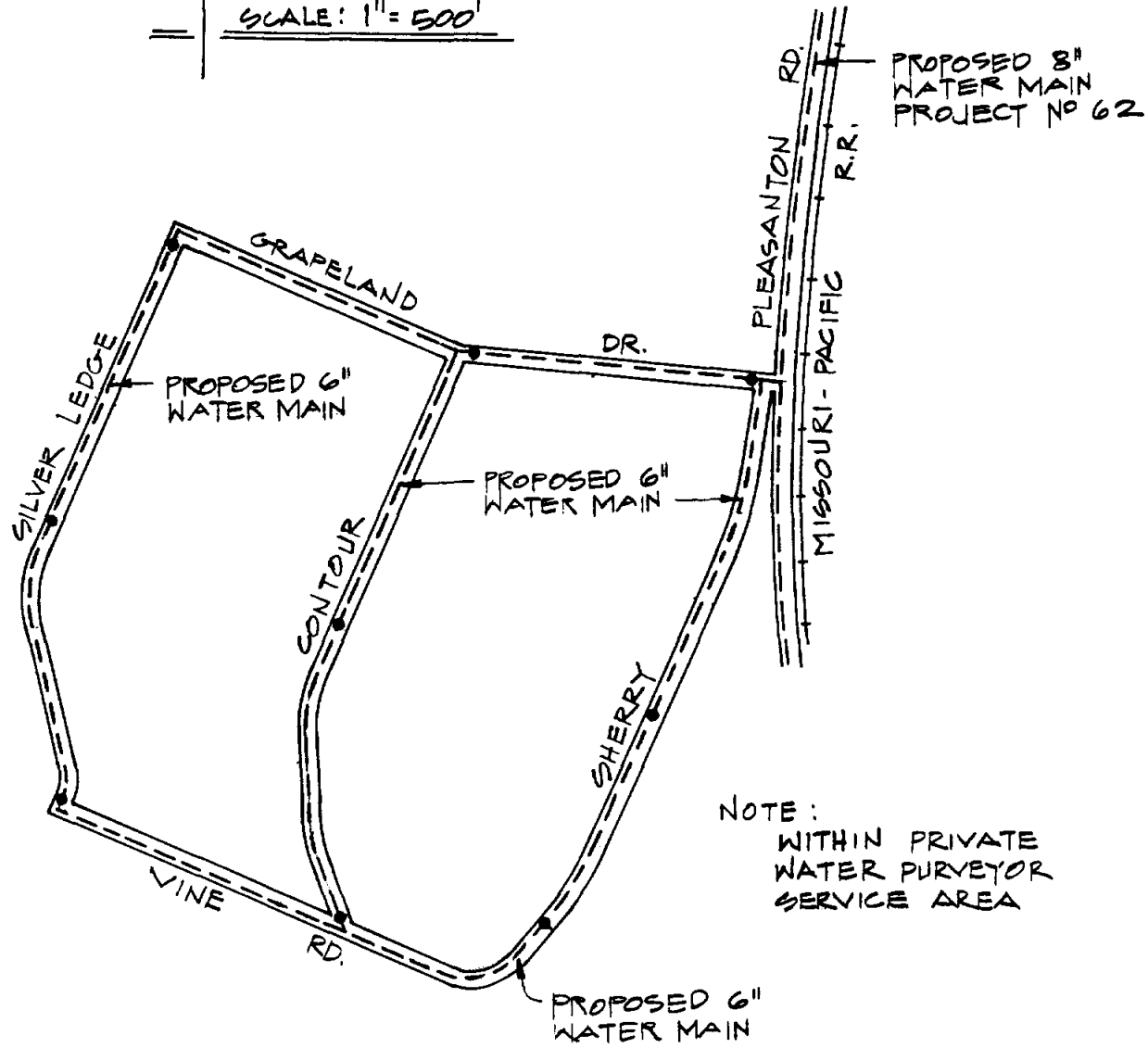
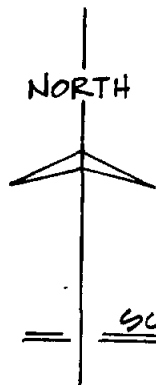
Project No. 86

PROJECT NAME: VINE RD. AREA

DWELLING UNITS: 22

CONSTRUCTION COSTS: \$151,772

6" DIA. WATER LINE - 8,400 L.F.



VINE RD. AREA

September 9, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN**

**PROJECTS WITHIN PRIVATE PURVEYOR AREAS
WITH NO WATER MAINS**

CONSTRUCTION COST ESTIMATE

Project Area Vine Road

Purveyor Private

<u>Item</u>	<u>Qty.</u>		<u>Unit Price</u>	<u>Cost</u>
6" DI Water line	8,400 LF	\$	14.25	\$119,700
8" DI Water line	---- LF		17.25	----
6" Gate Valve	4 EA		350.00	1,400
8" Gate Valve	---- EA		515.00	----
DI Fittings	0.5 TON		2,400.00	1,200
Bore and Case	---- LF		36.00	----
Open Cut Crossing	---- LF		18.00	----
Trench Protection	---- LF		1.50	----
2" Temporary Blow-off	1 EA		750.00	750
Pressure Testing	1 EA		425.00	425
Fire Hydrant	10 EA		1,450.00	14,500
Contingency 10%	1 LS		13,797.00	13,797

Total \$151,772

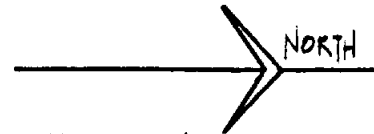
Project No. 87

PROJECT NAME: PRAIRIE ROAD

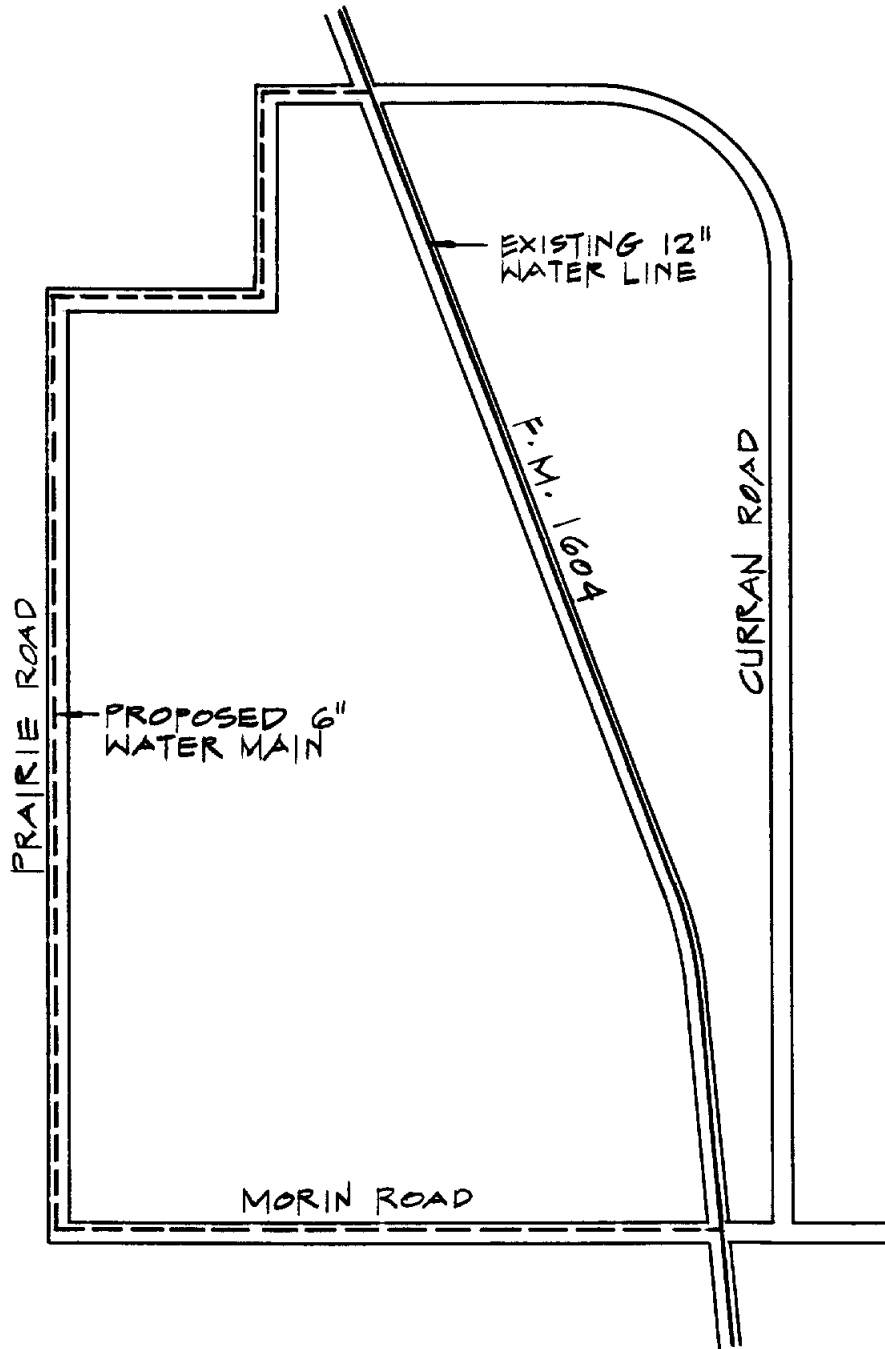
DWELLING UNITS: 41

CONSTRUCTION COSTS: \$ 156,750

6" DIA. WATER LINE ~ 11,000 L.F.



SCALE: 1" = 1000'



PRAIRIE ROAD @ F.M. 1604

July 15, 1992

**SOUTH BEXAR COUNTY
WATER SUPPLY SYSTEM PLAN
CONSTRUCTION COST ESTIMATE**

Project Area Prairie Road
Purveyor Bexar Metropolitan Water District

<u>Item</u>	<u>Qty.</u>	<u>Unit Price</u>	<u>Cost</u>
6" D1 Water Line	11,000 LF	\$ 12.00	132,000
8" D1 Water Line	-- LF	15.00	--
Fire Hydrant	12 EA	875.00	10,500
Contingency 10%	1 LS	14,250.00	14,250
		Total	\$156,750

Project No. 89

EXHIBIT 10

BASE MAP



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1485

Order Placed By:	Name: _____ Date: _____
	Title/Department: _____ Telephone: _____

BILL TO:	SHIP TO: (Street address please)
_____	_____
_____	_____
_____	_____

PURCHASE ORDER (Check one)		
<input type="checkbox"/> Enclosed	<input type="checkbox"/> To Be Sent	<input type="checkbox"/> Not Required
Number (if known) _____		

*IMPRINTING (Check one)		
<input type="checkbox"/> Requested	<input type="checkbox"/> Need Information	<input type="checkbox"/> Not Requested

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE	No. of Items Ordered	Extended Price
CLASS SET	\$40		
STUDENT PACK	\$35		
	Materials Total		
	Imprinting Charge		
	Shipping Charge		
	SUBTOTAL		



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

April 3, 1989

Mike Bukala, Administrative Assistant
Brazos River Authority
P. O. Box 7555
Waco, Texas 76714-7555

Dear Mr. Bukala:

In response to your request, I have enclosed a copy of the promotional materials that have been or will be sent to water associations across the state. I have also included the letter that was directed to Mr. Hogue earlier this year.

Our marketing strategy for the program, for which we have set a 20% of all fourth-grade classrooms in Texas by September 1989 (approximately 2000 classrooms), was to offer the public relations value of such a program first to the river authorities. The river authorities were selected in order that we might cover the largest number of classrooms at one time. Several river authorities have responded. The Sabine River Authority, for example, has reserved a portion of the state subsidy pending approval by their Board.

Following this survey of interest by the river authorities, we are moving on to the water associations, and then finally to private sector water-related industries (see plan enclosed). We hope to avoid going water district by water district.

As you can see from the promotional materials, there is a subsidy of \$10 per every \$30 spent by an eligible political subdivision. I believe that John Garland responded to this earlier information by obtaining a proposal from Ann Crafton at Educational Development Specialists, the supplier for the program. He should have a good idea of what the maximum participation level for BRA would be.

The program will also be promoted as the Texas Water Commission and Texas Water Development Board exhibit booths move about the state this spring. We anticipate a great deal of interest will be generated in the program.

Should BRA not elect to participate in the program this year, my suggestion for handling any inquiries that may be directed to your office would be to explain that your educational activities and budget have been directed more toward the "Water and Man" program. You may want to send the inquirer a copy of the enclosed promotional materials so that they can proceed independently.

We appreciate your interest in the program to date and would certainly appreciate your assistance in promoting the program either directly or indirectly.

Sincerely,

A handwritten signature in cursive script, appearing to read "Donna D. Darling".

Donna D. Darling
Director, Office of Public Information

April 5, 1989

Major Rivers Marketing Contacts:

Deniece Ryan
Lavaca Navidad River Authority
P. O. Box 429
Edna, Texas 77957
512/782-5229

* Needs formal proposal from Ann Crafton and order blank. Has only 3 school districts or approximately 10 classrooms to provide kit to at an approximate cost of \$500.00.

Sue Baker
Colorado Municipal Water District
Box 869 915/267-8245 98
18 Big Spring, Texas 79721 16 915/332-9151
915/267-6341 ~~331~~ 22/380 Snyder: Odessa - 22/2161

Will check with Mr. Ivie and call me back. Has \$500 in education budget to contribute to project.

Central Colorado River Authority
915/625-2838 n/a

Franklin County Water Authority
1-800-632-0668 (no letter, need contact)

John C. Williams
Canadian River Municipal Water Authority
P. O. Box 99
Sanford, Texas 79078
806/865-3325

* Need specific cost proposal and order blank for supplying to schools in Hutchison, Carson, Potter, Randall, Hale, Lubbock, Lynn, Dawson, Terry and Hockley counties.

Mr. John Specht
Guadalupe-Blanco River Authority
P. O. Box 271
Seguin, Tx. 78156-0271
512/379-5822

* Send proposal and order blank for service area.

Dan Allen, Executive Director
Texas Water Utilities Association
6521 Burnet Lane



Austin, Tx. 787

Invitation to Water Forum meeting on April 27th.
Invitation to P.R. Committee meeting of TWUA-will call with date.
(53 districts-can help spread the word, no money)

Mr. Ben O. Sims, Chairman
Lower Concho River Water & Soil Conservation Authority
Route 1
Paint Rock, Tx. 76866
915/732-4320

will call

Jim Ed Miller, General Manager
Red Bluff Water Power Control District
111 West Second Street
Pecos, Tx. 79772
915/445-2037

* Needs specific proposal for service area.

Mr. Ronald J. Glen, General Manager
Red River Authority of Texas
520 Hamilton Building
Wichita Falls, Tx. 76301
817/723-8697

will call Donna on Friday

Mr. Everett Grindstaff
Upper Colorado River Authority
P. O. Drawer 269
Ballinger, Tx. 76821
915/365-3515

will call back

Mr. B. W. Burns, General Manager
Upper Guadalupe River Authority
P. O. Box 1278
Kerrville, Texas 78028
512/896-5445

Donna needs to call Charlie Wiedenfeld after April 11 at 512/896-0100.

Mr. Roy Douglas, General Manager
Upper Neches River Municipal Water Authority
P. O. Drawer Y
Palestine, Texas 75801
214/584-3316 n/a



Walter W. Carlisle, III, Chairman
Stuart S. Goffman, Vice Chairman
Gene H. Brown, Secretary

M. Reginald Arnold, II
Executive Director

Thomas M. Darling, Director
Channon W. Johnson, Manager
Wendy M. O'Brien, Secretary

April 6, 1989

Mr. Roy Douglas, General Manager
Upper Neches River Municipal Water Authority
P. O. Drawer Y
Palestine, Texas 75801

Dear Mr. Douglas:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

As you recall, you received a letter and a preview kit earlier this year. Several river authorities have responded and several are still working on their level of involvement. In order to avoid duplication of counties or school districts selected for funding, we have suggested that water associations or districts contact you before contacting the "Major Rivers" supplier.

If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Alan F. Boney, Member

M. Reginald Arnold II
Member, Advisory Council

Thomas M. Dunning, Member
Charles W. Jensen, Member
Walter E. Pittman, Member

April 6, 1989

Mr. O. H. Ivie, General Manager
Colorado River Municipal Water District
P. O. Box 869
Big Spring, Texas 79720

Dear Mr. Ivie:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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Sincerely,

A handwritten signature in cursive script, reading "Donna D. Darling".

Donna D. Darling
Director, Office of Public Information

Encl:



Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Cliff E. Roney, Member

M. Reginald Arnold II
Executive Director

Thomas M. Brantley, Member
Charles W. Johnson, Member
W. J. H. Brantley, Member

April 6, 1989

Mr. Ben O. Sims, Chairman
Lower Concho River Water & Soil Conservation Authority
Route 1
Paint Rock, Texas 76866

Dear Mr. Sims:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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Sincerely,

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Donna D. Darling
Director, Office of Public Information

Encl:

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Rouse, Member

N. Reginald Arnold, II
Executive Administrator

Thomas M. Dantling, Member
Charles W. Jennings, Member
Wendell K. Pittman, Member

April 6, 1989

Mr. Laneal Maedgen, Operations Manager
Central Colorado River Authority
P. O. Box 964
Coleman, Tx. 76834

Dear Mr. Maedgen:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen H. Roney, Member

M. Reginald Arnold II
Executive Director

Thomas M. Dunning, Member
Charles W. Jarnoss, Member
Stanley E. Pizzone, Member

April 6, 1989

Mr. Emmett Gloyna, General Manager
Lavaca-Navidad River Authority
P. O. Box 429
Edna Tx. 77957

Dear Mr. Gloyna:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,

A handwritten signature in cursive script that reads "Donna D. Darling".

Donna D. Darling
Director, Office of Public Information

Encl:

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

W. Reginald Arnold II
Executive Vice President

Thomas M. Darling, Member
Charles W. Epps, Member
Walter R. Burdette, Member

April 6, 1989

Mr. Ronald J. Glen, General Manager
Red River Authority of Texas
520 Hamilton Building
Wichita Falls, Texas 76301

Dear Mr. Glen:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:

TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

Dr. Reginald Arnold II
Executive Vice President

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wendy P. Brown, Member

April 6, 1989

Mr. David Parsons
Sabine River Authority
P. O. Box 579
Orange, Texas 77630

Dear Mr. Parsons:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Haney, Member

M. Reginald Arnold II
Chairman, Texas Water Development Board

Thomas W. Dunning, Secretary
Charles W. Jenness, Chairman
Vernon E. Hester, Member

April 6, 1989

Mr. Everett Grindstaff
Upper Colorado River Authority
P. O. Drawer 269
Ballinger, Texas 76821

Dear Mr. Grindstaff:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,

A handwritten signature in cursive script that reads "Donna D. Darling".

Donna D. Darling
Director, Office of Public Information

Encl:

Walter W. Caswell, III, Chairman
Stuart S. Coleman, Vice Chairman
Clay E. Ransom, Member

M. Leighton Arnold II
Executive Administrator

Thomas M. Denning, Jr.
Charles W. Jenness, Jr.
Wesley E. Pittman, Jr.

April 6, 1989

Mr. Charlie Wiedenfeld
Upper Guadalupe River Authority
P. O. Box 1278
Kerrville, Texas 78028

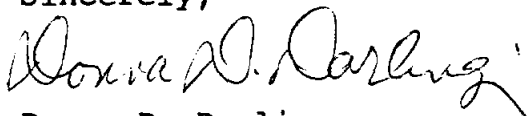
Dear Mr. Wiedenfeld:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Abegondo, Member II
Beverly A. ...

Thomas M. Darling, Member
Charles W. ...
W. ...

April 6, 1989

Mr. Jack K. Ayer, General Manager
San Jacinto River Authority
P. O. Box 329
Conroe, TX 77305

Dear Mr. Ayer:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

As you recall, you received a letter and a preview kit earlier this year. Several river authorities have responded and several are still working on their level of involvement. In order to avoid duplication of counties or school districts selected for funding, we have suggested that water associations or districts contact you before contacting the "Major Rivers" supplier.

If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,

A handwritten signature in cursive script, which appears to read "Donna D. Darling".

Donna D. Darling
Director, Office of Public Information

Encl:



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Curtis P. Renay, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wayne E. Dymally, Member

April 6, 1989

Mr. Con Mims, Executive Director
Nueces River Authority
P. O. Box 349
Uvalde, Tx. 78802

Dear Mr. Mims:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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Sincerely,

A handwritten signature in cursive script that reads "Donna D. Darling".

Donna D. Darling
Director, Office of Public Information

Encl:

Walter W. Cardwell, III, Chairman
Steven S. Coleman, Vice Chairman
Glen E. Bandy, Member

M. Reginald Arnold II
Member

Thomas M. Dunning, Member
Charles W. Johnson, Member
Walter E. Phillips, Member

April 6, 1989

Mr. Fred N. Pfieffer, General Manager
San Antonio River Authority
100 East Guenther Street
P. O. Box 9284, Guilbeau Station
San Antonio, Tx. 78204

Dear Mr. Pfieffer:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
John E. Haney, Member

M. Reginald Arnold, II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Dennis, Member
Wesley E. Pittman, Member

April 6, 1989

Mr. Tommy Hebert, General Manager
Lower Neches Valley Authority
P. O. Box 3464
Beaumont, Tx. 77704

Dear Mr. Hebert:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elected to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,

Donna D. Darling
Director, Office of Public Information

Encl:

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Ellis B. Ransom, Member

M. Langford Arnold, II
Member

Thomas M. Dunning, Member
Charles W. Boyers, Member
Walter D. Dunning, Member

April 6, 1989

Mr. John C. Williams, General Manager
Canadian River Municipal Water Authority
P. O. Box 99
Sanford, TX 79078

Dear Mr. Williams:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

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If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 11, 1989

Ms. Deniece Ryan
Lavaca Navidad River Authority
P.O. Box 429
Edna, TX 77957

Dear Deniece:

Donna Darling of the Texas Water Development Board asked me to provide you with a cost proposal for purchasing the Major Rivers program for your service area. The shipping costs are estimates and the actual costs may vary.

Enclosed you will find the cost proposal. Please feel free to call me if I can provide you with any additional information or if I can answer any questions. I will be happy to be of assistance.

Sincerely,

Ann M Crafton

Ann M. Crafton
Director of Marketing

cc: Donna Darling, Texas Water Development Board



Educational Development Specialists

SAMPLE

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 11, 1989

Mr. John C. Williams
Canadian River Municipal Water Authority
P.O. Box 99
Sanford, TX 79078

Dear John:

Donna Darling of the Texas Water Development Board asked me to provide you with a cost proposal for purchasing the Major Rivers program for your service area. The shipping costs are estimates and the actual costs may vary.

Enclosed you will find the cost proposal. Please feel free to call me if I can provide you with any additional information or if I can answer any questions. I will be happy to be of assistance.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling, Texas Water Development Board

Note: Proposals requested as of 4/26/89 include the following:

Red Bluff Water Power Control District
Lavaca Navidad River Authority
Sabine River Authority
Guadalupe-Blanco River Authority
Canadian River Municipal Water Authority
Trinity River Authority

Actual placement of kits as of 4/26/89 include the following:

10 counties-LCRA Service Area
2 schools- Williamson County MUD #1 Service Area

CANADIAN RIVER MUNICIPAL WATER AUTHORITY

This proposal outlines the specific numbers of 4th grade classrooms in 10 counties of the Canadian River Municipal Water Authority. The 10 counties represented are: Hutchison, Carson, Potter, Randall, Hale, Lubbock, Lynn, Dawson, Terry, and Hockley. The following information was comprised using the 1988 T.E.A. guide.

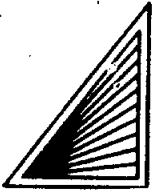
<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
Borger ISD	287	12
Sanford ISD	119	5
Plemons-Stinnett	71	3
Spring Creek ISD	1	?
Groom ISD	13	1
Panhandle ISD	68	3
White Deer ISD	40	2
Amarillo ISD	2262	91
River Road ISD	112	5
Highland Park ISD	53	2
Bushland ISD	48	2
Canyon ISD	479	20
Abernathy ISD	71	3
Cotton Center ISD	11	1
Hale Center ISD	61	3
Petersburg ISD	40	2
Plainview ISD	515	21
Lubbock ISD	2567	103
New Deal ISD	43	2
Slaton ISD	149	6
Lubbock-Cooper ISD	101	5
Frenship ISD	336	14
Roosevelt ISD	98	4
Shallowater ISD	68	3
Idalou ISD	69	3
O'Donnell ISD	38	2
Tahoka ISD	66	3
New Home ISD	13	1
Wilson ISD	18	1
Dawson ISD	16	1
Klondike ISD	20	1
Lamesa ISD	246	10
Sands ISD	15	1
Brownfield ISD	227	10
Meadow ISD	30	2

Union ISD	11	1
Wellman ISD	15	1
Anton ISd	23	1
Levelland ISD	300	12
Ropes ISD	25	1
Smyer ISD	27	2
Sundown ISD	41	2
Whitharral ISD	14	1

From this chart you can see that you will need a total of 369 Major Rivers class sets to supply the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
369 Major Rivers class sets @ \$40.00 each	\$14,760
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-3,690
Imprinting 369 class sets of 25	260
Shipping (one location)	498
Total	----- \$11,828

* Shipping costs are estimated and may vary.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 11, 1989

Mr. Jim Ed Miller
General Manager
Red Bluff Water Power Control District
111 West Second Street
Pecos, TX 79772

Dear Jim:

Donna Darling of the Texas Water Development Board asked me to provide you with a cost proposal for purchasing the Major Rivers program for your service area. The shipping costs are estimates and the actual costs may vary.

Enclosed you will find the cost proposal. Please feel free to call me if I can provide you with any additional information or if I can answer any questions. I will be happy to be of assistance.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling, Texas Water Development Board

RED BLUFF WATER POWER CONTROL DISTRICT

Red Bluff Water Power Control District is comprised of 4 counties and 8 school districts. The following information was comprised using the 1988 T.E.A. guide.

<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
Loving County	no info available	0
Pecos-Barstow-	277	12
Balmorhea ISD	18	1
Monahans-Wickett ISD	196	8
Grandfalls-Royalty ISD	18	1
W. Tex Childrens Home	0	0
Buena Vista ISD	13	1
Ft. Stockton ISD	228	10
Iraan-Sheffield ISD	46	2

From this chart we can see that you will need a total of 35 Major Rivers class sets to supply the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
35 Major Rivers class sets @ \$40.00 each	\$1,400
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-350
Imprinting 35 class sets of 25	80
Shipping (one location)	47
Total	<u>\$1,177</u>

* Shipping costs are estimated and may vary.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 11, 1989

Mr. David Parsons
Sabine River Authority
P.O. Box 487
Quitman, TX 75783

Dear David:

Enclosed you will find the cost proposal for purchasing the Major Rivers program for the 341 classrooms in your service area. The shipping costs are estimated and could vary.

Please call me if I can answer any questions or if I can provide you with any additional information.

Sincerely,

Ann M. Crafton
Director of Marketing

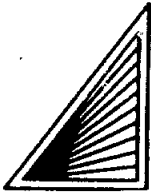
cc: Donna Darling, Texas Water Development Board

SABINE RIVER AUTHORITY

This proposal is based upon providing the Major Rivers water conservation program to 341 fourth grade classrooms in your service area..

<u>ITEMS</u>	<u>COSTS</u>
341 Major Rivers Class Sets @ \$40.00 each	\$13,640
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-3,410
Imprinting 341 Class sets of 25	240
Shipping (one location)	460
Total	<u>\$10,930.</u>

- Shipping costs are estimated and may vary



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 11, 1989

Mr. John Specht
Guadalupe-Blanco River Authority
P.O. Box 271
Seguin, TX 78156-0271

Dear John:

Donna Darling of the Texas Water Development Board asked me to provide you with a cost proposal for purchasing the Major Rivers program for your service area. The shipping costs are estimates and the actual costs may vary.

Enclosed you will find the cost proposal. Please feel free to call me if I can provide you with any additional information or if I can answer any questions. I will be happy to be of assistance.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling, Texas Water Development Board

GUADALUPE-BLANCO RIVER AUTHORITY

Guadalupe-Blanco River Authority is comprised of 10 counties and 32 school districts. The following information was comprised using the 1988 T.E.A. guide.

<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
Boerne ISD	160	7
Comfort ISD	67	3
New Braunfels ISD	353	15
Comal ISD	407	17
San Marcos ISD	419	17
Dripping Springs ISD	97	4
Wimberley ISD	67	3
Hays Cons ISD	296	12
Lockhart ISD	241	10
Luling ISD	117	5
Prairie Lea ISD	15	1
Seguin ISD	529	22
Schertz-Cibolo ISD	279	12
Navaro ISD	41	2
Marion ISD	60	3
Gonzales ISD	224	9
Nixon-Smilely ISD	60	3
Waelder ISD	14	1
Cuero ISD	127	6
Nordheim ISD	13	1
Yoakum ISD	117	5
Yorktown ISD	53	3
Westhoff ISD	7	1
Meyersville ISD	14	1
Bloomington ISD	61	3
Victoria ISD	1123	45
McFaddin ISD	3	1
Nursery ISD	13	1
Calhoun ISD	367	15
Austwell-Tivoli ISD	20	1
Woodsboro ISD	56	3
Refugio ISD	69	3

From this chart we can see that you will need a total of 234 Major Rivers class sets to supply the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
234 Major Rivers class sets @ \$40.00 each	\$9,360
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-2,340
Imprinting 234 class sets of 25	180
Shipping (one location)	315
Total	----- \$7,515

* Shipping costs are estimated and may vary.



SABINE RIVER AUTHORITY

of Texas

A GOVERNMENTAL AGENCY
OF THE

State of Texas

409-746-2192

FAX # 409-746-3780

P. O. BOX 579
ORANGE, TEXAS
77630

April 14, 1989

Ms. Donna D. Darling
Director/Office of Public
Information & Education
Texas Water Development Board
P. O. Box 13231
Capitol Station
Austin, Texas 78711-3231

RE: "Major Rivers" Water Education Program

Dear Ms. Darling:

As you are aware through your recent contacts with Mr. David Parsons at our Lake Fork Division, the Sabine River Authority (SRA) is planning to furnish the above referenced program to all of the fourth grade classrooms in the Sabine River Basin during the 1989-90 school year. The SRA's Board of Directors will consider my recommendation for implementation of this program at its semi-annual meeting scheduled for July 28, 1989.

We appreciate the opportunity to work with you through the TWC/TWDB cooperative education program and hereby request that a portion of the available 25% matching funds for the "Major Rivers" program sufficient to cover the 341 fourth-grade classrooms in our basin be set aside for use in September or October of 1989.

Your assistance and cooperation in this matter is sincerely appreciated.

Sincerely,

A handwritten signature in cursive script that reads "Sam F. Collins".

Sam F. Collins
Executive Vice President
and General Manager

SFC:AG:gnk

4/5/89

The sales staff is in action....need follow-up proposals to entities indicated on follow-up call sheet.

Please complete the order form making the changes you suggested. The three agencies agreed to subsidize any classroom sets at \$5.00 per set so the cost to an entity will be \$30.00 no matter what they order.

I will mail the ad to my newsletter network today and we have been invited to appear at several meetings later this month..we're rolling now!

Aloma



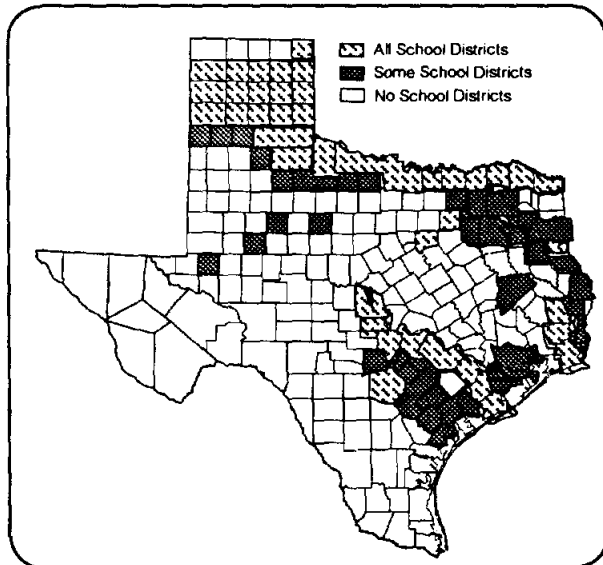
MAJOR RIVERS KEEPS ON ROLLIN' ACROSS TEXAS

By the end of the 1989-90 school year, more than 50,000 Texas fourth graders will have met "Major Rivers." The "Major Rivers" Texas-specific water education program keeps on rolling across Texas as more and more river authorities, municipal utility districts, water districts, soil and water conservation districts and cities dedicate their education budgets to the effort. Two state agencies, the Texas Water Commission and the Texas Water Development Board, are also subsidizing the program.

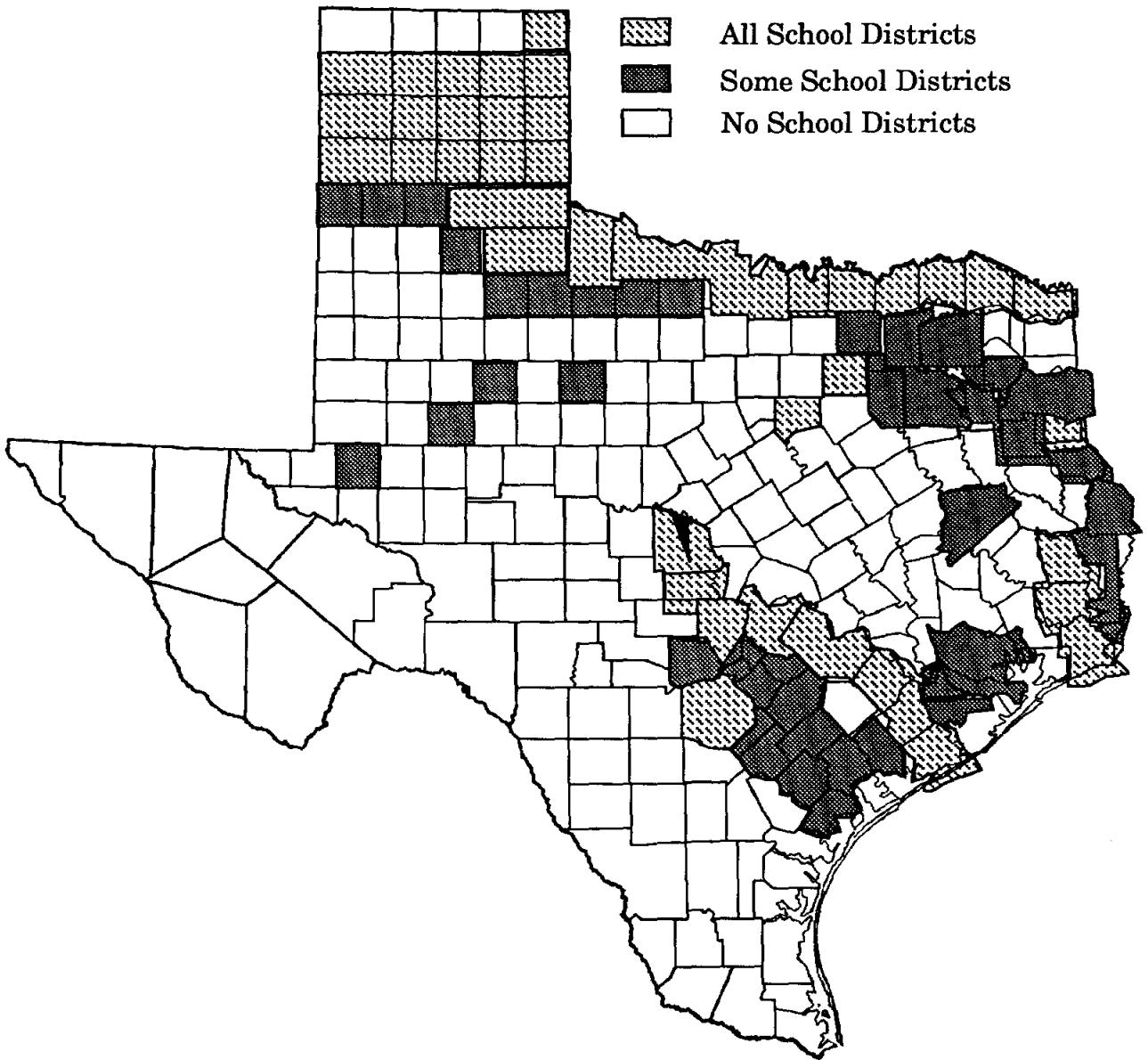
"Major Rivers" is a colorful, cartoon-filled, two-week water education unit that includes a video, student booklet, teacher's guide, poster, and home leaflet. Originally conceived by the Lower Colorado River Authority and produced by Education Development Specialists, the "Major Rivers" kit has become the state's answer to giving elementary school students access to information about water in Texas that is not available in current state-adopted textbooks.

Information on the "Major Rivers" program is available by writing the Major Rivers Distribution Center, 5505 East Carson Street, Suite 250, Lakewood, California 90713-3093.

This map indicates those counties with school districts that have used or will be using *Major Rivers* this school year. While introducing *Major Rivers* to some 50,000 of the state's fourth graders this first year is a real accomplishment, there are still 200,000 fourth graders who did not get to meet *Major Rivers*. Water entities interested in sponsoring the water education program in their area should contact the *Major Rivers Distribution Center* at (213) 420-6814.



Major Rivers Project



SPONSORS OF THE "MAJOR RIVERS" PROGRAM

Anderson Mill M.U.D.
Lavaca-Navidad River Authority
Soil Conservation Services
Red River Authority of Texas
Guadalupe-Blanco River Authority
Johnson County Fresh Water
Bridgestone M.U.D.
Harris County M.U.D. #33
Dallas County W.C.I.D. #6
Sabine River Authority
Tara Plantation M.U.D.
Dallas County Park Cities M.U.D.
Jones County 4-H
City of San Antonio
San Antonio City Water Board
San Antonio River Authority
Bexar Metropolitan Water District
City of Stephenville
Middle Concho Soil & Water
Harris County Utility District #5
Cypresswood Utility District
Bilma Public Utility District
Brookesmith Water
Wells Branch M.U.D.
Colorado River M.W.D.
Lower Neches Valley Authority
Upper Guadalupe River Authority

Major Rivers in Texas

Visual (suggestions only)

Major Rivers on Aquifer--
touching hat.

Someone in a house
turning water on

Some old photos of
buckets in the river
and old wells

Water well

River

Map showing LCRA
10-county water district

Audio

Howdy! I am Major Rivers and this is my horse, Aquifer. We've been traveling around Texas for many years, and we've seen a lot of changes. But one thing that will never change is our need for good, clean water!

Now, you're probably saying that getting water is easy. All you got to do is turn on the tap and out comes the water.

Well, just hold on there a minute. That water doesn't get to your tap by magic, you know. No sir. It takes a lot of hard work and costs a deal of money to get that water to you.

It used to be that people got their water right out of the river. They'd just put their buckets in and haul out the water they needed. Or if they didn't happen to live by a river, they'd dig a well and use water that was stored up underground. Well, as you might imagine, it really wasn't too convenient.

In Texas, we still get our water from rivers and from groundwater. In fact, more than half of the water we use comes from underground water basins, called aquifers, like my horse here; and the rest of our water, nearly half, comes from surface water, you know water on top of the ground, like rivers, lakes, and streams. But we don't exactly have to do the gettin' of the water ourselves anymore. Water companies and river authorities now do that for us.

Okay, let's see just how these water companies get the water from there to here, so to speak. Where you live, somewhere in Central Texas, the Lower Colorado River Authority, better known as LCRA, along with a water agency right in your town, are faced with the task of getting you the water you need. And mind you, it's quite a task!

Map of Texas highlighting the Colorado River.

Flood scenes

Most of the water in this area comes from the Colorado River. And what a river it is!

It used to be that some years, when it rained a lot, the river provided all the water anyone could want. Actually, it provided more water than anyone could want! Houses floated away, crops were drowned, and people and animals were even killed as the river spilled over its banks and flooded the land.

Drought scenes

Other years, when very little rain fell to the ground, the Colorado River would dry up to a trickle. No one had enough water then.

Split screen - flood/drought
of
Major Rivers

So, the river could be like a bucking bronco or like an old horse out to pasture. Neither did us much good.

Dam with floodgates

LCRA decided to change that. They built 6 dams on the river in Burnet, Llano, and Travis counties to hold the water back. That way they could control how much water flowed down the river toward the Gulf of Mexico. That put an end to the floods.

Lake behind a dam

Damming up the river like that meant lakes were formed. Turns out, these lakes, called reservoirs, are very useful. They actually store water, rather than just letting it run down the river into the gulf. So even in the driest years, drought years they're called, we have enough water.

Recreation on a
Highland lake

These reservoirs, known in these parts as the Highland Lakes, also provide us with lots of fun. Aquifer and I have spent many a lazy, hot summer day fishing, sailing, or just dangling our toes into one of these lakes!

Hydroelectric plant

LCRA can use this stored-up water for another purpose, too. When they open the gates, the water rushes out, turning big turbine-generators that produce electricity. So the dams not only make sure we have enough water but enough electricity too!

Major Rivers

Having the water in the reservoirs and in the aquifers isn't the same as having the water in your house though. LCRA and local water agencies still have to get the water to you. Before they do though, they make sure the water is clean and safe to drink.

Irrigation on rice fields

Water that's used to irrigate crops, like the water for the rice fields in Colorado, Wharton, and Matagorda Counties, can go directly from the river and the aquifers to the farms.

Treatment Plant

But the water we drink, cook with, and bathe in first gets cleaned. It is sent from the river and reservoirs to treatment plants, where any dirt that might have gotten in is taken out. And chlorine or another such chemical is put in to make sure germs stay out.

Pipeline network

All this water gets where it's going through a maze of pipelines. Sometimes the water travels miles and miles through pipes before it rushes out when you turn the faucet on.

Water going down a drain

But then where does the water go? Well, in some places, mainly in rural areas, wastewater goes down under the ground into what's called a septic tank. From there it slowly seeps back into the ground.

Wastewater plant

In other areas, though, the used water goes -- yep, you guessed it -- back into pipes where it travels to a wastewater plant. Here, the water is cleaned and then pumped back into the river or into an aquifer. And then the whole process starts over again!

Major Rivers

The reservoirs, the aquifers, the treatment plants, the pipelines, the wastewater plants -- it takes all these to make sure we have enough water to raise crops, water animals, fight fires, cook food, wash clothes, take showers ...

And you know, here in Texas, more and more people are needing water every year, but there's not more and more water available every year. That means we all need to use water wisely.

Someone brushing
teeth -- water
turned off

Someone taking a
shower

Various water
use scenes

Major River with
glass of water

How do you do that, you say. Well, partner, it's easy. Use only as much water as you really need. For example, don't let the water keep running down the drain while you're brushing your teeth. Turn the water off while you're brushing; then turn it back on.

When you need to take a shower, make it a quick one. You'll get just as clean in 5 minutes as you will in 15.

Each one of us uses thousands and thousands of gallons of water a year, so any way you can conserve water, not waste it, will help make sure that all of us in Texas have plenty of good clean water now and in the future.

Aquifer and I certainly appreciate you using only the water you really need. So long now.

Walter W. Carlwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Clara E. Hanson, Secretary

M. Donald Arnold, III
Executive Director

Thomas W. Linn, III
Charles W. Johnson, Jr.
Deputy Executive Director

April 6, 1989

Mr. Danny F. Vance, General Manager
Trinity River Authority
P. O. Box 60
Arlington, TX 76010

Dear Mr. Vance:

For your information, we have attached the "Major Rivers" promotional materials that will be used as the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health, move into phase II of their marketing plan to put the "Major Rivers" program into 20% of the fourth-grade classrooms in Texas by fall 1989. Phase II will include soliciting the support of water associations and districts.

As you recall, you received a letter and a preview kit earlier this year. Several river authorities have responded and several are still working on their level of involvement. In order to avoid duplication of counties or school districts selected for funding, we have suggested that water associations or districts contact you before contacting the "Major Rivers" supplier.

If you do not elect to participate directly in the "Major Rivers" program this year, we would appreciate your assisting in our marketing effort by referring callers to Educational Development Specialists at 213/420-6814.

Sincerely,



Donna D. Darling
Director, Office of Public Information

Encl:



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 25, 1989

Mr. John Jadrosich
Public Information Officer
Trinity River Authority
5300 S. Collins
Arlington, TX 76004

Dear John:

Thank you for your interest in "Major Rivers", the Texas Water Conservation Program.

I have enclosed a cost proposal by ISD within each county in your service area. The statistics used to compile the numbers of fourth grade students in the school districts were taken directly from the 1988 Texas Education Agency Guide. The number of students was then divided by 25 (the maximum number of students per classroom allowed by The State of Texas) to arrive at the number of classrooms in that school district.

I am also sending another Major Rivers preview kit as you requested. Please keep in mind that the preview kit is a sample and contains one of everything. The actual class set contains 25 sets of student material.

Please let me know if I can provide you with any additional information or assistance. I look forward to working with you and the Trinity River Authority.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling (TWDB)

TRINITY RIVER AUTHORITY

This proposal outlines the specific numbers of 4th grade classrooms in 17 counties of the Trinity River Authority. The 17 counties represented are: Tarrant, Dallas, Kaufman, Ellis, Navarro, Henderson, Freestone, Anderson, Leon, Madison, Walker, San Jacinto, Liberty, Chambers, Polk, Trinity, and Houston. The following information was comprised using the 1988 Texas Education Agency guide.

<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
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TARRANT COUNTY

Arlington ISD	3259	131
Birdville ISD	1296	52
Everman ISD	267	11
Fort Worth ISD	5256	211
Grapevine-Colleyville	531	22
Keller ISD	544	22
Mansfield ISD	517	21
Masonic Home ISD	10	1
Lake Worth ISD	131	6
Crowley ISD	377	16
Kennedale ISD	127	6
Azle ISD	404	17
Hurst-Euless-Bedford	1396	56
Castleberry ISD	206	9
Eagle Mt. Saginaw	371	15
Carroll ISD	132	6
White Settlement	308	13

SUBTOTAL.....	615
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DALLAS COUNTY

Carrollton-Farmers	1219	49
Cedar Hill ISD	312	13
Dallas ISD	10948	438
DeSoto ISD	416	17
Duncanville ISD	736	30
Garland ISD	2752	111
Grand Prairie ISD	1308	53
Highland Park ISD	335	14
Irving ISD	1663	67
Lancaster ISD	320	13
Mesquite ISD	1908	77
Richardson ISD	2385	96

Sunnyvale ISD	25	1
Wilmer-Hutchins ISD	283	12
Coppell ISD	170	7
SUBTOTAL.....		998

KAUFMAN COUNTY

Crandall ISD	86	4
Forney ISD	121	5
Kaufman ISD	175	7
Kemp ISD	98	4
Mabank ISD	188	8
Terrell ISD	294	12
Scurry-Rosser ISD	65	3
SUBTOTAL.....		43

ELLIS COUNTY

Avalon ISD	17	1
Ennis ISD	332	14
Ferris ISD	97	4
Italy ISD	37	2
Midlothian ISD	225	9
Milford ISD	18	1
Palmer ISD	64	3
Red Oak ISD	238	10
Waxahachie ISD	372	15
Maypearl ISD	40	2
SUBTOTAL.....		61

NAVARRO COUNTY

Blooming Grove ISD	47	2
Corsicana ISD	351	15
Dawson ISD	24	1
Frost ISD	29	2
Kerens ISD	49	2
Mildred ISD	24	1
Rice ISD	20	1
SUBTOTAL.....		24

HENDERSON COUNTY

Athens ISD	282	12
Brownsboro ISD	139	6

Cross Roads ISD	45	2
Eustace ISD	79	4
Malakoff ISD	82	4
Trinidad ISD	17	1
Murchison ISD	20	1
La Poynor ISD	36	2

SUBTOTAL..... 32

FREESTONE COUNTY

Fairfield ISD	148	6
Teague ISD	90	4
Wortham ISD	39	2
Dew ISD	11	1

SUBTOTAL..... 13

ANDERSON COUNTY

Cayuga ISD	26	2
Elkhart ISD	70	3
Frankston ISD	55	3
Neches ISD	14	1
Palestine ISD	334	14
Westwood ISD	131	6
Slocum ISD	21	1

SUBTOTAL..... 30

LEON COUNTY

Buffalo ISD	69	3
Centerville ISD	37	2
Normangee ISD	32	2
Oakwood ISD	28	2
Leon ISD	52	3

SUBTOTAL..... 12

MADISON COUNTY

Madisonville CISD	141	6
North Zulch ISD	14	1

SUBTOTAL..... 7

WALKER COUNTY

New Waverly ISD	54	3
Huntsville ISD	510	21
SUBTOTAL.....		24

SAN JACINTO COUNTY

Coldspring-Oakhurst ISD	154	7
Shepherd ISD	95	4
SUBTOTAL.....		11

LIBERTY COUNTY

Cleveland ISD	223	9
Dayton ISD	246	10
Devers ISD	12	1
Hardin ISD	89	4
Hull-Daisetta ISD	77	4
Liberty ISD	187	8
Tarkington ISD	117	5
SUBTOTAL.....		41

CHAMBERS COUNTY

Anahuac ISD	118	5
Barbers Hill ISD	123	5
East Chambers ISD	74	3
SUBTOTAL...		13

POLK COUNTY

Big Sandy ISD	36	2
Goodrich ISD	17	1
Corrigan-Camden	97	4
Leggett ISD	22	1
Livingston ISD	203	9
Onalaska ISD	46	2
SUBTOTAL.....		19

TRINITY COUNTY

Groveton ISD	58	3
Trinity ISD	87	4
Centerville ISD	11	1
Apple Springs ISD	10	1

SUBTOTAL..... 9

HOUSTON COUNTY

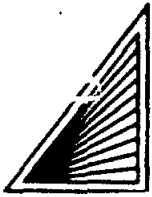
Crockett ISD	176	8
Grapeland ISD	69	3
Lovelady ISD	44	2
Latexo ISD	38	2
Kennard ISD	32	2

SUBTOTAL..... 17

From this chart you can see that you will need a total of 1968 Major Rivers class sets to supply 100% of the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
1968 Major Rivers class sets @ \$40.00 each	\$78,720
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-19,680
Imprinting 1968 class sets of 25	1,060
Shipping (one location)	2,361
Total	----- \$62,461

* Shipping costs are estimated and may vary slightly.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

May 19, 1989

Mr. Gary Keil
TARRANT COUNTY WATER CONTROL
6506 Wells-Burnett Road
Forth Worth, TX 76135

Dear Gary:

Thank you for your interest in "Major Rivers," the Texas Water Conservation Program.

Enclosed you will find a "Major Rivers" preview kit, a cost proposal for all 17 independent school districts within Tarrant County's service area, and an order form. The preview kit contains a sample of all the "Major Rivers" materials. However, the actual class sets, when purchased, will contain 25 sets of all student materials.

Please feel free to call me if I can answer any questions or can be of service. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

AMC:gk
Enclosures

cc: Donna Darling, TWDB

TARRANT COUNTY WATER CONTROL

This proposal outlines the specific numbers of 4th grade classrooms in 17 Independent School Districts in the Tarrant County Water Control service area. The following information was comprised using the 1988 Texas Education Agency guide.

<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
TARRANT COUNTY		
Arlington ISD	3259	131
Birdville ISD	1296	52
Everman ISD	267	11
Fort Worth ISD	5256	211
Grapevine-Colleyville	531	22
Keller ISD	544	22
Mansfield ISD	517	21
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Azle ISD	404	17
Hurst-Euless-Bedford	1396	56
Castleberry ISD	206	9
Eagle Mt. Saginaw	371	15
Carroll ISD	132	6
White Settlement	308	13
TOTAL.....		615

From this chart you can see that you will need a total of 615 Major Rivers class sets to supply 100% of the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
615 Major Rivers class sets @ \$40.00 each	\$24,600
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-6,150
Imprinting 615 class sets of 25	380
Shipping (one location)	738
Total	----- \$19,568

* Shipping costs are estimated and may vary slightly.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

June 1, 1989

Ms. Cheryl Taylor-West
CITY OF ARLINGTON
101 W. Abram
Arlington, TX 76010

Dear Cheryl:

Enclosed is the Major Rivers preview kit that you requested.

This morning you asked me how the state subsidy works. Let me briefly review what we talked about.

1. The TWDB, TWC, and TDH have pooled funds to assist river authorities, in the form of a subsidy, to provide the Major Rivers program to fourth graders in their various service areas.
2. The City of Arlington is part of the Trinity River Authority. The Trinity River Authority has been offered the option of a subsidy by the state entities and has requested a cost proposal from EDS. To the best of my knowledge, Trinity is still reviewing their options and level of interest.
3. If you want more information about what your river authority's interest level is, or if you want to participate in the Major Rivers program, I suggest that you contact Mr. John Jadrosich, Public Information Officer of Trinity River Authority.
4. If Mr. Jadrosich is unable to help you at this time, you may wish to arrange your own subsidy by contacting either Mr. Bill Colbert of Texas Water Commission or Ms. Donna Darling of Texas Water Development Board.

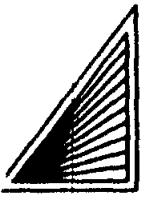
Please feel free to call me if I can answer any further questions.

Sincerely,

Ann M. Crafton
Director of Marketing

AMC:gk
Enclosure

cc: Donna Darling, TWDB



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Danny Vance
General Manager
Trinity River Authority
P.O. Box 60
Arlington, TX 76010

Dear Danny:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

As you are aware, Wanda McMurray with LCRA distributed Major Rivers throughout her service area last school year. Wanda has shared with us the teacher comments that she received and I am passing them along to you. We are very pleased with the positive response to the program, as I'm sure you will be too.

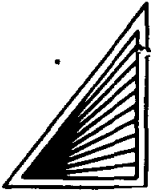
Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

April 26, 1989

Donna D. Darling
TEXAS WATER DEVELOPMENT BOARD
Post Office Box 13231
Austin, TX 78711-3231

Dear Donna:

Here is a revision of the Major Rivers video script. This version is Texas-wide, whereas the original video only addresses LCRA's 10-county service area.

Let me know soon if you have any comments or suggestions. Then we'll work with LCRA to produce the statewide version of the video.

Thanks, Donna.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk
Enclosure

cc: Wanda McMurray, LCRA
Ann Crafton, EDS

MAJOR RIVERS IN TEXAS

Visual (*suggestions only*)

Major Rivers on Aquifer—touching hat

Someone in a house turning water on

Some old photos of buckets in the river and old wells

Water well

River

Map showing river authorities throughout Texas

Audio

Howdy! I am Major Rivers and this is my horse, Aquifer. We've been traveling around Texas for many years, and we've seen a lot of changes. But one thing that will never change is our need for good, clean water!

Now, you're probably saying that getting water is easy. All you got to do is turn on the tap and out comes the water.

Well, just hold on there a minute. That water doesn't get to your tap by magic, you know. No sir. It takes a lot of hard work and costs a great deal of money to get that water to you.

It used to be that people got their water right out of the river. They'd just put their buckets in and haul out the water they needed. Or if they didn't happen to live by a river, they'd dig a well and use water that was stored up underground. Well, as you might imagine, it really wasn't too convenient.

In Texas, we still get our water from rivers and from groundwater. In fact, more than half of the water we use comes from underground water basins, called **aquifers**, like my horse here;

and the rest of our water, nearly half, comes from surface water—you know, water on top of the ground, like rivers, lakes, and streams. But we don't exactly have to do the gettin' of the water ourselves anymore. Water companies and river authorities now do that for us.

Okay, let's see just how these water companies get the water from there to here, so to speak. Where you live, it's likely that a river authority, along with a water agency right in your town, are faced with the task of getting you the water you need. And mind you it's quite a task!

Map showing aquifers throughout Texas

All over Texas, there are underground areas of gravel, or sand, or rocks that water seeps right into—you know, the aquifers.

Process of drilling a well

To get that water out of the ground so we can use it, water companies have to drill holes down to where the water is. Then the water has to be pumped up out of the ground.

Map of Texas showing the major rivers

We're also fortunate in Texas to have a lot of big rivers, famous rivers too, like the Rio Grande, the Pecos, the Colorado, and the Red. Generally, these (ahem) **major rivers** start in the northwest part of the state, run southeast across the state, and empty into the Gulf of Mexico.

Flood scenes

It used to be that some years, when it rained a lot, the rivers provided all the water anyone could want. Actually, they sometimes provided **more** water than anyone could want! Houses floated away, crops were drowned, and people and animals were even killed as the river spilled over its banks and flooded the land.

Drought scenes

Other years, when very little rain fell to the ground, some of the rivers would dry up to a trickle. No one had enough water then.

Split screen—flood/drought

So, the rivers could be like bucking broncos or like old horses out to pasture. Neither did us much good.

Dam with floodgates

Texans decided to change that. They built dams on many of the rivers to hold the water back. That way they could control how much water flowed down the rivers toward the Gulf of Mexico. That put an end to the floods.

Lake behind a dam

Damming up the rivers like that meant lakes were formed. Turns out, these lakes, called reservoirs, are very useful. They actually store water, rather than just letting it run down the river into the Gulf. So even in the driest years, *drought* years they're called, we have enough water.

Recreation on a lake

These reservoirs also provide us Texans with lots of fun. Aquifer and I have spent many a lazy, hot summer day fishing, sailing, or just dangling our toes into a Texas lake or reservoir.

Hydroelectric plant

River authorities can use this stored-up water for another purpose, too. When they open the gates, the water rushes out, turning big turbine-generators that produce electricity. So the dams not only make sure we have enough water but enough electricity too!

Major Rivers

Having the water in the reservoirs and in the aquifers isn't the same as having the water in your house though. River authorities and local water agencies still have to get the water to you. Before they do, though, they make sure the water is clean and safe to drink.

Irrigation on rice fields

Water that's used to irrigate crops, like cotton or rice, can go directly from the rivers and the aquifers to the farms.

Treatment plant

But the water we drink, cook with, and bathe in first gets cleaned. It is sent from the river, the reservoirs, and the aquifers to treatment plants, where any dirt that might have gotten in is taken out. And chlorine or another such chemical is put in to make sure germs stay out.

Pipeline network

All this water gets where it's going through a maze of pipelines. Sometimes the water travels miles and miles through pipes before it rushes out when you turn the faucet on.

Water going down a drain

But then where does the water go? Well, in some places, mainly in rural areas, wastewater goes down under the ground into what's called a septic tank. From there it slowly seeps back into the ground.

Wastewater plant

In other areas, though, the used water goes—you guessed it—back into pipes where it travels to a wastewater plant. Here, the water is cleaned and then pumped back into the river or into an aquifer. And then the whole process starts over again!

Collage of reservoirs, aquifers, treatment plants, pipelines, wastewater plants

The reservoirs, the aquifers, the treatment plants, the pipelines, the wastewater plants—it takes all these to make sure we have enough water to raise crops, water animals, fight fires, cook food, wash clothes, take showers . . .

Major Rivers

Yessiree. It takes a lot of hard work and money to supply us with all the water we need. Your river authority and local water agency work with the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health to see that we have plenty of clean, fresh, safe water to use.

Population signs

But these people can only do so much to keep that water flowing. You have to help too. There is only a limited amount of water, and, as you know, Texas is growing. More and more people are needing water every year.

Dam under construction

Supplying more water isn't easy. New dams and reservoirs would have to be built, but these are expensive and there aren't many places left to build them. We shouldn't dig more wells to get groundwater because we're taking too much water out of many of our aquifers already.

Water rushing in or out of a treatment plant

With more people using water, we also need more water treatment plants and wastewater plants, but these plants cost a lot of money and they can't be built overnight, you know.

Major Rivers

That means, we all must help save the water we already have and use it wisely.

Someone brushing teeth—water off

How do you do that, you say. Well, partner, it's easy. Use only as much water as you really need. For example, don't let the water keep running down the drain while you're brushing your teeth. Turn the water off while you're brushing; then turn it back on.

Someone taking a shower

When you need to take a shower, make it a quick one. You'll get just as clean in 5 minutes as you will in 15.

Kids playing in sprinkler on lawn

If you play in the sprinkler, be sure you're watering the yard, not the sidewalk.

Washing a car with a bucket of water

And use buckets of water when you help wash the car. Don't let the water from the hose run down the street.

Various water use scenes

Each one of us uses thousands and thousands of gallons of water a year, so any way you can conserve water, not waste it, will help make sure that all of us in Texas have plenty of good clean water now and in the future.

Major Rivers with glass of water

Aquifer and I certainly appreciate you using only the water you really need. So long now.

Major Rivers
Video Script - Revised 5/10/89

Howdy! I'm Major Rivers and this is my horse, Aquifer. We've been traveling around Texas for many years, and we've seen a lot of changes. But one thing that will never change is our need for good, clean water.

(Visual is Major Rivers touching hat, sitting on Aquifer who is drinking from a stream)

Now, you're probably saying that getting water is easy. You just turn on the tap and out comes the water.

(Fourth-grade child turning on water to brush teeth)

Well, just hold on there a minute. That water doesn't get to your tap by magic, you know. No sir. It takes a lot of hard work and costs a lot of money to get that water to you.

(Child turns off water and and picture dissovles to pioneer child hauling water.. collage of old photos of buckets in the river and old wells)

It used to be that people got their water right out of the river. They'd just put their buckets in and haul out the water they needed. Or if they didn't happen to live by a river, they'd dig a well and use water that was stored up underground, groundwater we call it. Well, as you might imagine, getting water from a river or from a well really wasn't too convenient.

(Continue collage of hauling and drawing from well--drinking from ladle in the water bucket.)

In Texas, we still get our water from rivers and from groundwater. In fact, more than half of the water we use comes from underground water basins, called aquifers, like my horse here.

(map of rivers, map of aquifers)

and the rest of our water, nearly half, comes from surface water--you know, water on top of the ground, like rivers, lakes, and streams. But we don't exactly have to do the gettin' of the water ourselves anymore. Water districts and river authorities do that for us now.

(collage of rivers, lakes, streams--raw water intake valve)

In towns and cities, the wastewater goes--you guessed it--back into pipes where it travels to a wastewater treatment plant. Here, the water is cleaned and then pumped back into a river, lake or stream so it can go back to the water treatment plant to be cleaned some more and used again.

(pipe diagram, then wastewater plant, then water treatment plant, then pipe, then faucet)

Yessiree. It takes a lot of hard work and money to supply us with all the water we need. It also takes a lot of people like you and your family making sure that we all use just the water we really need. There is only a limited amount of water, and, as you know, Texas is growing. More and more people are needing water every year.

(we have a great water fountain graphic that shows population growth and water use. Thanks for the plug about the agencies, but don't think fourth-graders will relate to state agencies--rather keep it on a local bureaucratic level)

Supplying more water isn't easy. Building new dams and reservoirs or drilling new wells takes a lot of time and money.

(dam being built, well being drilled)

And more people using more water will mean that we will need more water treatment plants and wastewater treatment plants which can't be built overnight, you know.

(construction shots of plants)

That means, we all must help save the water we already have and use it wisely.

(Major Rivers)

How do you do that, you say. Well, partner, it's easy. Use only as much water as you really need. For example, don't let the water keep running down the drain while you're brushing your teeth. Turn the water off while you're brushing; then turn it back on.

(someone brushing teeth-child)

When you need to take a shower, make it a quick one. You'll get just as clean in 5 minutes as you will in 15. And, oh yes, be sure to put Spot in a tub of water for his bath instead of letting the hose run.

(Child washing dog in tub of water)

If you play in the sprinkler, be sure you're watering the yard, not the sidewalk.



(Dam with floodgates)

Damming up the rivers like that meant lakes were formed. Turns out, these lakes, called reservoirs, are very useful. They actually store water, so that even in the driest years, drought years they're called, we have enough water to drink.

(Lake behind a dam)

These reservoirs also provide us Texans with lots of fun. Aquifer and I have spent many a lazy, hot summer day skiing, sailing, or just dangling our fishin' line in a Texas lake or reservoir.

(Major Rivers and Aquifer sitting on the bank fishing)

(skip electricity reference--one major concept is enough for fourth-grade)

Having the water in the reservoirs and in the aquifers isn't the same as having the water in your house though. River authorities and local water agencies still have to get the water to you. But before they do, they make sure the water is clean and safe to drink.

(Child cooling off by drinking a clear, cold glass of water)

Water that's used to irrigate crops, like cotton or rice, can go directly from the rivers and the aquifers to the farms.

(irrigation)

But the water we drink, cook with, and bathe in has to be cleaned so that no one will get sick from drinking or using dirty water. Water goes from the river, the reservoir, or the aquifer to a water treatment plant, where any dirt that might have gotten in is taken out. And chlorine or other such chemicals are put in to make sure germs stay out.

(treatment plant)

All this water gets where it's going through a maze of pipelines. Sometimes the water travels miles and miles through pipes before it rushes out when you turn on the faucet.

(pipeline network--animated water rushing and out the faucet)

But then where does the water go? Well, in some places, mainly in rural(not sure they know what rural means) areas, out in the country, dirty water or wastewater goes down under the ground into what's called a septic tank. From there it slowly seeps back into the ground.

(Water going down a drain into a septic tank-illustration)



Okay, let's see just how these water districts and river authorities get the water from there to here, so to speak. Where you live, it's likely that the people who work for a river authority or for a water district have the task of getting you the water you need. And mind you, bringing water to you and your family is no little task.

(drawing of pipes from lake or well to house)

All over Texas, there are underground areas of gravel, or sand, or rocks that water seeps right into--you know, aquifers.

(large cutaway of aquifer-with water seeping down)

To get that water out of the ground so we can use it, water districts have to drill holes, that is wells, down to where the water is. Then the water in these wells has to be pumped up out of the ground.

(Process of drilling a well)

We're also fortunate in Texas to have a lot of big rivers, famous rivers too, like the Rio Grande, the Pecos, the Colorado, and the Red. Generally these (ahem) major rivers start in the northwest part of Texas and run southeast across the state where they empty into the Gulf of Mexico.

(Graphic of rivers turning blue as they run from the northwest into the Gulf)

It used to be that some years, when it rained a lot, the rivers provided all the water anyone could want. Actually, they sometimes provided more water than anyone could want! Houses floated away, crops were destroyed, and people and animals drowned when the river spilled over its banks and flooded the land.

(Flood scenes)

Other years, when very little rain fell to the ground, some of the rivers would dry up to a trickle. No one had enough water then.

(Drought scenes)

So, the rivers could be like bucking broncos or like old horses out to pasture. Neither did us much good.

(Split screen - flood/drought)

Texans decided to change that. They built dams on many of the rivers to hold the water back. That way they could control how much water flowed down the rivers toward the Gulf of Mexico. These dams also protected us from the floods.



(Kids playing in sprinkler on lawn)

And use buckets of water when you help wash the car. Don't let the water from the hose run down the street.

(washing car)

Each one of us uses thousands and thousands of gallons of water a year, so any way you can conserve, that is save water, not waste it, will help make sure that all of us in Texas have plenty of good clean water now and in the future.

(various water use scenes)

Aquifer and I certainly appreciate your using only the water you really need. So long now.

(Major Rivers touches hat and he and aquifer ride into the sunset across a stream)

MAJOR RIVERS IN TEXAS

Visual (*suggestions only*)

Major Rivers touching hat, sitting on Aquifer who is drinking from a stream

Fourth-grade child turning on water to brush teeth

Child turns off water and picture dissolves to pioneer child hauling water . . . collage of old photos of buckets in the river and old wells

Continue collage of hauling and drawing from well—drinking from ladle in the water bucket.

Map of rivers, map of aquifers

Collage of rivers, lakes, streams—raw water intake valve

Drawing of pipes from lake or well to house

Large cutaway of aquifer with water seeping down

Audio

Howdy! I am Major Rivers and this is my horse, Aquifer. We've been traveling around Texas for many years, and we've seen a lot of changes. But one thing that will never change is our need for good, clean water!

Now, you're probably saying that getting water is easy. You just turn on the tap and out comes the water.

Well, just hold on there a minute. That water doesn't get to your tap by magic, you know. No sir. It takes a lot of hard work and costs a great deal of money to get that water to you.

It used to be that people got their water right out of the river. They'd just put their buckets in and haul out the water they needed. Or if they didn't happen to live by a river, they'd dig a well and use water that was stored up underground—ground water we call it. Well, as you might imagine, it really wasn't too convenient.

In Texas, we still get our water from rivers and from groundwater. In fact, more than half of the water we use comes from underground water basins, called **aquifers**, like my horse here;

and the rest of our water, nearly half, comes from surface water—you know, water on top of the ground, like rivers, lakes, and streams. But we don't exactly have to do the gettin' of the water ourselves anymore. Water companies and river authorities do that for us now.

Okay, let's see just how these water districts and river authorities get the water from there to here, so to speak. Where you live, it's likely that the people who work for a river authority or for a water district have the task of getting you the water you need. And mind you, bringing water to you and your family is no little task!

All over Texas, there are underground areas of gravel, or sand, or rocks that water seeps right into—you know, **aquifers**.

Child cooling off by drinking a clear, cold glass of water

Having the water in the reservoirs and in the aquifers isn't the same as having the water in your house though. River authorities and local water agencies still have to get the water to you. But before they do, they make sure the water is clean and safe to drink.

Irrigation

Water that's used to irrigate crops, like cotton or rice, can go directly from the rivers and the aquifers to the farms.

Treatment plant

But the water we drink, cook with, and bathe in has to be cleaned so that one one will get sick from drinking or using dirty water. Water goes from the river, the reservoir, or the aquifer to a water treatment plant, where any dirt that might have gotten in is taken out. And chlorine or another such chemical~~ate~~^{is} put in to make sure germs stay out.

Pipeline network—animated water rushing out the faucet

All this water gets where it's going through a maze of pipelines. Sometimes the water travels miles and miles through pipes before it rushes out when you turn on the faucet.

Water going down a drain into a septic tank—illustration

But then where does the water go? Well, in some places, mainly in rural areas out in the country, dirty water or wastewater goes down under the ground into what's called a septic tank. From there it slowly seeps back into the ground.

Pipe diagram, then wastewater plant, then water treatment plant, then pipe, then faucet

In towns and cities, the wastewater goes—you guessed it—back into pipes where it travels to a wastewater treatment plant. Here, the water is cleaned and then pumped back into a river, lake, or stream so it can go back to the water treatment plant to be cleaned some more and used again.

Use TWDB water fountain graphic that shows population growth and water use

Yessiree. It takes a lot of hard work and money to supply us with all the water we need. It also takes a lot of people like you and your family making sure that we all use just the water we really need. There is only a limited amount of water, and, as you know, Texas is growing. More and more people are needing water every year.

Dam being built, well being drilled

Supplying more water isn't easy. Building new dams and reservoirs or drilling new wells takes a lot of time and money.

Process of drilling a well

To get that water out of the ground so we can use it, water districts have to drill holes—that is, wells—down to where the water is. Then the water has to be pumped up out of the ground.

Graphic of rivers turning blue as they run from the northwest into the Gulf

We're also fortunate in Texas to have a lot of big rivers, famous rivers too, like the Rio Grande, the Pecos, the Colorado, and the Red. Generally, these (ahem) **major rivers** start in the northwest part of Texas and run southeast across the state where they empty into the Gulf of Mexico.

Flood scenes

It used to be that some years, when it rained a lot, the rivers provided all the water anyone could want. Actually, they sometimes provided **more** water than anyone could want! Houses floated away, crops were destroyed, and people and animals were drowned when the river spilled over its banks and flooded the land.

Drought scenes

Other years, when very little rain fell to the ground, some of the rivers would dry up to a trickle. No one had enough water then.

Split screen—flood/drought

So, the rivers could be like bucking broncos or like old horses out to pasture. Neither did us much good.

Dam with floodgates

Texans decided to change that. They built dams on many of the rivers to hold the water back. That way they could control how much water flowed down the rivers toward the Gulf of Mexico. These dams also protected us from the floods.

Lake behind a dam

Damming up the rivers like that meant lakes were formed. Turns out, these lakes, called reservoirs, are very useful. They actually store water, so even in the driest years, *drought* years they're called, we have enough water.

Major Rivers and Aquifer sitting on the bank fishing

These reservoirs also provide us Texans with lots of fun. Aquifer and I have spent many a lazy, hot summer day skiing, sailing, or just dangling our fishin' line in a Texas lake or reservoir.

Construction shots of plants

And more people using more water will mean that we will need more water treatment plants and wastewater treatment plants which can't be built overnight, you know.

Major Rivers

That means, we all must help save the water we already have and use it wisely.

Child brushing teeth

How do you do that, you say? Well, partner, it's easy. Use only as much water as you really need. For example, don't let the water keep running down the drain while you're brushing your teeth. Turn the water off while you're brushing; then turn it back on.

Child washing dog in tub of water

When you need to take a shower, make it a quick one. You'll get just as clean in 5 minutes as you will in 15. And, oh yes, be sure to put Spot in a tub of water for his bath instead of letting the hose run.

Kids playing in sprinkler on lawn

If you play in the sprinkler, be sure you're watering the yard, not the sidewalk.

Washing car

And use buckets of water when you help wash the car. Don't let the water from the hose run down the street.

Various water use scenes

Each one of us uses thousands and thousands of gallons of water a year. So any way you can conserve—that is, save water, not waste it—will help make sure that all of us in Texas have plenty of good clean water now and in the future.

Major Rivers touches hat, and he and Aquifer ride into the sunset across a stream

Aquifer and I certainly appreciate you using only the water you really need. So long now.

Credits: The *Major Rivers Texas Water Education Program* is provided by local water authorities in cooperation with the Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

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FROM THE DESK OF

Donna Darling

May 31, 1989

Attached for your information is a status report on the sponsorship and distribution efforts to date for the "Major Rivers" fourth-grade water education program.

Please note the information as it regards your organization and call me at 512/463-7869 to make additions, corrections, or deletions. No call will indicate that the information is correct.

If you know that you will not be participating in the distribution of the program this year, we would appreciate your providing the names of other entities in your service area who might wish to take advantage of this opportunity.

A copy of this marketing update will be included in the marketing materials to be distributed to those attending the Association of Water Board Directors Annual Conference in Dallas in June.

Thanks for your help.

*mailed to all on list
5/31/89*



Major Rivers Marketing Update June 1, 1989

Deadline for ordering *Major Rivers* classroom kits for distribution in Fall, 1989 is August 1, 1989. Cost proposals are available by calling Ann Crafton at 213/420-6814.

Political Subdivisions invited to participate in or to promote the distribution of the *Major Rivers* fourth-grade water education program include the following:

Political Subdivision	4th Grade Classrooms	Requested Cost Proposal	Reserved state subsidy	Placed order for Fall 1989
Angelina & Neches River Authority	330	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brazos River Authority	1450	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Canadian River Municipal Water Auth.	369	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Central Colorado River Authority	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Colorado River Municipal Water District	132	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Guadalupe-Blanco River Authority	220	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gulf Coast Waste Disposal Authority	1789	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lavaca-Navidad River Authority	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Lower Colorado River Authority	378	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lower Concho River Water & Soil	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lower Neches Valley Authority	191	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nueces River Authority	415	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Palo Duro River Authority	19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Red Bluff Water Power Control District	33	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Red River Authority of Texas	565	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sabine River Authority of Texas	406	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
San Antonio River Authority	728	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
San Jacinto River Authority	190	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tarrant County WCID #1	606	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trinity River Authority of Texas	1315	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upper Colorado River Authority	61	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upper Guadalupe River Authority	17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Upper Neches River Municipal Water	165	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Williamson County MUD #1	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Water Associations invited to participate in or to promote the distribution of the *Major Rivers* program include the following:

**American Water Works Association
Texas Water Utilities Association
Texas Municipal Utilities Association
Texas Water Conservation Association
Texas Rural Water Association
Texas Water Pollution & Control Association
Association of Water Board Directors
Texas Water Alliance
Water Well Drillers Association
Texas Society of Professional Engineers
Texas Water Quality Association**

Publications provided materials for use in promoting the *Major Rivers* program include the following:

***State of the Region - Coastal Bend COG
CRMWD Windmill
DETCOG Newsletter
ETCOG Regional Report
The Water Level - Edwards Underground Water District
GBRA Water Resources Report
Cross Section - High Plains UWCD #1
HGAC Spectrum
Your Region in Action -North Central Texas COG
North Plains Water News
TIA Update
Texas Water Report
The Texas Gazette-Texas Dept. of Agriculture
Water Resources Report - Guadalupe-Blanco River Authority
Pipeline - TWPCA
Little Cypress Utility District
Subsidence Update - Harris-Galveston Coastal Subsidence District
Texana Clarion - Lavaca-Navidad River Authority
INTRA - Trinity River Authority
TRWA Magazine
NTMWD News - North Texas Municipal Water District
Panhandle Panorama - Panhandle Regional Planning Commission
SRA Activities - Sabine River Authority
Water Conservation Newsletter - Texas Agriculture Extension Service
Texas Water Resources - Texas A&M Water Resources Institute
WRC Newsletter - Texas Tech University
AWDB Newsletter
Town & City - Texas Municipal League
Texas Water Alliance
Water News - Texas Water Conservation Association
Texas Water Utilities
Comments - Gulf Coast Waste Disposal Authority***



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

May 4, 1989

Mr. J. D. Nixon
2795 French Road
Beaumont, Texas 77706

Dear Mr. Nixon:

We appreciate your concerns about the "Major Rivers" water education program and the Lower Neches Valley Authority.

It is very important when developing education materials for elementary school children that only general information be included, especially when the subject covers water and the entire State of Texas. If you previewed the materials printed specifically for LCRA's 10-counties, the Teacher's Guide included lesson plans for our statutory district. The version that is being marketed outside this area will not contain these sections. It is being left up to the individual water agencies or organizations funding the materials to schools as to whether additional "localized" supplements for their specific locale are developed and distributed with the "Major Rivers" units.

The teachers and students who have used the materials this spring in LCRA's water district elementary schools have enjoyed learning about water in Texas. I hope LNVA is considering offering this comprehensive, Texas-generic water education program to the fourth graders in your Authority's area.

Thank you for your letter. I hope this explanation has clarified your concern.

Sincerely,

Wanda McMurray

Wanda McMurray, Coordinator
Consumer Education Programs

WM/dm

pc: Don Chovanec
Donna Darling, TWDB



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

May 30, 1989

Mr. David Parsons
Sabine River Authority
Post Office Box 487
Quitman, Texas 75783

Dear David:

I'm sorry I wasn't able to visit with you last week when you called regarding LCRA's method of spreading the word about the "Major Rivers" program. It is very rewarding to know that this water education unit is proving beneficial to others outside our area.

As requested, Donna has assembled copies of letters with their specific attachments pertaining to our initial contact for enrollment figures up to the most recent letter seeking resupply orders for next fall.

Also for your information we have included a copy of LCRA's application to the Texas Education Agency for Career Ladder Credit for teachers attending the introductory inservice workshops as well as their comments. These workshops proved to be excellent and the teachers left very enthusiastic about using the units.

Thanks again for your interest. If we can assist you in any other way, please don't hesitate to call on us.

Good Luck with Major Rivers and Aquifer!

Sincerely,

Wanda McMurray, Coordinator
Consumer Education Programs

WM/dm

attachments

pc: Don Chovanec
Donna Darling
Ann Crafton

MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM

Program Record Sheet

Teacher Zimmern Date 5-30-89

School Anderson Mill ISD Round Rock Grade Level 4

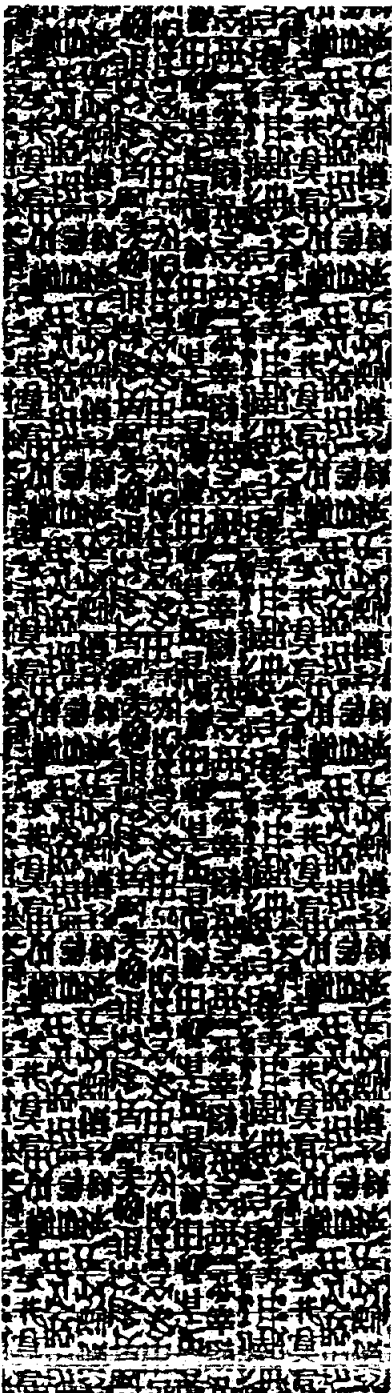
School Mailing Address 10610 Salt Mill Hollow Austin 78750

(Materials cannot be sent to a post office box.)

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy. Thank you.

Test Results

Pupil



Pretest Score (20 possible)

Posttest Score (20 possible)

70	100
70	100
85	100
50	90
60	100
45	95
25	100
55	100
70	85
25	100
55	75
60	100
60	75
50	100
45	100
70	100
Absent	100
50	100
50	80
35	Absent
45	55

Teacher Reactions

1. What was the attitude of most of your pupils toward the program?

- very positive neutral
 positive negative

Comments:

2. Please list any comments or suggestions you have about any aspect of the program.

Video is good follow-up.

3. Do you want to teach the program again next year and have consumable pupil materials replaced?

- yes no

Comments:

We would like to use in August, to introduce Texas unit. Can materials be delivered that early.

Walter W. Carrawell, III, Chairman
Stuart S. Coleman, Vice Chairman
Cliff E. Roney, Member

Mr. Harold ...
...

Thomas M. Dunning, Member
Charles W. Jennings, Member
...

May 31. 1989

Ms. Carolyn Hardy Olson, Commissioner
City of Atlanta
Department of Water & Pollution Control
55 Trinity Avenue
Atlanta, Ga. 30335-0328

Dear Ms. Olson:

David Harper passed your request to preview the "Major Rivers" Texas-specific water education program for fourth grade on to me as I am the information and education officer for one of the three state agencies involved in statewide distribution of the program.

The "Major Rivers" program development was done by the Lower Colorado River Authority who contracted with Educational Development Specialists. Wanda McMurray at LCRA, P. O. Box 220, Austin, Tx. 78767, 512/473-3227 or Fred Niedermeyer, EDS, 5505 East Carson St., Suite 250, Lakewood, California 90713-3093, 213/420-6814 would be able to discuss a project of this type in detail.

I have also enclosed a copy of the "Texas Water Education Network Directory" which lists many of the water education programs currently being used in the public schools in Texas.

If you need additional assistance, please give me a call.

Sincerely,



Donna D. Darling
Director
Public Information and Education

Encl:

CC: David Harper
Wanda McMurray
Fred Niedermeyer



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

*They will qualify for the subsidy when they place a full order.

Order Placed By:	Name: <u>Ron Hilliard</u>	Date: <u>6-1-89</u>
	Title/ Department:	Telephone: <u>(915) 332-9541</u>

BILL TO:	SHIP TO: (Street address please)
<u>SAME</u>	<u>Ron Hilliard</u>
	<u>Soil Conservation Services</u>
	<u>2464 I-20 West</u>
	<u>Odessa, TX 79766-9113</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Required

MAJOR RIVERS

Texas Water Education Program

SHIP ASAP!

	UNIT PRICE			No. of Items Ordered	Extended Price
	List	Less Subsidy	Actual Cost		
CLASS SET	\$40	(\$10)	\$30	(1)	40 ⁰⁰
STUDENT PACK	\$35	(\$5)	\$30		
Materials Total					40 ⁰⁰
Imprinting Charge					0
Shipping Charge					
SUBTOTAL					

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Sharon Faver</u>	Date: <u>6-1-89</u>
	Title/Department:	Telephone: <u>(817) 723-8697</u>

BILL TO:	SHIP TO: (Street address please)
<u>(SAME)</u>	<u>Sharon Faver</u>
	<u>Red River Authority of Texas</u>
	<u>520 Hamilton Bldg.</u>
	<u>Wichita Falls, TX</u>
	<u>76301</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

MAJOR RIVERS

Texas Water Education Program

Hold For Logo.

	UNIT PRICE			No. of Items Ordered	Extended Price
	List	Less Subsidy	Actual Cost		
CLASS SET	\$40	(\$10)	\$30	10	300
STUDENT PACK	\$35	(\$5)	\$30	2	60
Materials Total					360
Imprinting Charge					80
Shipping Charge					
SUBTOTAL					

These materials have been provided by Red River Authority of Texas

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Major Rivers

6-1-89

10 Class Sets @ 40.00 each

2 Student Packs @ 35.00 each

Hold for Logo & include in imprint.

Ship to:

Sharon Faver
 Red River Authority of Texas
 520 Hamilton Bldg.
 Wichita Falls, TX 76301
 (817) 723-8697

Bill to:

Sharon Faver
 Red River Authority of TX
 520 Hamilton Bldg.
 Wichita Falls, TX 76301
 (817) 723-8697

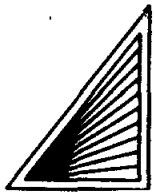
Subsidize bill:

Bill Colbert
 Office of Public Information
 Texas Water Commission
 P.O. Box 13087
 Capitol Station
 Austin, TX 78711-3087

10 class sets @ 30.00 = 300
 2 student packs @ 30.00 = 60
 imprinting = 80.00
~~shipping~~ subtotal = 440.00 ⊕ shipping

10 class sets @ 10.00 = 100
 2 student packs @ 5.00 = 10
 total = \$110.00

* Total order = \$550.00 plus shipping



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

June 1, 1989

Mr. Mike Bukala
Brazos River Authority
P.O. Box 7555
Waco, TX 76714-7555

Dear Mike:

Thank you for your interest in "Major Rivers", the Texas Water Conservation Program.

I have enclosed a cost proposal by ISD within each county in your service area. The statistics used to compile the numbers of fourth grade students in the school districts were taken directly from the 1988 Texas Education Agency Guide. The number of students was then divided by 25 (the maximum number of students per classroom allowed by The State of Texas) to arrive at the number of classrooms in that school district.

Please let me know if you would like a "Major Rivers" preview kit. I will be happy to send you one. There will be a video available very soon that will tie into the Major Rivers unit. I will send you a notification as soon as it is completed.

Please let me know if I can provide you with any additional information or assistance. I look forward to working with you and the Brazos River Authority.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling (TWDB)

BRAZOS RIVER AUTHORITY

This proposal outlines the specific numbers of 4th grade classrooms by school district within the county. The following information was comprised using the 1988 Texas Education Agency guide.

<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
------------------------	---------------------------	-----------------------------

BRAZORIA COUNTY

Alvin ISD	678	28
Angleton ISD	422	17
Danbury ISD	39	2
Brazosport ISD	958	39
Sweeny ISD	176	8
Columbia-Brazoria ISD	298	12
Pearland ISD	475	19
Damon ISD	15	1

SUBTOTAL...		126
--------------------	--	------------

FORT BEND COUNTY

Lamar Consolidated	789	32
Needville ISD	143	6
Fort Bend ISD	2311	93
Kendleton ISD	25	1
Stafford MSD	109	5

SUBTOTAL...		137
--------------------	--	------------

AUSTIN COUNTY

Bellville ISD	143	6
Sealy ISD	152	7
Wallis-Orchard ISD	49	2

SUBTOTAL...		15
--------------------	--	-----------

WALLER COUNTY

Hempstead ISD	79	4
Waller ISD	217	9
Royal ISD	116	5

SUBTOTAL...		18
--------------------	--	-----------

WASHINGTON COUNTY

Brenham ISD	362	15
Burton ISD	34	2
SUBTOTAL...		17
GRIMES COUNTY		
Anderson-Shiro Con.	28	2
Iola ISD	25	1
Navasota ISD	217	9
SUBTOTAL...		12
LEE COUNTY		
Giddings ISD	118	5
Lexington ISD	67	3
Dime Box ISD	19	1
SUBTOTAL...		9
BURLESON COUNTY		
Caldwell ISD	128	6
Somerville ISD	43	2
Snook ISD	45	2
SUBTOTAL...		10
BRAZOS COUNTY		
College Station ISD	418	17
Bryan ISD	862	35
SUBTOTAL...		52
MADISON COUNTY		
Madisonville CISD	141	6
North Zulch ISD	14	1
SUBTOTAL...		7
LEON COUNTY		
Buffalo ISD	69	3
Centerville ISD	37	2
Normangee ISD	32	2
Oakwood ISD	28	2
Leon ISD	52	3
SUBTOTAL...		12
ROBERTSON COUNTY		
Bremond IDS	19	1

Calvert ISD	28	1
Franklin ISD	46	2
Hearne ISD	145	6
Mumford ISD	7	1

SUBTOTAL... 11

MILAM COUNTY

Cameron ISD	137	6
Gause ISD	9	1
Milano ISD	25	1
Rockdale ISD	164	7
Thorndale ISD	34	2
Buckholts ISD	10	1

SUBTOTAL... 18

WILLIAMSON COUNTY

Florence ISD	60	3
Georgetown ISD	399	16
Granger ISD	20	1
Hutto ISD	35	2
Jarrell ISD	33	2
Liberty Hill ISD	73	3
Round Rock ISD	1320	53
Taylor ISD	217	9
Thrall ISD	40	2
Leander ISD	329	14
Coupland ISD	7	1

SUBTOTAL... 106

BURNET COUNTY

Burnet Cons ISD	160	7
Marble Falls ISD	185	8

SUBTOTAL... 15

BELL COUNTY

Academy ISD	64	3
Bartlett ISD	39	2
Belton ISD	399	16
Holland ISD	34	2
Killeen ISD	1848	74
Rogers ISD	63	3
Salsdo ISD	45	2
Temple ISD	642	26

SUBTOTAL... 128

FALLS COUNTY

Chilton ISD	23	1
Marlin ISD	127	6
Westphalia ISD	7	1
Rosebud ISD	61	3

SUBTOTAL... 11

LIMESTONE COUNTY

Coolidge ISD	21	1
Groesbeck ISD	152	7
Mexia ISD	190	8

SUBTOTAL... 15

FREESTONE COUNTY

Fairfield ISD	148	6
Teague ISD	90	4
Wortham ISD	39	2
Dew ISD	11	1

SUBTOTAL... 13

LAMPASAS COUNTY

Lampasas ISD	180	8
Lometa ISD	23	1

SUBTOTAL... 9

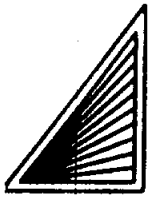
CORYELL COUNTY

Evant ISD	24	1
Gatesville ISD	164	7
Oglesby ISD	15	1
Jonesboro ISD	21	1
Copperas Cove ISD	560	23

SUBTOTAL... 33

MCLENNAN COUNTY

Crawford ISD	31	2
Midway ISD	389	16
La Vega ISD	176	8
Lorena ISD	79	4
Mart ISD	41	2
McGregor ISD	90	4
Moody ISD	54	3
Riesel ISD	33	2
Waco ISD	1163	47



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Tommy Hebert
General Manager
Lower Neches Valley Authority
P.O. Box 3464
Beaumont, TX 77704

Dear Tommy:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

As you are aware, Wanda McMurray with LCRA distributed Major Rivers throughout her service area last school year. Wanda has shared with us the teacher comments that she received and I am passing them along to you. We are very pleased with the positive response to the program, as I'm sure you will be too.

Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Charles Thomas
Executive Director
Angelina & Neches River Authority
P.O. Box 387
Lufkin, TX 75901

Dear Charles:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

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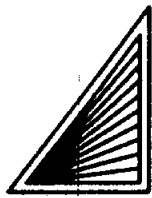
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Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

B.W. Burnes
General Manger
Upper Guadalupe River Authority
P.O. Box 1278
Kerrville, TX 78028

Dear Mr. Burns:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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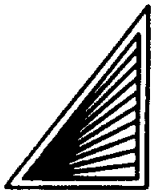
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Director of Marketing

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Educational Development Specialists

5505 East Carson Street • Suite: 250
Lakewood, California 90713-3093 • (213) 420 6814

July 28, 1989

Carson Hoge
General Manager
Brazos River Authority
P.O. Box 7555]
Waco, TX 76714-7555

Dear Carson:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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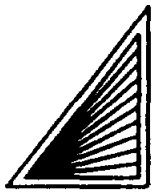
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

David Parsons
Sabine River Authority
Post Office Box 487
Quitman, TX 75783

Dear David:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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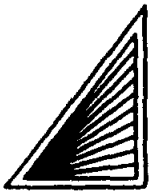
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Denise Ryan
Lavaca-Navidad River Authority
Post Office Box 429
Edna, TX 77957

Dear Denise:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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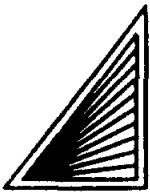
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420 6814

July 28, 1989

Jim Ed Miller
General Manager
Red Bluff Water Power Control District
111 West Second St
Pecos, TX 79772

Dear Jim Ed:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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Director of Marketing

enclosures

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Tami Malatek
Guadalupe-Blanco River Authority
Post Office Box 271
Seguin, TX 78156-0271

Dear Tami:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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Director of Marketing

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420 6814

July 28, 1989

John C. Williams
Canadian River Municipal Water Authority
Post Office Box 99
Sanford, TX 79078

Dear John:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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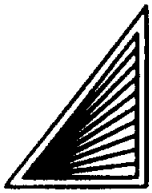
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Director of Marketing

enclosures

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Gary Keil
Tarrant County Water Control
6506 Wells-Burnett Road
Fort Worth, TX 76135

Dear Gary:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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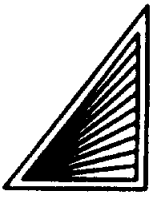
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Director of Marketing

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cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Dennis Becker
Lower Neches River Authority
Post Office Drawer 3464
Beaumont, TX 77704

Dear Dennis:

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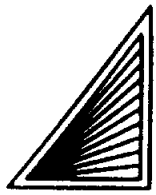
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Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420 6814

July 28, 1989

Gary Stanford
Jones County 4-H
Jones County Courthouse-Basement
Anson, TX 79501

Dear Gary:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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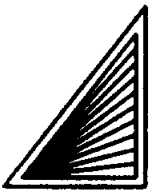
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Director of Marketing

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Danny Johnson
Director of Public Works
City of Stephenville
354 N. Belknap Street
Stephenville, TX 76401

Dear Danny:

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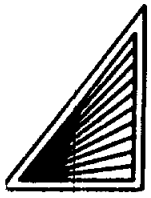
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Director of Marketing

enclosures

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Karen O'Neal
Harris-Galveston Coastal Subsidence District
1660 W. Bay Area Boulevard
Friendswood, TX 77546

Dear Karen:

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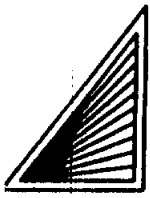
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Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Dennis Masters
Project Manager
Dallas County Park Cities
Municipal Utility District
1811 Regal Row
Dallas, TX 75235-2398

Dear Dennis:

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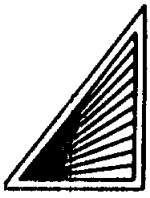
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Ron Hilliard
Soil Conservation Services
2464 120 West
Odessa, TX 79766-9113

Dear Ron:

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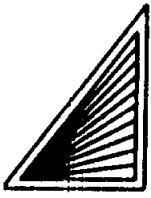
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Jim Ploetz
City of San Antonio
Water Resources Management
114 W. Commerce
San Antonio, TX 78282

Dear Jim:

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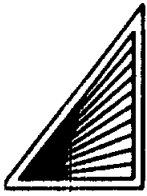
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Johnny Harris
Lake Cities M.U.A
501 N. Shadyshores Road
Lake Dallas, TX 75065

Dear Johnny:

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Director of Marketing

enclosures

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Pat Hohensee
Extension Service
Box 658
Ballinger, TX 76821

Dear Pat:

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enclosures

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Dan Copps
Harris County Utility District #5
Post Office Box 5447
Kingwood, TX 77325

Dear Dan:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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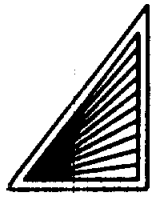
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Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

David Harper
President
Williamson County M.U.D.#1
11500 El Salido Parkway
Austin, TX 78750

Dear David:

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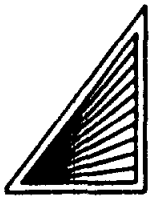
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Sharon Faver
Red River Authority Of Texas
520 Hamilton Building
Wichita Falls, TX 76301

Dear Sharon:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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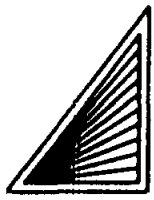
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Director of Marketing

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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Karen Baker
Johnson County Fresh Water
Supply District #1
103 Veatch Street
Joshua, TX 76058

Dear Karen:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

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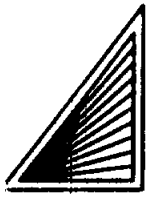
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Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Chet Wiles
Tara Plantation M.U.D.
196 Tara Plantation Dr.
Richmond, TX 77469

Dear Chet:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

As you are aware, Wanda McMurray with LCRA distributed Major Rivers throughout her service area last school year. Wanda has shared with us the teacher comments that she received and I am passing them along to you. We are very pleased with the positive response to the program, as I'm sure you will be too.

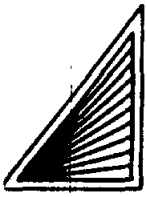
Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Gary Askins
Soil Conservation Service
Highway 67 West
Big Lake, TX 76932

Dear Gary:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

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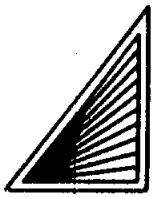
Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Michael Heimer
County Extension Agent
Texas Agricultural Extension Service
103 Commercial Circle Suite 100
Conroe, TX 1989

Dear Michael:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

As you are aware, Wanda McMurray with LCRA distributed Major Rivers throughout her service area last school year. Wanda has shared with us the teacher comments that she received and I am passing them along to you. We are very pleased with the positive response to the program, as I'm sure you will be too.

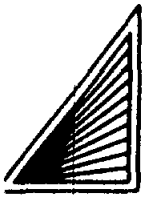
Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Carmon McCain
Information Education Director
High Plains Water District
2930 Avenue Q
Lubbock, TX 79405

Dear Carmon:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

As you are aware, Wanda McMurray with LCRA distributed Major Rivers throughout her service area last school year. Wanda has shared with us the teacher comments that she received and I am passing them along to you. We are very pleased with the positive response to the program, as I'm sure you will be too.

Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Cheryl Taylor West
Administrative Analyst
Water Utilities
City of Arlington
P.O. Box 231
Arlington, TX 76010

Dear Cheryl:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

As you are aware, Wanda McMurray with LCRA distributed Major Rivers throughout her service area last school year. Wanda has shared with us the teacher comments that she received and I am passing them along to you. We are very pleased with the positive response to the program, as I'm sure you will be too.

Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

July 28, 1989

Roy Douglas
General Manager
Upper Neches River Municipal Water Authority
P.O. Drawer Y
Palestine, TX 75801

Dear Roy:

At this point, I'm sure that you are in the process of arranging your subsidy and identifying your level of participation in the Major Rivers program.

Lately, I've received a number of questions that are shared by more than one river authority or water agency. I've compiled a list of questions and answers and I've decided to distribute them among those who have expressed interest in the Major Rivers water education program. These questions and answers may help the concept of the program become more clear.

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Please feel free to call me if I can be of assistance. I look forward to hearing from you.

Sincerely,

Ann M. Crafton
Director of Marketing

enclosures

cc: Donna Darling (TWDB)



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: David Parsons	Date: July 31, 1989
	Title/ Department: Sabine River Authority	Telephone: (409) 978-2262

BILL TO: Sabine River Authority of Texas P.O. Box 48 Quinn, Texas 75783	SHIP TO: (Street address please) Sabine River Authority of Texas P.O. Highway 288 Quinn, Texas 75783
---	--

PURCHASE ORDER (Check one)

Included To Be Sent Not Required

Number (if known):

***IMPRINTING** (Check one)

Requested Need Information Not Requested

Sabine River Authority of Texas

MAJOR RIVERS

Texas Water Education Program

Bill now!

	UNIT PRICE			No of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS KIT (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of all student materials)	\$45	(\$15)	\$30		
STUDENT PACK (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Materials Total					\$120
Imprinting Charge					\$120
Shipping Charge					<i>to be charged when shipped</i>
TOTAL					\$3120

Bill subsidy to:
Bill Colbert
Office of Public Information
Texas Water Commission
P.O. Box 13087
Capital Station
Austin, TX 78711-3087

100 @ \$15 = \$1,500

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1483

Order Placed By: Wanda
 Name: Judi Hill Asst. Secty./Director Date: August 2, 1989
 Title: Board of Directors
 Department: Board of Directors Telephone: (214) 288-4477

BILL TO:
 Dallas County W.C.I.D. #6
 P.O. Box 80030
 Balch Springs, TX 75180

SHIP TO: (Street address please)
 Mesquite Independent School District
 405 E. Davis Street
 Mesquite, TX 75148
 Attention: Linda Henry

PURCHASE ORDER (Check one)
 Enclosed To Be Sent Not Required
 Number (if known) _____

IMPRINTING (Check one)
 Requested Need Information Not Requested

MAJOR RIVERS Texas Water Education Program

*Hold for
 Logo for impt*

	UNIT PRICE			No. of Items Ordered	Extended Price
	Lin	Less Subsidy	Actual Cost		
CLASS SET	\$40 45 ⁰⁰	(\$10)	\$30	10	\$300.00
STUDENT PACK	\$35	(\$5)	\$30	10	\$300.00
Materials Total					\$600.00
Imprinting Charge					80 ⁰⁰
Shipping Charge <i>est.</i>					32 ⁰⁰
SUBTOTAL					712⁰⁰

Bill subsidy to: (Paid now)
 Bill Colbert
 Office of Public Information
 Texas Water Commission
 P.O. Box 13087
 Capital Station
 Austin, TX 78711-3087
 10 class sets @ 15⁰⁰ = 150⁰⁰
 10 student packs @ 5⁰⁰ = 50⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with the Texas Department of Water



SABINE RIVER AUTHORITY of Texas

A GOVERNMENTAL AGENCY
OF THE
State of Texas

409-746-2192

P. O. BOX 579
ORANGE, TEXAS
77630

August 4, 1989

Ms. Donna D. Darling
Director/Office of Public
Information & Education
Texas Water Development Board
P.O. Box 13231
Capitol Station
Austin, Texas 78711-3231

RE: "Major Rivers" Water Education
Program

Dear Ms. Darling:

As you are aware through your recent contacts with Mr. David Parsons at our Lake Fork Division, the Authority's Board of Directors approved my recommendation for implementation of the above referenced program at our recent semi-annual board meeting.

We appreciate the opportunity to continue working with you through the TWC/TWDB/TDH cooperative education program. Your coordination assistance in this matter is sincerely appreciated.

Sincerely,

SABINE RIVER AUTHORITY OF TEXAS

A handwritten signature in cursive script that reads "Sam F. Collins".

Sam F. Collins
Executive Vice-President and
General Manager

SFC:DP:lw

8/11

Tanna -

This is just an update —

I have spoken with Peggy Fowler (The Upper Guadalupe River Authority) who requested ① MR preview kit today.

I spoke to Karen Baker (Johnson Co. Fresh Water) who ordered 10 class sets. She understands that delivery will be mid-October. Copy of order enclosed.

(Sabine R.A.)
David Parsons estimated that he will be ^(ordering) purchasing an additional 275-300 class sets before Sept. 1

Dan Copps (Harris Co. #5) expects to order 70 class sets within this month. He is obtaining final approval.

Sue Epstein (JNS Consulting Engineers in Houston) requests information & a preview kit

Abba Anderson in the Governor's Office has requested EDs information and preview kits.

The teacher brochures will go to press the first of the week. Several of the R.A.'s have requested them to the distribution of U.R. These will be provided by EDs, F

Aug 11 '89 15:46

LCRA 473-3235

News
 Lower Colorado River Authority
 P. O. Box 220
 Austin, Texas 78767
 Telephone: (512) 473-3235

WATER EDUCATION PROGRAM OFFERED STATEWIDE

For immediate release: August 11, 1989

Contact: Sylvia Womble Saenz
1-800-252-3633, x 3315 or 473-3315

AUSTIN--The Lower Colorado River Authority's Major Rivers Water Education program--an adapted version to be used statewide this fall--wrapped up this summer's teacher workshops last Thursday (August 10).

This fall, the Texas Water Development Board, the Texas Water Commission and the Texas Health Department will provide initial funding to begin statewide distribution of the Major Rivers program. With the state agencies subsidizing part of the price of the classroom kits, river authorities and other water related agencies can purchase the units for their area schools \$30 a kit.

"There are roughly 10,000 fourth grade classrooms in with 250,000 students," said Donna Darling, TWDB. "We (the state agencies) have a goal of providing 3,000 kits to fourth grade classrooms throughout Texas in this '89-'90 school year, especially during a time when water is becoming an increasingly precious commodity."

The Major Rivers Water Education Program was specifically designed for LCRA's 10-county water service area, extending from Saba County down the Colorado River to Matagorda County.

-more-

News

**Lower Colorado River Authority
P. O. Box 220
Austin, Texas 78767**

Telephone: (512) 473-3235

**WATER EDUCATION
PROGRAM OFFERED STATEWIDE**

For immediate release: August 11, 1989

Contact: Sylvia Womble Saenz
1-800-252-3633, x 3315 or 473-3315

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This fall, the Texas Water Development Board, the Texas Water Commission and the Texas Health Department will provide initial funding to begin statewide distribution of the Major Rivers program. With the state agencies subsidizing part of the price of the classroom kits, river authorities and other water-related agencies can purchase the units for their area schools at \$30 a kit.

"There are roughly 10,000 fourth grade classrooms in Texas with 250,000 students," said Donna Darling, TWDB. "We (the three state agencies) have a goal of providing 3,000 kits to fourth grade classrooms throughout Texas in this '89-'90 school year, especially during a time when water is becoming an even more precious commodity."

The Major Rivers Water Education Program was originally designed specifically for LCRA's 10-county water district (San Saba County down the Colorado River to Matagorda County) to help

413-3228

fourth grade students learn about water quality and supply throughout Texas and how important it is to use water wisely. estimated 10,000 fourth-graders in LCRA's water area have the opportunity to benefit from the program, which features a personality called Major Rivers and his horse, Aquifer.

Ninety-one elementary schools sent teacher representatives to Major Rivers workshops to prepare for instruction of the course. Attendance at a workshop is required to teach the unit. LCRA is cooperating with the Austin Independent School District to instruct the 18 remaining schools in its water area.

"The workshop was approved for Texas Education Agency Career credit," said Wanda McMurray, LCRA Consumer Education Program Coordinator. "Teachers using the program receive a free set of instructional materials for all fourth grade students free of charge," added McMurray. LCRA will resupply the consumer student materials each year.

LCRA developed the Major Rivers program in cooperation with a professional curriculum company, Education Development Specialists (EDS) of Lakewood, California.

"Teachers who are outside of LCRA's water area and are interested in the water education program, need to contact local river authorities about getting their school the materials," added Darling.

Interested teachers can also contact (213) 420-6814, distributors of the

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LCRA developed the Major Rivers program in cooperation with a professional curriculum company, Education Development Specialists (EDS) of Lakewood, California.

"Teachers who are outside of LCRA's water area, yet are interested in the water education program, need to contact their local river authorities about getting their school equipped with the materials," added Darling.

Interested teachers can also contact Ann Crafton, EDS, at (213) 420-6814, distributors of the kits.

GENERAL OPERATING FUND
 ONE GREENWAY PLAZA, SUITE 330 965-0087
 HOUSTON, TEXAS 77042

1945

8/16/89

PAY TO THE ORDER OF

Educational Development Specialists

\$ 33.00

THE SUM 33 DOLS 00 CTS

DOLLARS



Richmark Bank

MEMBER FDIC
 P. O. Box 19288
 HOUSTON, TEXAS 77224-9288

James A. Kline
[Signature]

FOR

⑈001945⑈ ⑈113003473⑈

⑈5855⑈

Order Placed By:	Name: <u>CYCOMP FINANCIAL GROUP INC</u>	Date: <u>9/18/89</u>
	Title/Department: <u>BOOKKEEPER</u>	Telephone: <u>(713) 965-0087</u>

BILL TO:

SHIP TO: (Street address please)

MARY McVEIGH
 4007 POSTWOOD DRIVE
 SPRING, TEXAS 77388

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

MAJOR RIVERS

Texas Water Education Program

	UNIT PRICE	No. of Items Ordered	Extended Price
CLASS SET - <i>change in price of \$5 video tape added per. Billing</i>	\$45	1	\$45.00
STUDENT PACK \$15.00 Subsidy (discount) <i>for Municipal Utility District</i>	\$35		-15.00
Materials Total			\$30.00
Imprinting Charge			
Shipping Charge			3.00



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>DAN COPPS, JR.</u>	Date: <u>AUGUST 21, 1989</u>
	Title/ Department: <u>CONSTR. COORDINATOR</u>	Telephone: <u>713 358-4224</u>

BILL TO:	SHIP TO: (Street address please)
<u>HARRIS COUNTY U.D. #5</u>	<u>HARRIS COUNTY UTILITY DISTRICT #5</u>
<u>P. O. BOX 5447</u>	<u>3928 KINGWOOD DRIVE</u>
<u>KINGWOOD, TEXAS 77325</u>	<u>KINGWOOD, TEXAS 77339</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

*TWC
#I-5208*

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	70	\$2100.00
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Materials Total					\$2100.00
Imprinting Charge					
Shipping Charge					
TOTAL					

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1485

Order Placed By:	Name: <u>Karen Baker</u>	Date: <u>8-11-89</u>
	Title/ Department: _____	Telephone: <u>(817) (641) 9332</u>

BILL TO:	SHIP TO: (Street address please)
<u>Karen Baker</u>	<u>Karen Baker</u>
<u>Johnson County Fresh Water</u>	<u>Johnson County Fresh Water</u>
<u>P.O. Box 39</u>	<u>103 Veatch</u>
<u>Joshua, TX 76058</u>	<u>Joshua, TX 76058</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING (Check one)**

Requested Need Information Not Requested

acid for logo

MAJOR RIVERS

Texas Water Education Program

estimated shipping date = Oct. 15.

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	10	300 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Please bill subsidy <u>Now</u> to: Bill Colbert Office of Public Information Texas Water Commission P.O. Box 13087 Capitol Station Austin, TX 78711-3087 10 CS @ 15 ⁰⁰ = \$150 ⁰⁰	Materials Total				300 ⁰⁰
	Imprinting Charge				80 ⁰⁰
	Shipping Charge				18 ⁰⁰
	TOTAL				398⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1485

Order Placed By:	Name: <u>Ben Powell</u>	Date: <u>8-14-89</u>
	Title: <u>Treasurer</u>	Telephone: <u>(713) 288-7833</u>
	Department: <u>Bridgestone Municipal Utility Dist.</u>	

BILL TO:	SHIP TO: (Street address please)
<u>SAME</u>	<u>Ben Powell</u>
	<u>4831 Diehlwood Pl.</u>
	<u>Spring, TX 77388</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) per Ben

***IMPRINTING** (Check one)

Requested Need Information Not Requested

Estimated shipping Date 10-15-89.

MAJOR RIVERS Texas Water Education Program

Bridgestone Municipal Utility District.

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	8	240 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Materials Total					240 ⁰⁰
Imprinting Charge					80 ⁰⁰
Shipping Charge					14 ⁴⁰
TOTAL					\$ 334 ⁴⁰

Bill subsidy NONE to:
 Bill Colbert
 Office of Public Information
 Texas Water Commission
 P.O. Box 13087
 Capitol Station
 Austin, TX 78711-3087
 8 CS @ \$15⁰⁰ = \$120⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Date	Water Agency	# of Sets	Cost to Agency	Subsidy	Total
4/5	Williamson Co. MUD #1	9	270	135	405
5/8	Lavaca-Navidad R.A.	14	420	210	630
6/1	Soil Conservation Serv.	1	45	0	45
6/1	Red River Authority	10	300	150	450
"	" " Student PKG	2	60	10	70
6/30	Guadalupe-Blanco R.A.	200	6000	3000	9000
7/6	Johnson Co. Fresh Water	1	45	0	45
7/10	Tara Plantation M.U.D.	38	1140	570	1710
7/14 *	Anderson Mill MUD.	10	300	150	450
7/17	Guadalupe-Blanco R.A.	20	600	300	900
7/2	Dallas Co. WCID #6	10	300	150	450
"	" " Student PKG	10	300	50	350
7/31	Sabine River Authority	100	3000	1500	4500
8/11	Johnson Co. Fresh Water	10	300	150	450
8/14	Bridgestone M.U.D.	8	240	120	360
8/21	Harris Co. MUD #33	7	210	105	315
8/21	Dallas Co. Park Cities MUD.	16	480	240	720
8/30	Jones Co 4-H	2	60	30	90
8/30	City of San Antonio	730	21900	10950	32850
9/1	Sabine River Authority	275	8250	4125	12375
9/1	City of Stephenville	4	120	60	180
9/6	Middle Concho Soil + Water	13	390	195	585
8/21	Harris Co. U.D. #5	70	2100	1050	3150
8/18	Cypresswood U.D.	1	45	0	45
9/21	BICMA P.U.D.	4	120	60	180
9/28	Brooksmith Water	4	120	60	180
10/4	Guadalupe-Blanco R.A.	30	900	450	1350
10/6	Red River Authority	8	240	120	360
(10/6)	SUB TOTAL	1607	48255	23940	72195
10/2	Wells Branch M.U.D.	5	150	75	225
10/24	SUB TOTAL	1612	48405	24015	72410
11/27	Colorado River Municipal Water Dist	6	180	90	270
7/1	Guadalupe-Blanco R.A.	54	1620	810	2430
12/29	Lower Neches Valley Auth.	150	4500	2250	6750
"	" SP.	5	125	50	175
1/5	Lower Neches Valley Auth.	50	1500	750	2250
"	" SP.	5	125	50	175
1/3	Cypresswood U.D.	2	60	30	90

News

for immediate release
contact: Donna Darling/512-463-7869
Bill Colbert/512-463-8028

MEET "MAJOR RIVERS"

THE STATE-WIDE PROGRAM THAT'S "BRIDGING THE GAP" IN TEXAS-SPECIFIC WATER EDUCATION

AUSTIN (August 24, 1989)-- California has *Admiral Splash*, Kentucky has *Colonel Kentucky*, Florida has *Freddy the Alligator* and beginning this fall, Texas will have *Major Rivers*. Major Rivers and his trusty horse, Aquifer, will ride into the water consciousness of some 40,000 fourth-graders courtesy of three state agencies and a number of concerned river authorities, water districts, and municipal utility districts.

Major Rivers is a colorful, cartoon-filled, elementary-level water education package that includes a video, student booklet, teacher's guide, poster, and home leaflet. Originally conceived by the Lower Colorado River Authority (LCRA) and produced by Educational Development Specialists, the Major Rivers kit has become the state's answer to giving elementary school students access to information about water in Texas that is not available to them in current state-adopted textbooks.

LCRA used the Major Rivers kits in its service area last spring. The dramatic difference between student pre-test and posttest scores, as well as the positive comments from teachers, indicate that a lot of learning goes on during this two-week unit on water.

The importance of teaching Texans how to protect and conserve water is evidenced further by the fact that the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health are providing a subsidy to eligible political subdivisions wishing to purchase Major Rivers kits for the fourth-grade classrooms in their service area school districts. Besides LCRA, who will provide the program to 95 school districts again this fall, the Lavaca-Navidad, Red River, Sabine and Guadalupe-Blanco River Authorities have taken advantage of the state subsidy and are placing Major Rivers kits in the fourth-grade classrooms in their respective service areas.

Information on the Major Rivers program is available by writing the Major Rivers Distribution Center, 5505 East Carson Street, Suite 250, Lakewood, California 90713-3093.



718 WEST 5th ST. AUSTIN, TEXAS 78701 4774755

Herald-Zietung
New Braunfels, Texas

AUG 17 1989

LCRA offers education about water

The Lower Colorado River Authority's Major Rivers Water Education program — an adapted version to be used statewide this fall — wrapped up this summer's teacher workshops Aug. 10.

This fall, the Texas Water Development Board, the Texas Water Commission and the Texas Health Department will provide initial funding to begin statewide distribution of the Major Rivers program. With the state agencies subsidizing part of the price of the classroom kits, river authorities and other water-related agencies can

purchase the units for their area schools at \$30 a kit.

"There are roughly 10,000 fourth grade classrooms in Texas with 250,000 students," said Donna Darling of TDWB. "We (the three state agencies) have a goal of providing 3,000 kits to fourth grade classrooms throughout Texas in this 1989-90 school year, especially during a time when water is becoming an even more precious commodity."

The Major Rivers Water Education Program was originally designed for LCRA's 10-county water district (San Saba County down the Colorado River to Matagorda County) to help fourth-grade students learn about water quality and supply throughout Texas and how important it is to use water wisely. An estimated 10,000 fourth graders in LCRA's water area have the opportunity to benefit from the program, which features a personality called Major Rivers and his horse, Aquifer.

Ninety-one elementary schools sent teacher representatives to Major Rivers workshops to prepare for instruc-

tion of the course. Attendance at a workshop is required to teach the unit. LCRA is cooperating with the Austin Independent School District to instruct the 18 remaining schools in its water area.

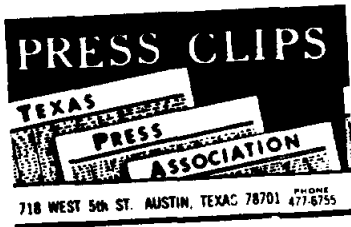
"The workshop was approved for Texas Education Agency Career Ladder Credit," said Wanda McMurray, LCRA Consumer Education Program Coordinator. "Teachers using the program receive a full set of instructional materials for all fourth grade students free of charge."

LCRA will resupply the consumable student materials each year.

LCRA developed the Major Rivers program in cooperation with a professional curriculum company, Education Development Specialists (EDS) of Lakewood, Calif.

"Teachers who are outside of LCRA's water area, yet are interested in the water education program, need to contract their local river authorities about getting their school equipped with the materials," added Darling.

Interested teachers can also contact Ann Crafton, EDS, at (213) 420-6814.



Herald
Big Spring, Texas

AUG 27 1989

45 Cartoon character to teach kids about water

AUSTIN (AP) — A cartoon character named Major Rivers, with his trusty horse Aquifer, will help educate 40,000 fourth-graders about water beginning this fall.

Major Rivers, the main character in the state's elementary-level water education package, joins several other cartoon mascots in water education programs around the nation.

California has Admiral Splash, Kentucky has Colonel Kentucky and Florida has Freddy the Alligator.

The Lower Colorado River

Authority conceived the idea and used the kits in its service area last spring, the Texas Water Development Board said.

The board, Texas Water Commission and Department of Health are providing a subsidy to eligible political subdivisions that want to buy Major Rivers kits.

Besides LCRA, which will provide the program to 95 school districts again this fall, the Lavaca-Navidad, Red River, Sabine and Guadalupe-Blanco river authorities have taken advantage of the subsidy.

PRESS CLIPS



718 WEST 5th ST. AUSTIN, TEXAS 78701 PHONE 477-6755

Register
Gainesville, Texas

AUG 25 1989

'Major Rivers' to teach about water resources

By The Associated Press

AUSTIN — A cartoon character named Major Rivers, with his trusty horse Aquifer, will help educate 40,000 fourth-graders about water beginning this fall.

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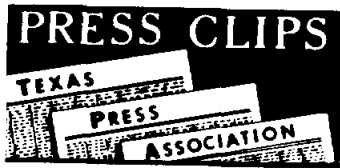
The board, Texas Water Commission and Department of Health are providing a subsidy to eligible political subdivisions that want to buy Major Rivers kits for the fourth-grade classes in their service area.



718 WEST 5th ST. AUSTIN, TEXAS 78701 PHONE 477-6755

Banner-Press
Brenham, Texas

AUG 27 1989



718 WEST 5th ST. AUSTIN, TEXAS 78701 PHONE 477-6755

Blanco Co. News
Blanco, Texas
AUG 16 1989

Cartoon character to help educate Texas schoolchildren about water

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districts again this fall, the Lavaca-Navidad, Red River, Sabine and Guadalupe-Blanco river authorities have taken advantage of the subsidy, the water board said.

Major Rivers'

Classroom kits teach water quality

The Lower Colorado River Authority's Major Rivers Water Education program--an adapted version to be used statewide this fall--wrapped up this summer's teacher workshops last Thursday, (August 10).

This fall, the Texas Water Development Board, the Texas Water Commission and the Texas Health Department will provide initial funding to begin statewide distribution of the Major Rivers program. With the state agencies subsidizing part of the price of the classroom kits, river authorities and other water-related agencies can purchase the units for their area schools at \$30 a kit.

"There are roughly 10,000 fourth grade classrooms in Texas with 250,000 students," said Donna Darling, TWDB. "We (the three state agencies) have a goal of providing 3,000 kits to fourth grade classrooms throughout Texas in this '89-'90 school year, especially during a time when water is

becoming even more precious commodity."

The Major Rivers Water Education Program was originally designed specifically for LCRA's 10-county water district (San Saba County down the Colorado River to Matagorda County) to help fourth-grade students learn about water quality and supply throughout Texas and how important it is to use water wisely. An estimated 10,000 fourth-graders in LCRA's water area have the opportunity to benefit from the program, which features a personality called Major Rivers and his horse, Aquifer.

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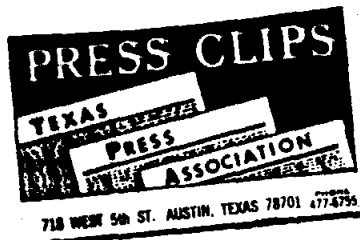
area.

"The workshop was approved for Texas Education Agency Career Ladder credit," said Wanda McMurray, LCRA Consumer Education Program Coordinator. "Teachers using the program receive a full set of instructional materials for all fourth grade students free of charge," added McMurray. LCRA will resupply the consumable student materials each year.

LCRA developed the Major Rivers program in cooperation with a professional curriculum company, Education Development Specialists (EDS) of Lakewood, California.

"Teachers who are outside of LCRA's water area, yet are interested in the water education program, need to contact their local river authorities about getting their school equipped with the materials," added Darling.

Interested teachers can also contact Ann Crafton, EDS, at (213) 420-6814, distributors of the kits.



Advertiser
Bastrop, Texas

AUG 17 1989 aursd

LCRA wraps up teacher summer workshops

108 4
The Lower Colorado River Authority's Major Rivers Water Education program--an adapted version to be used statewide this fall--wrapped up this summer's teacher workshops August 10.

This fall the Texas Water Development Board, the Texas Water Commission and the Texas Health Department will provide initial funding to begin statewide distribution of the Major Rivers program. With the state agencies subsidizing part of the price of the classroom kits, river authorities and other water-related agencies can purchase the units for their area schools at \$30 a kit.

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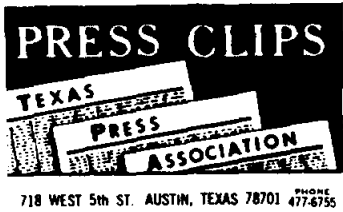
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Sticker
Schulenburg, Texas

AUG 17 1989

Water Education Program Offered

The Lower Colorado River Authority's Major Rivers Water Education Program -- an adapted version to be used statewide this fall ^{4/5} wrapped up this summer's teacher workshops Thursday, Aug. 10.

This fall, the Texas Water Development Board, the Texas Water Commission and the Texas Health Department will provide initial funding to begin statewide distribution of the Major Rivers program. With the state agencies subsidizing part of the price of the classroom kits, river authorities and other water-related agencies can purchase the units for their area schools at \$30.00 a kit.

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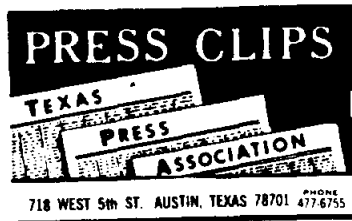
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"Teachers who are outside of LCRA's water area, yet are interested in the water education program, need to contact their local river authorities about getting their school equipped with the materials," added Darling.

Interested teachers can also contact Ann Crafton, EDS, at 213-420-6814, distributors of the kits.



Newsboy
Luling, Texas
AUG 17 1989

Water education program is offered statewide

45
The Lower Colorado River Authority's Major Rivers Water Education program--an adapted version to be used statewide this fall--wrapped up this summer's teacher workshops last Thursday.

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Sample Cost Proposal

LAVACA NAVIDAD RIVER AUTHORITY

Your service area, Jackson County, is comprised of three school districts. The following information was comprised using the 1988 T.E.A. guide.

<u>School District</u>	<u>4th grade students</u>	<u>4th grade classrooms</u>
Edna ISD	120	5
Ganado ISD	48	2
Industrial ISD	64	3

From this chart we can see that you will need a total of 10 Major Rivers class sets to supply the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
10 Major Rivers class sets @ \$40.00 each	\$400
Less TWC, TWDB, TDH subsidy @ \$10.00/class set	-100
Imprinting 10 class sets of 25	80
Shipping (one location)	13
Total	----- \$393

- Shipping costs are estimated and may vary.

Major Rivers The Answer to an Education Committee's Prayer

That's right...just a check and a phone call and your education committee can disband for the year. "Major Rivers" is a fourth-grade water education program that is teacher friendly and committee affordable.



Major Rivers and his horse Aquifer made their debut in January in Austin, initiating the first water education program for Texas elementary school students. Produced by the Lower Colorado River Authority in co-operation with the Texas Education Agency and Educational Development Specialists, "Major Rivers" helps students learn about the importance of water, water quality, and conservation measures. The program supplements the limited amount of "Texas water information" currently found in state-adopted textbooks.

Okay...we're interested. Where do we call?

Currently, the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health are offering a subsidy of \$10 per classroom set to political subdivisions interested in purchasing "Major Rivers" for the fourth-grade classrooms in their service areas. The cost to the political subdivision will be \$30.00 per classroom set.

Ann Crafton of Educational Development Specialists at 213/420-6814 in Lakewood, California can provide your political subdivision with a cost proposal based on the number of fourth-grade classrooms in your area. Some river authorities are planning to fund a portion of their service areas (the Lower Colorado River Authority has already provided the program to all of the fourth-grade classrooms in its service area). You may want to call your local river authority before placing your order.



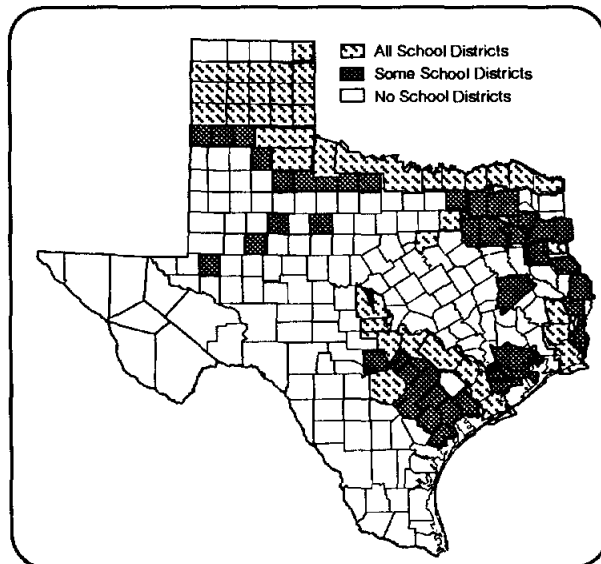
MAJOR RIVERS KEEPS ON ROLLIN' ACROSS TEXAS

By the end of the 1989-90 school year, more than 50,000 Texas fourth graders will have met "Major Rivers." The "Major Rivers" Texas-specific water education program keeps on rolling across Texas as more and more river authorities, municipal utility districts, water districts, soil and water conservation districts and cities dedicate their education budgets to the effort. Two state agencies, the Texas Water Commission and the Texas Water Development Board, are also subsidizing the program.

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Information on the "Major Rivers" program is available by writing the Major Rivers Distribution Center, 5505 East Carson Street, Suite 250, Lakewood, California 90713-3093.

This map indicates those counties with school districts that have used or will be using *Major Rivers* this school year. While introducing *Major Rivers* to some 50,000 of the state's fourth graders this first year is a real accomplishment, there are still 200,000 fourth graders who did not get to meet *Major Rivers*. Water entities interested in sponsoring the water education program in their area should contact the *Major Rivers Distribution Center* at (213) 420-6814.





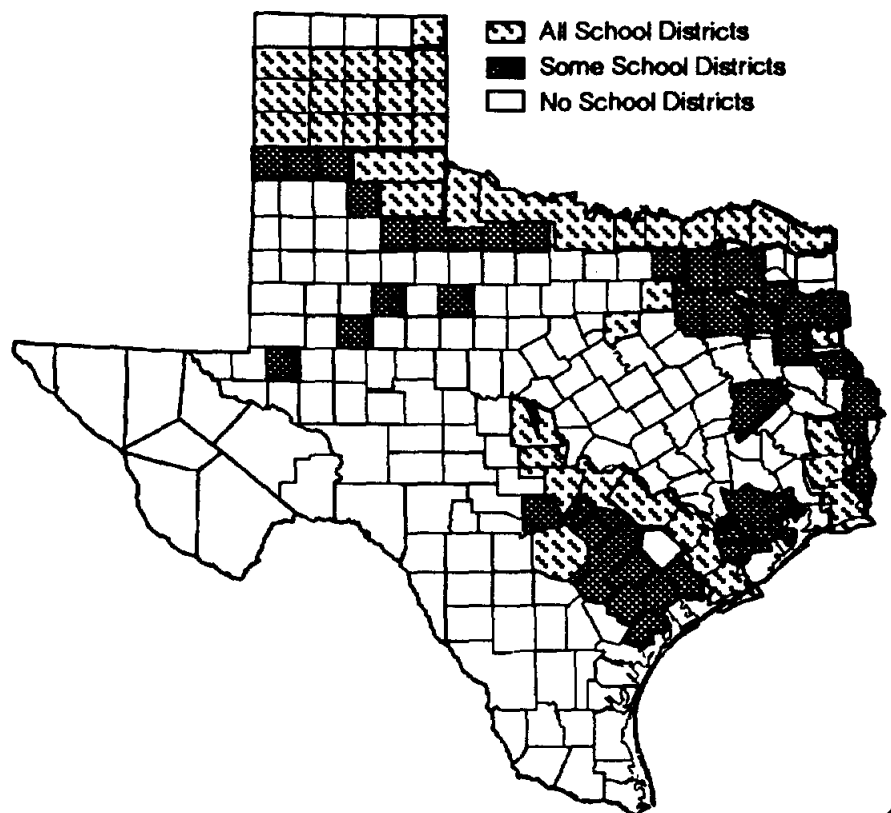
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News

for immediate release
contact: Donna Darling/512-463-7869
Bill Colbert/512-463-8028

MEET "MAJOR RIVERS"

THE STATE-WIDE PROGRAM THAT'S "BRIDGING THE GAP" IN TEXAS-SPECIFIC WATER EDUCATION

AUSTIN (August 24, 1989)-- California has *Admiral Splash*, Kentucky has *Colonel Kentucky*, Florida has *Freddy the Alligator* and beginning this fall, Texas will have *Major Rivers*. Major Rivers and his trusty horse, Aquifer, will ride into the water consciousness of some 40,000 fourth-graders courtesy of three state agencies and a number of concerned river authorities, water districts, and municipal utility districts.

Major Rivers is a colorful, cartoon-filled, elementary-level water education package that includes a video, student booklet, teacher's guide, poster, and home leaflet. Originally conceived by the Lower Colorado River Authority (LCRA) and produced by Educational Development Specialists, the Major Rivers kit has become the state's answer to giving elementary school students access to information about water in Texas that is not available to them in current state-adopted textbooks.

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Information on the Major Rivers program is available by writing the Major Rivers Distribution Center, 5505 East Carson Street, Suite 250, Lakewood, California 90713-3093.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Margaret Cox</u>	Date: <u>8-21-89</u>
	Title/ Department: _____	Telephone: <u>(713) 893-5786</u>

BILL TO: <u>Harris Co. MUD #33</u> <u>Attn: Julian C. Reeves, inc.</u> <u>1506 Whispering Pines</u> <u>Houston, TX 77055</u>	SHIP TO: (Street address please) <u>Margaret Cox</u> <u>14138 Magnolia Springs</u> <u>Houston, TX 77066</u>
---	---

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING (Check one)**

Requested Need Information Not Requested

Harris County Municipal

Utility District #3

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	7	210 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Materials Total					210 ⁰⁰
Imprinting Charge					80 ⁰⁰
Shipping Charge	estimate				12 ⁶⁰
TOTAL					302 ⁶⁰

Bill subsidy immediately to:
Bill Colbert
Office of Public Information
Texas Water Commission
P.O. Box 13087
Capitol Station
Austin, TX 78711-3087
7 CS @ \$15⁰⁰ = \$105⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

F.Y.I.

Order Placed By:	Name: <u>Dennis Masters</u>	Date: <u>8-21-89</u>
	Title/ Department: _____	Telephone: <u>(214) 631-8540</u>

BILL TO:	SHIP TO: (Street address please)
<u>SAME</u>	<u>Dennis Masters</u>
	<u>Dallas Co. Park Cities M.U.D.</u>
	<u>1811 Regal Row</u>
	<u>Dallas, TX 75235</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) # 10711

***IMPRINTING** (Check one)

Requested Need Information Not Requested

Dallas County Park Cities

MAJOR RIVERS Texas Water Education Program

Municipal Utility District.

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	16	480 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
<i>Bill subsidy immediately to:</i>	Materials Total				480 ⁰⁰
<i>Bill Colbert office of Public Information Texas Water Commission P.O. Box 13087 Capitol Station Austin, TX 78711-3087</i>	Imprinting Charge				80 ⁰⁰
	Shipping Charge <i>estimate</i>				28 ⁸⁰
	TOTAL				588 ⁸⁰

16 CS @ \$15⁰⁰ = \$240⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



CONTACT RECORD

Date: 8-30-89
Consultant: Ann
How contact made: I called
Person with whom contact made: Karen O'Neal
Position:
Company: Harris Galveston Coastal Subsidence District
Address:
Phone: (713) 436-7311

- Ann
- Fred
- Gwen
- Kay
- Jean
- Mae
- Shari:
- Other

Notes: I have been working with Karen to get major
- Rivers into her service area. she got it passed through
all the channels and presented the idea to
the board of directors yesterday. I called to
see how it went. The board rejected the
proposal on several issues:

- ① They agreed to provide to all or none in their service area
- ② They have a total office staff of 17 & budget of \$1,000,000
- ③ Their contribution would have exceeded \$55,000.
- ④ The attorney who holds a board position felt that it
would be "strong-arm" tactics to ask those MUDs whom
they regulate to participate in the project.
- ⑤ The size of the project is beyond Harris-Galveston
Coastal Subsidence's scope.
- ⑥ Their attorney-director felt that they may realize some
Planned Action: legal problems if they asked the local agencies
to participate.
- ⑦ They feel that a project of this size is best left
to the River Authorities

Reply:

Ni Donna -

Donna -
 The read + ans
 to Cindy Egan 9/1/89

I hope you had a nice vacation!
 When you get a chance, will you give me
 a call. I have a couple of questions.

① Remember we were having problems, a few
 weeks ago, receiving payment of the
 subsidy. The problem has been resolved.
 The TWC accounting department said that
 the Health Department's money never came
 in and that's why we weren't paid. They
 have resolved that issue by issuing the
 check from the TWC and TWDB's accounts.
 Does this mean we should remove TDH from
 the imprints on the Major Rivers kits?
 Please advise.

② To date, we have billed \$21,675⁰⁰ in subsidy.
 Are we okay? Does this mean we can
 sell \$18,325 (or) \$38,325 worth of subsidy?

③ Please see the attached contact record
 re: Harris Halveston Coastal Subsidence District.
 (F.V.I.)

Ann



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>David Parsons</u>	Date: <u>9-1-89</u>
	Title/Department: <u>Sabine River Authority</u>	Telephone: <u>(214) 878-2262</u>

BILL TO:	SHIP TO: (Street address please)
<u>Sabine River Authority of TX</u>	<u>Sabine River Authority</u>
<u>P.O. Box 487</u>	<u>E.M. Highway 288</u>
<u>Quitman, TX 75783</u>	<u>Quitman, TX 75783</u>
	<u>Attn: David Parsons</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

Use imprint from 7/31 order.

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	275	\$8,250. ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
	Materials Total				\$8,350. ⁰⁰
	Imprinting Charge				110. ⁰⁰
	Shipping Charge <i>estimate</i>				495. ⁰⁰
	TOTAL				8,955.⁰⁰

Bill subsidy now to:
Bill Colbert
Office of Public Information
Texas Water Commission
P.O. Box 13087
Capitol Station
Austin, TX 78711-3087

275 CS @ \$15 = \$4,125.⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Educational Development Specialists

Type: Yes No
Distribution File

CONTACT RECORD

- Ann
 - Fred
 - Gwen
 - Kay
 - Jean
 - Mae
 - Sharian
 - Other
 - Donna Darling
- (FAXED)

89

Date: 11/20/89
Contact made: I called
Contact made: Mike Bukala
Position: _____
Company: Brazos River Authority
Address: _____
Waco, TX
Phone: (817) 776-1441

Notes: I called Mike to ascertain his level of interest in Major Rivers for this fall. Mike said that the Brazos River Authority Board has decided to "do nothing" with Major Rivers this fall. There isn't money in the budget for this project. He did say however, that they have agreed to discuss budgeting for the program in Spring 1990. Mike suggested that I check in then. He claims that he thinks the chances are good for getting budgeting in Spring.

Planned Action:

Reply:



CONTACT RECORD

Date: 9-5-89
Consultant: Ann
How contact made: I called
Person with whom contact made: Ron Hilliard
Position: _____
Company: Soil Conservation Service
Address: _____
Odessa, TX
Phone: (915) 332-9541

- Ann
- Fred
- Gwen
- Kay
- Jean
- Mae
- Sharian
- Other
- Donna Darling

Notes: I spoke with Ron today. He is definitely interested in providing Major Rivers in his area & even sold the idea to a neighboring soil conservation service, Monaghan. School started in their area today and he doesn't have a feel for the number of class sets he will need. He has been trying to contact each school individually & show them the sample kit. I told him that I would have the teacher brochures in a couple weeks. Ron was excited about that & said they would be a big

Planned Action: help to him. will order soon.

① I will send the MR teacher brochures ASAP.

Reply:



CONTACT RECORD

Date: 9-5-89

Consultant: Ann

How contact made: I called

Person with whom contact made: Mary Keil → Wayne Owen
Education Coordinator

Position: _____

Company: Warrant County Water

Address: P.O. BOX 4508

Fort Worth, TX 76106

Phone: (817) 237-8585 (817) 335-2491

- Ann
- Fred
- Gwen
- Kay
- Jean
- Mae
- Sharian
- Ocher
- Donna Darling

Notes: Mary made initial inquiry & then referred everything to Wayne Owen - Educ. Coordinator.

I called Wayne Owen to find out what his interest level is and how many major Rivers class sets he will want to order. He said school just started, but he will probably order around 10 class sets. We continued talking & Wayne asked me what other water agencies are doing. I told him about Sabine R.A., San Antonio R.A., Guadalupe-Blanco R.A., etc... and he seemed surprised. He said he may need to beef-up his original estimate & that this new information (about the other R.A.'s participation) puts pressure on him to do more. He would like to see the teacher

Planned Action: brochures as soon as they are available. He expects to order within the next 6-8 weeks.

Reply:

Major Rivers Orders

<u>Date</u>	<u>Water Agency</u>	<u># of Sets</u>	<u>Cost</u>	<u>Subsidy</u>
4-5-89	Williamson County M.U.D.#1	9	\$ 270	\$ 135
5-8-89	Lavaca-Navidad River Authority	14	420	210
6-1-89	Soil Conservation Services	1	45	0
6-1-89	Red River Authority of Texas	10	300	150
" "	" " " "	2*	60	10
6-30-89	Guadalupe-Blanco River Authority	200	6000	3000
7-6-89	Johnson County Fresh Water Supply #1	1	45	0
7-10-89	Tara Plantation M.U.D.	38	1140	570
7-14-89	Williamson County M.U.D. #1	9*	270	45
7-17-89	Guadalupe-Blanco River Authority	20	600	300
8-2-89	Dallas County W.C. I. D. #6	10	300	150
" "	" " " "	10*	300	50
7-31-89	Sabine River Authority of Texas	100	3000	1500
8-11-89	Johnson County Fresh Water Supply #1	10	300	150
8-14-89	Bridgestone Municipal Utility Dist.	8	240	120
8-21-89	Harris County M.U.D. #33	7	210	105
8-21-89	Dallas County Park Cities M.U.D.	16	480	240
8-30-89	Jones County 4-H	2	60	30
8-30-89	City of San Antonio, City Water Board	730	21900	10950
	San Antonio R.A., Bexar M.W.D.			
9-1-89	Sabine River Authority of Texas	275	8250	4125
9-1-89	City of Stephenville	4	120	60
9-6-89	Middle Concho Soil & Water	13	390	195
8-21-89	Harris County Utility District #5	70	2100	1050
8-18-89	Cypresswood Utility District	1	45	0
TOTAL...		1560	\$46,845	\$23,145

* Indicates Student Packs, all others are Class Sets

Major Rivers Orders

<u>Agency</u>	<u># of Sets</u>	<u>Cost</u>	<u>Subsidy</u>	<u>Total</u>
San Antonio County M.U.D. #1	9	\$ 270	\$ 135	\$ 405
San Antonio River Authority	14	420	210	630
San Antonio Conservation Services	1	45	0	45
San Antonio Authority of Texas	10	300	150	450
" "	2*	60	10	70
San Antonio Blanco River Authority	200	6000	3000	9000
San Antonio County Fresh Water Supply #1	1	45	0	45
San Antonio Station M.U.D.	38	1140	570	1710
San Antonio County M.U.D. #1	9*	270	45	315
San Antonio Blanco River Authority	20	600	300	900
San Antonio County W.C. I. D. #6	10	300	150	450
" "	10*	300	50	350
San Antonio River Authority of Texas	100	3000	1500	4500
San Antonio County Fresh Water Supply #1	10	300	150	450
San Antonio Home Municipal Utility Dist.	8	240	120	360
San Antonio County M.U.D. #33	7	210	105	315
San Antonio County Park Cities M.U.D.	16	480	240	720
San Antonio County 4-H	2	60	30	90
San Antonio San Antonio, City Water Board	730	21900	10950	32850
San Antonio Rio R.A., Bexar M.W.D.				
San Antonio River Authority of Texas	275	8250	4125	12375
San Antonio Stephenville	4	120	60	180
San Antonio Rancho Soil & Water	13	390	195	585
San Antonio County Utility District #5	70	2100	1050	3150
San Antonio Flood Utility District	1	45	0	45
	1560	\$46,845	\$23,145	\$69,990

Packs, all others are Class Sets

9/12/89



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Gary Askins</u>	Date: <u>9-6-89</u>
	Title/ Department: _____	Telephone: <u>(915) 884-2182</u>

BILL TO:	SHIP TO: (Street address please)
<u>Middle Concho Soil + Water Conservation District</u>	<u>Gary Askins</u>
<u>P.O. Box 90</u>	<u>Soil Conservation Service</u>
<u>Big Lake, TX 76932</u>	<u> Hwy 67 West</u>
	<u>Big Lake, TX 76932</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

These materials have been provided by:

Middle Concho Soil and Water Conservation District along with TWC, TWB & TDH.

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	13	390 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Bill subsidy <u>now</u> to: Bill Colbert Office of Public Information Texas Water Commission P.O. Box 13087 Capitol Station Austin, TX 78711-3087	Materials Total				390 ⁰⁰
	Imprinting Charge				50 ⁰⁰
	Shipping Charge <i>estimate</i>				25 ⁰⁰
	TOTAL				

13 CS @ 15⁰⁰ = 195⁰⁰

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Betty B. Dugat
Barbers Hill Independent School Dist.
P. O. Box 1108
Mont Belvieu, Texas 77580
September 8, 1989

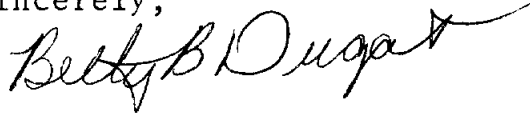
Texas Water Commission
Box 130787
Capitol Station
Austin, Texas 78711

713-383-2486

Dear Sir:

Please send me your elementary-level water education package starring Major Rivers. Water education will be taught to 125 fourth graders in our district. If there is a charge, please bill me.

Sincerely,



Betty B. Dugat

CHANNELVIEW INDEPENDENT SCHOOL DISTRICT

B. H. HAMBLIN, SUPERINTENDENT

1403 SHELDON ROAD

CHANNELVIEW, TEXAS 77830

September 21, 1989

Texas Water Commission
P.O. Box 13087
Capital Station
Austin, TX 78711-3087

Dear Sir,

I am very much interested in acquiring the kit called Major Rivers and his trusty horse aquifer for fourth graders.

Please notify me in regards to the cost of the kit and if you accept Purchase Orders or a check.

Thank you so much for your time and consideration.

Sincerely,



Marjorie Barker
Elementary Coordinator



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>John Chamberlain</u>	Date: <u>9-21-89</u>
	Title/Department: _____	Telephone: <u>(713) 241-5491</u>

BILL TO:	SHIP TO: (Street address please)
<u>John Chamberlain</u>	<u>Mrs. Maryana Richardson</u>
<u>Bilma Public Utility District</u>	<u>Principal</u>
<u>116927 Windy Pine Dr.</u>	<u>Kuehler Elem. School</u>
<u>Spring, TX 77379</u>	<u>5510 Winding Ridge Dr.</u>
	<u>Klein, TX 77379</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number of known _____

***IMPRINTING** (Check one)

Requested Need Information Not Required

Bilma P.U.D.

Use address on Record sheets

MAJOR RIVERS

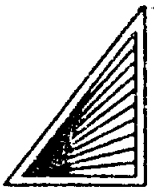
Texas Water Education Program

These materials have been provided by Bilma Public Utility District along with

	UNIT PRICE			No. of Kits Ordered	Extension Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	4	120 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Materials Total					120 ⁰⁰
Imprinting Charge					50 ⁰⁰
Shipping Charge					7 ²⁵
TOTAL					177 ²⁵

Bill subsidy to:
Bill Colbert
Office of Public Information
Texas Water Commission
P.O. Box 13087
Capitol Station
Austin, TX 78711-3087

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713 3093 • (213) 420-6814

September 22, 1989

Dear

I am pleased to enclose a copy of the new Major Rivers teacher brochure. For a limited time, we are offering **FREE** Major Rivers teacher brochures. These teacher brochures are an excellent way for you to promote the Major Rivers water education program directly to the teachers in your service area. As you will see, the teacher brochure clearly defines the program, its objectives and contents, as well as provides a tear-off portion so the teacher can request program materials from you.

I would like to invite you to take advantage of our **FREE** offer for the Major Rivers teacher brochures. Simply call or write, and I will send you enough brochures to reach every teacher in your service area. Please note that these brochures will be shipped flat so that you can place your return address on the backside before they are folded. Call today and tell me how many **FREE** teacher brochures to send.

Sincerely,

Ann

Ann M. Crafton
Director of Marketing

AMC:gk
Enclosure

cc: Donna Darling, TWDB
Bill Colbert, TWC

P.S. I have enclosed a list of the water agencies who have already purchased the Major Rivers program. This list may be helpful in sharing implementation ideas or success stories with each other.



LAVACA-NAVIDAD RIVER AUTHORITY

Post Office Box 429
Edna, Texas 77957
512-782-5229

September 26, 1989

Ms. Ann M. Crafton
Director of Marketing
Educational Development Specialists
5505 East Carson Street, Suite 250
Lakewood, California 90713-3093

Dear Ann:

Please forward the Lavaca-Navidad River Authority twenty (20) FREE teacher brochures for Major Rivers. I plan to use them to collect orders for the 1991 school year.

Major Rivers class sets were delivered in our county earlier this month and the reception was tremendous. Enclosed is a newsclip of delivery at a local school.

Your continued assistance in this program is appreciated.

Sincerely,

Denise Ryan
Assistant General Manager
for Administration

Enclosure



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
James H. Coleman, Vice Chairman
Glen E. Roney, Member

1001 N. Congress Avenue, Suite 1000
Austin, Texas 78701

1001 N. Congress Avenue, Suite 1000
Austin, Texas 78701
Telephone: (512) 463-1000

September 26, 1989

Mr. Mike Ezell
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756

Dear Mike,

Per our conversation yesterday, I am forwarding a copy of the proposed certificate that would be presented to public sector entities who are supporting the distribution of the "Major Rivers" fourth-grade water education program. (see list of participants).

Please ask Dr. Bernstein if he would be willing to sign such a certificate, and if so, would he please provide me with his signature so that our graphics staff can trace it on future certificates. Or, if he would prefer, we can forward the certificates for actual signature.

TWDB Executive Director Sonny Kretzschmar has agreed to sign the certificate, and TWC Commissioner Buck Wynn have been asked to sign but has not yet replied.

I will be on vacation through Oct. 10 and back in the office on the 11th. Also, I would appreciate your mentioning the loss of the \$20,000 to Dr. Bernstein to see if there may be a remedy as the popularity of the program is increasing and the subsidy will really be needed.

Thanks for your assistance.

Sincerely,

Donna D. Darling
Director, Public Information



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Sherry Bailey</u>	Date: <u>9-28-89</u>
	Title/ Department: _____	Telephone: <u>(915) 646-5731</u>

BILL TO:	SHIP TO: (Street address please)
<u>Sherry Bailey</u>	<u>Sherry Bailey</u>
<u>Brooksmith Water</u>	<u>Brooksmith Water</u>
<u>P.O. Box 27</u>	<u> Hwy 377 South of Kruger Hill</u>
<u>Brownwood, TX 76804</u>	<u>Brownwood, TX 76804</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

MAJOR RIVERS

Texas Water Education Program

Brooksmith Water

←

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	4	120
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
Bill subsidy to: Bill Colbert Office of Public Info. Texas Water Commission P.O. Box 13087 Capitol Station Austin, TX 78711-3087	Materials Total				120-
	Imprinting Charge				50-
	Shipping Charge			est.	750
	TOTAL				17750

4CS @ 15.00 = 60.00

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Donna



STATE OF TEXAS

State Purchasing and General Services Commission
1711 San Jacinto P.O. Box 13047 Capitol Station
Austin, Texas 78711-3047
(512) 463-3438

CHAIRMAN
PHILLIP A. ARONOFF
COMMISSIONERS
KENNETH R. EPLEY
ROBERT E. DAVIS
EXECUTIVE DIRECTOR
LIAS B. "BUBBA" STEEN
DIRECTOR FOR
CENTRALIZED SERVICES
AUBREY JOHNSON

October 3, 1989

Allen Beinke
Executive Director
Texas Water Commission
Stephen F. Austin Building
1700 North Congress Avenue
Austin, Texas 78701

RE: IAC (90-91) 0423

Dear Mr. Beinke:

Attached is an approved copy of the referenced Interagency Cooperation Contract in which you are the Performing Agency.

A copy is also being forwarded to the Receiving Agency listed below.

Sincerely,

Aubrey Johnson
Director
Centralized Services

AJ:gdm

Attachment

cc: Gladys Stansberry, Director of Accounting, Texas Water Development Board (580)

THE STATE OF TEXAS

INTERAGENCY COOPERATION CONTRACT

COUNTY OF TRAVIS

THIS CONTRACT AND AGREEMENT is entered into by and between the State agencies shown below as Contracting Parties, pursuant to the authority granted and in compliance with the provisions of "The Interagency Cooperation Act", Article 4413 (32) V.C.S.

I. CONTRACTING PARTIES:

The Receiving Agency: Texas Water Development Board (TWDB)

The Performing Agency: Texas Water Commission (TWC) VID #

II. STATEMENT OF SERVICES TO BE PERFORMED: (See instructions on Page 4)

The Office of Public Information of the TWC will serve as the primary contact for the distribution of "Major Rivers," a fourth-grade water education program. The TWC will be responsible for informing river authorities and other entities of the number of classrooms in their pertinent service area and half their service area, and who to contact to order "Major Rivers." The TWDB, TWC and Texas Dept. of Health have committed \$20,000 each to be used as a subsidy for the purchase of classroom sets of this water education program. The Office of Public Information of the TWC will determine who is eligible to receive the subsidy. The TWC will also be the invoice coordinator with the supplier (Educational Development Specialists), billing each agency as orders are placed.

III. BASES FOR CALCULATING REIMBURSABLE COSTS: (See instructions on Page 4).

The TWC will bill the TWDB up to but not exceeding \$19,495 which will provide a subsidy of \$15.00 per classroom set for a total of 1299 sets. \$15.00 will be paid from the matching grant fund for each \$30 spent by a water entity for classroom sets -- one classroom set of 25 costs a total of \$45.00. For every order of supplemental materials, the water entity will receive a subsidy of \$5.00.

TWC will bill TWDB \$15.00 per classroom set.

TWC will bill TWDB \$5.00 per set of student supplemental materials.

IV. CONTRACT AMOUNT:

The total amount of this contract shall not exceed: \$Nineteen Thousand Four Hundred Ninety Five
(Words and figures)

\$19,495.00

V. PAYMENT FOR SERVICES: (See instructions on Page 4)

Receiving Agency shall pay for services received from appropriation items or accounts of the Receiving Agency from which like expenditures would normally be paid, based upon vouchers drawn by the Receiving Agency payable to Performing Agency.

Payments for service performed shall be billed monthly
(Weekly, monthly, lump sum, etc)

Payments received by the Performing Agency shall be credited to its current appropriation item(s) or account(s) from which the expenditures of that character were originally made.

VI. TERM OF CONTRACT:

This Contract is to begin September 1, 1989, and shall terminate August 31, 1991 (Term of Contract cannot transcend the biennium.)

THE UNDERSIGNED CONTRACTING PARTIES do hereby certify that, (1) the services specified above are necessary and essential for activities that are properly within the statutory functions and programs of the affected agencies of State Government, (2) the proposed arrangements serve the interest of efficient and economical administration of the State Government, and (3) the services, supplies or materials contracted for are not required by Section 21 of Article 16 of the Constitution of Texas to be supplied under contract given to the lowest responsible bidder.

RECEIVING AGENCY further certifies that it has the authority to contract for the above services by authority granted in Texas Water Code, Section 6.190 (Statute, Constitution, Appropriation Bill)

PERFORMING AGENCY further certifies that it has authority to perform the services contracted for by authority granted in Texas Water Code, Section 5.229 (Statute, Constitution, Appropriation Bill)

SUBJECT TO THE APPROVAL of the State Purchasing and General Services Commission, the undersigned parties bind themselves to the faithful performance of this Contract. It is mutually understood that this Contract shall not become effective until approved by the State Purchasing and General Services Commission, and that such approval must be obtained prior to the beginning date of the Contract.

RECEIVING AGENCY

PERFORMING AGENCY

Texas Water Development Board

Texas Water Commission

Name of Agency

Name of Agency

By: [Signature]

By: [Signature]

Authorized Signature

Authorized Signature

Executive Administrator

Executive Director

Title

Title

Date: _____

Date: 9-3-89

EXAMINED and APPROVED this the _____ day of SEP 01 1989, A.D., 19 _____

STATE PURCHASING AND GENERAL SERVICES COMMISSION

By: [Signature]
Director, Centralized Services Division

Verbal Approval for September 1, 1989 start date given on August 16, 1989

Education
Development
Societies

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 9013-3093
Telephone: (213) 420-6814
FAX: (213) 420-1480

Order # 1000000

Date: 10-4-89

Telephone: (513) 379-8583

SHIP TO: (Street address please)
Clara M. Baker
6032 Hillside - Blvd 2
433 E. Court St
Sequim, TX 75475

*IMPRINTING Charge
 Requested Not needed

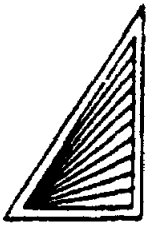
MAJOR RIVERS

Local Water Education Program

Description	UNIT PRICE		No. of Units Ordered
	Estimated Price	Actual Price	
1001 - 1002	5.00	5.00	30
1003 - 1004	5.00	5.00	
Material Total			
Imprinting Charge			
Shipping Charge			
TOTAL			950.00

3000
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*All orders must be accompanied with the sponsor's name along with the sponsor's address and phone number. All orders must be placed with the Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Sharon Faver</u>	Date: <u>10-6-89</u>
	Title/ Department: _____	Telephone: <u>(817) 723-8697</u>

BILL TO:	SHIP TO: (Street address please)
<u>(SAME)</u>	<u>Sharon Faver</u>
	<u>Red River Authority of TX</u>
	<u>520 Hamilton Bldg.</u>
	<u>Wichita Falls, TX</u>
	<u>76301</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

MAJOR RIVERS Texas Water Education Program

Use existing imprint.

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers: contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	8	240
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$5)	\$30		
<i>Bill subsidy to:</i>	Materials Total				240.
<i>Bill Colbert</i>	Imprinting Charge				50.
<i>Office of Public Information</i>	Shipping Charge				
<i>Texas Water Commission</i>	TOTAL				
<i>P.O. BOX 13087</i>					
<i>Capitol Station,</i>					
<i>Austin, TX 78711-3087</i>					
<i>8 CS at 15⁰⁰ = \$120⁰⁰</i>					

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM

Program Record Sheet

Teacher Jerry Cassidy Date 10/6/89

School Poplar Street ISD Round Rock Grade Level 4

School Mailing Address _____

(Materials cannot be sent to a post office box.)

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy. Thank you.

Test Results

Pupil



Pretest Score (20 possible)	Posttest Score (20 possible)
11	17
4	16
7	15
13	18
11	15
12	19
10	19
5	18
15	14
5	19
8	12
7	17
14	19
14	6
6	18
18	14
6	11
7	12
7	10
10	16
6	13
9	17
9.4	15.7

Teacher Reactions

1. What was the attitude of most of your pupils toward the program?

- very positive neutral
 positive negative

Comments:

2. Please list any comments or suggestions you have about any aspect of the program.

The class was taught by Jerry Cassidy, an environmental engineer. He did an excellent job.

3. Do you want to teach the program again next year and have consumable pupil materials replaced?

- yes no

Comments:

MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM

Program Record Sheet

Teacher SHARON CASSADY Date 10/6/87

School PURPLE SAGE ISD ROUND ROCK Grade Level 4

School Mailing Address _____

(Materials cannot be sent to a post office box.)

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy. Thank you.

Test Results

Pupil



Pretest Score
(20 possible)

Posttest Score
(20 possible)

8	14
10	17
12	16
10	16
4	20
7	14
10	17
11	15
6	15
8	14
8	12
3	18
6	18
10	10
6	15
9	16
4	14
10	20
12	20
6	12
9	17
10	19
8	16.4

Teacher Reactions

1. What was the attitude of most of your pupils toward the program?

very positive

neutral

positive

negative

Comments:

2. Please list any comments or suggestions you have about any aspect of the program.

Taught by Jennifer Cassady

3. Do you want to teach the program again next year and have consumable pupil materials replaced?

yes

no

Comments:



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1485

Order Placed By:	Name: Denise McCall (for Tom Alban)	Date: 10-12-89
	Title: _____	Telephone: (512) 499-3645
Department: _____		

BILL TO: David McCall Am- ... 3876 ... Suite ... Austin, TX	SHIP TO: (Street address please) Denise McCall Artist & Brown PC 2000 Cree American Ctr. 600 Cordross Ave. Alhambra, TX 79201
---	---

<input type="checkbox"/> Enclosed ...	<input type="checkbox"/> No Request	<input checked="" type="checkbox"/> Reprinted	<input type="checkbox"/> Need Information	<input type="checkbox"/> Not Reprinted
Number of ...		*IMPRINTING (check box) WIA Fee 10.00 -		

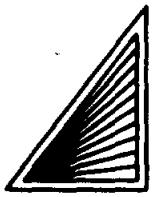
Back of ... these water ...
 Tom Alban 14534 ...
 Austin, TX ...
MAJOR RIVERS
 Texas Water Education Program

CLASS	UNIT PRICE			No. of Kits Ordered	Amount
	List	Subsidy	Actual Cost		
CLASS (for new ...)	\$15	\$0	\$15	5	\$75
STUDENT MARK (or ...)	\$30	\$0	\$30		
Materials Total					\$75
Imprinting Charge					\$10
Shipping Charge					est. \$5
TOTAL					\$90

bill sub ...
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*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Resources Institute, and Texas Department of Health.

	1	2	3	4
Date	Water Agency	# of Sets	Cost to Agency	Subsidy Total
✓1 4/5	Williamson Co. MUD #1	9	270	135 405
✓2 5/8	Lavaca-Navidad R.A.	14	420	210 630
✓3 6/1	Soil Conservation Serv.	1	45	0 45
✓4 6/1	Red River Authority	10	300	150 450
✓5 "	" " Student PKG	2	60	10 70
✓6 6/30	Guadalupe-Blanco R.A.	200	6000	3000 9000
✓7 7/6	Johnson Co. Fresh Water	1	45	0 45
✓8 7/10	Tara Plantation M.U.D.	38	1140	570 1710
✓9 7/14 *	Anderson Mill MUD.	10	300	150 450
✓10 7/17	Guadalupe-Blanco R.A.	20	600	300 900
✓11 8/2	Dallas Co. WCIO #6	10	300	150 450
✓12 "	" " Student PKG	10	300	50 350
✓13 7/31	Sabine River Authority	100	3000	1500 4500
✓14 8/11	Johnson Co. Fresh Water	10	300	150 450
15 8/14	Bridgestone M.U.D.	8	240	120 360
✓16 8/21	Harris Co. MUD #33	7	210	105 315
✓17 8/21	Dallas Co. Park Cities MUD.	16	480	240 720
✓18 8/30	Jones Co 4-H	2	60	30 90
✓19 8/30	City of San Antonio	730	21900	10950 32850
✓20 9/1	Sabine River Authority	275	8250	4125 12375
21 9/1	City of Stephenville	4	120	60 180
22 9/6	Middle Concho Soil + Water	13	390	195 585
23 8/21	Harris Co. U.D. #5	70	2100	1050 3150
24 8/18	Cypresswood U.D.	1	45	0 45
25 9/21	Bilma P.U.D.	4	120	60 180
26 9/23	Brooksmith Water	4	120	60 180
27 10/4	Guadalupe-Blanco R.A.	30	900	450 1350
28 10/6	Red River Authority	8	240	120 360
29				
30	(10/6) SUB TOTAL	1607	48255	23940 72195
31				
32 10/12	Wells Branch M.U.D.	5	150	75 225
33				
34				
35				
36				
37				
38				
39				
40				



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

October 17, 1989

Donna D. Darling
TEXAS WATER DEVELOPMENT BOARD
Post Office Box 13231
Austin, TX 78711-3231

Dear Donna:

Major Rivers has made his way into Texas fourth grade classrooms. Denise Ryan, with Lavaca-Navidad River Authority shared an article with me that appeared in the Edna Herald last month. The article featured the introduction of the Major Rivers water education program by the Lavaca-Navidad River Authority to fourth graders within their service area. I enjoyed reading this article and thought you might too.

We are very excited about the overwhelming enthusiasm that Major Rivers has received. Please feel free to call me if I can provide you with any additional information or teacher brochures.

Sincerely,

Ann M. Crafton
Director of Marketing

AMC:gk
Enclosure

_NAME_LNAME_

_David Harper
President
ANDERSON MILL MUD
11500 El Salido Parkway
Austin, TX 78750_David_

_Denise Motal
ARMBRUST & BROWN P.C.
2600 One American Center
600 Congress Avenue
Austin, TX 78701_Denise

_John Chamberlain
BILMA PUBLIC UTILITY DISTRICT
16927 Windypine Drive
Spring, TX 77379_John_

_Mike Bukala
BRAZOS RIVER AUTHORITY
Post Office Box 7555
Waco, TX 76714-7555_Mike_

_Mr. Ben Powell
BRIDGESTONE MUNICIPAL
UTILITY DISTRICT
4831 Diehlwood Place
Spring, TX 77388_Ben_

_Ms. Sherry Bailey
BROOKESMITH WATER
Highway 377 South at Kruger Hill
Brownwood, TX 76804_Sherry_

_Mr. John C. Williams
CANADIAN RIVER MUNICIPAL WATER AUTHORITY
Post Office Box 99
Sanford, TX 79078_John_

_Laneal Maedgen
CENTRAL COLORADO R.A.
Post Office Box 964
Coleman, TX 76834_Laneal_

_Ms. Cheryl Taylor-West
Administrative Analyst
Water Utilities
CITY OF ARLINGTON
Post Office Box 231
Arlington, TX 76010_Cheryl_

_Larry Spitzer
Director of Public Works
CITY OF CLYDE
Drawer TT
Clyde, TX 79510_Larry_

_Jim Cummings
Environmental Health Department
Water Pollution Control Division
CITY OF GRAND PRAIRIE
218 West Main Street
Post Office Box 530011
Grand Prairie, TX 75053-0011_Jim_

_Mr. Jim Ploetz
CITY OF SAN ANTONIO
WATER RESOURCES MANAGEMENT
114 W. Commerce, Suite 324
San Antonio, TX 78283_Jim_

_Danny Johnson
Director of Public Works
CITY OF STEPHENVILLE
354 N. Belknap Street
Stephenville, TX 76401_Danny_

_O.H. Ivie
COLORADO RIVER M.W.A.
Post Office Box 869
Big Spring, TX 79720_O.H._

_Sigrid
CYPRESSWOOD U.D.
One Greenwood Plaza, Suite 330
Houston, TX 77046_Sigrid_

_Dennis R. Masters
Project Manager
DALLAS COUNTY PARK CITIES
MUNICIPAL UTILITY DISTRICT
1811 Regal Row
Dallas, TX 75235-2398_Dennis_

_Judi Hill
DALLAS COUNTY W.C.I.D. #6
Post Office Box 80030
Balch Springs, TX 75180_Judi_

_Pat Hohensee
County Extension Agent-HE
RUNNELS COUNTY
TEXAS AGRICULTURAL EXTENSION SERVICE
Box 658
Ballinger, TX 76821_Pat_

_Tami Malatek
GUADALUPE-BLANCO RIVER AUTHORITY
Post Office Box 271
Sequin, TX 78156-0271_Tami_

_Ms. Margaret Cox
HARRIS COUNTY MUNICIPAL
UTILITY DISTRICT #33
14138 Magnolia Springs
Houston, TX 77066_Margaret_

_Dan Copps
HARRIS COUNTY UTILITY DISTRICT #5
Post Office Box 5447
Kingwood, TX 77325_Dan_

_Karen O'Neal
HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT
1660 W. Bay Area Boulevard
Friendswood, TX 77546_Karen_

_Ms. Sue Epstein
JNS CONSULTING ENGINEERS
11211 Katy Freeway, #420
Houston, TX 77079_Sue_

_Karen Baker
JOHNSON COUNTY FRESH WATER DISTRICT #1
103 Veatch Street
Post Office Box 39
Joshua, TX 76058_Karen_

_Gary Stanford
JONES COUNTY 4-H
Jones County Courthouse--Basement
Post Office Box 167
Anson, TX 79501_Gary_

_Mr. Johnny Harris
LAKE CITIES M.U.A.
501 N. Shadyshores Road
Lake Dallas, TX 75065_Johnny_

_Denise Ryan
LAVACA-NAVIDAD RIVER AUTHORITY
Post Office Box 429
Edna, TX 77957_Denise_

_Wanda McMurray
Energy Coordinator
School Programs
LOWER COLORADO RIVER AUTHORITY
Post Office Box 220; Mail Stop WB 336
Austin, TX 78767_Wanda_

_Ben Sims
LOWER CONCHO RIVER WATER &
CONSERVATION AUTHORITY
Route 1
Paint Rock, TX 76866_Ben_

Dennis Becker
LOWER NECHES RIVER AUTHORITY
Post Office Drawer 3464
Beaumont, TX 77704_Dennis_

_Robert Harris
LOWER NECHES RIVER AUTHORITY
Post Office Drawer 3464
Beaumont, TX 77704_Robert_

_Con Mims
NUECES R.A.
Post Office Box 349
Uvalde, TX 78802_Con_

_Jim Ed Miller
General Manager
RED BLUFF WATER POWER CONTROL DISTRICT
111 West Second Street
Pecos, TX 79772_Jim Ed_

_Sharon Faver
RED RIVER AUTHORITY OF TEXAS
520 Hamilton Building
Wichita Falls, TX 76301_Sharon_

_David Parsons
SABINE RIVER AUTHORITY
Post Office Box 487
Quitman, TX 75783_David_

_Fred Pfieffer
SAN ANTONIO RIVER AUTHORITY
100 East Guenther Street
P.O. Box 9284, Guilbeau Station
San Antonio, TX 78204_Fred_

_Jack Ayer
SAN JACINTO R.A.
Post Office Box 329
Conroe, TX 77305_Jack_

_Mr. Gary Askins
Soil Conservation Service
Highway 67 West
Big Lake, TX 76932_Gary_

_Mr. Ron Hilliard
SOIL CONSERVATION SERVICES
2464 I20 West
Odessa, TX 79766-9113_Ron_

_Chet Wiles
TARA PLANTATION M.U.D.
196 Tara Plantation Drive
Richmond, TX 77469_Chet_

_Gary Keil
TARRANT COUNTY WATER CONTROL
6506 Wells-Burnett Road
Forth Worth, TX 76135_Gary_

_Wayne Owen
TARRANT COUNTY WATER CONTROL
Post Office Box 4508
Forth Worth, TX 76106_Wayne_

_Bill Colbert
Office of Public Information
TEXAS WATER COMMISSION
P.O. Box 13087 - Capital Station
Austin, TX 78711-3087_Bill_

_Donna D. Darling
TEXAS WATER DEVELOPMENT BOARD
Post Office Box 13231
Austin, TX 78711-3231_Donna_

_Mr. John Jadrosich
Public Information Officer
TRINITY RIVER AUTHORITY
5300 S. Collins
Arlington, TX 76004_John_

_Everett Grindstaff
UPPER COLORADO R.A.
Post Office Drawer 269
Ballinger, TX 76821_Everett_

_Ms. Peggy Fowler
THE UPPER GUADALUPE RIVER AUTHORITY
213 W. Water
Kerrville, TX 78028_Peggy_

_Roy Douglas
UPPER NECHES RIVER M.W.A.
P.O. Drawer Y
Palestine, TX 75801_Roy_

_Tom Alban
WELLS BRANCH MUNICIPAL UTILITY DISTRICT
14534 Robert I Walker
Austin, TX 78728_Tom_

Recommendations for future promotion of the program:

1. That the attached certificate be signed and provided to those entities who are currently participating. This sign of recognition will assure them that their participation has not gone unnoticed. (Mr. Kretzschmar and Dr. Bernstein have agreed to sign the certificate).

2. That we continue to promote the program using the original list of invited water entities until spring of 1990, at which time we approach the members of the Chemical Council and some of the large industries who have a vested interest in water and offer them the public relations value of supporting the program to the program in areas not currently funded or in areas where student supplies will need to be re-funded.

We currently have on file enough print and video news clips and program evaluations to verify the success of the program on both an educational and public relations level. We are off to a great start. However, continued support at the state level will be required to accomplish our goal of 100% of the fourth-grade classrooms in Texas.

CC: Bill Colbert
Renee Carlson



Educational Development Specialists
 5505 E. Carson St., Suite 250
 Lakewood, CA 90713
 (213) 420-6814

OCT 31 1989

**SHIPPING / ORDER
 ACKNOWLEDGEMENT**

Shipping Order No. _____

Date Written _____

Checked by _____

Customer Number	Date Order Received	Purchase Order No.

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NOTES TO CUSTOMER	INSTRUCTIONS TO OUR SHIPPING DEPT.	
Terms: Net 30 days — F.O.B. Los Angeles Shipping, any imprinting, and (if applicable) state tax will be added.	Imprinting	Other
	<input type="checkbox"/> Home Activity Booklet <input type="checkbox"/> Record Sheet Imprinting copy is:	Estimated Shipping Date:

DESCRIPTION	QTY.ORDER	QTY.SHIP	UNIT PRICE	AMOUNT

Inventory Control

By _____ Shipped by _____ Shipped Via _____ (UPS \$ _____)

Date _____ Date _____ Bill Lading Attached

HELP YOUR STUDENTS SAVE ENDANGERED SEA TURTLES!

"Ridley's Road to Rights" is an exciting new teaching tool for all levels. HEART (Help Endangered Animals-Ridley Turtles) is pleased to offer this excellent documentary that tells the story of the "heartbreak turtle," the Kemp's ridley sea turtle. Middle school students of Spring Independent School District narrate their experiences as they learn about the international program to save the ridleys from extinction. Accompanying the VHS Video is a **Curriculum Guide** written by teachers with suggestions for all levels including word searches, cross-word puzzles, true/false and multiple choice questions and other useful exercises.

The students visit the Head Start Project of the National Marine Fisheries Service at the Galveston, Texas, Laboratory where Kemp's ridley hatchlings are raised. They also tour Galveston's Sea-Arama and see adult ridleys. Noted authorities from National Marine Fisheries Service, U.S. Fish and Wildlife Service, Texas A&M University, the Center for Environmental Education and HEART are interviewed in depth.

Finally, viewers are caught up in the excitement of releasing hundreds of endangered sea turtle hatchlings in the Gulf of Mexico near Corpus Christi, Texas, as experienced by the students.

Complete with an excellent musical background, the 2 hour video was designed to be used in several class sessions. Issues discussed include sea turtle physiology, political involvement of students in conservation legislation, and other relevant subjects. Viewers learn effective ways to help prevent the extinction of sea turtles.

Order today from HEART, P.O. Box 681231, Houston, Texas, 77268-1231. Please make your check payable to HEART of PWWS for \$32.40 (includes first class postage.) You will receive the VHS video and Curriculum Guide. The purchase will sponsor the food for a Kemp's ridley sea turtle hatchling.

PROGRAM PROPOSAL

CAST '89 Convention - Waco, Texas

November 2-4, 1989

(Please Type)

PRESENTERS:

1. Name _____
Dept. _____
School/Inst. _____
Work Address _____
City, State, Zip _____
Work Phone() _____
Home Phone() _____

2. Name _____
Dept. _____
School/Inst. _____
Work Address _____
City, State, Zip _____
Work Phone() _____
Home Phone() _____

Additional presenters are listed on reverse side.

PRESIDER DATA: Please identify a person willing to serve as presider for your presentation.

Name _____ Dept. _____ School/Inst. _____
Work Address _____ City _____ State _____ Zip _____ Tel.() _____

SESSION DATA: (See reverse side for definitions)

I. Type of Session

- Hands-On Workshop (60 min)
- Demonstration (60 min)
- Contributed Paper (30 min)
- Panel (60 min)
- Other _____

II. Room Facilities Needed

- Classroom w/student desks
- Room with flat tables
- Wet lab

III. Subject Area

(Check only one for listing
in Final Program)

- Biology
- Chemistry
- Earth Science
- Physics
- Ecology/Environment
- General
- Teacher Preparation
- Science-Technology-Society
- Informal Education
- Research
- Supervision/Administration
- Elementary
- Other _____

IV. Intended Area

- Preschool
- Elementary (K-3)
- Elementary (4-6)
- Middle/Junior High
- High School
- College
- Supervision
- General

V. Equipment Required

- Overhead Projector
- Other(s) _____ Please
- Specify _____

VI. The session should be planned for 30-50 people. Would you be willing to do an additional workshop to if CAST '89 turnout is larger than expected? _____ Yes _____ No

VII. Session Title _____

Brief Description (Limit to 25 words) _____

VIII. Abstract (15—200 words—use reverse side)

RETURN THIS PROPOSAL BY MARCH 1, 1989 TO:

Dr. Tom Gadsden, Richardson ISD, 400 S. Greenville Ave., Richardson, Texas 75081.

Type of Session

Hands-on Workshop--A 60-min. presentation that provides everyone in the audience with a hands-on experience with materials. Classroom style setup.

Demonstration--A 60-min. demonstration of apparatus, a series of experiments, or a scientific phenomenon, allowing for only limited participation by the audience. Classroom style setup.

Contributed Paper--A 30-min. opportunity to present the results of research or share an innovative teaching idea. Classroom style setup.

Panel--A 60-min. interactive session by two or more speakers on a topic of general or specific interest, including a question and answer period. Classroom style setup.

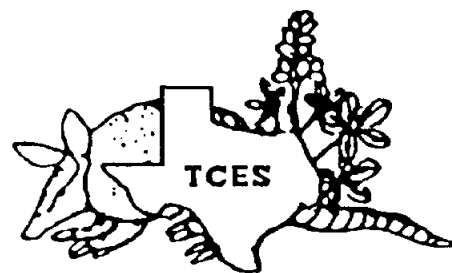
Abstract (150-200 words--use additional sheet if necessary.)

Additional Presenters

3. Name _____
Dept. _____
School/Inst. _____
Work Address _____
City, State, Zip _____
Work Phone () _____
Home Phone () _____
4. Name _____
Dept. _____
School/Inst. _____
Work Address _____
City, State, Zip _____
Work Phone () _____
Home Phone () _____

Additional presenters are listed on an attached sheet.

Dillo Press



Newsletter of the Texas Council of Elementary Science

Special Edition Special Edition Special Edition Special Edition Special Edition

Saturday, November 4, 1989

TEXAS COUNCIL OF ELEMENTARY SCIENCE ANNUAL BREAKFAST AT THE CONFERENCE FOR THE ADVANCEMENT OF SCIENCE TEACHERS WACO, TEXAS

BREAKFAST BUSINESS MEETING

Special guests:

Texas Association for Environmental Education
Texas Zoo Educators

Call to Order Introductions

New Area Directors for 1990 and 1991:

Panhandle - Anita Smither
Central - Pam Stryker
North - Catherine Banks
East - Gloria Slaughter
Coastal - Linda Moats
South - Mary Linda Moore
Far West - Ann Bolte

Committee Reports:

President - Barbara ten Brink
Vice President - Richard Smith
Secretary - Nancy Long
Treasurer - Faye Neathery
Historian - Irene Rieck
Editor - Janett Frentress
Membership - Lester Hickman

Awards:

Past President's Gavel to Christine Fogg
Rebecca Sparks Elementary Science Award
TCES Honorarium
TCES Meritorious Service Award
TCES Membership Recruitment Award

Keynote Speaker

Alan Sowards, President, TAEE
Courtesy of Silver Burdett and Ginn

Entertainment

Bill Oliver, Folk Singer
Courtesy of Silver Burdett and Ginn

New Business:

- TCES is an associated group with NSTA, 1989
- TCES is an affiliate with CESI, 1989
- Establishment of a permanent Scholarship Fund through the contributions of Carl and Dorothy Lohmann, Gulflands Angus Ranch
- Search for 1990 Editor of Hands Across Texas
- Nominations for TCES officers for 1991 & 1992

Date: 11/16/89

MAJOR RIVERS SUBSIDY: FY 90

Entity	Original Proposal	Subsidy Reserved	Subsidy Billed
Bilma Public Utility Dist.	\$	\$	\$ 60
Bridgestone MUD			
Brazos River Auth.	23,865		
Brookesmith Water			60
Canadian River Mun. Water Auth.	5,940		
City of San Antonio Water Res. Mgmt.	10,620		10,950
City of Stephenville			60
Guadalupe-Blanco River Auth.			450
Harris Co. Utility Dist. #5	840		1,050
Harris-Galveston Coastal Sub. Dist.	26,865		
Johnson Co. Fresh Water Supp. Dist. #1			
Jones Co. 4-H	101		30
Lake Cities MUA	1,875		
Lower Neches River Auth.	3,600		
Middle Concho Soil & Water District			195
Red Bluff Water Power Control Dist.	525		
Red River Auth.			120
Sabine River Authority			4,125
Tarrant Co. Water Central Dist.	9,225		
Trinity River Auth.	29,520		
Wells Branch Municipal			75
Williamson Co./Anderson Mill MUD			105
	<u>\$112,976</u>	<u>\$ 0</u>	<u>\$17,280</u>

FY 90
total reserved
+ billed = \$17,280

TWC - FY90

\$20,000 original amount
-17,280 reserved + billed
\$ 2,720 remainder

TWDB - FY90 IAC

\$19,400 original amount
- 0 reserved + billed
\$19,400 remainder

Date: 11/16/89

MAJOR RIVERS SUBSIDY: FY 89

Entity	Original Proposal	Subsidy Reserved	Subsidy Billed
Bridgestone MUD	\$		\$ 120
Dallas Co. Park Cities MUD	240		240
Dallas Co. W.C.I.D. #6			200
Guadalupe/Blanco River Auth.			3,300
Harris Co. MUD #33			105
Johnson Co. Fresh Water Supp. Dist. #1	344		150
Lavaca-Navidad River Auth.			210
Red River Auth.			160
Sabine River Auth.	3,615		1,500
Soil Conservation Services			5
Tara Plantation MUD			570
Williamson County MUD #1			180
	\$ <u>4199</u>	<u>\$ 0</u>	<u>\$6740</u>

TWC - FY89

\$20,000 original amount
- 6,740 paid

\$13,260 remainder never spent



Colorado River Municipal Water District

400 EAST 24TH ST. P. O. BOX 869
Big Spring Texas 79721-0869

PHONE 915/287-6341

November 22, 1989

OFFICERS

John L. Taylor, President
Clyde Y. ... Vice President
R. S. ... Vice President
Joe ... Secretary
O. H. ... General Manager
J. R. ...

DIRECTORS

John L. Taylor
Clyde Y. ...
R. S. ...
Joe ...
O. H. ...
J. R. ...
...

Mr. Ann M. Cas...
Director of ...
Attention: ...
4005 E. ...
Lakeview ...

Dear Ms. Craft:

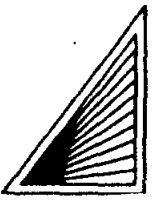
... the Major River ...
... for those in the ... and we will ...

... in the future

Yours very truly,

O. H. Ivie
O. H. Ivie
General Manager

Handwritten note:
...
...



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

November 27, 1989

Mr. Robert Harris
Lower Neches Valley Authority
P.O. Drawer 3464
Beaumont, TX 77704

FILE COPY

Dear Robert:

Thank you for your interest in "Major Rivers", the Texas Water Education Program.

I have enclosed a cost proposal by ISD within each county in your service area. The statistics used to compile the numbers of fourth grade students in the school districts were taken directly from the 1988 Texas Education Agency Guide. The number of students was then divided by 25 (the maximum number of students per classroom allowed by The State of Texas) to arrive at the number of classrooms in that school district.

Please let me know if I can provide you with any additional information or assistance. I look forward to working with you and the Lower Neches Valley Authority.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling (TWDB)

LOWER NECHES VALLEY AUTHORITY

This proposal outlines the estimated number of 4th grade classrooms by school district within the county. The following information was comprised using the 1988 Texas Education Agency guide.

School District 4th grade students 4th grade classrooms

TYLER COUNTY

Colmesneil ISD	23	1
Woodville ISD	133	6
Warren ISD	76	4
Spurger ISD	32	2
Chester ISD	20	1

SUBTOTAL... 14

HARDIN COUNTY

Kountze ISD	104	5
Silsbee ISD	293	12
Hardin-Jefferson	164	7
Lumberton ISD	193	8
West Hardin ISD	47	2

SUBTOTAL... 34

JEFFERSON COUNTY

Nederland ISD	367	15
Port Arthur ISD	885	36
Port Neches ISD	387	16
Beaumont ISD	1623	65
Sabine Pass ISD	10	1
Hamshire-Fannett ISD	111	5

SUBTOTAL... 138

LIBERTY COUNTY

Cleveland ISD	223	9
Dayton ISD	246	10
Devers ISD	12	1
Hardin ISD	89	4
Hull-Daisetta ISD	77	4
Liberty ISD	187	8

Tarkington ISD	117	5
SUBTOTAL...		41

CHAMBERS COUNTY

Anahuac ISD	118	5
Barbers Hill ISD	123	5
East Chambers ISD	74	3
SUBTOTAL...		13

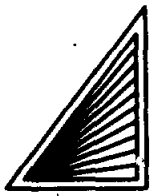
GALVESTON COUNTY

Dickinson ISD	424	17
Galveston ISD	876	36
High Island ISD	21	1
La Marque ISD	430	18
Texas City ISD	480	20
Hitchcock ISD	105	5
Santa Fe ISD	312	13
Clear Creek ISD	1601	65
Friendswood ISD	238	10
SUBTOTAL...		185

From this chart you can see that you will need a total of **425** Major Rivers class sets to supply 100% of the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
425 Major Rivers class sets @ \$45.00 each	\$19,125
Less TWC, TWDB, TDH subsidy @ \$15.00/class set	-6,375
Imprinting 425 class sets of 25	150
Shipping (one location)	765
Total	----- \$13,665

* Shipping costs are estimated and may vary slightly.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

November 27, 1989

Mr. Stephen Lusk
San Antonio River Authority
P.O. Box 830027
Arsenal Station
San Antonio, TX 78283-0027

Dear Stephen:

Thank you for your interest in "Major Rivers", the Texas Water Education Program.

I have enclosed a cost proposal by ISD within each county in your service area. The statistics used to compile the numbers of fourth grade students in the school districts were taken directly from the 1988 Texas Education Agency Guide. The number of students was then divided by 25 (the maximum number of students per classroom allowed by The State of Texas) to arrive at the estimated number of classrooms in that school district.

I am enclosing a "Major Rivers" preview kit, an order form, and some sample teacher brochures for your convenience. Please let me know if I can provide you with any additional information or assistance. I look forward to working with you and the San Antonio River Authority.

Sincerely,

Ann M. Crafton
Director of Marketing

cc: Donna Darling (TWDB)

SAN ANTONIO RIVER AUTHORITY

This proposal outlines the estimated number of 4th grade classrooms by school district within the county. The following information was comprised using the 1988 Texas Education Agency guide.

School District 4th grade students 4th grade classrooms

ATASCOSA COUNTY

Charlotte ISD	50	2
Jourdanton ISD	98	4
Lytle ISD	64	3
Pleasanton ISD	240	10
Poteet ISD	106	5

SUBTOTAL... 24

BANDERA COUNTY

Medina ISD	14	1
Bandera IS	110	5

SUBTOTAL... 6

BEXAR COUNTY

Alamo Heithts ISD	237	10
Harlandale ISD	1223	49
Edgewood ISD	1232	50
Randolph Field ISD	99	4
San Antonio ISD	4632	186
South San Antonio ISD	1011	41
Somerset ISD	166	7
North East ISD	2968	119
East Central ISD	419	17
SouthWest ISD	590	24
Lackland ISD	72	3
Ft. Sam Houston ISD	123	5
Northside ISD	8653	147
Judson ISD	954	39
Southside ISD	166	7

SUBTOTAL... 708

GOLIDAD COUNTY

Golidad ISD	91	4
SUBTOTAL...		4
KARNES COUNTY		
Karnes City ISD	59	3
Kenedy ISD	95	4
Runge ISD	28	2
Falls City ISD	25	1
SUBTOTAL...		10
WILSON COUNTY		
Floresville ISD	160	7
LaVernia ISD	86	4
Poth ISD	45	2
Stockdale ISD	41	2
SUBTOTAL...		15

From this chart you can see that you will need a total of **59** Major Rivers class sets to supply 100% of the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
59 Major Rivers class sets @ \$45.00 each	\$2655
Less TWC, TWDB, TDH subsidy @ \$15.00/class set	-885
Imprinting 59 class sets of 25	60
Shipping (one location)	106
Total	----- \$1,936

* Note: Bexar County has already been supplied by the City of San Antonio, Bexar MWD, City Water Board and the San Antonio River Authority. I have not included these costs in this estimate, but have listed Bexar County in the itemization.

* Shipping costs are estimated and may vary slightly.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Robert Harris</u>	Date: <u>12-29-89</u>
	Title/Department: _____	Telephone: <u>(409) 892-4011</u>

BILL TO:
Robert Harris
Lower Neches Valley Auth.
P.O. Drawer 3464
Beaumont, TX 77704

SHIP TO: (Street address please)
Robert Harris
Lower Neches Valley Authority
7850 Eastern Freeway
Beaumont, TX 77708

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Required

MAJOR RIVERS

Texas Water Education Program

These materials were provided by the LOWER NECHES VALLEY AUTHORITY

on record sheet
bill subsidy
Subsidy CS 2250
SP 50

	UNIT PRICE			No. of Kits Ordered	Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	150	4500 ⁰⁰
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25	5	125 ⁰⁰
Materials Total					
Imprinting Charge					
Shipping Charge					
TOTAL					



* Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with the Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

**TEXAS WATER AGENCIES WHO HAVE PURCHASED
THE MAJOR RIVERS WATER EDUCATION PROGRAM**

Bexar M.W.D.
Bilma Public Utility District
Bridgestone M.U.D.
City of San Antonio
City of Stephenville
Cypresswood Utility District
Dallas County Park Cities M.U.D.
Dallas County W.C.I.D. #6
Guadalupe-Blanco River Authority
Harris County M.U.D. #33
Harris County Utility District #5
Johnson County Fresh Water Supply #1
Jones County 4-H
Lavaca-Navida River Authority
Lower Colorado River Authority
Middle Concho Soil and Water
Red River Authority of Texas
Sabine River Authority of Texas
San Antonio City Water Board
San Antonio River Authority
Soil Conservation Services--Odessa
Tara Plantation M.U.D.
Williamson County M.U.D. #1*

*Placed original order and subsequently
resupplied that order.



Educational Development Specialists
 5505 E. Carson St. Suite 250
 Lakewood, CA 90713
 (213) 420-6814

**SHIPPING / ORDER
 ACKNOWLEDGEMENT**

Shipping Order No. 5081

Date 1/3/90

Checked by JH

Customer Number	Date Order Received	Purchase Order No.
	Not Required	

COMP FINANCIAL GROUP INC.
 One Greenway Plaza, Suite 330
 Houston TX 77041

CYPRESSWOOD UTILITY DISTRICT
 4007 Postwood Drive
 Spring TX 77388
 ATTN: MARY MCVEY

NOTES TO CUSTOMER	INSTRUCTIONS TO OUR SHIPPING DEPT	
<p>THIS IS NOT AN INVOICE.</p> <p>FOB [blank] [blank] [blank] Imprinting and if applicable: shipped</p>	Imprinting	Other
	<p>NONE</p> <p><input type="checkbox"/> Home Activity Booklet <input type="checkbox"/> Record Sheet Imprinting copy is</p> <p>Imprinting Cost: \$0.00</p>	<p>SHIP ASAP.</p> <p>Estimated Shipping Date: 1-7-90</p>

DESCRIPTION	QTY. ORDER	QTY. SHIP	UNIT PRICE	AMOUNT
IRS CLASS SET	2		\$45	
				\$0.00
Materials Subtotal				\$0.00

Spelling Inventory Control Handling: \$0.00 Sales Tax Rate: _____

By _____ Shipped by _____ Shipped Via _____ UPS \$ _____

Date _____ Date _____ Bill Lading Attached

AMENDMENT TO INTERAGENCY CONTRACT

THE STATE OF TEXAS)
)
COUNTY OF TRAVIS)

AMENDMENT NO. 1 TO INTERAGENCY CONTRACT NO. IAC (90-91)0423

It is mutually understood and agreed by and between the undersigned contracting parties of the above numbered Interagency Contract to amend said contract as follows:

The TWC will bill the TWDB \$10.00 (instead of \$5.00) for student packets of "Major Rivers" materials when the student packets are purchased for use by teachers with more than one class or for classes with more than 25 students. The \$10.00 subsidy will provide incentive for purchasing student materials instead of classroom sets.

The total amount of the contract will remain the same.
TWC will bill TWDB \$10.00 per set of student materials.

This Amendment shall become effective on the date of approval by the State Purchasing and General Services Commission. All other terms and conditions not hereby amended are to remain in full force and effect.

RECEIVING AGENCY

PERFORMING AGENCY

Texas Water Development Board

Texas Water Commission

By: [Signature]
Name of Agency
Authorized Signature

By: [Signature]
Name of Agency
Authorized Signature

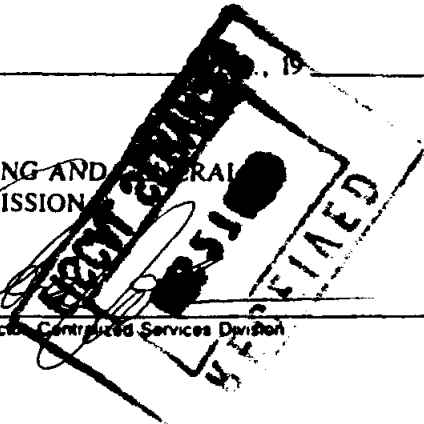
12-19-89 Ex. Adm.
Title

Executive Director
Title

EXAMINED and APPROVED this the JAN 5 - 1990 day of _____, 19__

STATE PURCHASING AND GENERAL SERVICES COMMISSION

By: [Signature]
Director, Contracted Services Division



THE STATE OF TEXAS

INTERAGENCY COOPERATION CONTRACT

COUNTY OF TRAVIS

THIS CONTRACT AND AGREEMENT is entered into by and between the State agencies shown below as Contracting Parties, pursuant to the authority granted and in compliance with the provisions of "The Interagency Cooperation Act", Article 4413 (32) V.C.S.

I. CONTRACTING PARTIES:

The Receiving Agency: Texas Water Development Board (TWDB)

The Performing Agency: Texas Water Commission (TWC) VID # _____

II. STATEMENT OF SERVICES TO BE PERFORMED: (See instructions on Page 4)

The Office of Public Information of the TWC will serve as the primary contact for the distribution of "Major Rivers," a fourth-grade water education program. The TWC will be responsible for informing river authorities and other entities of the number of classrooms in their pertinent service area and half their service area, and who to contact to order "Major Rivers." The TWDB, TWC and Texas Dept. of Health have committed \$20,000 each to be used as a subsidy for the purchase of classroom sets of this water education program. The Office of Public Information of the TWC will determine who is eligible to receive the subsidy. The TWC will also be the invoice coordinator with the supplier (Educational Development Specialists), billing each agency as orders are placed.

III. BASES FOR CALCULATING REIMBURSABLE COSTS: (See instructions on Page 4).

The TWC will bill the TWDB up to but not exceeding \$19,495 which will provide a subsidy of \$15.00 per classroom set for a total of 1299 sets. \$15.00 will be paid from the matching grant fund for each \$30 spent by a water entity for classroom sets -- one classroom set of 25 costs a total of \$45.00. For every order of supplemental materials, the water entity will receive a subsidy of \$5.00.

TWC will bill TWDB \$15.00 per classroom set.

TWC will bill TWDB \$5.00 per set of student supplemental materials.

IV. CONTRACT AMOUNT:

The total amount of this contract shall not exceed: \$Nineteen Thousand Four Hundred Ninety Five

(Words and figures)

\$19,495.00

V. PAYMENT FOR SERVICES: (See instructions on Page 4)

Receiving Agency shall pay for services received from appropriation items or accounts of the Receiving Agency from which like expenditures would normally be paid, based upon vouchers drawn by the Receiving Agency payable to Performing Agency.

Payments for service performed shall be billed monthly

(Weekly, monthly, lump sum, etc)

Payments received by the Performing Agency shall be credited to its current appropriation item(s) or account(s) from which the expenditures of that character were originally made.

VI. TERM OF CONTRACT:

This Contract is to begin September 1, 1989, and shall terminate August 31, 1991 (Term of Contract cannot transcend the biennium.)

THE UNDERSIGNED CONTRACTING PARTIES do hereby certify that, (1) the services specified above are necessary and essential for activities that are properly within the statutory functions and programs of the affected agencies of State Government, (2) the proposed arrangements serve the interest of efficient and economical administration of the State Government, and (3) the services, supplies or materials contracted for are not required by Section 21 of Article 16 of the Constitution of Texas to be supplied under contract given to the lowest responsible bidder.

RECEIVING AGENCY further certifies that it has the authority to contract for the above services by authority granted in Texas Water Code, Section 6.190 (Statute, Constitution, Appropriation Bill)

PERFORMING AGENCY further certifies that it has authority to perform the services contracted for by authority granted in Texas Water Code, Section 5.229 (Statute, Constitution, Appropriation Bill)

SUBJECT TO THE APPROVAL of the State Purchasing and General Services Commission, the undersigned parties bind themselves to the faithful performance of this Contract. It is mutually understood that this Contract shall not become effective until approved by the State Purchasing and General Services Commission, and that such approval must be obtained prior to the beginning date of the Contract.

RECEIVING AGENCY

Texas Water Development Board
Name of Agency
By: [Signature]
Authorized Signature
Executive Administrator
Title

Date: _____

PERFORMING AGENCY

Texas Water Commission
Name of Agency
By: [Signature]
Authorized Signature
Executive Director
Title

Date: 9-3-89

EXAMINED and APPROVED this the SEP 01 1989 day of _____, A.D., 19 _____

STATE PURCHASING AND GENERAL SERVICES COMMISSION

By: [Signature]
Director, Centralized Services Division

Verbal Approval for September 1, 1989
start date given on August 16, 1989



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Green Street, Suite 250
Lakewood, CO 80015
Telephone: (303) 440-814
FAX: (303) 440-850

Order Placed By:	Name: <u>LUE PAKER</u>	Date: <u>10-89</u>
	Title:	Telephone: <u>(915) 267-0341</u>
	Department:	

BILL TO:	SHIP TO: (Street address, please)
<u>CORCORAN RIVER MWD</u>	<u>1700 21st Street, Bldg. 5</u>
<u>P.O. BOX 263</u>	<u>1000 21st Street, Bldg. 5</u>
<u>FARGO SPRINGS, TX 75720</u>	<u>FARGO SPRINGS, TX 75720</u>

<input type="checkbox"/> Enclosed <input type="checkbox"/> To be Sent <input checked="" type="checkbox"/> Not included	<input type="checkbox"/> Enclosed <input type="checkbox"/> To be Sent <input checked="" type="checkbox"/> Not included
--	--

8 (915) 267-0341

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE		Quantity	Total
	Low	High		
CLASS SET (to supply teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	\$50	1	\$45
STUDENT PACK (to supply teachers with more than one class or to resupply previous years' teachers; contains 25 copies of student materials only)	\$25	\$30	1	\$25
Subtotal				\$70
Shipping Charge				
TOTAL				\$70



*Any materials shipped within the state will be shipped with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Date: 1/16/90

MAJOR RIVERS SUBSIDY: FY 90

Entity	Original Proposal	Subsidy Reserved	Subsidy Billed
Bilma Public Utility Dist.	\$	\$	\$ 60
Bridgestone MUD			
Brazos River Auth.	23,865		
Brookesmith Water			60
Canadian River Mun. Water Auth.	5,940		
City of San Antonio Water Res. Mgmt.	10,620		10,950
City of Stephenville			60
Colorado River Municipal Water Dist.			240
Guadalupe-Blanco River Auth.			1,260
Harris Co. Utility Dist. #5	840		1,050
Harris-Galveston Coastal Sub. Dist.	26,865		
Johnson Co. Fresh Water Supp. Dist. #1			
Jones Co. 4-H	101		30
Lake Cities MUA	1,875		
Lower Neches River Auth.	3,600		3,100
Middle Concho Soil & Water District			195
Red Bluff Water Power Control Dist.	525		
Red River Auth.			120
Sabine River Authority			4,675
Tarrant Co. Water Central Dist.	9,225		
Trinity River Auth.	29,520		
Upper Guadalupe River Auth.			185
Wells Branch Municipal			75
Williamson Co./Anderson Mill MUD			105
	<u>\$112,976</u>	<u>\$</u>	<u>\$22,165</u>

FY 90
total reserved
+ billed = \$22,165

TWC - FY90

\$20,000 original amount
-20,000 reserved + billed
\$ 0 remainder

TWDB - FY90 IAC

\$19,400 original amount
- 2,165 reserved + billed
\$17,235 remainder



**Educational
Development
Specialists**

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1685

January 30, 1990

Mr. John J. Byrum, II
Director
City of Victoria
3209 N. Ben Jordan
Victoria, TX 77902

Dear John:

Thank you for your interest in "Major Rivers", the Texas Water Education Program.

I have enclosed a cost proposal by ISD within each county in your service area. The statistics used to compile the numbers of fourth grade students in the school districts were taken directly from the 1988 Texas Education Agency Guide. The number of students was then divided by 25 (the maximum number of students per classroom allowed by The State of Texas) to arrive at the estimated number of classrooms in that school district.

I am enclosing a "Major Rivers" preview kit, an order form, and some teacher brochures for your convenience. Please let me know if I can provide you with any additional information or assistance. I look forward to working with you and the City of Victoria.

Sincerely,

Ann

Ann M. Crafton
Director of Marketing

cc: Donna Darling (TWDB)

CITY OF VICTORIA

This proposal outlines the estimated number of 4th grade classrooms by school district within the county. The following information was comprised using the 1988 Texas Education Agency guide.

School District 4th grade students 4th grade classrooms

VICTORIA COUNTY

Bloomington ISD	61	3
Victoria ISD	1,123	45
McFaddin ISD	3	1
Nursery ISD	13	1
SUBTOTAL...		50

From this chart you can see that you will need a total of **50** Major Rivers class sets to supply 100% of the fourth grade classrooms in your service area. A break down of costs follows:

<u>ITEMS</u>	<u>COSTS</u>
50 Major Rivers class sets @ \$45.00 each	\$2,250
Less TWC, TWDB, TDH subsidy @ \$15.00/class set	-750
Imprinting 50 class sets of 25	60
Shipping (one location)	90
Total	\$1,650

- Shipping costs are estimated and may vary slightly.



Educational Development Books, Inc.
 6506 E. Center St., Suite 250
 LeRay, OK 74743
 (512) 896-7478

Shipping Address
 Billing Address
 Checked by

INVOICE
 LED
 4/18
 UPPER GUADALUPE RIVER AUTHORITY
 154155 VYB
 KERRVILLE TX

Customer Number _____ Date Order Received _____ Purchase Order No. _____
NOT REQUIRED

UPPER GUADALUPE RIVER AUTHORITY
 Post Office Box 1278
 Kerrville TX 78029
 Attn: Laura Hargrove
 (512) 896 7478

UPPER GUADA
 154155 VYB
 KERRVILLE TX
 Attn: Laura H
 (512) 896

NO. 24 - CUSTOMER	INTRODUCING TO OUR SHIPMENT	
THIS IS NOT AN INVOICE.	imprinting	
	<input type="checkbox"/> Home Activity Booklet <input checked="" type="checkbox"/> Record Sheet imprinting copies	
Terms: Net 30 days, P.O. Bill Accepted SH printed on recycled paper where applicable. state tax will be added.	Imprinting Cost \$50.00	Estimated Shipping Cost

DESCRIPTION	QTY ORDER	QTY SHIP	UNIT PRICE
MA. RIVERS CLASS SETS	2		\$10
LEAD SHEETS BY TWO	2		\$10
<i>TWO - I 2428</i>			TOTAL \$20.00

Inventory Control
 By _____ Date _____
 Shipped by _____
 Bill being Attached



Educational Development Specialists

1989 ORDER FORM

MAIL TO: Educational Development Specialists
14000
Houston, Texas 77034
713-261-1111

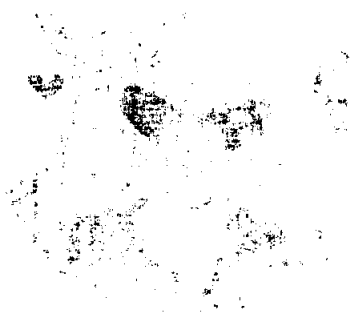
Order Placed By:	Name:	Address:

BILL TO:	SUBJECT:
Company Name	Course Title
PO Box	Address
City	State
Zip	Country
PURCHASE ORDER NO.:	
DATE:	

Bill order to
2066

MAJOR RIVERS Texas Water Education Program

CLASS SET	NUMBER	UNIT PRICE	TOTAL
Class Set 1	1	\$40.00	\$40.00
Class Set 2	1	\$40.00	\$40.00
Class Set 3	1	\$40.00	\$40.00
Class Set 4	1	\$40.00	\$40.00
Class Set 5	1	\$40.00	\$40.00
Class Set 6	1	\$40.00	\$40.00
Class Set 7	1	\$40.00	\$40.00
Class Set 8	1	\$40.00	\$40.00
Class Set 9	1	\$40.00	\$40.00
Class Set 10	1	\$40.00	\$40.00
Class Set 11	1	\$40.00	\$40.00
Class Set 12	1	\$40.00	\$40.00
Class Set 13	1	\$40.00	\$40.00
Class Set 14	1	\$40.00	\$40.00
Class Set 15	1	\$40.00	\$40.00
Class Set 16	1	\$40.00	\$40.00
Class Set 17	1	\$40.00	\$40.00
Class Set 18	1	\$40.00	\$40.00
Class Set 19	1	\$40.00	\$40.00
Class Set 20	1	\$40.00	\$40.00
Class Set 21	1	\$40.00	\$40.00
Class Set 22	1	\$40.00	\$40.00
Class Set 23	1	\$40.00	\$40.00
Class Set 24	1	\$40.00	\$40.00
Class Set 25	1	\$40.00	\$40.00
Class Set 26	1	\$40.00	\$40.00
Class Set 27	1	\$40.00	\$40.00
Class Set 28	1	\$40.00	\$40.00
Class Set 29	1	\$40.00	\$40.00
Class Set 30	1	\$40.00	\$40.00
Class Set 31	1	\$40.00	\$40.00
Class Set 32	1	\$40.00	\$40.00
Class Set 33	1	\$40.00	\$40.00
Class Set 34	1	\$40.00	\$40.00
Class Set 35	1	\$40.00	\$40.00
Class Set 36	1	\$40.00	\$40.00
Class Set 37	1	\$40.00	\$40.00
Class Set 38	1	\$40.00	\$40.00
Class Set 39	1	\$40.00	\$40.00
Class Set 40	1	\$40.00	\$40.00
Class Set 41	1	\$40.00	\$40.00
Class Set 42	1	\$40.00	\$40.00
Class Set 43	1	\$40.00	\$40.00
Class Set 44	1	\$40.00	\$40.00
Class Set 45	1	\$40.00	\$40.00
Class Set 46	1	\$40.00	\$40.00
Class Set 47	1	\$40.00	\$40.00
Class Set 48	1	\$40.00	\$40.00
Class Set 49	1	\$40.00	\$40.00
Class Set 50	1	\$40.00	\$40.00
Class Set 51	1	\$40.00	\$40.00
Class Set 52	1	\$40.00	\$40.00
Class Set 53	1	\$40.00	\$40.00
Class Set 54	1	\$40.00	\$40.00
Class Set 55	1	\$40.00	\$40.00
Class Set 56	1	\$40.00	\$40.00
Class Set 57	1	\$40.00	\$40.00
Class Set 58	1	\$40.00	\$40.00
Class Set 59	1	\$40.00	\$40.00
Class Set 60	1	\$40.00	\$40.00
Class Set 61	1	\$40.00	\$40.00
Class Set 62	1	\$40.00	\$40.00
Class Set 63	1	\$40.00	\$40.00
Class Set 64	1	\$40.00	\$40.00
Class Set 65	1	\$40.00	\$40.00
Class Set 66	1	\$40.00	\$40.00
Class Set 67	1	\$40.00	\$40.00
Class Set 68	1	\$40.00	\$40.00
Class Set 69	1	\$40.00	\$40.00
Class Set 70	1	\$40.00	\$40.00
Class Set 71	1	\$40.00	\$40.00
Class Set 72	1	\$40.00	\$40.00
Class Set 73	1	\$40.00	\$40.00
Class Set 74	1	\$40.00	\$40.00
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Class Set 76	1	\$40.00	\$40.00
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Class Set 79	1	\$40.00	\$40.00
Class Set 80	1	\$40.00	\$40.00
Class Set 81	1	\$40.00	\$40.00
Class Set 82	1	\$40.00	\$40.00
Class Set 83	1	\$40.00	\$40.00
Class Set 84	1	\$40.00	\$40.00
Class Set 85	1	\$40.00	\$40.00
Class Set 86	1	\$40.00	\$40.00
Class Set 87	1	\$40.00	\$40.00
Class Set 88	1	\$40.00	\$40.00
Class Set 89	1	\$40.00	\$40.00
Class Set 90	1	\$40.00	\$40.00
Class Set 91	1	\$40.00	\$40.00
Class Set 92	1	\$40.00	\$40.00
Class Set 93	1	\$40.00	\$40.00
Class Set 94	1	\$40.00	\$40.00
Class Set 95	1	\$40.00	\$40.00
Class Set 96	1	\$40.00	\$40.00
Class Set 97	1	\$40.00	\$40.00
Class Set 98	1	\$40.00	\$40.00
Class Set 99	1	\$40.00	\$40.00
Class Set 100	1	\$40.00	\$40.00



*Any material supplied by Texas Water Education Program

Order form for Major Rivers Texas Water Education Program



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1685

February 22, 1990

Sonny Kretzschmar
Texas Water Development Board
Post Office Box 13231
Austin, TX 78711-3231

Dear Sonny:

As you know, the first state-subsidized printing of the "Major Rivers" program was delivered to participating classrooms in November 1989. A total of 1,901 classroom sets were purchased by the sponsors on the attached list. When translated into students reached, the total for the 1989-90 school year will be 47,525.

While this is a great accomplishment, there are still some 200,000 fourth-grade students in Texas whose teachers have not yet received "Major Rivers," and there is no guarantee that this year's sponsors will choose to resupply the consumable portions of the classroom sets they provided this year.

In that regard, I would like to propose that the state encourage the continued participation of current sponsors by presenting them with a signed certificate like the one enclosed so that they will know their efforts were appreciated. Donna Darling will have the certificates inscribed and signed and will deliver them to participating river authorities and water agencies. Also, at the end of the school year, EDS will compile a report which includes pretest and posttest results and teacher comments. This report will be mailed to each of the sponsors and water agencies.

Some time in the near future, I would like to give you a call to hear any ideas you may have about how EDS can support further efforts to reach the 200,000 fourth-graders not yet exposed to the program.

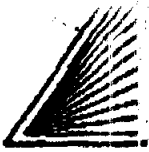
Finally, we feel that the subsidy provided by your agency and the other two state agencies, enabling local sponsors to purchase the program at a considerable savings, was a critical factor in the first year's success. We sincerely hope that the subsidy will be re-funded or even expanded for the 1990-91 school year.

I will talk to you more about the certificate and the next phase of moving "Major Rivers" statewide when I call.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk



Development Specialists

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Sherry Bailey</u>	Date: <u>3-20-90</u>
	Title/Department: _____	Telephone: <u>(915) (46) 5731</u>

BILL TO:	SHIP TO: (Street address please)
<u>SAME</u>	<u>Sherry Bailey</u> <u>* Brooksmith Special Utility Dist.</u> <u>Box 377 South of Kopper Hill</u> <u>Brookwood, TX 77604</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING (Check one)**

Requested Need Information Not Requested

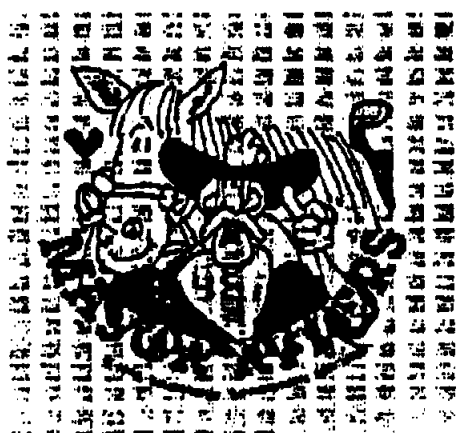
Bill for TWC for CS only. No subsidy on student packs

MAJOR RIVERS Texas Water Education Program

Charge Logo

** Hold for camera ready art.*

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	6	180
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25	4	140
Materials Total					320
Imprinting Charge					50-
Shipping Charge					
TOTAL					370-



Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM

Program Record Sheet

Teacher Sharon Williams Date 3/5/90

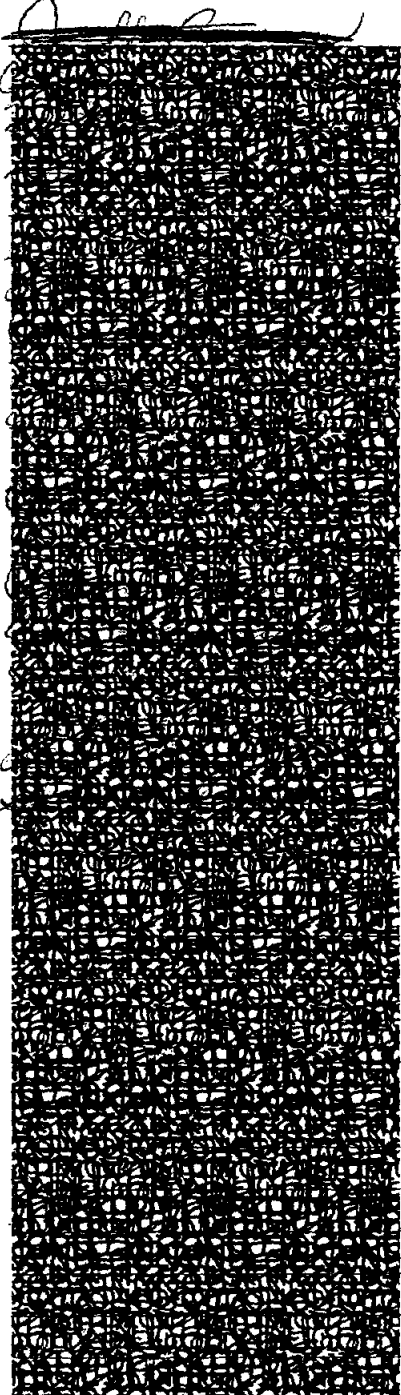
School Anderson Mill ISD Round Rock Grade Level 4

School Street Address 10610 Salt Mill Hollow
Austin (Material cannot be sent to a post office box) 78750

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy. Thank you.

Test Results

Pupil



	Pretest Score (20 possible)	Posttest Score (20 possible)
	8/20 40%	95%
	10/20 50%	80%
	9/20 45%	85%
	15/20 75%	100%
	12/20 60%	95%
	13/20 65%	85%
	15/20 75%	100%
	14/20 70%	85%
	11/20 55%	90%
	11/20 55%	100%
	9/20 45%	95%
	5/20 30%	80%
	12/20 60%	85%
	13/20 60%	75%
	12/20 60%	85%
	12/20 60%	50%
	11/20 55%	85%
	15/20 75%	100%
	14/20 70%	100%
	16/20 80%	100%

Teacher Reactions

- What was the attitude of most of your pupils toward the program?
 very positive neutral
 positive negative

Comments:

- Please list any comments or suggestions you have about any aspect of the program.

- Do you want to teach the program again next year and have consumable pupil materials replaced?

yes no

Comments:

PLEASE COMPLETE AND RETURN THIS RECORD SHEET TO YOUR SPONSOR.

THIS PROGRAM RECORD SHEET IS ESSENTIAL FOR EVALUATION AND CONTINUATION OF THIS WATER PROGRAM

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy
 Thank You.

MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM

Program Record Sheet

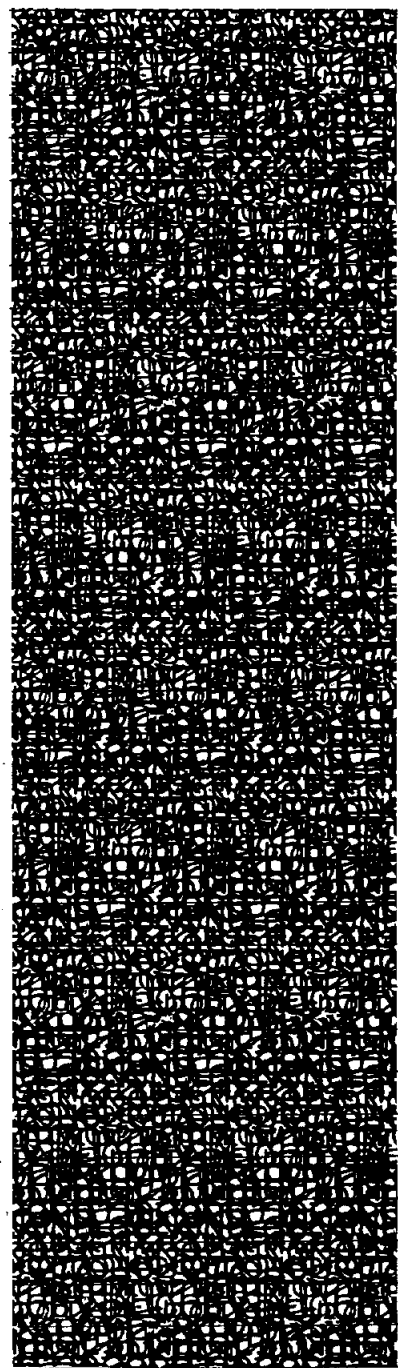
Teacher Zimmerman Date March, 1990

School Anderson Mill ISD Round Rock Grade Level 4

School Street Address 10610 Salt Mill Hollow Austin 78750
(Material cannot be sent to a post office box.)

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy. Thank you.

Test Results



Pretest Score (20 possible) Posttest Score (20 possible)

6	16
13	15
9	17
12	19
9	19
12	20
6	20
15	19
9	19
9	18
7	15
12	16
14	19
11	18
16	20
9	20
7	13
11	20
17	20
6	15

Teacher Reactions

1. What was the attitude of most of your pupils toward the program?

- very positive neutral
 positive negative

Comments:

2. Please list any comments or suggestions you have about any aspect of the program.

3. Do you want to teach the program again next year and have consumable pupil materials replaced?

- yes no

Comments:

We've found it ~~for~~ very useful.

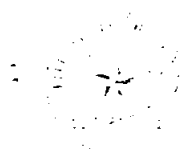
PLEASE COMPLETE AND RETURN THIS RECORD SHEET TO YOUR SPONSOR.

THIS PROGRAM RECORD SHEET IS ESSENTIAL FOR EVALUATION AND CONTINUATION OF THIS WATER PROGRAM

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy
Thank You.

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
John E. Birdwell, Commissioner
Cliff Johnson, Commissioner



John J. Vay, General Counsel
Michael E. Field, Chief Hearings Examiner
Brenda W. Foster, Chief Clerk

Allen Beinke, Executive Director

March 16, 1990

Mr. Fred C. Niedermeyer, Ed.D.
President
Educational Development Specialists
5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093

Dear Mr. Niedermeyer,

Thank you for all the fine work your company has done in the statewide development and distribution of the Major Rivers program. I am pleased the Commission has been a part of this worthwhile endeavor.

Bill Colbert and Renee Carlson of my public information staff are working closely with Donna Darling in producing a certificate to present to participating sponsors. The idea is an excellent one.

The end of August, 1990 will conclude our present two year financial commitment to the Major Rivers subsidy program. I am uncertain at this time what the new biennium will bring, but you will continue to have our enthusiastic endorsement. In this regard, we will be in touch with the Trinity River Authority and the Brazos River Authority.

Please consult with Bill Colbert or Renee Carlson when you make your contact in the near future by calling 512/463-8028. Once again, I greatly appreciate your diligence in this matter.

Sincerely,

A handwritten signature in dark ink, appearing to read "Buck Wynne".

B. J. Wynne, III, Chairman

cc: Donna Darling, TWDB



Development Specialists

FAX

(512) 277-1282

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By: _____ Name: Rebecca Raabe Date: 3-20-90
Title: _____ Telephone: (512) 769-3740
Department: _____

BILL TO: Rebecca Raabe -
Evergreen Underground Water Cons.
P.O. Box 155
Sourdanton, TX 78026

SHIP TO: (Street address please)
Rebecca Raabe
Evergreen Underground Water Conservation District
1306 Simmons
Sourdanton, TX 78026

PURCHASE ORDER (Check one)
 Enclosed To Be Sent Not Required
Number (if known) _____

***IMPRINTING** (Check one)
 Requested Need Information Not Requested
(skip by 3-30-90)

Bill TWC

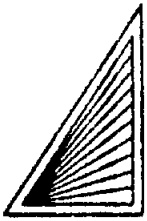
MAJOR RIVERS

Texas Water Education Program

These materials have been provided by Evergreen Underground Water Conservation District along with

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	8	40
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25	10	250
	Materials Total				490 - 480
	Imprinting Charge				50 -
	Shipping Charge			est.	30 -
	TOTAL				540 -

Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Mike Gonzales</u>	Date: <u>4-3-90</u>
	Title/Department: _____	Telephone: <u>(512) 227-1373</u>

BILL TO:	SHIP TO: (Street address please)
<u>SAME</u>	Attn: <u>Mike Gonzales (Envir. Service)</u>
	<u>San Antonio River Authority</u>
	<u>100 E Guenther</u>
	<u>San Antonio, TX</u>
	<u>78201</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) # 1574

***IMPRINTING** (Check one)

Requested Need Information Not Requested

Bill TWC
\$ 450.00
30 CS @ 15.00 = 450

Hold for Logo.

MAJOR RIVERS

Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	30	900-
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25		
	Materials Total				
	Imprinting Charge				50-
	Shipping Charge				
	TOTAL				

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Please add to list of
certificate recipients.

Mike Gonzales
Environmental Services
San Antonio River Authority
100 E. Guenther
San Antonio, TX 78201

TEXAS WATER DEVELOPMENT BOARD

INTEROFFICE MEMORANDUM

TO Tommy Knowles DATE: 4//6/90

THRU Sonny Kretzschmar

FROM : Donna Darling, TWDB Public Information & Education

SUBJECT: Transfer of 1991 Research and Planning Funds for
Subsidizing Major Rivers Program

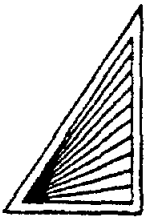
If the Brazos River Authority purchases some 1500 Major Rivers Education kits in June, the remaining \$17,000 of the original \$40,000 dollars contributed by the TWC and the TWDB will be used up. (see attached status of program letter & subsidy breakdown)

As you can see, there is still a potential for a large number of first-time purchasers who may want to apply for the subsidy. The Trinity River Authority is considering the program and a full order subsidy for their service area would exceed \$19,000.

Therefore, I would appreciate an opportunity to discuss the use of a minimum of \$20,000 of research and planning money as the 1990-91 school year subsidy for the Major Rivers Program.

The consultant is currently preparing a statistical report on the accomplishments of the program during the 1989-90 school year. I would recommend that we place this item on the July Board meeting agenda so that we will have this report as justification for use of the additional \$20,000 in research and planning funds.

Your comments would be appreciated.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>Sue Baker</u>	Date: <u>4-25-90</u>
	Title/ Department:	Telephone: <u>(915) 267-6341</u>

BILL TO:	SHIP TO: (Street address please)
STATE P.O. Box 869	Attn: <u>Sue Baker</u> (Howard Scurry)
79721	Colorado ^{RM} Blvd. 400 E 24th St. Sector
	Big Spring, TX 79720

PURCHASE ORDER (Check one) <input type="checkbox"/> Enclosed <input type="checkbox"/> To Be Sent <input type="checkbox"/> Not Required Number (if known) _____	*IMPRINTING (Check one) <input type="checkbox"/> Requested <input type="checkbox"/> Need Information <input checked="" type="checkbox"/> Not Requested
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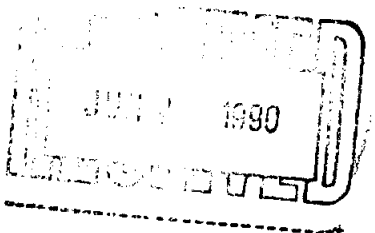
Bill subsidy to TWC - 17 x \$15 = 255

MAJOR RIVERS Texas Water Education Program

RUSH 2 WKS.

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	17	510-
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25		
	Materials Total				
	Imprinting Charge				0
	Shipping Charge				
	TOTAL				

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



CONTRACT VOUCHER LOG

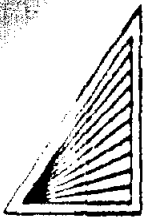
CONTRACT NO.: 150

VOUCHER NO.: 1

CONTRACT MGR. Darling

VOUCHER AMOUNT: \$7,305⁰⁰

<u>EVENT</u>	<u>DATE</u>	<u>INITIALS</u>
Voucher Received by Contract Manager	<u>5/2/90</u>	<u>DNL</u>
Voucher Determined Complete	<u>5/3/90</u>	<u>DNL</u>
Voucher Provided to Carolyn Brittin	<u>5/03/90</u>	<u>CLB</u>
Voucher Provided to Assistant Division Director	_____	_____
Asst. Division Director's Approval	_____	_____
Voucher Provided to Division Director	_____	_____
Director's Approval	_____	_____
Received by Gladys Stansberry	<u>5/03/90</u>	<u>CLB</u>
Gladys Stansberry's Approval	<u>5-4-90</u>	<u>gm</u>
Received by DFM <u>Stapp</u>	<u>5-8-90</u>	<u>WK</u>
Sue Brookmole's Approval	<u>5-9-90</u>	<u>DMS</u>
Received by Gladys Stansberry	_____	_____
Payment Request Sent to Comptroller <u>SAGSC</u>	<u>5-10</u>	<u>gm</u>
Comptroller Warrant (No. <u>7944998</u>)	<u>5-30-90</u>	<u>gm</u>
Return Completed Form to Carolyn Brittin	Date Received <u>6/04/90</u>	<u>CLB</u>



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1485

* Note: change on RS. imprint.

Order Placed By:	Name: <u>DAN COPPS</u>	Date: <u>6-19-90</u>
	Title/	
	Department:	Telephone: <u>(713) 358-4224</u>

4955

BILL TO:	SHIP TO: (Street address please)
	<u>Dan Copps</u>
	<u>Harris County Utility District #5</u>
	<u>3928 Kingwood Dr.</u>
	<u>Kingwood, TX</u>
	<u>77339</u>

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (if known) _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

#5271

MAJOR RIVERS Texas Water Education Program

R.S. -
 Harris County ~~UTD~~
 Utility District #5.
 P.O. Box 5447
 Kingwood, TX 77305

* Bu TWC
 5 C @ 15.00 = \$75.00

CLASS SET:	UNIT PRICE		No. of Kits Ordered	Extended Price
	Less State Subsidy	Actual Cost		
(for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	* 5	150
	45	0	70	3150
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)		
	Materials Total			3300
	Imprinting Charge			70
	Shipping Charge <i>est.</i>			135
	TOTAL			3505.

* Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



Educational Development Specialists

1990
~~1989~~ ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485

Order Placed By:	Name: <u>J. W. Dean</u>	Date: <u>July 2, 1990</u>
	Title/Department: <u>General Manager</u>	Telephone: <u>214/639-7538</u>

BILL TO:
Northeast Texas Municipal Water Dist.
P. O. Box 955
Hughes Springs, Texas 75656

SHIP TO: (Street address please)
Northeast Texas Municipal Water Dist.
P. O. Box 955 (Hwy 250, South)
Hughes Springs, Texas 75656

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number (shown) _____

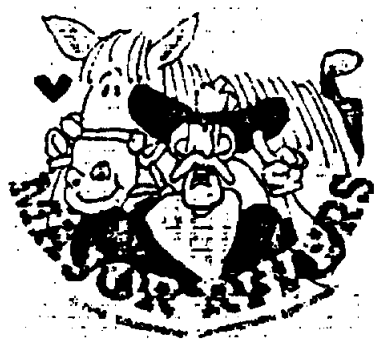
***IMPRINTING** (Check one)

Requested Need Information Not Requested

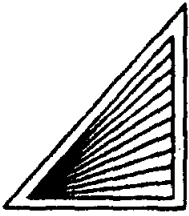
*Bill T
32 CS @ \$15.00 = \$480.00*

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials including video cassette, and 25 copies of student materials)	\$45	(\$15)	\$30	32	\$960.00
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25		
Materials Total					\$960.00
Imprinting Charge					50 -
Shipping Charge					
TOTAL					1010 - \$960.00



*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



**Educational
Development
Specialists**

5505 East Carson Street, Suite 250 • Lakewood, CA 90713-3933 • (213) 420-6814 • FAX (213) 420-1485

FAX COVER SHEET

Date: 7-11-90 Time: 2:36 No. of Pages: 2

TO: Donna Darling

COMPANY/
DEPARTMENT:

TWDB

(512)

FAX NO. 475-2053

FROM: Ann Crafton

SUBJECT: M.B. order

MESSAGE: reminder: Sue Baker is offering Major
Rivers - school district by school district within

her service area. The class sets have been

confirmed as new teachers & the student packs
are re-supply. The subsidy was allowed only on
- the class sets.

If you do not receive all the pages, please call as soon as possible.

P.S. - I should have the completed M.R. record
sheet report very soon! You'll be 1st to see it.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5305 East Carson Street, Suite 250
 Lakewood, CA 90713-3093
 Telephone: (213) 420-6814
 FAX: (213) 420-1485

Order Placed By:	Name: <u>Sue Baker</u> (183)	Date: <u>7-11-90</u>
	Title/Department: _____	Telephone: <u>(915) 267-6341</u>

BILL TO:	SHIP TO: (Street address please)

PURCHASE ORDER (Check one)

Enclosed To Be Sent Not Required

Number of known: _____

***IMPRINTING** (Check one)

Requested Need Information Not Requested

*all TWC
 140 CS @ 1500 = 210000
 subsidize class sets only*

MAJOR RIVERS

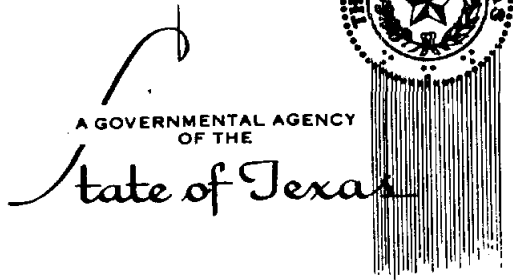
Texas Water Education Program

ship by 7/23/90

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30	140	4,200
STUDENT PACK: to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25	18	630
	Materials Total				4,830
	Imprinting Charge				
	Shipping Charge				
	TOTAL				



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SABINE RIVER AUTHORITY

of Texas

Lake Fork Division
P.O. Box 487
Quitman, Texas 75783
214/878-2262

November 29, 1989.

Ms. Donna D. Darling
Director/Office of Public
Information & Education
Texas Water Development Board
P.O. Box 13231
Capitol Station
Austin, Texas 78711-3231

RE: "Major Rivers" Water Education
Program

Dear Ms. Darling:

Please find attached for your files a copy of an article concerning the "Major Rivers" program from the Wood County Democrat from Quitman, Texas. This news release was supplied to 21 different newspapers in the Sabine Basin.

As of this date "Major Rivers" materials have been distributed to 373 4th grade classrooms on 90 different elementary school campuses in 65 school districts in 18 counties in the basin. Based on our most recently revised estimate of the total number of 4th grade classrooms in the basin, 490, the 373 figure represents approximately 96% coverage.

The remarkably positive response from both teachers and administrators to the "Major Rivers" program has been a pleasant surprise to say the least. Your help and the financial assistance of the TWDB, TWC, and TDH is sincerely appreciated.

Sincerely,

A handwritten signature in cursive script that reads "David S. Parsons".

David S. Parsons
Regional Manager

DSP/lw

cc: Sam F. Collins
Ann Crafton

Water Well Statistics

May, June, July, 1990

County	Permits	Wells Completed	Wells Abandoned
Hansford	0	1	0
Hartley	0	5	0
Hutchinson	1	2	0
Lipscomb	0	0	0
Moore	3	5	2
Ochiltree	1	1	1
Sherman	2	7	1
Totals	7	21	4

interfere with each other, especially when they have been run hard and long. The "area of influence" of a pumping well will expand to the point where it overlaps the boundaries of "areas of influence" of other wells that are producing water in the immediate area. This overlapping creates a depression in the water table that has an effect on all the wells that are producing from the aquifer in the general area. The depression means that the pumping level in most of those wells is down and the efficiency of the pumps is probably suffering because of the increased drawdown. This in turn may show up in the form of slightly less water being produced by the individual wells in this area.

The farmer knows that last year he was able to water a certain number of rows with the water he had available. Now he can't seem to ever get the rows through unless he cuts back the number of rows he is watering. To the farmer this means that something is wrong and he immediately starts worrying about the condition of his wells and the suspicion grows that his wells are failing for some reason. The farmer now starts trying to push the water through the field by shutting off rows and forcing more water through the remaining rows. This procedure will help in some instances but in most cases it only creates more worry on the operators' part and he becomes absolutely positive that something is wrong with his well. The major problem is that it is "DRY" out there and the more dry it becomes, the more problems the operator is going to have getting the crop watered.

The field staff of the Water District has measured and tested many wells since this period of dryness and hot weather started. In most cases the wells were producing very near what they were producing several years ago, if measurements have been made in the past. Many sprinkler systems were tested with the new electronic flow meter which has improved the accuracy of our field measurements. Since the start of this irrigation season the

Dumas field staff has measured or tested approximately 200 wells or sprinkler systems in the western three county area. It has been a particularly busy year for us and will continue that way until the precipitation returns to help us cool off and get wet.

Water Educational Program

This District will be sending out information concerning a water educational program. The program will be for 4th grade students. If the grade schools want the program the District will furnish all the materials needed for the program.

The title of the program is "Major Rivers" and was developed through a process of educator review, field testing and revision. Field-test results from 11 Texas fourth-grade classrooms showed a high level of student learning of objectives; students averaged 50% on the pretest and 87% on the posttest.

More than 90% of the students said that they learned an important thing, that they'd now be more careful using water and that they liked "Major Rivers." Of the teachers, 100% said that the content was objective, that the pupils' reactions were positive, and that they'd like to teach the program again.

The program is designed especially for the 4th grade level. It is colorful, entertaining and easy to teach. All the materials needed for instruction will be provided and include the following: Teachers guide, Video, Poster, Program record sheet, Student booklets, Pretest, Posttest, Home information leaflets and Major Rivers stickers.

Instruction focuses on five specific learning objectives.

1. Identify the steps in the water cycle.
2. Identify basic facts about the water supply in Texas which include; the regional differences in rainfall, the amount of water supplied by surface and by groundwater, and the State's major rivers and aquifers.
3. Identify the steps and processes of the water distribution system in Texas.
4. Recognize typical household water uses, and identify which ones use the most water over a year's time.
5. Identify water conservation practices and assess personal habits.

These objectives also support many of the State's Essential Elements in science, social studies and writing.

The program consists of 10 lessons, requiring approximately 30 - 45 minutes of instruction each day. Suggestions for optional enrichment activities are included if the teacher wants to expand the program.



After reading the papers and listening to the news I begin to think that the best thing that could happen to this country would be to repeal every law we have, with the exception of murder, robbery and rape, then start all over.

Every time that congress and the state legislature meet they pass more laws which makes more violators. The time will come when every city of any size will have a state or federal prison. This will sound good to the citizens of the area. They don't stop to think that they are the ones who have to pay for the prisons through taxes.

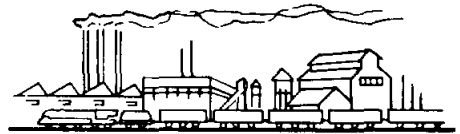
It is estimated that it costs about \$50.00 per day to house each prisoner. Multiply that by the number of people that we now have in jails and prisons. The only way the state and nation have of supplying money is through taxing its citizens. Then think of the court appeals. It takes about ten years to bring a murderer to justice. The taxpayer pays this cost.

If our system of laws is going to work, they must be changed so that Justice will be swift. If the law violator knew that he was going to prison or the electric chair the next week, he would have second thoughts about committing a crime.

*“Do Not Take
Your Water
For Granted”*

Directors To Meet

The Board of Directors of the North Plains Groundwater Conservation District No. 2 will meet in regular session Friday, August 10, 1990 in the District Office, 603 East First Street, Dumas, Texas at 10:00 a.m.



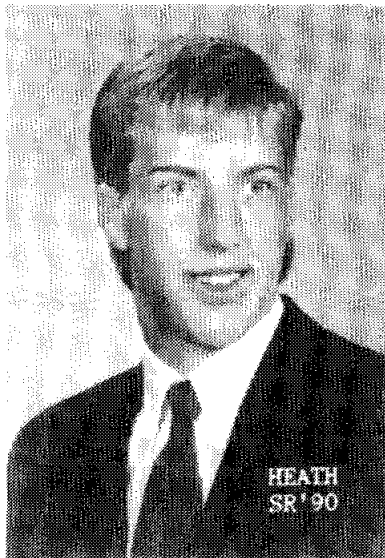
NORTH PLAINS WATER NEWS

A Publication of the NORTH PLAINS WATER CONSERVATION DISTRICT

Volume 34, No.3

"WASTE MAKES WANT"

August 1990



HEATH ROUSSER

Heath Rousser is the winner of the \$300.00 scholarship given by the North Plains Water District for his essay on "Why the Importance of Water Conservation". Heath is the 17 year old son of Mr. & Mrs. Rick Rousser of Sunray. His father is a farmer-rancher and his mother is a substitute teacher for Dumas Independent School District.

Heath belongs to the Sunray Baptist Church and has served as youth council president. He has participated in football for four years, being selected as all-district defensive end, honorable mention wide receiver, all-district academic team. He has also played basketball four years and was selected to the all-district team and the all-district academic team. He has played tennis for four years being a regional qualifier for 2 years. He has been a member of the National Honor Society for two years, serving as secretary this year. He is a member and officer of student council and a class officer. He has participated in U.I.L. events all four years.

Upon graduation Heath plans to attend Texas Tech University and pursue a degree in accounting.

Why The Importance Of Water Conservation

Agriculture is responsible for 72% of all the water used in Texas. Irrigation is a significant factor in the success and size of the agriculture economy. My grandfather came to the North Plains in 1954 and started to irrigate. Irrigation was new and water was abundant. Irrigation gas was cheap and little emphasis was placed on conserving the water. But not so today.

Since that time through technology and education we have learned how to conserve and protect our water. The North Plains Water District is composed of a seven county area and is doing much in the community to preserve and protect our water resources. By issuing well-drilling permits, they are able to keep an accurate record of all irrigation wells, regulating spacing and production of wells.

As irrigated acreage expanded, water use increased. The High Plains Region is highly dependent upon water and energy resources. The quantities of ground water that are being withdrawn and used far exceed the quantities being replaced.

Ground water is one of our nation's most important resources. It is a source of irrigation for this country's multi-billion dollar agriculture industry and it is especially used in the county which we live. Moore County is a very prosperous place that has always been blessed with an abundance of water. With our water table dropping we need to teach and practice water conservation. It is hard to believe that with more than seventy percent of the earth's surface covered by water we could run out. But it could happen and it's up to my generation to see that it does not.

Our agriculture uses many different ways to irrigate. One of the most efficient and economical ways to irrigate is through the use of a low energy precision application (LEPA). The answer to the deepening water table in the High Plains and the resulting higher cost of pumping that water to grow a crop was LEPA. Developed by Bill Lyles, an agricultural

engineer in Lubbock, it has received wide acclaim by progressive farmers in our country.

The development of LEPA was a great asset when energy prices were escalating and farm prices were declining. This irrigation system uses drop pipes or flexible hoses fitted with special designed low-energy heads that release water 12 to 15 inches above the ground reaching efficiency levels of 95 to 98%. This is about 15% higher than the average center-pivot sprinkler system.

The center-pivot sprinkler system along with the LEPA sprinkler saves labor, fuel, time, money, and water. All of these resources mean the difference between profit and loss to a farmer.

On our farm the use of low pressure pivots reduces water loss due to evaporation as compared to high pressure systems. We have also found that coarse-groove pads save evaporation as compared to fine-groove pads due to the wind here on the North Plains.

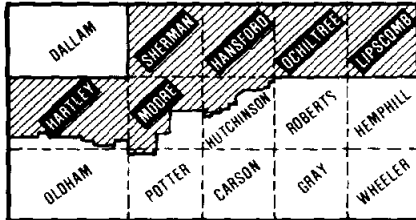
Gated pipe is another device used to irrigate crops here on the North Plains. Less evaporation occurs with gated pipes than any sprinkler system. Gated pipes, however, are more labor intensive than center-pivots and require leveling to ensure equal distribution of water across the field, but if the farmers intent is water conservation, gated pipes are certainly a positive alternative.

The least used method to apply water on fields is surge flow. Surge flow uses a battery-powered valve in a tee directly downstream from the riser or outlet valve. The surge valve directs water alternately from one set of furrows to the other. The duration of the flow to each set of furrows is determined by the surge valve controller. Surge flow gives farmers an opportunity to apply lighter applications than flow irrigation. Usually surge flow is used for pre-watering or one of the first seasonal waterings.

Ditch irrigation is applying irrigation water in furrows between crop rows by the use of tubes. It is the oldest type or irrigation in Moore County. It is less economical because it involves more labor and time and a greater evaporation loss results.

(continued on page 2)

North Plains Water News



**A publication of the
North Plains Water Conservation District
DISTRICT OFFICE**

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Committeemen meet the first Tuesday of the last month of each quarter at M's Meet & Eat.

Essay

(continued from page 1)

Our irrigation options are great and all types of irrigation helps farmers. The High Plains depends heavily on irrigation as the average eighteen inch a year rainfall is severely deficient in crop production. We as farmers and as citizens must use the water we have as efficiently as possible. High Plains farmers are progressing gradually to agricultural practices that require less irrigation as stewards of our land. A few farmers are diversing their operations into crops such as pinto beans, soybeans, and sunflowers which require less water for quality production than corn which is the commodity produced in the greatest amount the Moore County.

Urban residents are also "irrigators". Typically, about 50% of municipal water use goes for landscape irrigation. Lawn watering makes up a great portion of a city's water usage. By using native and low water-use lawns, shrubs, trees and vines, residents can still have a well landscaped yard while saving money and water.

Government programs also encourage water conservation. Among those is the Conservation Reserve Program (CRP). That program pays farmers to return their farm land to grass. Thus, wells are no longer used for irrigating crops. Many irrigation pumps are even being pulled out of the wells. This could mean that these farms will never be irrigated again. The CRP grasslands will also inhibit erosion. The water that does run off of these grasslands will be of a much higher quality and more usable.

Another program that farmers are choosing is the 0-92 program. This program allows farmers to earn 92% of their government check without planting a crop. Again irrigating is eliminated, which helps to maintain the underground water table.

Still another program is the 50-92 program, which allows farmers to plant 50% of their base acres to a program crop and divert their other half to non-production. This program again will retain water in nature's limited reservoir.

These programs are advantageous when there is a surplus of farm products. Our government is encouraging farmers to be good stewards of their water resources so they may be preserved for future generations. The government programs share the cost of underground pipe lines, tailwater pits, stock water, and some sprinkler assistance. These farm programs will help the farmer have the capital to install these water conserving practices.

Every living thing, . . . human and plant . . . depends on water. Plants would wither and die without water. Animals would eat from barren soil and be reduced to skeletons. Prosperity would be no more. The bumper sticker, "If you eat you are involved in Agriculture" would certainly

apply. Mankind would die without water. Certainly, I do not want to face such a scenario.

To see a beautiful green crop is an agriculture dream that I know firsthand, as a son and grandson of a farmer, requires much water. My grandfather did not realize the importance of water conservation. He didn't know the supply was limited. Water flowed freely then.

My father has farmed in an era when technology has been rapid. Better fertilizer and improved disease control has significantly increased production, but not without taking its toll on the water table. Water now flows, but not so freely.

Now they tell me that it is up to me and others in my generation to learn and praective better methods to maintain. . .not deplete. . .our water reservoir. Because my peers and I realize how vital water is to our very existence so that future generations may continue to prosper, we are meeting the challenge.

The scarcity of energy a decade ago was certainly a scare, but not nearly the threat to mankind that an absence of water would be. We could live without energy, but not without water. What greater motivator could better explain "Why the Importance of Water Conservation"?

**Importance of
Underground
Water**

The ever-present heat this year has brought to our attention the importance of our underground water. The high temperature and hot winds have put a strain on irrigation wells across the pan-handle trying to keep up with the water needs of the crops being watered. Curled up corn and maize leaves seems to be the norm lately, along with large cracks that appear in the dry ground that are impossible to fill with water. In town there are many lawns that are a little on the dry side because you can't seem to get enough water down to keep the good green color that we have grown used to seeing in our yards.

In the country the farmers are working night and day to keep their irrigation wells running and producing the life giving water for the crops they hope will make it to harvest.

Every day the staff at the Water District is busy answering calls from operators throughout the area who are having water related problems and hoping that the field staff of the water district might be able to help resolve these problems.

In an area such as ours, where there are many high capacity water wells that produce a tremendous amount of water for irrigation, the wells have a tendency to

Laugh Time



Advice is more acceptable if it doesn't interfere with our plans.

...

Time is not an enemy -- unless you try to kill it.

...

Experience is yesterday's answer to today's problems.

...

The man who rows the boat generally doesn't have time to rock it.

...

Even a stopped clock is right twice a day.

...

Isn't it amazing? A rumor that doesn't have a leg to stand on sure gets around.

...

The rung of a ladder was never meant to rest upon, but only to hold a man's foot long enough to enable him to put the other somewhat higher.

...

Progress is the product of mankind's constant effort to improve -- to excell.

...

Have the courage to face a difficulty, lest it kick you harder than you bargained for.

...

When people say: "That's the way the ball bounces." they're usually the ones who dropped it.

...

Those who say it can't be done should get out of the way of the people who are doing it.

...

If you never stick your neck out, you will never get your head above the crowd.

...

Pessimist: One who complains about the noise when opportunity knocks.

...

Nobody's smarter than someone who knows they've got a lot to learn.

...

It is one of the most beautiful compensations of this life that no man can sincerely try to help another without helping himself.

...

Don't just hope for the best -- go out and get it.

...

Yesterday is a cancelled check, Tommorrow is a promissory note, Today is the only asset you have - spend it wisely.

...

A good example can overcome a lot of bad advice.

...

When it takes you twice as long to rest and half as long to get tired, you're getting old.

...

Even if you're on the right track, you'll get run over if you just sit there.

...

**NORTH PLAINS
WATER CONSERVATION DISTRICT**
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DUMAS, TEXAS 79029

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Austin, Texas 78711-3231

MAJOR RIVERS

Texas Water Education Program



RECORD SHEET SUMMARY
1989-1990

MAJOR RIVERS MAKES A BIG SPLASH IN TEXAS!

Since their introduction, *Major Rivers* and his horse Aquifer have touched the hearts of more than 65,000 students in more than 2,600 fourth grade classrooms throughout Texas. *Major Rivers* is the main character in a comprehensive, two-week, instructional unit on water. The program focuses on five specific learning objectives addressing the water cycle, water supply, water distribution, water use, and water conservation. The objectives not only define important knowledge and skills related to water, but they also support many of the State's Essential Elements in science, social studies, and writing.

The distribution of the *Major Rivers* water education program began in the 1988-89 school year. The program was developed under the sponsorship of the Lower Colorado River Authority by Educational Development Specialists, in cooperation with an advisory committee of water experts, teachers, curriculum specialists, and representatives of the Texas Education Agency. *Major Rivers* was quickly adopted by the Texas Water Commission, Texas Water Development Board, and the Texas Department of Health. These state agencies contributed funds to create a subsidy program to encourage the local river authorities and water districts to educate Texas fourth graders about water and the importance of using it wisely.

The program has been a great success! On the following page, test scores from Program Record Sheets show that besides liking the program, students learned the concepts. The teacher comments, which are listed on the back page, indicate that the teachers as well as the students enjoyed the program. In addition, parents acknowledged that the program was beneficial. Both teachers and parents expressed the desire to continue to have the program taught in their schools.

In cooperation with the Texas Water Commission, Texas Water Development Board, and the Texas Department of Health, the following sponsors are to be commended for their role in making the *Major Rivers* program a success.

Anderson Mill M.U.D.
Bexar Metropolitan Water District
Bilma Public Utility District
Bridgestone M.U.D.
Brookesmith Special Utility District
City of San Antonio
City of Stephenville
Colorado River M.W.D.
Cypresswood Utility District
Dallas County Park Cities M.U.D.
Dallas County W.C.I.D. #6
Evergreen Underground Water
Guadalupe-Blanco River Authority
Harris County M.U.D. #33
Harris County Utility District #5

Johnson County Fresh Water
Jones County 4-H
Lavaca-Navidad River Authority
Lower Colorado River Authority
Lower Neches Valley Authority
Middle Concho Soil & Water
Red River Authority of Texas
Sabine River Authority
San Antonio City Water Board
San Antonio River Authority
Soil Conservation Services
Tara Plantation M.U.D.
Upper Guadalupe River Authority
Wells Branch M.U.D.

Teacher Comments

"If grades were given, Major River would receive A+. I want to teach Major Rivers each year!"
Round Rock ISD

"I loved every aspect of this program, and it kept the children's interest. It gave us a chance to have a wonderful exchange of conversation." *Klein ISD*

"Students talked with parents to encourage water conservation in the home." *Austin ISD*

"A very well-organized and informative program. Fits in very well with the Earth Day movement." *Rice ISD*

"Congrats to the people who prepared the unit – a wonderful program. Students made and tested water filtering system and became very aware of our water." *Lackland ISD*

"The students were eager to work on the unit each day and really liked Major Rivers and Aquifer. Thank you for providing these great materials for our use! I felt the students benefited a great deal from this program. They really became aware of the need to conserve water."
Hayes ISD

"Very positive reactions on the part of the parents too." *Judson ISD*

"The students really enjoyed this program and looked forward to it every day." *Reagan County ISD*

"The teacher's guide was well organized. The enrichment and re-teaching activities were great! This curriculum fits in perfectly with our science and social studies curriculums."
Comfort ISD

"Excellent program. Lots of varied activities and information." *Stephenville ISD*

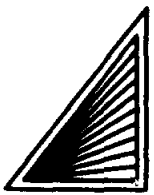
"I enjoyed using these materials. The review worksheets were especially beneficial." *Ganado ISD*

"My students were very enthusiastic during the entire program." *Bangs ISD*

"This program is very easy to teach. The materials are there – ready to go. Great!" *Buna ISD*

"Great unit. I hope to use it again next year. The children all enjoyed it." *Fort Sam Houston ISD*

"This is an excellent program." *Clarendon ISD*



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1485

July 20, 1990

Donna Darling
Director of Public Information
Texas Water Development Board
P.O. Box 13231
Austin, TX 78711-3231

Dear Donna:

As per our conversation this morning, I have contacted Renee Carlson regarding the current balance of funding for the Major Rivers subsidy program. Renee said she will have the figures for me by Monday.

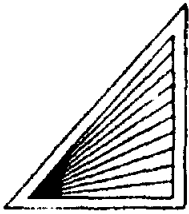
I wanted to let you know that I have a number of interested agencies gearing up to implement the Major Rivers program in the fall, and I understand that we are getting low on subsidy money. The City of San Antonio has reserved \$6,200 in subsidy and will confirm this order on Monday. Mike Bukala of The Brazos River Authority has made a commitment to supply between 1,000 and 1,600 class sets in the Brazos service area, which will take between \$15,000 and \$24,000 in subsidy. Mike will have his final count next week as well. I have several other smaller entities that are looking to start up with the Major Rivers program and will be requesting subsidy.

On a final note, the Texas Federation of Women's Clubs is offering to volunteer to aide in the Major Rivers distribution efforts in the Brazos and Trinity River Authority's service areas, if the river authorities will come up with the funding. The TFWC chairwoman will be contacting John Jadrosich of Trinity River Authority with this offer. Trinity's major opposition to providing the Major Rivers program has been that they don't have the time or staff to distribute the program. With this new twist, Trinity may very well decide to come in and of course request the subsidy. Trinity's service area has been calculated to require approximately \$29,500 in subsidy.

Please advise!

Sincerely,

Ann M. Crafton
Director of Marketing



Educational Development Specialists

5505 East Carson Street, Suite 250 • Lakewood, CA 90713-3933 • (213) 420-6814 • FAX (213) 420-1485

FAX COVER SHEET

Date: 7-25-90 Time: 3:30 No. of Pages: 5

TO: Donna Darling

COMPANY/
DEPARTMENT: TWDB

FAX NO. (512) 475-2053

FROM: Ann Crafton

SUBJECT: orders & ledger.

MESSAGE: Donna - should I invoice ^{the} for Brazos River

Authority now, in Sept, or both ?

Ann

Date	Water Agency	# of sets	Cost to Agency	Subsidy	Total
1/9	Colorado River MWD	2	60	30	90
1/10	Colorado River MWD	8	240	120	360
—/—	SUBTOTAL	1894	56815	28195	85010
1/15	Upper Guadalupe R.A.	7	210	105	315
2/20	Colorado River MWD	2	60	30	90
3/20	Evergreen Underground Water	CS 8	240	120	360
	" "	SP 10	250	100	350
3/20	Rocksmith Special Utility Dist	CS 6	180	90	270
		SP 4	140	0	140
4/3	San Antonio River Authority	30	900	450	1350
4/2	Colorado River MWD	17	510	255	765
—/17	SUBTOTAL	1978	59305	29345	88650
1	Sabine River Authority	35	12250	0	12250
4/1	Harris County U.D. #5	70	3150	0	3150
	" "	(subsidize new CS) 5	150	75	225
7/5	NE Texas MWD	32	960	480	1440
7/11	Colorado River MWD	140	4200	2100	6300
	" (student packs)	18	630	0	630
—/20	SUBTOTAL	2278	80645	32000	112645
7/25	City of San Antonio (CS)	280	8400	4200	12600
	" (SP)	200	5000	2000	7000
	no subsidy "	(SP) 730	25550	0	25550
7/25	Brazos River Authority	1500	45000	22500	67500

22 004



Date	Water Agency	# of Sets	Cost to Agency	Subsidy	Total
4/5	Williamson Co. MUD #1	9	270	135	405
5/8	Lavaca-Navidad R.A.	14	420	210	630
6/1	Soil Conservation Serv.	1	45	0	45
6/1	Red River Authority	10	300	150	450
"	" " Student PKs	2	60	10	70
6/30	Guadalupe-Blanco R.A.	200	6000	3000	9000
7/6	Johnson Co. Fresh Water	1	45	0	45
7/10	Tara Plantation M.U.D.	38	1140	570	1710
7/14 *	Anderson Mill MUD.	10	300	150	450
7/17	Guadalupe-Blanco R.A.	20	600	300	900
8/2	Dallas Co. WCID #6	10	300	150	450
"	" " Student PKs	10	300	50	350
7/31	Sabine River Authority	100	3000	1500	4500
8/11	Johnson Co. Fresh Water	10	300	150	450
8/14	Bridgestone M.U.D.	8	240	120	360
8/21	Harris Co. MUD #33	7	210	105	315
8/21	Dallas Co. Park Cities MUD.	16	480	240	720
8/30	Jones Co 4-H	2	60	30	90
8/30	City of San Antonio	730	21900	10950	32850
9/1	Sabine River Authority	275	8250	4125	12375
9/1	City of Stephenville	4	120	60	180
9/6	Middle Concho Soil + Water	13	390	195	585
8/21	Harris Co. U.D. #5	70	2100	1050	3150
8/18	Cypresswood U.D.	1	45	0	45
9/21	BILMA P.U.D.	4	120	60	180
9/28	Brooksmith Water	4	120	60	180
10/4	Guadalupe-Blanco R.A.	30	900	450	1350
10/6	Red River Authority	8	240	120	360
10/6	SUB TOTAL	1607	48255	23940	72195
10/12	Wells Branch M.U.D.	5	150	75	225
10/24	SUB TOTAL	1612	48405	24015	72420
11/27	Colorado River Municipal Water Dist	6	180	90	270
12/1	Guadalupe-Blanco R.A.	54	1620	810	2430
12/29	Lower Neches Valley Auth.	150	4500	2250	6750
"	" SP.	5	125	50	175
1/5	Lower Neches Valley Auth	50	1500	750	2250
"	" SP.	5	125	50	175
1/2	...				



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
 Lake wood, CA 90713-3093
 Telephone: (213) 420-6314
 FAX: (213) 420-1435

Order Placed By:	Name: <u>Mike Bukala</u>	Date: <u>7-13-90</u>
	Title: _____	Telephone: <u>(817) 776-1441</u>
	Department: _____	

BILL TO: Mike Bukala
Brazos River Authority
P.O. Box 7555
Waco, TX 76714-7555

SHIP TO: (Street address please)
Multiple Addresses.
to be determined

PURCHASE ORDER Check one:

Back of _____ To Be Sent Not Required

***IMPRINTING** Check one:

Requested Need Information Not Required

*all subsidy to TWC
 - 1500x15 = 22,500*

MAJOR RIVERS Texas Water Education Program

\$5374

	UNIT PRICE			No. of Kits Ordered	Extended Price
	Unit	Less State Subsidy	Actual Cost		
CLASS SET: <small>(to supply teachers with all teacher materials, including video cassette, and 25 copies of all student materials)</small>	\$45	(\$15)	\$30	1500	45,000
STUDENT PACK: <small>(to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)</small>	\$35	(\$10)	\$25		
Materials Total					
Imprinting Charge					420
Shipping Charge					4000
TOTAL					



*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Education.



Educational Development Specialists

1989 ORDER FORM

MAIL TO: 5505 East Carmen Street, Suite 350
 Lakewood, CA 90713-3693
 Telephone: (213) 420-6314
 FAX: (213) 420-1435

Yes per Renee

Order Placed By:	Name: <u>Connie Henderson</u>	Date: <u>7-19-90</u>
	Title:	Telephone: <u>(512) 299-7753</u>
	Department:	

BILL TO:
Connie Henderson
City of San Antonio
Water Resources Mgmt Division
114 West Commerce, Suite 324
San Antonio, TX 78283

SHIP TO: (Street address please)

\$5383

PURCHASE ORDER Check one

*IMPRINTING Check one

Exact To Be Done Not Required

Requested Not Imprinted Not Imprinted

*Bill 512
 280 of
 2
 100
 4700.00
 100
 subsidy*

MAJOR RIVERS

Texas Water Education Program

*confirm
 for H.A.
 imprint
 Packet
 printing*

CLASSIFICATION	UNIT PRICE			Quantity	Extended Price
	Unit	Less State Subsidy	Actual Cost		
CLASSIFIED Materials 2 copies of each	\$45	(\$15)	\$30	17	4700
STUDENT To supply teachers with materials or to supply primary materials contains 25 copies (unit materials only)	\$35	(\$10)	\$25	200 <i>subsize 200</i>	5,000
Materials Total					38950
Imprinting Charge					350-
Shipping Charge (est.)					1558-
TOTAL					40,858.00



*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.



BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE • P. O. BOX 7555 • TELEPHONE AREA CODE 817 776-1441

WACO, TEXAS 76714-7555

July 24, 1990

Each Elementary School Principal
Brazos River Basin


Dear Principal:

The Brazos River Authority, in cooperation with the Texas Water Development Board and the Texas Water Commission, is pleased to offer, free of charge, the MAJOR RIVERS water education program for use in 4th grade classrooms. I am enclosing a supply of forms for use in ordering these materials, which are already in use in school districts throughout the State. I will appreciate it if you will furnish these order forms to your 4th grade teachers.

The MAJOR RIVERS programs has a proven record of acceptance and accomplishment. The Brazos River Authority, whose history, duties and functions are described in the enclosed information brochure, is pleased to make these materials available without cost in order to further awareness and appreciation for conservation and wise use of one of our most essential natural resources.

Please encourage the use of these materials in your school. If you have questions or would like to see a sample copy of the MAJOR RIVERS materials, please contact Mr. Mike Bukala at (817) 776-1441.

Sincerely,


CARSON H. HOGE, P.E.
General Manager

CHH:bw

Enclosure

cc: Each Member, Board of Directors
Brazos River Authority
Mr. Walter W. Cardwell, III, TWDB ✓
Mr. B.J. Wynne, III, TWC
Mr. G.E. Kretzschmar, TWDB
Ms. Donna Darling, TWDB
Ms. Ann Crafton, Educational
Development Specialists

COPY



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1685

August 6, 1990

Donna D. Darling
Texas Water Development Board
Post Office Box 13231, Capitol Station
Austin, TX 78711-3231

Dear Donna D.:

Major Rivers is a big splash in Texas! Teachers, students and parents agree that *Major Rivers* is an enjoyable way to learn about water and the importance of using it wisely.

Many of the *Major Rivers* sponsors shared with us the test scores and comments that they received from the teachers in their service areas. We compiled those scores and comments and prepared a report showing the statewide results of the program for the school year 1989-90. We were quite pleased with the outcome and have enclosed several copies of that report for your review. Overall, the *Major Rivers* Water Education Program was a tremendous success in its first year of statewide distribution!

Please feel free to call me if you would like additional copies of the *Major Rivers* record sheet summary, or if I can provide you with more information.

Sincerely,

Ann M. Crafton
Director of Marketing

Enclosures



Educational Development Specialists

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093

Telephone: (213) 420-6814

FAX: (213) 420-1685

August 6, 1990

Sonny Kretzschmar
Texas Water Development Board
Post Office Box 13231, Capitol Station
Austin, TX 78711-3231

Dear Sonny:

Major Rivers is a big splash in Texas! Teachers, students and parents agree that *Major Rivers* is an enjoyable way to learn about water and the importance of using it wisely.

Many of the *Major Rivers* sponsors shared with us the test scores and comments that they received from the teachers in their service areas. We compiled those scores and comments and prepared a report showing the statewide results of the program for the school year 1989-90. We were quite pleased with the outcome and have enclosed several copies of that report for your review. Overall, the *Major Rivers* Water Education Program was a tremendous success in its first year of statewide distribution!

Please feel free to call me if you would like additional copies of the *Major Rivers* record sheet summary, or if I can provide you with more information.

Sincerely,

Ann M. Crafton
Director of Marketing

Enclosures

September 5, 1990
Donna D. Darling, Director
Office of Public Information & Education

Major Rivers Fourth Grade Water Education Program
Request for Research and Planning Grant Funds

"Major Rivers" is the Texas-specific, fourth-grade water education program. The first state-subsidized printing of the "Major Rivers" program was delivered to participating classrooms in November, 1989.

According to Educational Development Specialists' 1989/90 report, "Major Rivers" was taught in 2,600 fourth-grade classrooms to 65,000 students which means that 25 percent of the 260,000 fourth graders in Texas have been exposed to the information in the "Major Rivers" kit. And as the consultant's report indicates, students' posttest scores show a creditable increase over their pretest scores; the teacher comments are extremely favorable; and all sponsors have re-funded the consumable supplies needed to teach the program again this year, even though no state subsidy is allotted for this purpose.

THE FINANCIAL SITUATION: (Historical and Current)

Historical

In the spring of 1989, the Lower Colorado River Authority donated \$80,000 in "Major Rivers" development costs to the state.

The Texas Water Development Board, Texas Water Commission, and Texas Department of Health all agreed to contribute \$20,000 each to subsidize the "Major Rivers" fourth-grade water education program at \$15.00 for each \$30.00 contributed by a sponsor to cover the \$45.00 cost of a classroom set.

The Texas Water Commission agreed to handle billings from the consultant, and the Texas Water Development Board did an interagency contract transferring \$20,000 to the Texas Water Commission. Only a small amount of TWC's 1989 commitment of \$20,000 was used, and the remainder lapsed. The TWC then committed another \$20,000 of 1990 money to the project and the TWDB's original \$20,000 carried over from 1989 to 1990. The Texas Department of Health did not complete the appropriate paper work to carry over their 1989 commitment of \$20,000, so the money was never available for use. The total state subsidy committed to the project so far then is a little over \$40,000.

Following a year of intense marketing on the part of the Texas Water Commission and the Texas Water Development Board, all of the original \$40,000 subsidy was used. Current orders totaling \$22,500 (Brazos River Authority order) in subsidy have been placed as of September 1, 1990.

Current

The Texas Water Development Board is considering a commitment of \$30,000 to the 1990/91 school year, the Texas Water Commission has agreed to dedicate some lapsed 1990 funds for use in 1990/91, and the Texas Department of Health has transferred \$10,000 in lapsed funds to the "Major Rivers" account for use in 1990/91.

If all funds requested are acquired, the account will total \$40,000+ to subsidize the 1990/91 school year. When the \$22,500 requested by the Brazos River Authority has been deducted, the account balance will be approximately \$17,500.

Other orders are anticipated for the 1990/91 school year.

The Trinity River Authority, which would require a subsidy of \$29,500, is taking a serious look at the program saying that the money is not a problem for them, but the staff to do the distribution of the kits is a problem. The Texas Federation of Women's Clubs has offered to distribute the kits for the TRA, so there is a real possibility their request may come in.

Also, Bill Colbert (TWC Director of Public Information) and I have been approached by Senator Truan's office to present the program as part of a Water Conference in Corpus Christi in September.

Additionally, Houston Lighting & Power is investigating the possibility of doing a private/public partnership to fund the program for the Houston Independent School District (would require \$10,000 in subsidy).

And the TWDB is scheduled to present the program to 400 elementary school science teachers at a conference in Ft. Worth in January.

The marketing effort is finally working since both sponsors and teachers are beginning to ask for the program.

We have a real winner on our hands. Therefore, withdrawing state participation now -- after publicizing how important water education is to the future of the state -- would certainly make it difficult to ever again achieve the current level of trust and cooperation exhibited by the current sponsors (see consultant's report).



BRAZOS RIVER AUTHORITY

4400 COBBS DRIVE • P. O. BOX 7555 • TELEPHONE AREA CODE 817 776-1441

WACO, TEXAS 76714-7555

October 16, 1990

Each Fourth Grade Teacher
Brazos River Basin

Dear Teacher:

The Brazos River Authority, in cooperation with the Texas Water Development Board and the Texas Water Commission, is pleased to offer, free of charge, the MAJOR RIVERS water education program for use in fourth grade classrooms. I am enclosing a reply form for your convenience in ordering these materials, which are already in use in school districts throughout the State.

The MAJOR RIVERS program has a proven record of acceptance and accomplishment. The Brazos River Authority is pleased to make these materials available without cost in order to further awareness of and appreciation for conservation and wise use of one of our most essential natural resources.

If you have questions or would like to see a sample copy of the MAJOR RIVERS materials, please contact Mr. Mike Bukala at (817) 776-1441.

Sincerely,

CARSON H. HOGE, P.E.
General Manager

CHH:bw
Enclosure

COPY



Ganado Elementary fourth graders Brooke Conner and Jamie McCarrell, center, and their teacher Georgie Kruse, display a poster outlining water supply systems. The poster is part of a water education program delivered

to county fourth grade classes this week by Denise Ryan, left, Lavaca-Navidad River Authority administrative manager.

'Major Rivers' teaches students in L-NRA education program

Major Rivers and his horse Aquifer are being introduced to Jackson County fourth graders as part of a water conservation education program by the Lavaca-Navidad River Authority.

The Major Rivers education package was delivered to the 14 fourth grade classes in the county's three school districts this week by Denise Ryan, L-NRA assistant general manager for administration.

The L-NRA is funding the pro-

gram in cooperation with the Texas Water Development Board and the Texas Water Commission in an effort to increase the water consciousness of students. Other river authorities throughout the state, including the Lower Colorado, Red, Sabine and Guadalupe-Blanco, are also participating.

Major Rivers is a colorful, cartoon-filled, elementary-level education package that includes a video, student booklet, teacher's guide, poster and home leaflet.

Originally conceived by the Lower Colorado River Authority and produced by Educational Development Specialists, the Major Rivers kit has become the state's answer to providing elementary students access to information about water in Texas that is not available in current text-

books.

In the program, students learn basic facts about the water supply in Texas, including rainfall, groundwater, rivers and aquifers; information about the water distribution system in Texas; and facts on water conservation practices.

Mrs. Ryan said the kits were delivered this week to all fourth graders in the county and that teachers were excited about the opportunity to teach water conservation.

This is the second consecutive year the program has been implemented, Mrs. Ryan said.

As a supplement to the instruction, the L-NRA also offers a slide presentation about the Lake Texana reservoir, Palmetto Bend Dam and the operation of the authority. Tours are also made available to classes.



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

March 25, 1991

Dear Elementary Science Supervisor/Teacher:

The Texas Water Commission, Texas Water Development Board, and Texas Department of Health would appreciate your reviewing and considering for purchase the enclosed materials. The three state agencies offer a subsidy for each first-time purchase of a *Major Rivers* classroom set (see pg. 5 of the Texas Education Network Directory and the Record Sheet Summary for a description of the *Major Rivers* program).

If you are the elementary science supervisor for your district, you may return the enclosed card to obtain a preview kit. If you are an elementary science teacher, please share the card with your science supervisor and/or school principal.

We would also appreciate it if the science supervisor or principal would complete the enclosed survey and return it in the envelope provided. Since school districts are entitled to apply for the state agency subsidy of \$15.00 per classroom set, we need to gauge the level of interest so that subsidy money can be set aside. Please return the survey whether you are or are not interested in purchasing *Major Rivers* for your school district.

For the past two years, the program has been sponsored in one-fourth of the fourth-grade classrooms in Texas by a variety of water-related authorities or organizations. A list of sponsors is included. You may want to check to see if there is a local sponsor who has already placed *Major Rivers* in your school district and then give them a call to see if classroom sets are being furnished to ALL the fourth-grade classrooms in your district. If not, maybe the district can fill in the gaps.

Questions about the *Major Rivers* program should be directed to Ann Crafton at 213/420-6814 FAX 213/420-1485 and questions about the state subsidy should be directed to Donna Darling at 512/463-8422 FAX 512/475-2053.

Sincerely,

Donna D. Darling
State Agency Coordinator - *Major Rivers* Program

Encl: Texas Water Education Network Directory; Record Summary Sheet; Reply Card; List of Sponsors; Return Envelope

Major Rivers Survey

School District: _____
Science Coordinator/Principal: _____
Address: _____
City, State, Zip: _____
Phone Number: _____
FAX Number: _____



Please check the comments that apply and complete the blanks if possible.

- Major Rivers* is currently being used in all the fourth-grade classrooms in this school district.
Number of classrooms: _____
- Major Rivers* is currently being used in some of the fourth-grade classrooms in this school district.
Number of classrooms: _____
- Major Rivers* is not being used in any of the fourth-grade classrooms in this district.
- I have sent for a *Major Rivers* preview kit.
- If my school district decides to purchase *Major Rivers* classroom sets for all or some of the fourth-grade classrooms in our district, we would request a \$15.00 subsidy per classroom for _____
for a total of \$ _____. (number of classrooms)

Suggestion: If your school district is interested in the program but finds that the cost of purchasing classroom sets for all fourth-grade classrooms in the district is prohibitive, offering the public relations value of doing a co-operative sponsorship to a water or utility-related entity in your district may be a solution.

Note: Classroom sets cost \$45.00 per set* if purchased without benefit of the state subsidy. Districts interested in applying for the subsidy should write The Texas Water Development Board, *Major Rivers* Program, P. O. Box 13231, Austin, Texas, 78711-3231. Please do not order classroom sets until you have received a written confirmation authorizing the subsidy.

**There will be an increase in the cost of classroom sets beginning July 1, 1991. Ordering before July 1 will lock in the \$45.00 per classroom set. The state subsidy will remain the same.*



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

David Harper
President
Anderson Mill M.U.D.
11500 El Salido Parkway
Austin TX 78750


Dear Mr. Harper:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Anderson Mill M.U.D. for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

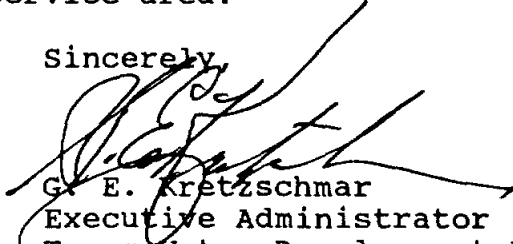
Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

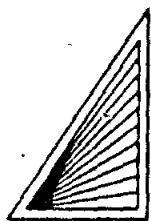
If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



Educational Development Specialists

1990 ORDER FORM

MAIL TO: 5505 East Carson Street, Suite 250
Lakewood, CA 90713-3093
Telephone: (213) 420-6814
FAX: (213) 420-1485


Order Placed By:	Name: _____ Date: _____
	Title/ Department: _____ Telephone: _____
	Department: _____ Telephone: _____

BILL TO:	SHIP TO: (Street address please)
_____	_____
_____	_____
_____	_____

PURCHASE ORDER (Check one)		
<input type="checkbox"/> Enclosed	<input type="checkbox"/> To Be Sent	<input type="checkbox"/> Not Required
Number (if known) _____		

*IMPRINTING (Check one)		
<input type="checkbox"/> Requested	<input type="checkbox"/> Need Information	<input type="checkbox"/> Not Requested

MAJOR RIVERS Texas Water Education Program

	UNIT PRICE			No. of Kits Ordered	Extended Price
	List	Less State Subsidy	Actual Cost		
CLASS SET: (for new teachers; contains all teacher materials, including video cassette, and 25 copies of all student materials)	\$45	(\$15)	\$30		
STUDENT PACK: (to supply teachers with more than one class or to resupply previous year's teachers; contains 25 copies of student materials only)	\$35	(\$10)	\$25		
	Materials Total				
	Imprinting Charge				
	Shipping Charge				
	TOTAL				

*Any materials supplied using the state subsidy will be imprinted with the sponsor's name along with Texas Water Commission, Texas Water Development Board, and Texas Department of Health.

Darling____
Kretzschmar____

April 23, 1991

Mike Bukala
Administrative Assistant
Brazos River Authority
P.O. Box 7555
Waco, Texas 76714-7555

Dear Mr. Bukala:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the Brazos River Authority for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

We applaud and acknowledge you for your support of this important education effort and encourage your continued participation in the program.

Sincerely,

Sincerely,

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board

Darling
Kretzschmar



April 23, 1991

Mike Bukala
Administrative Assistant
Brazos River Authority
P.O. Box 7555
Waco, Texas 76714-7555

Dear Mr. Bukala:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to the Brazos River Authority for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

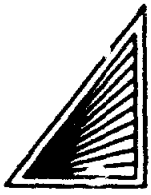
We applaud and acknowledge you for your support of this important education effort and encourage your continued participation in the program.

Sincerely,

Sincerely,

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



Educational Development Specialists

Danna Darling

5505 East Carson Street • Suite 250 • Lakewood, CA 90713-3093
Telephone: (213) 420-6814 FAX: (213) 420-1485

April 24, 1991

Dear

Thank you for your continued support of the *Major Rivers* Texas Water Education Program. From the number of kits distributed to date, we can estimate that more than 170,000 Texas students have learned about water through this program. From all indications, *Major Rivers* continues to be a hit in Texas.

Once again, I would like to provide you and the other program sponsors with the Annual Record Sheet Summary for *Major Rivers*. Your input is valuable to us and is important in the evaluation process. Please send me a random sample of approximately 20 copies of the Program Record Sheets that have been returned to you by the teachers in your service area. I will compile the statewide test scores and the teachers' comments for publication. Please send these copies to me by the first of June.

I also want to let you know that there will be a price increase on the *Major Rivers* program, effective July 1, 1991. I have enclosed a current order form (the white one) that will be valid through June 1991. I have also enclosed the new order form (the blue one) reflecting prices as of July 1, 1991. You may want to order early this year to take advantage of the savings.

Please call me if I can answer any questions or if I can assist you with your order. I look forward to hearing from you soon.

Sincerely,

Ann M. Crafton
Director of Marketing

AMC:gk
Enclosures



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
N. E. Fernandez, *Member*

G. E. Sonny Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
William B. Madden, *Member*

May 28, 1991

Danny F. Vance, General Manager
Trinity River Authority
P. O. Box 60
Arlington, Texas 76010

Dear Mr. Vance:

Recently, the Texas Water Development Board and the Texas Water Commission conducted a survey of the state's 200 plus science coordinators to encourage their school district's to consider purchasing the Major Rivers Fourth-Grade Water Education Program.

As you can imagine, the current unknowns in their school budgets for next year make it difficult for them to commit, even though they all indicate that they would like to have the program. I have taken the liberty of enclosing the names of the science coordinators in four school districts in your service area that responded and also a copy of your original proposal in hopes that you may consider assisting with the program in the districts that have expressed an interest.

Other water entities in your area that have previewed the program include the City of Arlington (Ms. Cheryl Taylor-West) and the Tarrant Country Water Control Board (Mr. Gary Keil). Maybe a cooperative effort with these other entities is possible.

The thank-you letter to the only sponsor in your service area, Dennis Masters of the Dallas County Park Cities M.U.D., summarizes the program's progress to date. You may want to check with Mr. Masters to see what he thinks about the program and how his district is funding and coordinating it.

If coordination is a problem, I can be of assistance. If budget is a problem, I can understand. Please let me know if TRA will consider sponsoring Major Rivers this year at any level, and how I can help.

Sincerely,

Donna D. Darling
State Agency Coordinator - Major Rivers Program

P. S.: Have enclosed letter to Dallas County W.C.I.D. #6 also because I was not sure if they were another sponsor in your service area.

CC: Dan Dodson, TWDB Deputy Administrator
John Jadrosich
Cheryl Taylor-West
Gary Keil
Dennis Masters



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Dennis R. Masters
Project Manager
Dallas Municipal Utility District
1811 Regal Row
Dallas TX 75235-2398

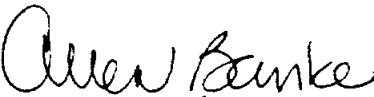
Dear Mr. Masters:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Dallas Municipal Utility District for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

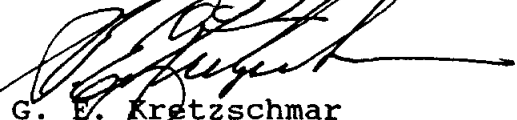
Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Judi Hill
Assistant Secretary/Director
Dallas County W.C.I.D. #6
Post Office Box 80030
Balch Springs TX 75180

Dear Ms. Hill:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Dallas County W.C.I.D. #6 for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

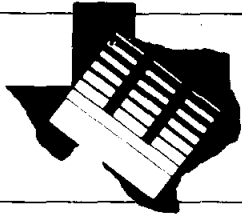
A handwritten signature in cursive script that reads "Allen Beinke".

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

A handwritten signature in cursive script that reads "G. E. Kretzschmar".

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



**Texas
Agricultural
Extension
Service**

The Texas A&M University System
College Station 77843

809 University Drive E., Bldg. D&E
College Station, Texas 77843-2473
June 14, 1991

Office of the Director

Ms. Donna Darling
Director, Public Information
Executive Division
Texas Water Development Board
P. O. Box 13231
Capitol Station
Austin, Texas 78711-3231

Dear Donna:

Thank you for sharing the materials on the Major Rivers Program. I have already forwarded the materials to Weldon Floyd, County Extension Agent in Ward County (Monahans), and Chairman of the Water Camp.

Weldon may be in touch with you. If so, you will be very interested in the educational program that he and his committee are designing.

Thank you again for contacting me!

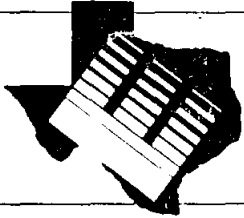
Sincerely,

A handwritten signature in cursive script that reads "Lynne W. Thibodeaux".

Lynne W. Thibodeaux
Assistant Director for 4-H & Youth

LWT:sbf

cc: Dr. Milo Shult
Dr. John Sweeten
Dr. Chester Fehlis
Mr. Charles Neeb
Mr. Weldon Floyd



**Texas
Agricultural
Extension
Service**

The Texas A&M University System
College Station 77843

Office of the Director

809 University Drive E., Bldg. D&E
College Station, Texas 77843-2473
June 14, 1991

Mr. Weldon Floyd
County Extension Agent
1900 S. Stockton, Station J
Monahans, Texas 79756

Dear Weldon:

I am sorry I was unable to join you for your planning meeting on the Texas 4-H Water Camp. Please give me a call and update me when you have time. I am very interested in and excited about this project.

Enclosed are the materials from Donna Darling, Texas Water Development Board. I did not know if you were familiar with these. Please return these materials to my office after reviewing.

Donna would welcome a call if you have need to visit with her further. She can be reached at (512) 475-2053. Please let me know if I can assist you in any way and best of luck!

Sincerely,

Lynne W. Thibodeaux
Assistant Director for 4-H & Youth

LWT:sbf

cc: Dr. Chester Fehlis
Mr. Charles Neeb
Ms. Donna Darling

Major Rivers
Texas Water Education Program for Elementary Students

By Donna D. Darling
Texas Water Development Board
Austin, Texas 78711-3231

Since their introduction, Major Rivers and his horse Aquifer have touched the hearts and minds of more than 65,000 students in more than 2,600 fourth grade classrooms throughout Texas. Major Rivers is the main character in a comprehensive, two-week, instructional unit on water. The program focuses on five specific learning objectives addressing the water cycle, water supply, water distribution, water use, and water conservation. The objectives not only define important knowledge and skills related to water, but they also support many of the State's Essential Elements in science, social studies, and writing.

The distribution of the Major Rivers water education program began in the 1988-89 school year. The program was developed under the sponsorship of the Lower Colorado River Authority by Educational Development Specialists, in cooperation with an advisory committee of water experts, teachers, curriculum specialists, and representatives of the Texas Education Agency. Major Rivers was quickly adopted by the Texas Water Commission, Texas Water Development Board, and the Texas Department of Health. These state agencies contributed funds to create a subsidy program to encourage the local river authorities and water districts to educate Texas fourth graders about water and the importance of using it wisely.

The program has been a great success. Student pretest and posttest scores indicate that students really learn the concepts, and teacher comments have been extremely positive. In fact, all teachers who used the program the first year have requested it again this year, and all program sponsors have renewed their funding.

Current

The Texas Water Development Board is considering a commitment of \$30,000 to the 1990/91 school year, the Texas Water Commission has agreed to dedicate some lapsed 1990 funds for use in 1990/91, and the Texas Department of Health has transferred \$10,000 in lapsed funds to the "Major Rivers" account for use in 1990/91.

If all funds requested are acquired, the account will total \$40,000+ to subsidize the 1990/91 school year. When the \$22,500 requested by the Brazos River Authority has been deducted, the account balance will be approximately \$17,500.

Other orders are anticipated for the 1990/91 school year.

The Trinity River Authority, which would require a subsidy of \$29,500, is taking a serious look at the program saying that the money is not a problem for them, but the staff to do the distribution of the kits is a problem. The Texas Federation of Women's Clubs has offered to distribute the kits for the TRA, so there is a real possibility their request may come in.

Also, Bill Colbert (TWC Director of Public Information) and I have been approached by Senator Truan's office to present the program as part of a Water Conference in Corpus Christi in September.

Additionally, Houston Lighting & Power is investigating the possibility of doing a private/public partnership to fund the program for the Houston Independent School District (would require \$10,000 in subsidy).

And the TWDB is scheduled to present the program to 400 elementary school science teachers at a conference in Ft. Worth in January.

The marketing effort is finally working since both sponsors and teachers are beginning to ask for the program.

We have a real winner on our hands. Therefore, withdrawing state participation now -- after publicizing how important water education is to the future of the state -- would certainly make it difficult to ever again achieve the current level of trust and cooperation exhibited by the current sponsors (see consultant's report).



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Denise Ryan
Assistant General Manager
Lavaca-Navidad River Authority
Post Office Box 429
Edna Tx 77957

Dear Ms. Ryan:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Lavaca-Navidad River Authority for your continued support of the Major Rivers fourth-grade water education program. Your authority's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

Thanks to sponsorships like yours, 6,821 Major Rivers classroom sets have been distributed statewide, which means that over the past two years, approximately 170,525 students have been exposed to the information in the Major Rivers instructional unit. The program continues to receive extremely favorable teacher comment and is further complimented by the fact that many of the 1990-91 sponsors have already placed their orders for the coming year.

If you have already placed your order, we thank you. If you are currently working on your budget for next year, we hope that you will again consider providing the Major Rivers program to the fourth-grade classrooms in your service area.

Sincerely,

Handwritten signature of Allen P. Beinke, Jr.

Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

Handwritten signature of G. E. Kretzschmar.

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Ben Powell
Treasurer
Bridgestone Municipal Utility District
4831 Diehlwood Place
Spring TX 77388


Dear Mr. Powell:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Bridgestone Municipal Utility District for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

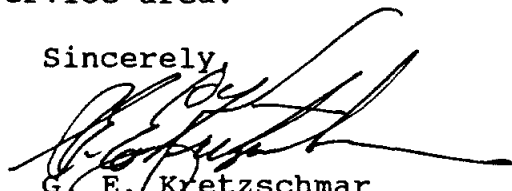
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Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Tom Moreno
General Manager
Bexar Metropolitan Water District
2706 West South Cross
San Antonio TX 78211

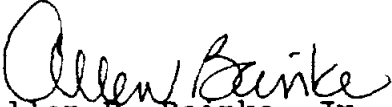
Dear Mr. Moreno:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Bexar Metropolitan Water District for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

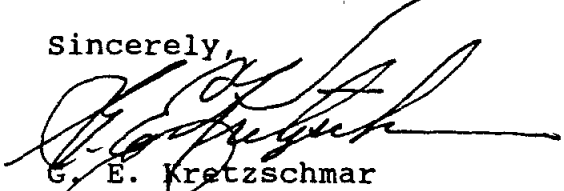
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Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noc Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

Javier Lopez
Cameron County FWSD #1
105 Port Road
Port Isabel TX 78578


Dear Mr. Lopez:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Cameron County FWSD #1 for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

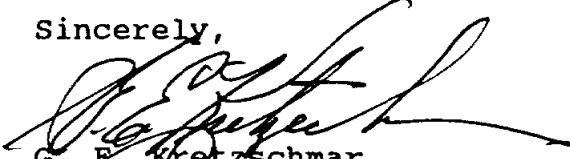
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Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,


G. E. Kretzschmar
Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Charles W. Jenness, *Chairman*
Thomas M. Dunning, *Member*
Noe Fernandez, *Member*

G.E. (Sonny) Kretzschmar,
Executive Administrator

Wesley E. Pittman, *Vice Chairman*
Walter W. Cardwell, III, *Member*
William B. Madden, *Member*

April 30, 1991

John Chamberlain
Bilma Public Utility District
16927 Windypine Drive
Spring TX 77379

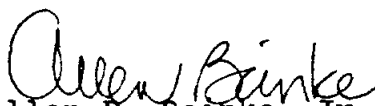
Dear Mr. Chamberlain:

The Texas Water Commission and the Texas Water Development Board wish to express our appreciation to Bilma Public Utility District for your continued support of the Major Rivers fourth-grade water education program. Your district's participation in this education effort has been instrumental in furthering the goals of the participating state agencies and in increasing water awareness and understanding statewide.

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Sincerely,


Allen P. Beinke, Jr.
Executive Director
Texas Water Commission

Sincerely,

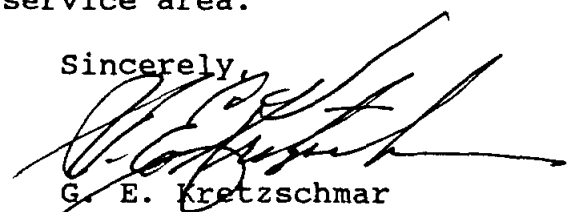

G. E. Kretzschmar
Executive Administrator
Texas Water Development Board

EXHIBIT 11

**TEXAS DEPARTMENT OF HEALTH
LETTER OF DETERMINATION**

**AWBD ANNUAL CONFERENCE
SCHEDULE OF EVENTS**

All activities take place in the Corpus Christi Bayfront Convention Plaza

THURSDAY, JULY 14

1:00 – 9:00 p.m. Conference Registration
Vendor Exhibits Open

5:00 – 9:00 p.m. Meet and Greet Reception Exhibit Hall B
No Children Please; Casual Dress

FRIDAY, JULY 15

7:30 a.m. Conference Registration Continues
Vendor Exhibits Open Exhibit Hall B
Continental Breakfast – Delegates Only Banquet Hall

8:30 – 9:20 a.m. General Session Banquet Hall

9:30 a.m. – 2:00 p.m. Polls Open For Trustee Ballotting
Texas Water Development Board Interviews For
Financial Assistance – By Appointment Only Room 221 A
Individual Reviews of District Status Reports
Dean Robbins, Texas Water Commission – By
Appointment Only Room 221 B

SEMINAR BLOCK I

9:30 – 10:20 a.m.

<p align="center">SESSION I-A Roles of Directors and Consultants in Water District Operations</p> <p align="center">Merry Dunaway, AWBD Trustee Moderator A Panel of Consultants</p> <p>Room 223</p>	<p align="center">SESSION I-B Regional Stormwater Detention Plans</p> <p align="center">Ronald L. Mullinax, Pate Engineers, Inc., Moderator Jim Green, Harris County Flood Control District</p> <p>Room 224</p>	<p align="center">SESSION I-C A Classroom Experience: “Water and Man” Donna Darling, Texas Water Development Board, and the AWBD Players</p> <p>Room 225</p>
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10:20 – 10:40 a.m. Coffee Break

SEMINAR BLOCK II

10:40 – 11:30 a.m.

<p align="center">SESSION II-A How Sanitary Sewage Treatment Systems Work Clyde Jacks, Fort Bend County MUD 12, Moderator</p> <p>Room 223</p>	<p align="center">SESSION II-B The Legislative Process and Programs (1988–1989) Buck Wynne, Commissioner Texas Water Commission</p> <p>Room 224</p>	<p align="center">SESSION II-C Report Card on Texas Water Gary Robison, Friendswood Development Corporation, Moderator</p> <p>Room 225</p>
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SEMINAR BLOCK III

11:40 a.m. – 12:30 p.m.

<p align="center">SESSION III-A How Water Supply Systems Work Pat Brown, Brown, Gay & Associates</p> <p>Room 223</p>	<p align="center">SESSION III-B Look Before You Place Your Water District Funds: How to Analyze Financial Stability of Banks for MUD Investments Warren Heller, Veribanc, Inc.</p> <p>Room 224</p>	<p align="center">SESSION III-C Is Your Water Storage Tank Sick? Don S. Reichle, Reichle & Associates</p> <p>Room 225</p>
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12:40 – 2:00 p.m. LUNCHEON: Guest Speaker: The Honorable
William P. Clements, Governor of the State of Texas Banquet Hall

Luncheon is for delegates only; guest tickets may be purchased at registration desk at \$25 per person

6:00 – 10:00 p.m. Vendor Exhibits Open Exhibit Hall B
6:30 – 10:00 p.m. Family Night Reception Banquet Hall

SATURDAY, JULY 16

7:30 – 8:30 a.m.	Registration Continues Continental Breakfast – Delegates Only	Banquet Hall
7:30 a.m. – 1:00 p.m.	Vendor Exhibits Open	Exhibit Hall B
8:30 – 9:20 a.m.	General Session Presentation of Texas Water Commission Awards of Excellence	Banquet Hall

SEMINAR BLOCK IV

9:30 – 10:20 a.m.		
SESSION IV-A Lead In Drinking Water Charles Molloy Texas Department of Health Room 223	SESSION IV-B Tax Abatement John Prevet Tax Research Association Room 224	SESSION IV-C Geology, Groundwater and Your Well Owen Sveter Law Engineering Room 225

10:20 – 10:30 a.m. Coffee Break

SEMINAR BLOCK V

10:40 a.m. – 11:30 a.m.		
SESSION V-A How To Conserve Water Outside The House Bill Hoffman, Texas Water Development Board Room 223	SESSION V-B Sanitary Sewer Renovation Program Kathryn Marshall, Guitierrez, Smouse, Wilmut & Associates Room 224	SESSION V-C Board Responsibilities During District Dissolution: Annexation John Wallace, Smith, Murdaugh, Little & Crawford Room 225

SEMINAR BLOCK VI

11:40 a.m. – 12:30 p.m.		
SESSION VI-A Water Re-Use David Harper, AWBD Trustee, Moderator Donald Schelfhout, Clear Lake City Water Authority Jim Glaser, Vice President Parkhill, Smith and Cooper Room 223	SESSION VI-B What Every District Should Know About Purchasing Insurance Merry Dunaway, AWBD Trustee Room 224	SESSION VI-C Delinquent Tax Collection Terry Wiseman Roseman & Wiseman Room 225

12:40 – 1:30 p.m.	LUNCH Guest Speaker: Leonard Passmore, Attorney "And God Created Water Districts"	Banquet Hall
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Luncheon for delegates only; guest tickets available at \$25 each.

Closing Remarks
Adjournment

SPORTING EVENTS, SPOUSE AND FAMILY ACTIVITIES CALENDAR
ASSOCIATION OF WATER BOARD DIRECTORS – TEXAS ANNUAL CONFERENCE

CORPUS CHRISTI, TEXAS
JULY 14–16, 1988

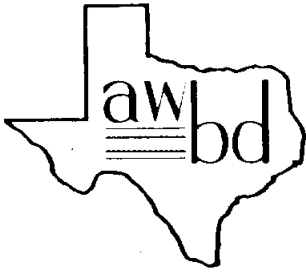
THURSDAY, JULY 14

12:00 NOON	Check In For Golf Tournament	Northshore Country Club
12:00 Noon – 6:00 p.m.	Pool and Playground Open to AWBD	
12:10 p.m.	Driving Range Open For Use By AWBD Members Participating In Second Annual Compliance Open. Small bucket of range balls included in \$50.00 per person tournament entry fee.	
12:30 p.m.	Receive starting assignments from golf tournament registration table. Entrants must be present or tournament slot and entry fee can be forfeited.	
1:00 p.m.	Shotgun start of golf tournament, Field limited to 72 players.	
5:00 – 9:00 p.m.	Meet and Greet Reception (Casual attire; no children, please)	Bayfront Convention Plaza

FRIDAY, JULY 15

11:30 a.m. – 1:00 p.m.	“Cruise To Fashion” Luncheon and Style Show \$25.00 per person; tickets available at Registration Desk at Bayfront Convention Plaza	Reflections Room, Hershey Hotel
10:45 a.m. – 3:15 p.m.	Boat Rides on Corpus Christi Bay	Peoples Street T-Head
10:45 a.m.	Embark on first trip, returning 12:00 Noon	
12:15 p.m.	Embark for second trip, returning 1:30 p.m.	
1:45 p.m.	Embark for third trip, returning 3:00 p.m.	
3:15 p.m.	Embark for final trip, returning 4:30 p.m.	
6:30 – 10:00 p.m.	Family Night Reception	Corpus Christi Bayfront Convention Plaza

Spouse luncheon tickets available at conference registration desk at Convention Plaza. There is no charge for the boat rides. Tickets for delegates and guests are available in registration packets and at registration desk. Shuttle buses will transport delegates and guests to events at Bayfront Convention Plaza. Please refer to the schedule on the front of this brochure for times. AWBD identification must be displayed to board buses. This identification is available at the conference registration desk. Buses stop only at conference hotel sites and at the Convention Plaza.



ASSOCIATION OF WATER BOARD DIRECTORS – TEXAS

“Dedicated to the betterment of Texas Water district operation and management through education and unification.”

NEWSLETTER

AUGUST 1988

1988 Annual Conference A Record Breaker In Corpus Christi



Trustees join Governor Clements after his speech, a highlight of the 1988 Annual Conference. L-R, Howard Hankins, John Gardner, Floyd Mechler, Governor Clements, Bill Jones, Donna Parrish, Merry Dunaway and David Harper.

The combination of Governor William P. Clements, the beauty of Corpus Christi and a full slate of informative seminars drew a record-breaking number of delegates and guests to attend the 1988 AWBD Annual Conference, July 14-16, at the Corpus Christi Bayfront Convention Plaza.

The Friday luncheon address by the Governor was a high point of the event, as he covered major water issues and the strides Texas is making on the road to economic recovery. Attending the Conference with the Governor were Texas' First Lady, Rita Clements, and Hugo Berlander, President Pro Tem of the Texas Senate.

The Texas Water Commission's top officials set up shop in Corpus Christi, with Chairman Paul Hopkins presenting the TWC's "Best of the West" district excellence awards and Commissioner Buck Wynne assessing the 1989 Legislature's posture on water issues. "Top guns" Allen Beinke and Dean Robbins headed up the key staff team on hand to work with district status reports and answer questions. Once again, the AWBD Annual Conference was the place to be for people connected to utility districts and the water industry.

With more than 900 delegates registered, a new record, estimates were that the Conference pumped more than \$1 million into the Corpus Christi economy during our stay.

AWBD social functions again provided a full schedule of fun to balance the weighty two-day schedule of seminars on everything from tax abatement to health department regulations on contaminants in water. And entertainment and information were combined in one delightful session, as the AWBD Players made their debut to an enthusiastic audience.

When it was over and the last official tote bag stuffed with the last vendor souvenir and goodies, delegates were in agreement that the conference lived up to its billing of something great in '88!

FALL SEMINAR ANNOUNCED

The Association of Water Board Directors has announced the scheduling of its fall 1988 seminar. Set for Monday, October 3, 1988, the topic for the session is "How Do Changes To The Property Tax Code Affect You and Your District?"

Speakers for the evening include Stan Stiefer, General Counsel to the State Property Tax Board, and Debbie Wheeler, from the Board.

The program will be held at the Hotel Sofitel, located at 425 North Beltway 8. A cash bar will be open from 5:30 p.m. to 6:30 p.m., with dinner following at 6:30 p.m. The program will begin at 7:30 p.m.

Cost of the seminar is \$50.00 per person for AWBD members and reservations must be made through the Association office no later than Tuesday, September 27.

More details will appear in the next issue of the Newsletter.

"I urge you to plan now to attend this first seminar of the fall, said AWBD President Floyd Mechler. "The issues concerning our tax bases affect all of us, whether as homeowners or district directors. They can be very complex and it is our responsibility to be as well informed as possible to carry out our duties. You owe it to yourself to get your information firsthand and be able to ask the questions that concern you. AWBD is pleased to provide you this important opportunity in October."

SEE INDEX ON PAGE 71.

The Presidency in Transition

At the first meeting of the Board of Trustees following the Annual Conference, the leadership positions of the Association were reorganized.

To preserve the progress our Association has made and to firmly focus our attention on issues only, I have agreed to serve in the coming year in the position of treasurer of AWBD. Floyd Mechler has been elected president and I support his leadership and goals without reservation.

My personal commitment to the Association is more strong today than ever before. My intent is that the Association remain a forceful voice on the subject of water issues and, to that end, I do support the unification of our leadership. My position is, and always has been, that representing the Association is a privilege and an honor. It is not the arena for individual gain or personal advancement; rather, it is a position of trust and an opportunity to speak out for the greatest membership of any water industry organization anywhere — the Association of Water Board Directors. That is my philosophy as a member; that was my rule of conduct as your President.

The Association must fairly represent all facets of our industry and the burden of responsibility faced by a trustee of the Association centers on being the conduit for the membership and its concerns, speaking out for them in board forums, thrusting them onto the larger stage of conferences and seminars.

My voice will remain as strong as ever on your behalf. Regardless of my personal opinion on a subject, I will continue to speak out for each of you. The position of the Association on any issue must be forged from the climate of honest debate and remain the voice of consensus. It must never bear the stamp of any one individual, for we are an Association of many, not the tool of any single person or interest group.

Being your president has been my highest achievement. I pledge my continued loyalty to you and to the integrity of our Association. I remain at your service.



John Gardner gives television interview about AWBD and water conservation effort at Annual Conference in Corpus Christi.

NEW MEMBER DRIVE

Membership Chairperson Donna Parrish has announced the beginning of an AWBD membership drive to kick off the fall season with the goal of enlarging and strengthening the Association's membership.

Anyone recruiting new members should be sure their own name is prominently marked in the upper righthand corner of the new member's application to ensure credit is given to the right person.

The drive will run from September 1 through December 15. The top recruiter will receive three conference registrations and three hotel rooms for the Mid Winter Conference in Fort Worth in January. The runner-up will receive a complimentary conference registration. No monetary equivalents will be awarded.

If you need membership applications or packets, contact the Association office, 713/759-1377.

Interest in the Association is definitely up for 1988 and the time following the Annual Conference gives you an excellent opportunity to get others involved in AWBD.

And, let's not forget the new members saluted in Corpus Christi!

Maple Run
Water Utilities Service
Williamson-Travis Counties MUD 1
Nottingham County MUD
Harris County MUD 155
Emerald Forest UD
Forest Cove MUD
Travis County WCID 10
Fern Bluff MUD
Aware Engineering, Inc.
Municipal Accounting Service

The Newsletter of the Association of Water Board Directors — Texas is published by the Association throughout the year in Houston, Texas. The materials contained in the NEWSLETTER are compiled from various sources of information available to the Association of Water Board Directors and from articles submitted by individuals. The opinions and representations contained herein do not necessarily reflect the views of the Association, the Board of Trustees, or individual members, thereof, nor does the Association or the Board warrant the factual accuracy of all of the materials herein. Readers are encouraged to read carefully, study the issues raised, and come to their own conclusions.

Chairman, Publications Committee Merry Dunaway

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Acting Out "WATER AND MAN"

The commitment of the Association to promoting water conservation through education is one of the greatest AWBD has ever made, pledging seminars, resources and reminders to get the word out that our water resources will not be here in abundance unless we do something about preserving it. Education is universally accepted as the key to this endeavor and efforts by individual districts have been enthusiastic.

"Water And Man" is the heart of the education process a wonderful water conservation program that can be easily adapted into school curricula. It draws on the resources of the community and districts, directors and consultants can play vital roles in getting this program into the schools and in seeing that it is successful.

To demonstrate just how vital these roles are, members of the Association turned thespians to demonstrate that water conservation education doesn't have to be a dry subject.

And, in getting their point across, they showed themselves to be wonderful troupers, great talents and good sports.



"Give Me A W, Give Me An A, Give me a T E R, cheers Julie (Donna Darling) as she exhorts everyone to join the team that's saving water.

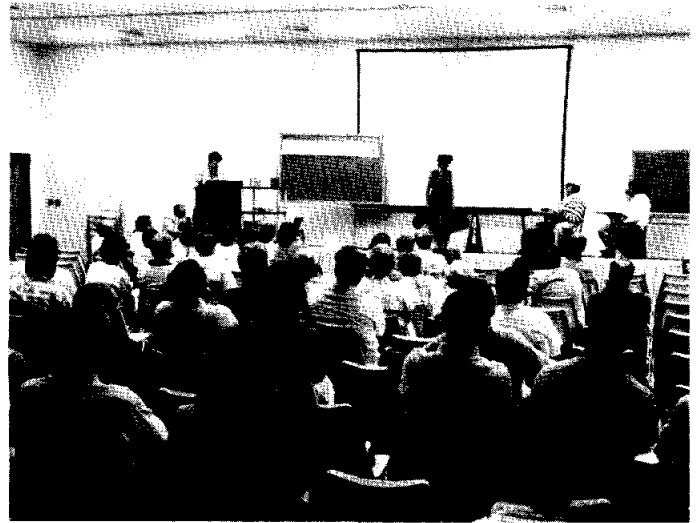
Their aim was simply for everyone to understand that the introduction of water conservation programs can be entertaining, a fun experience for all. It does not have to follow any set lesson plan and will pay to audiences of all ages. Their skit was perfect for schools and could easily be adapted to present for civic organizations and clubs.

In a real schoolroom setting, their skit demonstrated how easily it is to adapt water to learning objectives in all segments of a lesson plan. At the Annual Conference, their skit was a wonderful diversion that was thought-provoking for all.

THE PLAY'S THE THING

Once you've got your audience's attention in a skillful manner, you can tell your message and have great reception and

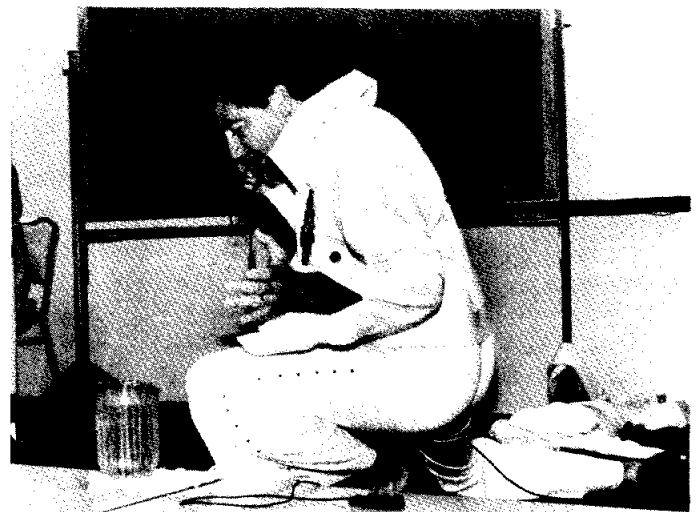
AWBD PHOTOS BY FRANK MARTIN



Kay Kutchins, the "teacher" at the podium welcomes guests to her classroom where the lesson the day will be four essential elements of water: clean water is essential to our existence; water is precious and should not be wasted; water costs money; and water is often a political topic.

retention of ideas. And, there is no more important message than making the public aware of how critical water conservation is for our future.

The AWBD Players made their debut at the Annual Conference in Corpus Christi to rave reviews. All members of the audience had orchestra seats for the play, which featured the acting talents of Donna Darling, David Harper, Kay Kutchins, Pat Hudspeth and Kirk Jefferies.



It's The King!!! Pat Hudspeth found a new career as the one and only Elvis, rocking and rolling for water conservation.

(Continued, next page)

34 states exempt equipment and machinery. Texas does not.

47 states exempt goods in transit. Not in Texas.

According to Previtt, if you've ever wondered why Texas doesn't have a big distribution business, a big, central warehousing facility, this is the reason. "You can't do that with a tax policy that taxes inventory. 43 states exempt manufacturer's inventory. Not in Texas."

39 states have sales tax exemptions for new machinery and equipment. Not in Texas.

31 states have tax credits for new jobs. Not in Texas.

21 states have loan guarantees for new buildings. "We're just starting to get into that," he says. And 34 states provide direct loans for new business construction, "We're also just starting to get into that."

"My point is that it (tax abatement) is one of the few tools that is available to us and is an incentive to try to attract new businesses."

The thrust in Harris County, as Previtt defines it, is to use tax abatement as the means to create thousands of new primary jobs. Primary jobs are those "that bring new payrolls into the community." If he reaches his goal of creating 60-80,000 jobs in Harris County, the total employment would increase by 200,000." The implications of that are pretty straight-forward, for water districts, school districts and for us as individuals." Previtt says this could mean an increase of 40-50 percent in home values, with probable comparable increases in the value of commercial property.

"If we can get our economy moving, we don't have to worry about high water-district tax rates. We don't have to worry about the pressures of funding our schools.

And, the potential is good for all of us."

It's important to know that tax abatement is a promotional device.

In setting the safeguards for the Harris County policy, Previtt and his group were careful. "We require that the investments that are receiving tax abatements have a useful life of at least 15 years. We don't want to abate the property on some fly-by-night organization that . . . can move overnight.

"We have provisions that will allow for abatement to be turned down for moral (or) safety considerations, that have an adverse effect on water districts."

If a water district receives notice of an abatement application on a company in the district and feels the abatement would have an adverse effect on the district's jurisdiction, you have the right to testify against it. "I don't think anyone is trying to hurt a water district," Previtt said.

Safeguards also restrict the movement of a plant from one part of Harris County to another simply to gain a tax abatement.

And, there is the "sunset provision" that is built into the abatement policy. It provides for an evaluation at the end of two years. If things are working as proposed, then the abatement can be continued. If not, the abatement ends.

"It's important to note that tax abatement, tax holiday, is a promotional device. It is not something your community should intend to keep forever. We want to get our economy well."

How Successful Has Abatement Been?

Abatement was enacted in Harris County less than a year ago. With careful work, the City of Houston and the Houston Independent School District have "come on-line at the first of the year," Previtt noted, and "we really started cranking up."

Currently one new tax abatement application is coming in per week, with a great range of industry being represented . . . everything from diapers to chemical concerns.

"We don't know how much effect abatement is having on triggering the economy. There is no doubt that several of the chemical plants have been triggered by tax abatement."

What tax abatement provides is the little edge, the flag that gets management's attention long enough for other factors and advantages to the area to be fairly evaluated. "It gave our economic development people an opportunity to go out and open the door . . . with this attractive bargaining."

And, with Houston Lighting and Power now offering a utility discount tied to the abatement "that has a major effect on corporate cost."

All may be fair in love and war and now in economic development. When the recovery is complete, and Previtt is optimistic that Texas will achieve recovery, the role of tax abatement in shoring up the process will be a significant one. The bottom line is that "it is absolutely crucial that we do everything we can to secure plants now!" And, armed with tax abatement, people are trying all over the state.

AWBD PHOTOS BY FRANK MARTIN



Tax Tech's Lynda Reynolds, left of podium, reflects the interest of the entire audience on tax abatement.



David Harper brought current events and social studies home with a look at the political implications of water issues. He also earned a grade of "A," both for his acting and his report.

Set in a classroom, the premise of the play was a group of students working on an educational unit on water and wastewater.

Kirk Jefferies was typecast, filling the bill as a special guest, a resource person to discuss "something important about water" and stimulate student interest.

Kay Kutchins, an able teacher, emphasized the theme that water can be utilized in every teaching unit. Jefferies' talk would serve as a science lesson. Donna Darling was to give the language art report, with water as her theme and David Harper, the most studious of the lot and bound for valedictory glory, presented the political side of water as a social studies project.



Cheers for the AWBD Players! L-R, Hudspeth, Jefferies, Darling, Harper and Kutchins.

And, then there was Pat Hudspeth. Immortalized for the day. Enquiring minds may want to know if Elvis is alive. In Corpus Christi, there was no doubt. Not only was "The King" alive, he was back to do his part to save water!!!

With good fun and amid laughs and cheers, the AWBD Players scored a hit with their skit. It opened options for the rest of us to get our message across and once again proved that AWBD's greatest asset is its membership, who will do anything for the cause.

Though there were no Oscars or Emmys given for the performances, the Don Day sculpture, "The Witcher," substituted very well as well-deserved accolades for the AWBD Players, who may be called upon again to hit the boards when the curtain goes up at future AWBD events.

Water and Man!



SPECIAL THANKS . . .

AWBD extends our very special thanks to CDR Industries and Johnson County Freshwater Supply District 1 for their generous support of Conference activities. They helped to make things just a bit nicer for all of us!

HOW WATER SUPPLY SYSTEMS WORK

Now that you are a director of a utility system, you find that you are in a business, the business of providing water to your customers, who also happen to be your constituents, the residents of the district you represent.

You also have acquired responsibility for the quality of the water you provide, and, in this instance, you have responsibility to regulatory agencies, as well as to the residents.

So, it's a very good idea to understand fully just where your water comes from and how it gets from its source to the faucets of the homes in your district.

As part of the "basic block" of seminars at the Annual Conference, L. S. "Pat" Brown was responsible for introducing directors to the workings of their water supply systems. And, as he pointed out, "your water supply system is easily taken for granted, but is essential to your community. Although it operates relatively routinely, it is somewhat complex and merits your ongoing attention."

However, he stressed throughout his presentation that understanding the workings of the water supply system doesn't require an engineering degree — just the desire to know.

Where Does The Water Come From



L. S. "Pat" Brown
Brown, Gay & Associates

Water comes from two sources, surface reservoirs and subsurface wells, with most water originating from wells. Brown said "We have been very dependent on groundwater and have, in some cases, used to excess." This overuse of groundwater has resulted in lowered water tables and surface subsidence, a problem that districts in the greater Houston area are all too familiar with.

Because of this, Brown noted "there is a strong movement to convert to surface water for our water supply. Maximum utilization of surface water combined with reasonable uses of groundwater sources is the desirable long-term answer to our water supply needs."

Especially in the Houston area, Brown explained, there is an aggressive encouragement of the conversion to surface sources for water supply, with the Harris-Galveston Coastal Subsidence District leading the way.

"Permits are required for wells and are closely reviewed at each annual renewal, so long-term dependence on well water is being slowly altered." In some areas, the subsidence district is being less patient, depending on the severity of the subsidence problem that has resulted from overpumping of groundwater.

In other areas of the state, similar groups and concerned districts are making the effort to convert to surface water, pro-

moting the use of regional supply districts to minimize costs and maximize results from conversion.

"Alternatives to subsurface water supplies must be incorporated in the long-range planning of all entities charged with the responsibility for providing potable water to users," Brown emphasized.

A Typical Water System

The typical water system consists of a water plant with a deep, high-volume well, water storage, service pumps and pressure maintenance, and a distribution system comprised of a network of various sized water mains.

But, the facilities are only as good as the water source, the "key element."

"Assuming no surface water is available and you can obtain any required permit, the water source commonly is a fairly deep well with enough water to flow 1000 gallons per minute (gpm)," he said. In Houston, for example, the water table will require your well to be 1,000–1,500 feet deep.

A well of this size would serve about 1,667 single family connections, according to Brown, making it "a substantial well."

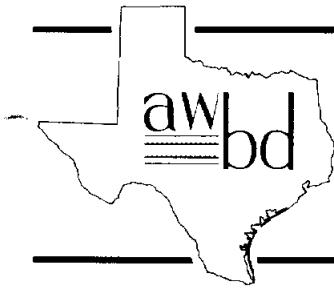


Basic seminars were well attended at Annual Conference.

To handle water from the well, water storage is needed to provide a reservoir of available water. This storage can be either ground storage or elevated storage. Service pumps also are needed to pump the water through the lines of your system to the users.

And, if the storage is ground storage, a pressure tank, which is technically a hydro-pneumatic tank, is required to maintain line pressure when the service pumps are not pumping. "If you have an elevated storage tank, the pressure tank is not needed."

(Continued, next page)



ASSOCIATION OF WATER BOARD DIRECTORS - TEXAS

*"Dedicated to the betterment of Texas water district operation
and management through education and unification."*

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ADMINISTRATIVE DIRECTOR

MYRTLE CRUZ

July 27, 1988

Dear Donna,

On behalf of the Association of Water Board Directors, I would like to thank you for contributing to the success of our 1988 Summer conference in Corpus Christi.

Since the whole purpose of our organization is the education of our members on water issues, our program content is extremely important. The strength and stamina of seminars such as yours, fortify our members with current information they can use when they return home to their water districts.

Thank you, once again, for your help in making our 1988 Summer Conference a success.

Sincerely,

Donna Parrish
Program Chairman

LCRA WATER EDUCATION PROGRAM
TO BE AVAILABLE STATEWIDE

For Immediate Release: 8/18/88

Contact: Loretta Ewart (512) 473-3234

AUSTIN--Lower Colorado River Authority directors approved Thursday (August 18) a proposal to allow statewide distribution of a water-education program developed by LCRA for elementary schools.

LCRA will introduce the program, which features a personality called "Major Rivers," to schools in its 10-county statutory district this fall. The program is designed to teach fourth grade students about water quality, supply and conservation. Keyed to basic subjects taught in these grades, the materials comply with requirements of the Texas Education Agency, said Wanda McMurray, LCRA Consumer Education Program Coordinator.

LCRA commissioned Educational Development Specialists of Lakewood, California, to produce the water resources education program, and with this Board action will grant privileges for broad distribution in Texas and other states.

LCRA provides materials to the 95 school districts in its water and electric service areas, reaching approximately 685,000 elementary and high school students.



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

August 26, 1988

Mr. Allen Beinke, Executive Director
TEXAS WATER COMMISSION
Post Office Box 13087 Capitol Station
Austin, TX 78711-3087

Dear Mr. Beinke:

As you may be aware, EDS has developed a 4th-grade water education program for LCRA, called "Major Rivers." Wanda McMurray, Coordinator of Consumer Education Program at LCRA, intends to distribute the program to about 600 4th-grade classrooms annually in LCRA's 10-county district.

LCRA has also licensed EDS to reproduce the Major Rivers program and make it available to Texas water agencies outside LCRA's 10-county area. Thus, the program could be used in schools throughout the state. The program will be made available to water agencies at \$45 a class set (i.e., nonconsumable materials for teachers and consumable materials for 25 students). Sets of student materials only (to resupply teachers each year after the first year) will be available at \$35.

It occurred to us that the Texas Water Commission may want to be involved in the distribution. For example, Major Rivers could become a Water Commission program, and the Commission could distribute it directly to teachers or through local water agencies. The Commission may even want to work jointly with the Texas Water Development Board. EDS would produce and maintain the inventory, provide the materials at an agreed on cost, and handle all shipping to water agencies or schools. The Commission would receive full credit for its role on program materials for teachers and parents.

If the Commission would like to explore this possibility, we'd be happy to meet. We'd like to present the program to you and your staff regardless, and to solicit your support and advice.

Thank you for your consideration.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk

bcc: Wanda McMurray
Donna Darling
Kay Ice
Sharian Burroughs

cc: Bill Colbert, Office of Public Information



YOGI BEAR'S

JELLYSTONE PARK
CAMP-RESORT

Texas Canoe Trails, Inc.
131 Ruekle Road
New Braunfels, Texas 78130
(512) 625-1919 or (512) 625-3375

Rec'd 12/88



625-0662 (H)

8-30-88

Handa Mc Murray
Consumer Education Program Co.

LCPA
P O Box 220
Austin TX 78767

I recently read in LCPA News about your educational kits. I will be putting together an exhibit for our local Childrens Museum Oct 6 - Nov 24. The theme will be Water Works. I represent Friends for Rivers a non profit group concerned about River Conservation.

I wonder if any of your materials would be appropriate. I also read where you had coloring books. Are they available now? We expect about 2500 students will come thru the museum in this book period.

I have requested Lumper Slides from Les Hitcher and the video that adds up from Mr. Ray Freese.

Anything you have to offer would be helpful.

Sincerely
Ditty Walls

September 9, 1988

Ms. Betty Walls
Texas Canoe Trails, Inc.
131 Ruekle Road
New Braunfels, Texas 78130

Dear Ms. Walls:

I am responding to the letter you wrote to Wanda McMurray of LCRA on Aug. 30.

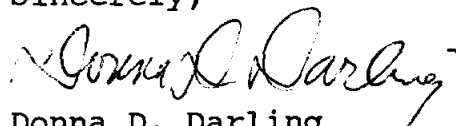
I have enclosed samples of the items we have for children and a price list for same. We can supply up to 200 of these on a complimentary basis, but according to your expectations for the event, that number would be gone rather quickly.

Also, I have enclosed the Texas Water Education Network Directory as a suggestion for other sources you may wish to contact. The Texas Parks and Wildlife Department is more involved with rivers.

The yellow coloring book produced by the Texas Water Commission is available on a purchase basis also. You would need to contact their library at 512/463-7834 for quantities and costs.

Please let me know if you need our assistance.

Sincerely,



Donna D. Darling
Public Information
512/463-7869

DD/ss
Encl:

CC: Wanda McMurray

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : William E. Colbert

DATE: 9-15-88

THRU :

FROM : Kevin Hamby

SUBJECT: Major Rivers & Aquifer

Renee Carlson and I have reviewed the Major Rivers video tape and educational package forwarded us by Donna Darling of the TWDB.

The Major Rivers project appears to be a well done highly received video about Water Conservation. While this is an interesting target audience, fourth graders, I am not sure this is the subject or the age group we should be targeting for the cost involved. Especially, since we have already produced the children's booklet for this age group.

The original cost estimate given to me by Donna was the TWDB would fund \$50,000 and the TWC would fund \$50,000. The follow up costs, or second year and beyond costs, are listed at \$35.00 per twenty five students. This cost is for the work packages for students.

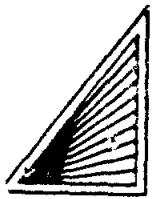
It is possible, with the equipment ordered, and the excellent print facilities in house, we may be able to produce a package of this nature geared toward the water environment as a whole rather than just water conservation. It may also be that we look for a slightly older age group between sixth and eighth grades. We have not really investigated the costs of producing in house, but it can be looked into if there is interest.

Again, for the money involved and the major issue addressed, I believe we can better utilize the dollars in a different education program.

Another note of lesser importance, the company is California based.

Please advise me on where we should go from here. Thanks.

cc: Donna Darling
Renee Carlson



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

September 19, 1988

Mr. Allen Beinke, Executive Director
TEXAS WATER COMMISSION
Post Office Box 13087, Capitol Station
Austin, TX 78711-3087

Dear Mr. Beinke:

This letter is following up my August 26 letter, where I described the "Major Rivers" water education unit EDS developed and will distribute for LCRA. (I believe you saw Wanda McMurray's presentation on this program in Corpus Christi in July.)

I would very much like to meet with you to discuss the program. "Major Rivers" is a measurable, truly instructional program that offers "major benefits" to students, parents, teachers, and, possibly, the Texas Water Commission. Sometimes it is difficult for non-specialists in instructional technology to ascertain the important characteristics of an instructional program like this and to differentiate it from a more informational resource like, say, a coloring book. I would like to brief you on these characteristics, on the benefits they offer, and on cost-effective options the Commission would have for participating in the distribution of the program.

I hope you'll be able to meet with me. I could come to Austin at just about any time in the near future.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk

bcc: Wanda McMurray
Donna Darling
Kay
Sharian
Ann

STATE OF TEXAS
WATER DEVELOPMENT BOARD

M. Reginald Arnold II
Executive Administrator

Thomas M. Downing, Member
Charles W. Jenness, Member
W. Scott H. Hines, Member

September 23, 1988

Mr. Allen P. Beinke, Jr.
Executive Director
Texas Water Commission
P. O. Box 13087, Capitol Station
Austin, Texas 78711

Dear Mr. Beinke:

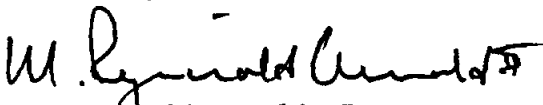
Re: TWDB Contract No. 9-483-703

Please find enclosed three (3) copies of a Fiscal Year 1989 contract between the Texas Water Development Board and the Texas Water Commission. Under the terms of this interagency cooperative contract, the Water Commission will continue to collect water quality samples and related field data on a bi-monthly schedule from 63 sites in five estuaries on the central and upper Texas coast, as well as operate and maintain continuously recorded water quality stations at a minimum of 10 bay sites with instruments supplied by the Board. In addition, the Commission will assist the Board and the Parks and Wildlife Department in performing at least two Intensive (72-hour minimum) Inflow Surveys on selected estuarine systems.

The contract has been verbally approved to begin September 6, 1988 and terminates on August 31, 1989. The total contract amount shall not exceed \$96,087. Upon execution of the three contract copies, please forward same to the State Purchasing and General Services Commission for their approval and processing.

The Division Contract Manager for this contract is Mr. Gary L. Powell, Water Data Collection, Studies, and Planning Division. If you have any questions concerning this contract now or in the future, please do not hesitate to contact him at 512/463-7979.

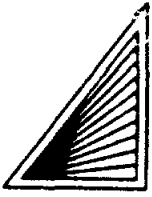
Sincerely,



M. Reginald Arnold II
Executive Administrator

Enclosures (3)

cc: Charles Jenness, Member of Water Development Board
Susan Taylor, Director of Accounting
Gary Powell, Director of Bays & Estuaries Program
Rochelle Pemberton, Director of State Centralized Services



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

September 29, 1988

Mr. Sonny Kretzschmar
Deputy Administrator
TEXAS WATER DEVELOPMENT BOARD
Post Office Box 13231
Austin, TX 78711-3231

Dear Mr. Kretzschmar:

On Tuesday morning, October 11, Donna Darling, Wanda McMurray, and I will be discussing the Major Rivers water education program with the Texas Water Commission. Donna mentioned that since we'd be in your building then, perhaps we could brief you on the program too. We'd be happy to stop by about 10:30 a.m., or at any later time that is convenient for you that day.

We'll plan to see you at 10:30 a.m. on the 11th unless you tell us otherwise. Thank you for the opportunity to present the program.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk

cc: Donna Darling
Wanda McMurray



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

November 11, 1988

Ms. Donna Darling
Public Information Office
Texas Water Development Board
P.O. Box 13231
Austin, TX 78711-3231

Dear Ms. Darling:

The Lower Colorado River Authority (LCRA) is proud to announce the development of the first, comprehensive, Texas-oriented water education program entitled "Major Rivers". On Wednesday, December 14, 1988, LCRA will host a Kickoff and Appreciation Luncheon to introduce Major Rivers to the public and to recognize the hard work and dedication that went into creating this program. We would like very much for you to attend.

A Technical Advisory Committee composed of LCRA Water Council members, state and local educators, and representatives from LCRA and the City of Austin worked closely with a professional curriculum development firm to design this one-of-a-kind water education unit. The materials were successfully field tested last spring within LCRA's 10-county statutory district, and suggestions from teachers, students, and outside evaluators were incorporated into the final product. "Major Rivers" units will be provided free-of-charge this spring to all fourth grade classes in LCRA area schools. Various state agencies are considering offering the program throughout the rest of Texas.

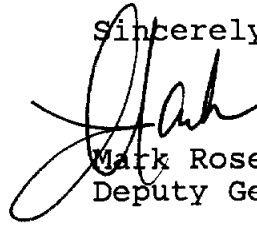
The learning objectives of the unit, which are closely correlated to the Texas Education Agency's fourth grade Essential Elements, include the water cycle, Texas water supply and distribution, and water conservation and use. The program includes a complete set of student materials, a teacher's guide, wall poster and corresponding video.

Please join us at the Wyndham South Hotel in Austin (intersection of Ben White and IH 35) from 11:30 a.m. to 1:30 p.m. You will have the opportunity to preview the "Major Rivers" program materials and meet the committee members.

Major Rivers Appreciation Luncheon
Page 2

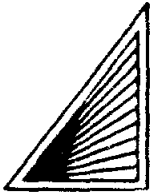
To R.S.V.P., please call Donna Sherry, 1-800-223-4391, ext. 2341
or 473-3200 ext. 2341 by December 5, 1988. I look forward to
seeing you there.

Sincerely,



Mark Rose
Deputy General Manager

MR/WM/ds



Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

November 15, 1988

Mr. Allen Beinke, Executive Director
TEXAS WATER COMMISSION
Post Office Box 13087, Capitol Station
Austin, TX 78711-3087

Dear Allen:

We're looking forward to LCRA's Major Rivers luncheon on December 14. I hope to see you there.

I also hope we have the complete program "in the box" for LCRA at the luncheon. Finalizing a new program and printing it for the first time is always a crunch.

At this point, we're printing 1,000 class sets, about 650 of which are for LCRA. We'll have the other 300 or so sets available for pilot testing around the state this spring.

What is the status of your organization with regard to the Major Rivers program? Do you wish to be involved in this printing? We can always fire up the presses again at any time.

Let me know if you'd like us to meet again with any of the other departments or organizations at the state level.

Sincerely,

Fred C. Niedermeyer, Ed.D.
President

FCN:gk

cc: Donna Darling
Wanda McMurray

Educational Development Specialists

5505 East Carson Street • Suite 250
Lakewood, California 90713-3093 • (213) 420-6814

November 15, 1988

Mr. Sonny Kretzchmar
TEXAS WATER DEVELOPMENT BOARD
Post Office Box 13231, Capitol Station
Austin, TX 78711-3231

Dear Sonny:

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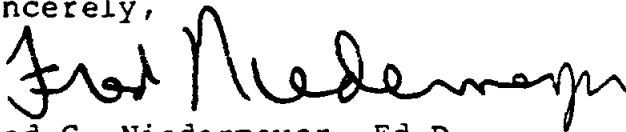
I also hope we have the complete program "in the box" for LCRA at the luncheon. Finalizing a new program and printing it for the first time is always a crunch.

At this point, we're printing 1,000 class sets, about 650 of which are for LCRA. We'll have the other 300 or so sets available for pilot testing around the state this spring.

What is the status of your organization with regard to the Major Rivers program? Do you wish to be involved in this printing? We can always fire up the presses again at any time.

Let me know if you'd us like to meet again with any of the other departments or organizations at the state level.

Sincerely,



Fred C. Niedermeyer, Ed.D.
President

FCN:gk

cc: Donna Darling
Wanda McMurray



TEXAS WATER DEVELOPMENT BOARD

Louie Welch, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

November 30, 1988

Mr. David Freeman
Lower Colorado River Authority
P. O. Box 220
Austin, Texas 78767

Dear Mr. Freeman:

As Director for Public Information and Education for the Texas Water Development Board, it has been my privilege to work closely with LCRA, specifically with Wanda McMurray, on the "Major Rivers" fourth-grade water education program. I have also watched with interest the development of the Water Simulator project and have appreciated Wanda's efforts on behalf of the Texas Water Development Board/Texas Water Commission public school textbook review committee.

I review the newsclips for our agency and am aware of all the fine things that LCRA does for its service area. I believe, however, that none will have as far reaching an impact as the two water education programs which have resulted from the enthusiasm and persistence of Wanda McMurray. She is truly an asset to your organization and is someone who is making a difference to the citizens of Texas.

Her professionalism, follow-through, and positive attitude make working with her a pleasure.

Sincerely,

A handwritten signature in cursive script, reading "Donna D. Darling".

Donna D. Darling
Director
Office of Public Information and Education

DD/nh
cc: Cindy Blewett
Don Chovanec
Wanda McMurray



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

December 9, 1988

Donna D. Darling
Director, Office of Public Information
Texas Water Development Board
P. O. Box 13231 Capitol Station
Austin, Texas 78711-3231

Dear Ms. Darling:

I appreciate your recent letter concerning our employee Wanda McMurray and her work on water education. I know Wanda was working on this subject long before it became the new "hot topic" at LCRA, and it is gratifying to see her get the credit she deserves.

We appreciate the support of your agency in our efforts, and I look forward to seeing you at the Major Rivers luncheon next week.

Sincerely,

A handwritten signature in cursive script that reads "S. David Freeman".

S. David Freeman
General Manager

/mmp



TEXAS WATER DEVELOPMENT BOARD

Louie Welch, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

MEMORANDUM

TO: REG ARNOLD

THRU: SONNY KRETZSCHMAR *gek*

FROM: DONNA DARLING, TWDB

RE: 1988-89 WATER EDUCATION REPORT

DATE: DECEMBER 29, 1988

Currently, the most important water education effort being coordinated by the state's water agencies is the Texas Water Development Board-Texas Water Commission Statewide Water Education Network and Textbook Committee. This Committee evolved from the efforts of the Texas Society of Professional Engineers' Water Education Committee under the leadership of Dave Dorchester. For the past several years, the TSPE Committee has been tracking the Texas Education Agency's textbook proclamations and contacting textbook publishers in an effort to include more information on water, particularly water in Texas.

In 1988, Wanda McMurray of the Lower Colorado River Authority became Chairperson of the Textbook Committee (members and progress to date are attached). Ms. McMurray resigned as of Jan. 1, 1989, and Renee Carlson of the Texas Water Commission has been asked to assume the Chairperson's duties.

While the Textbook Committee continues the long and arduous process of influencing the content of state textbooks, the state water agencies, water-industry associations and the private sector have developed and are sponsoring several statewide education programs to bridge the gap and expose the current generation of students to information on water that is currently unavailable in existing textbooks.

The following information concerns the water education efforts in which the Texas Water Development Board and the Texas Water Commission have some interest or involvement:

1. Statewide Water Education Network and Textbook Committee. (see explanation on preceding page)

2. Major Rivers

Major Rivers is a fourth grade water education program developed by the Lower Colorado River Authority between 1984 and 1988. LCRA has licensed Educational Development Specialists (EDS), an educational curriculum development company, to seek private and public sector funding for providing the Major Rivers packet of instructional materials to all fourth grade classrooms in Texas that are outside the LCRA service area. A plan has been developed and presented to the Texas Water Commission and the Texas Water Development Board soliciting their financial support for the program. Both agencies have agreed to fund the program with \$20,000 each for FY 1989. The Texas Water Commission has also indicated that they will budget \$20,000 for the program in FY 1989. Bill Colbert will draft a letter inviting the Texas Department of Health to be a contributor. However, current fund-raising efforts will not be contingent upon the Health Department's reply. Some clarification as to how the \$40,000 in state funds will be applied is needed.

EDS is currently working to develop a plan that outlines the number of fourth grade classrooms and costs for funding the classrooms in each River Authority area in Texas. Bill Colbert will draft a letter to the River Authorities to see which ones would be interested in participating. The letter will be signed by Commissioner Buck Wynne and by Reg Arnold (and the Health Department). River Authorities expressing a willingness to participate will receive a second letter detailing the classroom numbers and costs for supplying the program in their service area. EDS will also suggest ways that the state funds may be applied to distribution of the program.

Martha Harris, a local consultant working for EDS, presented the Major Rivers program to Terral Smith on December 15, 1988. Representative Smith was very impressed with the program and with the co-operative spirit exhibited by the two water agencies. He has requested copies of the packet for all the members of his committee and has offered his assistance in promoting the project. Mrs. Harris will supply the packets and continue to work with Representative Smith on this project.

David Harper of the Association of Water Board Directors has indicated that space will be available to the TWC and the TWDB to display and distribute Major Rivers at the AWDB Annual Meeting, January 26-29, 1989 in Ft. Worth. He is also arranging for Commissioner Wynne to appear before the Texas Water Forum, a consortium of 12 water associations meeting in conjunction with the AWDB meeting. The Forum was briefed on the program last July and is now awaiting instruction as to how they may become involved.

Note to Bill Colbert: In the meeting with EDS on December 15, 1988, we discussed how private sector industries would be included in the funding efforts for Major Rivers. We tentatively assigned the re-funding role to these entities. However, Fred Niedermeyer of EDS is concerned that if the River Authorities whole heartedly adopt the program in their service areas, they may be reluctant to share their association with Major Rivers and that perhaps allowing the River Authorities the option of soliciting the large industries in their areas after the program is well established might be a better alternative. EDS would like to present their next proposal before any contacts are made with the private sector.

3. Water and Man

Water and Man is the K-12 water education program that is co-ordinated jointly by the Texas Water Development Board and the Texas Society of Professional Engineers. The TWDB Research and Planning Grant that provides matching funds for the program expired in August 1988. TSPE has applied for re-funding. A determination for re-funding will be made in January.

Reports from teachers who have used the program over the past three years indicate that the materials appear to be most useful in the 7th or 8th grade. Teachers also indicate that the current format of the program makes it too teacher intensive. TWDB staff recommends a re-packaging of the program for use in junior high only. Water and Man will serve to re-enforce student exposure to Major Rivers.

4. Texas Water Education Network and Directory

The Texas Water Education Network Directory is an annual publication of the Texas Water Development Board listing resource persons and programs relative to water education materials that are suitable for use in public school classrooms. The Directory is currently being updated for distribution in January 1989. (TWC may want to list some things in the Directory)

CC: Bill Colbert, TWC
Renee Carlson, TWC

MAJOR RIVERS
JANUARY CALENDAR OF EVENTS

Tuesday, January 10

Memo and cover letter delivered to Allen Beinke
Request meeting with Bill Colbert to go over memo outlining
roles of program organizers
Meet with David Harper to confirm role of TWDB and TWC at
AWDB Mid-Winter Conference in Ft. Worth on Jan. 27-28.
Note: AWDB Education Committee personnel will assume
major responsibility for education booth at conference.
TWC and TWDB staff will assist as needed
Call EDS and order pre-view kits, student booklets, posters
and stickers; call Wanda McMurray to arrange for
Major Rivers doll
EDS preparing numbers and costs for River Authority
participation.
Called Tom Duck of Texas Rural Water Association to be put
on Water Forum agenda to report on status of Major
Rivers and potential involvements of Water Forum
membership associations

Wednesday, January 11

Meet with Bill Colbert.
Draft letter to Department of Health.
Draft letter to River Authorities (can send pre-view kits if
appropriate)
Confirm Commissioner Wynne's appearance at Water Forum
meeting- Call Tom Duck with agenda information (458-
8121)

Note: Also need to discuss announcing that Renee Carlson is new
Textbook Committee Chairman: propose doing this by mailing the
Texas Water Education Network Directory to attached list. (Donna
will draft letter and distribute packets. Directory should go to
print by January 13 and be distributed before the end of the
month.

Tuesday, January 17

Mail letter to Department of Health

Friday, January 20

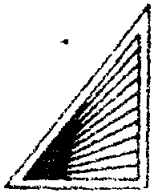
Mail first letter to River Authorities
(Major Industries?)

Friday, January 27

Make presentation to Water Forum in Ft. Worth

Monday, January 30

Mail Texas Education Network Directory and Textbook
Committee Chairman announcement.



Educational Development Specialists

8501 East Carson Street • Suite 250
Lakewood, California 90713-0993 • 213-429-6814

January 6, 1989

Ms. Donna Darling
Director of Public Information
Texas Water Development Board
P.O. Box 13231
Austin, TX 78711-3231

Dear Donna:

I got your memo today. It looks good. I think everyone will be clear as to their part in getting the project off the ground.

There are a couple of areas under item #2 that I would like to clarify. The last sentence in the second paragraph might be better if it were omitted. As history served, program sponsors generally do not want the credits involved in the financing decisions. We will be happy to make suggestions, but you may want to keep that a "law-fey" arrangement.

The statement in the third paragraph that says that Mardel works for EDD is also omitted. This relationship does not appear beneficial at this time and we would not want to mislead any of the sponsors.

I would like to clarify the note to Bill Coleman, the last paragraph of item 2. It is in this position that the private sector should be included in the "Motor Rivers" project right from the beginning, as wider distribution goals can be attained with additional sponsors. We feel, however, that existing support should be on a contractual basis rather than by means of River Authority. Our experience has been that large industries will identify more with a state sponsored project than with a local project. Also, they will want as much exposure as they can get for their investment. Money raised from private companies could be used to subsidize the cost of the program to River Authorities and other local agencies, much like the Texas Water Board and Texas Water Commission do now. Also, you may want to delete the last sentence in the note to Bill.

I have been in touch with Barbara Lee Frank's office, specifically with Terry Hitchcock, who is working to provide me with the 4th grade enrollment statistics that we need to prepare the cost analysis for you. She will be sending a substantial report that will care us in getting these figures together. I will let you know just as soon as I have a number of 4th grade enrollments for each district.

Currently, there are 300 "Major Rivers" class sets available at \$40.00 each if you want to start a pilot program or begin distribution. There are also preview kits that are put together if you would like to send any out to prospective sponsors and/or River Authorities. Let me know when you'd like me to send them to you.

We talked about a possible exhibit the end of this month. Would you like me to make arrangements to have student books sent to you for display? Please let me know if there are any other materials that you may need. I will be happy to get them right out to you.

You asked about some possible ideas for allocating the \$40,000.00. I would recommend the following:

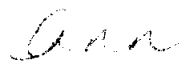
- * Enlist the support and sponsorship of the private sector now. Address potential sponsors with the concept of statewide distribution and recognition.
- * Allocate funds by offering at 25% Water Board/Water Commission subsidy. State to the River Authorities that the program costs \$40.00 per class set, plus shipping and imprinting, but as an incentive to join in the public awareness kick-off, the Water Board/Water Commission will subsidize the program. The price becomes \$30.00 per class set (plus shipping and imprinting) to the River Authority or agency and the Water Board/Water Commission will subsidize the other \$10.00 per class set ordered. Thus, the present \$40,000 grant will generate \$760,000 in sales and create a much wider student outreach.

Other options would be:

- * Match funds equally from River Authorities and Water Agencies, i.e., River Authority can buy class sets for \$20.00.
- * Send teacher brochures out to all 4th grade teachers in the state offering the Major Rivers program for free to the first 1,000 teacher's who request it. i.e., state funding only.

Please let me know if I can help in any way.

Sincerely,



Ann M. Craiton
Director of Marketing

MEMORANDUM

TO: REG ARNOLD
 SONNY KRETZSCHMAR
 SUE CLABAUGH

FROM: DONNA DARLING

RE: PRESENTATION ON MAJOR RIVERS AT THE WATER FORUM MEETING
 ON JANUARY 27 AT 1:30 P.M. IN FORT WORTH AT THE AWBD
 MID-WINTER CONFERENCE; ADDITIONAL CONFERENCE
 INFORMATION

DATE: JANUARY 10, 1989

Tom Duck, Chairman of the Water Forum (see list of member associations) has asked Buck Wynne to present a status report on the Major Rivers education program which our two agencies co-sponsor. Com. Wynne may also use this opportunity to solicit financial participation from the associations. I believe Tom Duck would include us in this presentation if we want to co-present. He is currently establishing the agenda for the water forum meeting...please advise.

Water Forum Members

- American Water Works Association
- Association of Water Board Directors
- Texas Municipal Utilities Association
- Texas Water Utilities Association
- Texas Rural Water Association
- Texas Well Water Association
- Texas Water Conservation Association
- Texas Water Alliance
- Texas Water Pollution Control Association
- Texas Water Quality Association
- Texas Society of Professional Engineers

I am ordering pre-view kits for each association representative attending the forum meeting. I am ordering Student Booklets for display in the Major Rivers booth in Ft. Worth. These are being supplied by EDS at no charge.

AWBD education committee members will require our support to man the Major Rivers Booth in the vendor area of the AWBD Conference in Ft. Worth.

We will not have any other role to play in the AWBD meeting. Pre-application interviews for loans will not be necessary at the meeting as MUD Boards are not currently a viable market for our loan programs. Reg has a complimentary invitation to come to the meeting (Jan. 27 & 28). The TWC and TWDB will not be featured at the head table this time. Ann Richards and the Ft. Worth area legislators will be the honored guests.

no
Jeff

OK
1/16/89

EDS on this

Are we working for EDS?

EDUCATIONAL DEVELOPMENT SPECIALISTS

5505 E. CARSON STREET
SUITE 250
LAKEWOOD, CA. 90713-3093
(213) 420-6814

Introducing "MAJOR RIVERS" the Texas Water Education Program. "Major Rivers" is designed to teach 4th grade students about the importance of water in Texas, while meeting the Texas Education Agency curriculum requirements for elementary science, social studies, and composition.

Major Rivers' addresses the water cycle, water supply and demand, water distribution, and water use and conservation. The materials are presented in a colorful and entertaining format. The instructor materials included are:

- * Teacher's Guide
- * Classroom poster
- * 30 Student Books
- * 30 Home Information Letters
- * 30 "Major Rivers" badges
- * 30 Trainers and 30 Posttests

"Major Rivers" was developed by EDS, the developer and distributor of many educational programs, including the Energy Source Education Program.

RIVER AUTHORITY/WATER DISTRICT
OTHER AUTHORITY

4th grade
students

4th grade
classrooms

Cost at \$40 per kid

<i>Bill</i>	Angelina & Neches River Authority	8209	330	\$13,200
	✓ Brazos River Authority	32899	1450	\$58,000
	NA Central Colorado River Authority	158	7	1,106
<i>800-632-0668</i>	Franklin County Water District	92	4	160
<i>Sol.</i>	Galveston County Water Authority	4487	180	7,200
	✓ Guadalupe-Blanco River Authority	5489	220	8,800
<i>Bill</i>	Gulf Coast Waste Disposal Authority	44699	1789	71,560
<i>Mon Called</i>	✓ Lavaca-Navidad River Authority	232	10	400
	Lower Colorado River Authority	9411	378	15,120
	Lower Concho River Water & Soil	33	2	80
<i>Bill</i>	Lower Neches Valley Authority	4783	191	7,640
<i>Bill</i>	Nueces River Authority	10292	415	16,600
	Palo Duro River Authority	466	19	760
	Red Bluff Water Power Control Dist.	796	33	1320
	Red River Authority of Texas	13761	565	22,600
	✓ Sabine River Authority of Texas	10047	406	16,240
<i>Bill</i>	San Antonio River Authority	18175	728	29,120
<i>Bill</i>	San Jacinto River Authority	4719	190	7,600
	Tarrant County WCID #1	15132	606	24,240
	Titus County Fresh Water Supply #1	338	14	560
	Upper Colorado River Authority	1513	61	24,440
<i>Bill</i>	Trinity River Authority of Texas	32828	1315	52,600
	Upper Guadalupe River Authority	412	17	680
	Upper Neches River Municipal Water	4124	165	6,600
				9,095 = \$363,200.00
				at \$40 per kid

*Enrollment Statistics as of August 30, 1988-Texas Education Agency

*Classroom numbers are calculated using county statistics

Revenue available for total control time at 100% funding for this award is

\$259,786



Box 231
Zip Code 76004-0231
Arlington Phone
(817) 275-3271
Dallas Phone
Metro (817) 265-3311
January 19, 1989

Deborah Dahlke
Director of Corporate Development
LCRA
Box 220
Austin, Texas 78767

Dear Ms. Dahlke:

I am interested in the program that you have developed for elementary school aged children on water, water quality, and conservation measures, which I read about in the Texas Water Report published on January 5, 1989. I would be very interested in receiving additional information about your program and the implementations policies developed in support of the program, as this department is looking into ways to educate young children on various water related issues.

I would be most appreciative of any information that you can send me pertaining to this topic.

Thank you in advance for your assistance.

Cheryl Taylor West

Cheryl Taylor West
Administrative Analyst
Water Utilities
City of Arlington
P.O. Box 231
Arlington, Texas 76010

/lm
cc: file

A:40-052

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

January 17, 1989

Dr. Robert Bernstein, M.D., F.A.C.P.
Commissioner
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756

Dear Dr. Bernstein,

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The TWC and TWDB would like to invite the Texas Department of Health to participate in this highly praised educational effort.


Major Rivers is a fourth grade water education program developed by the Lower Colorado River Authority between 1984 and 1988. LCRA licensed an educational curriculum development company to seek private and public sector funding to provide the Major Rivers packet of instructional materials to all fourth grade classrooms in Texas that are outside the LCRA service area.

A plan has been developed and presented to the TWC and the TWDB soliciting our financial support for the program. Both agencies have agreed to support the program with \$20,000 each for FY 1989.

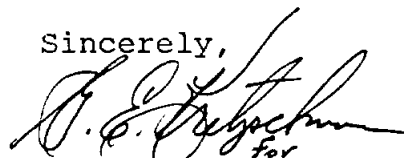
If the TDH would like to support this educational effort, you or one of your staff may contact Bill Colbert, Director of the TWC's Office of Public Information. It would be helpful to have an indication of TDH's level of support by mid-February in order to expedite this matter within the anticipated time frame.

Thank you for considering this joint educational proposal, and we look forward to hearing from you.

Respectfully yours,


B. J. Wynne, III
Chairman

Sincerely,


M. Reginald Arnold II
Executive Administrator

**SOME OPTIONS FOR STATEWIDE DISTRIBUTION OF
MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM**

Texas Water Development Board

1. Fund program distribution to Texas 4th-grade teachers at a specific student saturation level (e.g., 25%) for three years. (Cost: \$300,000)
2. Fund distribution at a specific student saturation level for one year; work with EDS to get local water agencies, associations, municipalities, and river authorities to take over the implementation in their respective areas in subsequent years. (Cost: \$115,000)
3. Provide a grant to allow local water agencies or school districts to purchase program at 1/2 price. (Cost: at least \$50,000 per year)

**BENEFITS TO TEXAS WATER DEVELOPMENT BOARD
OF SPONSORING STATEWIDE DISTRIBUTION OF
MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM**

1. **Texas water information will reach classrooms.** The *Major Rivers* program teaches Texas-specific water information and objectives that are not contained in currently-adopted state textbooks.
2. **Teachers will be receptive.** As many teachers will want and use the program as there are kits available. Associated Milk Producers Inc. (AMPI) reaches 70 to 80 percent of the 2nd and 4th grades in Texas with similar EDS-developed nutrition education kits. LCRA reaches nearly all of their school districts with the EDS-developed Energy Source Program.
3. **Teachers will use *Major Rivers* for many years.** The above-mentioned AMPI nutrition kits have been used in Texas since 1974. Seventy percent of the *Major Rivers* teachers will request a resupply kit every year so as to reteach the program.
4. **Students really learn about water and water conservation.** During field testing of *Major Rivers*, classes averaged near guessing levels on the program pretest and 87 percent mastery on the posttest. All Texas 4th grades will experience success with the *Major Rivers Texas Water Education Program*.
5. **Students will develop positive attitudes.** During the *Major Rivers* field test, only 42 percent of the students said they were careful about conserving water prior to the program. After the program, 90 percent said they would now do more to save water.
6. **Results are verifiable and measurable.** Teachers return program record sheets that contain test scores, reactions, and suggestions. Data bases can be built to substantiate teacher use and student learning.
7. **Parents will become involved.** The home activity booklet contains a home water audit to do with the child. A recent study with the Energy Source Program found that 85 percent of the parents were aware of the program, and 70 percent of these parents said the program had influenced them to take actual energy saving measures at home.
8. **Educational community will support program.** Dr. Barbara ten Brink, Science Specialist for the Texas Education Agency, participated on the *Major Rivers* technical advisory committee during development. Dr. ten Brink has helped the Austin ISD prepare a *Major Rivers* presentation that will be given to Texas science teachers this month.
9. **Development Board will be recognized for leadership role.** Because *Major Rivers* is a true instructional program that teachers will really want and use, it will have much more impact and visibility than traditional informational materials. The Development Board's leadership in distributing the program will be recognized in many sectors.
10. **Program will open school doors to water education.** A typical teacher reaction to the Energy Source Program is, "I enjoyed teaching this unit, and I am interested in other programs you might have (in Florida)." As teachers experience success with *Major Rivers*, they will be receptive to other water education programs and speakers offered in their communities by local water organizations.

**IMPLEMENTATION COSTS FOR STATEWIDE DISTRIBUTION OF
MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM**

• Produce 10,400 <i>Major Rivers</i> teacher brochures/ order cards @ \$.35	\$3,640
• Purchase mailing labels for all Texas 4th grade teachers @ \$50/M	\$550
• Mail teacher brochures to every 4th-grade teacher in Texas	\$2,600
• Ship class sets UPS @ \$1.50 to the first 2,600 teachers (25%) requesting the program.*	<u>\$3,900</u>
 TOTAL	 \$10,690

* Depends on number of kits available; student saturation level of 25 percent used in this example.

January 19, 1989

Donna D. Darling
Director of Public Information
Texas Water Development Board
1700 North Congress Avenue
P.O. Box 13231
Austin, Texas 78711-3231

Dear Donna;

Attached is a break-down of the 4th grade classroom statistics that we compiled from the Texas Education Agency report dated August 30, 1988.

The total number of 4th grade students in the state of Texas, as of August 30, 1988 was...256,722.

To achieve the estimated number of 4th grade classrooms in the state we divided 256,722 (the total number of 4th grade students) by 25 (the Texas state maximum per classroom). We calculated a total number of 10,269 4th grade classrooms in the state of Texas. This may be a conservative estimate since we divided by the maximum allowable rather than the average classroom size.

Using the February 1985 map of "River Authorities and Selected Water Districts and other Authorities" for the state of Texas, we were able to determine which counties were serviced by which Authority. We plugged the county statistics into the appropriate River Authority and then added them up. The total number of students within the designated Authorities are 223,095 4th grade students. There are a total of 9,095 4th grade classrooms that area.

Attached is the specific numbers by River Authority, Water District, or other Authority. Please feel free to call me if I can answer any questions or provide you with any more information.

Sincerely,



Ann M. Crafton
Director of Marketing

<u>RIVER AUTHORITY/WATER DISTRICT</u> <u>OTHER AUTHORITY</u>	<u>4th grade</u> <u>students</u>	<u>4th grade</u> <u>classrooms</u>
Angelina & Neches River Authority	8209	330
Brazos River Authority	32899	1450
Central Colorado River Authority	158	7
Franklin County Water District	92	4
Galveston County Water Authority	4487	180
Guadalupe-Blanco River Authority	5489	220
Gulf Coast Waste Disposal Authority	44699	1789
Lavaca-Navidad River Authority	232	10
Lower Colorado River Authority	9411	378
Lower Concho River Water & Soil	33	2
Lower Neches Valley Authority	4783	191
Nueces River Authority	10292	415
Palo Duro River Authority	466	19
Red Bluff Water Power Control Dist.	796	33
Red River Authority of Texas	13761	565
Sabine River Authority of Texas	10047	406
San Antonio River Authority	18175	728
San Jacinto River Authority	4719	190
Tarrant County WCID #1	15132	606
Titus County Fresh Water Supply #1	338	14
Upper Colorado River Authority	1513	61
Trinity River Authority of Texas	32828	1315
Upper Guadalupe River Authority	412	17
Upper Neches River Municipal Water	4124	165

*Enrollment Statistics as of August 30, 1988-Texas Education Agency

*Classroom numbers are calculated using county statistics



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

January 24, 1989

Ms. Donna Darling
Office of Public Information
TEXAS WATER DEVELOPMENT BOARD
Post Office Box 13231
Austin, Texas 78711-3231

Dear Donna:

Thank you so much for participating in our first Austin MAJOR RIVERS workshop last Saturday. We especially appreciated your help in putting the room back in order and packing up our materials. There is so much work involved in conducting programs of this type, but the positive responses given by the teachers make it worthwhile. Thank you for the help and for all the support and encouragement you give us.

I am attaching for your information:

- 1) The January 21, 1989 Teacher Comments from MAJOR RIVERS Workshop,
- 2) A copy of the City of Arlington's inquiry re MAJOR RIVERS unit and reply,
- 3) The NSTA REPORT article, "Essential Changes in Secondary Science...." that may be of interest to the Textbook Hearing Committee. Note the first paragraph, middle column of third page. The article gives even more justification and importance to groups such as your committee and the active participation of its members to support the needed changes in Texas textbooks for practical applications in the area of water resources management as they relate to science and social studies, and
- 4) FYI - JCST (Journal of College Science Teaching) article, "Educating Scientists and Engineers: Grade School to Grad School".

Stay in touch!

Sincerely,

Wanda McMurray, Coordinator
Consumer Education Programs

WM/ds

Attachments

LCRA
Inservice Training
WORKSHOP EVALUATION FORM

WORKSHOP LOCATION: Murchison Middle School WORKSHOP TITLE Major Rivers

WORKSHOP SPONSOR Lower Colorado River Authority DATE 1-21-89

98% of teachers gave the workshop highest possible rating. The following are the written comments:

- Very well planned, organized interesting.
- Well planned workshop.
- The materials are very good. I look forward to using them with my class. I appreciate your allowing the workshop to progress at a reasonable pace.
- Well done! Well organized. Efficient.
- Very informative about a subject which is too often glossed over in regular curriculum.
- Very well organized - coordinated & presented - liked the variety of presenters.
- I enjoyed the workshop and benefited.
- This could have been done in half a day. (*Not if teachers participate to the fullest! WMC*)
- Thanks for so many supplies (and food).
- I like the idea of finishing early. Materials are great. Food was great. Valuable stuff.
- I'm very pleased that I attended this workshop. The presenters were enthusiastic and quite organized. The information and materials given to me will be put to great use in my classroom. I appreciate the time and energy the presenters spent preparing & presenting the workshop. THANKS.
- Very well organized, "self-teach" method allowed for more input for participant ideas & brainstorming.

WORKSHOP STAFF

Wes Birdwell, Manager, Water Resources Management
Kevin Critendon, Water Resources Management
Nora Mullarkey, Coordinator, Water Efficiency Program
Lucia Athens, Water Efficiency Program
Wanda McMurray, Coordinator, Consumer Education Programs
Donna Sherry, Support Staff



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 • (512) 473-3200

January 24, 1989

Ms. Cheryl Taylor West
Administrative Analyst
Water Utilities
City of Arlington
Post Office Box 231
Arlington, Texas 76010

Dear Ms. Taylor:

I was pleased to learn from Deborah Dahlke of your interest in LCRA's MAJOR RIVERS water education unit. Major Rivers and his horse, Aquifer, are making a big hit with our fourth grade teachers.

The curriculum development firm, Educational Development Specialists (EDS) of Lakewood, California, worked with a Technical Advisory Board selected by LCRA to develop and field test the material. LCRA then granted EDS production and distribution privileges outside LCRA's 10-county statutory district. As you will see from the enclosed samples, the materials are designed for use in any part of Texas, with supplements added to make them specific to LCRA's area.

It would be best for you to talk directly with Dr. Fred Niedermeyer, President of EDS, for further details. I am sending your inquiry to him with a copy of this letter, so that he can call you. However, should you prefer to contact him directly, he can be reached at EDS, 5505 E. Carson St. - Suite 250, Lakewood, CA, 90713. The phone number is (213) 420-6814.

Again, thank you for your letter. It is always fun sharing information about Major Rivers.

Sincerely,

A handwritten signature in cursive script that reads "Wanda McMurray".

Wanda McMurray, Coordinator
Consumer Education Programs

WM/ds

Encls.

pc: Fred Niedermeyer, Ed.D.
Deborah Dahlke
Don Chovanec

TEXAS WATER DEVELOPMENT BOARD

INTEROFFICE MEMORANDUM

TO : Commissioner Wynne
Allen Beinke
Bill Colbert

THRU : Sonny Kretzschar

FROM : Donna Darling

SUBJECT: Major Rivers presentation to Water Forum members

DATE:

When Commissioner Wynne was unable to attend the Water Forum meeting in Ft. Worth on January 27, I was invited to make the presentation on Major Rivers, the 4th grade water education program jointly-coordinated by the TWC and TWDB. The response from the representatives of the water associations that make up the Water Forum was extremely enthusiastic.

I explained that the River Authorities (and some commercial companies) would be offered an opportunity to fund the Major Rivers classroom sets for as many of the 4th grade classrooms in their service areas as they felt they could afford; then we (the TWC and the TWDB) would be calling on each association to fill in the gaps. Our first year objective was to put Major Rivers in at least 1/3 of the 10,000 4th grade classrooms in Texas (beginning September 1989). This would cost approximately \$193,000 and that the state agencies had already committed \$20,000 each.

In light of the enthusiastic response of the water associations, it is important that we follow up with a letter to the River Authorities from Commissioner Wynne as soon as possible, so that we can contact the associations with some fairly specific idea of what their contribution will need to be to accomplish our first-year objective. I have some Major Rivers preview kits that can be included with the River Authority letters. We also have specific costs for each River Authority's participation, although we may not want to provide that information until they have expressed an interest in participating in the program.

Members of the Water Forum include the following:

- American Water Works Association
- Texas Water Utilities Association
- Texas Municipal Utilities (TML)
- Texas Water Conservation Association
- Texas Rural Water Association
- Texas Water Control & Pollution Association
- Association of Water Board Directors
- Texas Water Alliance
- Water Well Drillers Association
- Texas Society of Professional Engineers

TEXAS WATER DEVELOPMENT BOARD
INTEROFFICE MEMORANDUM

TO : Commissioner Wynne
Allen Beinke
Bill Colbert

THRU : Sonny Kretzschmar *geh*

FROM : Donna Darling

SUBJECT: Major Rivers presentation to Water Forum members

DATE: 1/31/89

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- Texas Water Conservation Association
- Texas Rural Water Association
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- Association of Water Board Directors
- Texas Water Alliance
- Water Well Drillers Association
- Texas Society of Professional Engineers

Texas Water Quality Assoc.

ASSOCIATION OF
WATER BOARD DIRECTORS
- TEXAS -

DONNA PARRISH
Executive Vice President

(713) 759 1377
1617 Fannin, Suite 900

Res. (713) 859 8088
Houston, Texas 77002

Please send information about Major Rivers to:

Name: William R. Lewis

Address: 5787 South Hampton Rd

City: Dallas

State/Zip: Texas # 75232

Phone: (214) 330-4855

Tx. Wtr. Pollution Control Assoc.

Please send information about Major Rivers to:

Name: TEXAS WATER QUALITY ASSN.

Address: 1904 Sam Houston

City: VICTORIA, TX

State/Zip: TEXAS, 77901

Phone: 512-575-2974

MAJOR RIVERS
JANUARY CALENDAR OF EVENTS

Tuesday, January 10

Memo and cover letter delivered to Allen Beinke
Request meeting with Bill Colbert to go over memo outlining
roles of program organizers
Meet with David Harper to confirm role of TWDB and TWC at
AWDB Mid-Winter Conference in Ft. Worth on Jan. 27-28.
Note: AWDB Education Committee personnel will assume
major responsibility for education booth at conference.
TWC and TWDB staff will assist as needed
Call EDS and order pre-view kits, student booklets, posters
and stickers; call Wanda McMurray to arrange for
Major Rivers doll
EDS preparing numbers and costs for River Authority
participation.
Called Tom Duck of Texas Rural Water Association to be put
on Water Forum agenda to report on status of Major
Rivers and potential involvements of Water Forum
membership associations

Wednesday, January 11

Meet with Bill Colbert.
Draft letter to Department of Health.
Draft letter to River Authorities (can send pre-view kits if
appropriate)
Confirm Commissioner Wynne's appearance at Water Forum
meeting- Call Tom Duck with agenda information (458-
8121)

Note: Also need to discuss announcing that Renee Carlson is new
Textbook Committee Chairman: propose doing this by mailing the
Texas Water Education Network Directory to attached list. (Donna
will draft letter and distribute packets. Directory should go to
print by January 13 and be distributed before the end of the
month.

Tuesday, January 17

Mail letter to Department of Health

Friday, January 20

Mail first letter to River Authorities
(Major Industries?)

Friday, January 27

Make presentation to Water Forum in Ft. Worth

Monday, January 30

Mail Texas Education Network Directory and Textbook
Committee Chairman announcement.



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

1/31/89

Dear Fred & Ann,

The presentation to the associations in Ft. Worth is covered in the enclosed memo which has been delivered to those who will have to take the next step.

The inquiries gathered at the meeting are also enclosed. The ones stapled together are from Water Forum members and should be answered by telephone. The others are from water board directors, teachers, cub scout den mothers etc. and could probably be handled by a letter. Some of them would like to have preview kits. My suggestion is that we do not begin taking private sector orders until March 1 when I hope we will have some handle on the River Authority involvement. After that, I think you should fill orders as they come keeping close track of where the kits are going so that when the state financing comes through we will not double up on distribution. We probably need to talk about how the kits are going to be personalized also.

As of this morning, Reg Arnold's condition had not changed. I don't believe Reg's accident will impact this project very much since it is Commissioner Wynne who is interested in carrying the ball.

I have enclosed my proposed time schedule, so that you can see where I wanted us to be and where we are. I hope the River Authority letter will be mailed before the 15th of Feb.

Stay tuned,

DDD

TEXAS WATER COMMISSION

Paul Higgins
John O. Buchanan

William E. Smith
Brenda W. Eustace

February 15, 1989

Mr. Charles D. Thomas, Executive Director
Angelina & Neches River Authority
P. O. Box 387
Lufkin, TX 75901

Dear Mr. Thomas:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

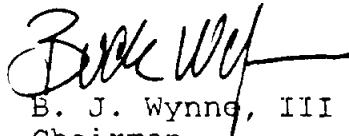
Major Rivers is a fourth grade water education program developed by the Lower Colorado River Authority between 1984 and 1988. LCRA licensed an educational curriculum development company to seek private and public sector funding to provide the Major Rivers packet of instructional materials to all fourth grade classrooms in Texas that are outside the LCRA service area.

A plan has been developed and presented to the Commission and the Board soliciting our financial support for the program. Both agencies have agreed to support the program with \$20,000 each for FY 1989.

As a river authority, participation in this educational effort within your region would be very beneficial. If you would like to support this educational effort, please contact Bill Colbert, Director of the Texas Water Commission's Office of Public Information. It would be helpful to have an indication of your level of support by early March in order to expedite this matter within the anticipated time frame.

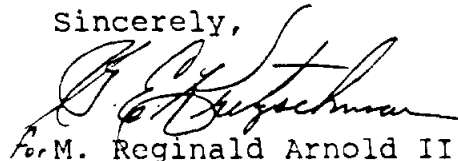
Enclosed is a Major Rivers kit for your preview. Thank you for considering this educational program and we look forward to hearing from you.

Respectfully yours,



B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,



M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael L. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Mr. Ivie
Mr. O. H. Ivie, General Manager
Colorado River Municipal Water District - *wildcat*
P. O. Box 869
Big Spring, TX 79720

over
Dear Mr. Ivie:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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B. J. Wynne, III
B. J. Wynne, III
Chairman

Texas Water Commission

Sincerely,

M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Bill
Mr. Danny F. Vance, General Manager
Trinity River Authority
5300 South Collins
P. O. Box 60
Arlington, TX 76010

Dear Mr. *Danny* Vance:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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Respectfully yours,

Bill Wynne

B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Bill
Mr. Jack K. Ayer, General Manager
San Jacinto River Authority
P. O. Box 329
Conroe, TX 77305

Dear Mr. Ayer:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.


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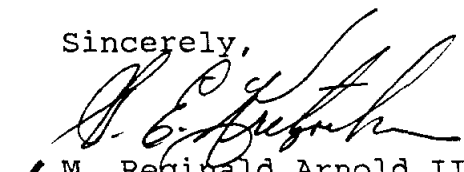
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B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,


for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Mr. Fred N. Pfeiffer, General Manager
San Antonio River Authority
100 East Guenther Street
P. O. Box 9284, Guilbeau Station
San Antonio, TX 78204

Dear Mr. Pfeiffer:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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Respectfully yours,

Handwritten signature of B. J. Wynne, III.

B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

Handwritten signature of M. Reginald Arnold II.

M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Handwritten: Sims
Mr. Ben O. Sims, Chairman of the Board
Lower Concho River Water & Soil
Conservation Authority
Route 1
Paint Rock, TX 76866 *915/322-4320*

Dear Mr. Sims:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

Handwritten signature: M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER DEVELOPMENT BOARD

James H. Aronson, III, Chairman
Stanley S. Coleman, Vice Chairman
Thomas J. Gentry, Secretary

W. Raymond Arnold, II
Director, Administration

Thomas M. Darling, Member
Charles W. Jenness, Member
Walter F. Pittman, Member

MEMORANDUM

TO: Bill Colbert, TWC

THRU: G. E. (Sonny) Kretzschar

FROM: Donna Darling

RE: Working agreement with Educational Development Specialists and the Texas Water Commission for the sale and distribution of the "Major Rivers" water education program.

DATE: February 24, 1989

Per my February 14, 1989 conversation with Fred Niedermeyer, President of Educational Development Specialists (EDS), we concluded that an appropriate working arrangement with the Texas Water Commission and the Texas Water Development Board for the sale and distribution of "Major Rivers" would include the following:

1. Bill Colbert will be the primary contact with River Authorities desiring to purchase "Major Rivers" classroom sets for fourth grade classrooms in their service area. Mr. Colbert will inform the River Authority contact that the cost of the class sets are \$45.00 each. The TWC/TWDB will subsidize the programs purchase price at a cost of \$10.00 per class set and will be given a bulk discount of \$5.00 per class set by EDS, which will be passed along to the River Authorities. This brings the price of each class set down to \$30.00 to the River Authority as an incentive to participate.
2. Mr. Colbert, using number of classrooms figures per River Authority service area which have been provided by EDS, will tell the River Authority contact how much it would cost to fund (1) their entire service area, and (2) half their service area (about 50% of the teachers would be expected to respond to a teacher brochure mailing). The River Authority can then contact Ann Crafton or Sharian Burroughs at EDS (5505 E. Carson St., Suite 250, Lakewood, CA 90713; 213/420-6814) to determine how they want to implement the program and how many class sets they want. They can then place the order for the number of kits desired and designate the school districts that will receive the kits. They will also provide EDS with imprint information at that time.

Note: Although September 1989 has been set as the official target date for distribution of the "Major Rivers" program, Mr. Niedermeyer has informed me that 300 classroom sets are already available and could be distributed this spring. If state funds are not available for matching a spring order, he would be willing to bill the state's \$10.00 portion as funds become available, providing EDS has a signed contract with TWC/TWDB by March 30, that states funds will be available no later than May 1, 1989. This would allow the River Authorities to take advantage of the \$30.00 per set cost before next fall.

3. EDS will imprint the materials with Texas Water Commission, Texas Water Development Board, and the name of the River Authority. The River Authority will be charged for imprinting and shipping. EDS will provide the River Authority with a total cost for delivery to the designated school districts. EDS or the River Authority will then mail teacher brochures to each fourth-grade teacher in the designated school district which when returned to EDS or the River Authority, will entitle them to one classroom set. (Some River Authorities may elect to implement the program in another way, eg. teacher workshops.)

4. When the order has been placed and fulfilled, EDS will bill the Texas Water Commission/Texas Water Development Board \$10.00 per kit purchased and will bill the River Authority \$30.00 plus imprinting and shipping costs per kit ordered. EDS will bill TWC/TWDB monthly for all sets ordered by River Authorities for that month.

5. In the "Major Rivers" classroom set, there is a Program Record Sheet which the teacher will return to the "Major Rivers Distribution Office" (EDS) after he/she has taught the two-week unit. A compilation of the test results and teacher reactions will be sent periodically to the sponsoring state agencies and River Authorities.

6. The student booklets and take-home leaflets in each classroom set will have to be repurchased annually. River Authorities who choose to provide classroom sets in 1989 will be contacted as to their desire to re-fund the consumable portions of the kit.

7. A request for Board approval for the transfer of \$20,000 from the Research and Planning Fund to the Texas Water Commission to be used as matching funds for the distribution of "Major Rivers" classroom sets is on the agenda for the March 16, 1989 Board meeting. Upon Board approval, the Texas Water Development Board legal staff will draft an interagency contract with the Texas Water Commission which will transfer \$20,000 from the TWDB Research and Planning Fund to a billing account that will be drawn on by Educational Development Specialists and will be administered by the Texas Water Commission.

Letters to the River Authorities along with "Major Rivers" preview kits were mailed on February 15, 1989. If you have questions or need assistance with the order process, I am available to help.

Also, the Texas Department of Health is reviewing our invitation to participate in the program and will let us know in the near future.

cc: Buck Wynne Jim Fries
 Allen Bienke J. D. Beffort
 Suzanne Schwartz Fred Niedermeyer, EDS

A PROPOSAL FOR MARKETING "MAJOR RIVERS"

Program description, benefits and projected costs for reaching 20% of the fourth-grade classrooms in Texas during FY 1989 are attached.

Participation by the three state agencies in promoting the use of "Major Rivers" may include the following:

Completed:

1. Letters were mailed by the TWC/TWDB to all River Authorities in Texas on February 15, 1989. As of March 17, 1989, the Sabine River Authority and the Brazos River Authority had requested a costs proposal from EDS.
2. Harris Co. Municipal Utility District #5 in Kingwood, Texas has also requested a proposal to fund the classrooms in the Humble Independent School District.

To Do:

1. Make follow-up phone calls to the River Authorities that have not responded to ascertain their interest. (see attached list).

Bill? Monica
--Who will do this and what is a reasonable timetable to accomplish it--

2. Each agency should provide a list of entities that they would approve as eligible for the subsidy. i.e. water associations, chemical council members. An appropriate letter on that agency's stationery should be prepared. (see sample letter to River Authorities). Promotional flyer could be attached to the formal letter. Also sheet describing benefits may be included. (see draft). (Am attempting to procure Water Industry Guide mailing labels) Note: Best if one person maintains all list so that duplication is avoided.

3. Add a "Major Rivers" display board to the TWC and TWDB exhibit booths. Interested parties can fill out reply cards that will be returned directly to EDS. Also, a list of meetings where just the "Major Rivers" exhibit would be appropriate should be made so that a representative from one of the three agencies could plan to attend.

4. A feature article picturing Major Rivers and discussing the

reasons for state participation in water education in public schools should be prepared and mailed to appropriate industry newsletters and trade publications. (see TWDB newsletter list)

5. Specific costs proposals must come from EDS. Imprinting, handling/shipping and extra materials will have to be added in. (Need to discuss subsidizing extra materials and at what %)

6. All entities using the state subsidy will need to be told that the three state agency names will appear on the imprinted materials. Entities not using the state subsidy may use just their name or may also include the three state agencies if desired.

7. All the fourth-grade classrooms in the Lower Colorado River Authority 10-county area have received classroom sets. (San Saba, Llano, Burnet, Blanco, Travis, Bastrop, Fayette, Colorado, Wharton and Matagorda). Therefore, we will need to be sure that our marketing efforts are not directed to those 10 counties. Note: Our calls to River Authorities who elect to participate this year should include the question of do they want an exclusive right to market in their service area. We are hoping that they may approach some private-sector entities to help supply funding. (We can supply them with our letter and flyer for use on their stationery)

8. Our written information can offer preview kits which are available on a 60-day loan basis and can be obtained by contacting EDS directly.

9. Including legislators? Political protocol for three state agencies? Necessary approvals, who signs letters, who makes phone calls etc.

10. Need to keep a map of the state and color in areas penetrated.

Austin, Tx. 787

Invitation to Water Forum meeting on April 27th.
Invitation to P.R. Committee meeting of TWUA-will call with date.
(53 districts-can help spread the word, no money)

Mr. Ben O. Sims, Chairman
Lower Concho River Water & Soil Conservation Authority
Route 1
Paint Rock, Tx. 76866
915/732-4320

will call

Jim Ed Miller, General Manager
Red Bluff Water Power Control District
111 West Second Street
Pecos, Tx. 79772
915/445-2037

Needs specific proposal for service area.

Mr. Ronald J. Glen, General Manager
Red River Authority of Texas
520 Hamilton Building
Wichita Falls, Tx. 76301
817/723-8697

will call Donna on Friday

Mr. Everett Grindstaff
Upper Colorado River Authority
P. O. Drawer 269
Ballinger, Tx. 76821
915/365-3515

will call back

Mr. B. W. Burns, General Manager
Upper Guadalupe River Authority
P. O. Box 1278
Kerrville, Texas 78028
512/896-5445

Donna needs to call Charlie Wiedenfeld after April 11 at 512/896-0100.

Mr. Roy Douglas, General Manager
Upper Neches River Municipal Water Authority
P. O. Drawer Y
Palestine, Texas 75801
214/584-3316 n/a

April 5, 1989

Major Rivers Marketing Contacts:

Deniece Ryan
Lavaca Navidad River Authority
P. O. Box 429
Edna, Texas 77957
512/782-5229

*not their river not
on poster 3 school district*

Needs formal proposal from Ann Crafton and order blank. Has only 3 school districts or approximately 10 classrooms to provide kit to at an approximate cost of \$500.00.

Sue Baker
Colorado Municipal Water District
Box 869
Big Spring, Texas 79721
915/267-6341

Will check with Mr. Ivie and call me back. Has \$500 in education budget to contribute to project.

Central Colorado River Authority
915/625-2838 n/a

Franklin County Water Authority
1-800-632-0668 (no letter, need contact)

John C. Williams
Canadian River Municipal Water Authority
P. O. Box 99
Sanford, Texas 79078
806/865-3325

Need specific cost proposal and order blank for supplying to schools in Hutchison, Carson, Potter, Randall, Hale, Lubbock, Lynn, Dawson, Terry and Hockley counties.

Mr. John Specht
Guadalupe-Blanco River Authority
P. O. Box 271
Seguin, Tx. 78156-0271
512/379-5822

Send proposal and order blank for service area.

Dan Allen, Executive Director
Texas Water Utilities Association
6521 Burnet Lane

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

John Ed Miller
Mr. ~~John A. Hayes~~, General Manager
Red Bluff Water Power Control District
111 West Second Street
Pecos, TX 79772 *915/45-2037*

Dear Mr. Hayes:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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Enclosed is a Major Rivers kit for your preview. Thank you for considering this educational program and we look forward to hearing from you.

Respectfully yours,

B. J. Wynne, III
B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Alford
Mr. John C. Williams, General Manager
Canadian River Municipal Water Authority - 045-265-3245
P. O. Box 99
Sanford, TX 79078

Dear Mr. Williams:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

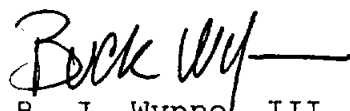
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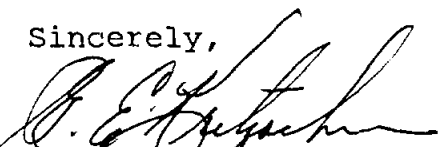
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Respectfully yours,


B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,


for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III
Paul Hopkins, General Manager
John O. Houchins, General Manager

Allen Benke, General Manager
Michael L. Field, General Manager
Brenda W. Foster, General Manager

February 15, 1989

Alvin
Mr. Carson Hoge, General Manager
Brazos River Authority
P. O. Box 7555
Waco, TX 76714-7555

Dear Mr. ^{*Carson*}Hoge:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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B. J. Wynne, III
B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II
M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Mr. Emmett Gloyna, General Manager
Lavaca-Navidad River Authority - *wlc*
P. O. Box 429
Edna, TX 77957

Dear Mr. Gloyna:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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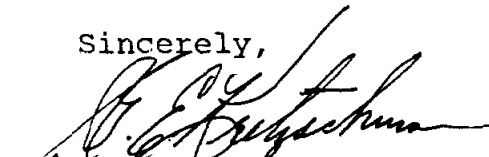
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B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,



M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Mr. Ronald J. Glen, General Manager
Red River Authority of Texas
520 Hamilton Building
Wichita Falls, TX 76301

Dear Mr. Glen:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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Respectfully yours,

Handwritten signature of B. J. Wynne, III in cursive script.

B. J. Wynne, III
Chairman
Texas Water Commission

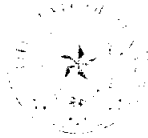
Sincerely,

Handwritten signature of M. Reginald Arnold II in cursive script.

M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Wynne
Mr. Sam Collins, General Manager
Sabine River Authority
P. O. Box 579
Orange, TX 77630

Dear Mr. Collins:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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B. J. Wynne III
B. J. Wynne III
Chairman

Texas Water Commission

Sincerely,

M. Reginald Arnold II
M. Reginald Arnold II
Executive Administrator

Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Almond
Mr. Everett Grindstaff,
Chairman of the Board
Upper Colorado River Authority
P. O. Drawer 269
Ballinger, TX 76821

365-3535
Dear Mr. Grindstaff:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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Respectfully yours,

Buck W. J.
B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Alvin
Mr. B. W. Burns, General Manager - *Abilene Medcalf*
Upper Guadalupe River Authority
P. O. Box 1278
Kerrville, TX 78028 *512*

896-0100 Roy Walden

Dear Mr. Burns:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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B. J. Wynne, III
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Texas Water Commission

Sincerely,

M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Wynne Mr. John Specht, General Manager
Guadalupe-Blanco River Authority
P. O. Box 271
Seguin, TX 78156-0271 512-379-5822

Dear Mr. Specht: *John*

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B. J. Wynne, III
B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II
M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner

Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

1/15/89
Mr. Laneal Maedgen, Operations Manager
Central Colorado River Authority
P. O. Box 964
Coleman, TX 76834 915/625-2838 -PA

Dear Mr. Maedgen:

The Texas Water Commission and the Texas Water Development Board are currently involved in the statewide dissemination of an environmental education packet known as the "Major Rivers" program. The Commission and the Board invite all river authorities in Texas to participate in this highly praised educational effort.

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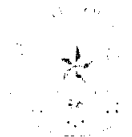
B. J. Wynne, III
B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II
for M. Reginald Arnold II
Executive Administrator
Texas Water Development Board

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director
Michael E. Field, General Counsel
Brenda W. Foster, Chief Clerk

February 15, 1989

Bill
Mr. Con Mims, Executive Director
Nueces River Authority
P. O. Box 349
Uvalde, TX 78802

Dear Mr. Mims:

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B. J. Wynne, III

B. J. Wynne, III
Chairman
Texas Water Commission

Sincerely,

M. Reginald Arnold II

M. Reginald Arnold II
for Executive Administrator
Texas Water Development Board



TEXAS WATER DEVELOPMENT BOARD

Louie Welch, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

December 29, 1988

Allen P. Beinke, Jr., Executive Director
Texas Water Commission
Stephen F. Austin Bldg.
17th and Congress
Austin, Tx. 78711

Dear Allen,

The attached memorandum outlines the education efforts in which our agencies share a common interest. Bill Colbert, Donna Darling, and Fred Niedermeyer of EDS, the consulting firm working with us on Major Rivers, met earlier this month and are currently working together to formulate a marketing approach for taking the 4th grade program statewide by next fall.

Mr. Niedermeyer will also supply some suggestions as to how the \$40,000 in state funds may be best applied to the project. He has had similar experience with the energy programs he distributes nationwide.

I thought you would want to share this information with Commissioner Wynne as he may have some ideas to include in the plan.

Sincerely,

Reg Arnold
Executive Administrator

RA/cb
attachment



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

MEMORANDUM

TO: Bill Colbert, TWC

THRU: G. E. (Sonny) Kretzschmar

FROM: Donna Darling

RE: Working agreement with Educational Development Specialists and the Texas Water Commission for the sale and distribution of the "Major Rivers" water education program.

DATE: February 24, 1989

Per my February 14, 1989 conversation with Fred Niedermeyer, President of Educational Development Specialists (EDS), we concluded that an appropriate working arrangement with the Texas Water Commission and the Texas Water Development Board for the sale and distribution of "Major Rivers" would include the following:

1. Bill Colbert will be the primary contact with River Authorities desiring to purchase "Major Rivers" classroom sets for fourth grade classrooms in their service area. Mr. Colbert will inform the River Authority contact that the cost of the class sets are \$45.00 each. The TWC/TWDB will subsidize the programs purchase price at a cost of \$10.00 per class set and will be given a bulk discount of \$5.00 per class set by EDS, which will be passed along to the River Authorities. This brings the price of each class set down to \$30.00 to the River Authority as an incentive to participate.

2. Mr. Colbert, using number of classrooms figures per River Authority service area which have been provided by EDS, will tell the River Authority contact how much it would cost to fund (1) their entire service area, and (2) half their service area (about 50% of the teachers would be expected to respond to a teacher brochure mailing). The River Authority can then contact Ann Crafton or Sharian Burroughs at EDS (5505 E. Carson St., Suite 250, Lakewood, CA 90713; 213/420-6814) to determine how they want to implement the program and how many class sets they want. They can then place the order for the number of kits desired and designate the school districts that will receive the kits. They will also provide EDS with imprint information at that time.

Note: Although September 1989 has been set as the official target date for distribution of the "Major Rivers" program, Mr. Niedermeyer has informed me that 300 classroom sets are already available and could be distributed this spring. If state funds are not available for matching a spring order, he would be willing to bill the state's \$10.00 portion as funds become available, providing EDS has a signed contract with TWC/TWDB by March 30, that states EDS funds will be available no later than May 1, 1989. This would allow the River Authorities to take advantage of the \$30.00 per set cost before next fall.

3. EDS will imprint the materials with Texas Water Commission, Texas Water Development Board, and the name of the River Authority. The River Authority will be charged for imprinting and shipping. EDS will provide the River Authority with a total cost for delivery to the designated school districts. EDS or the River Authority will then mail teacher brochures to each fourth-grade teacher in the designated school district which when returned to EDS or the River Authority, will entitle them to one classroom set. (Some River Authorities may elect to implement the program in another way, eg. teacher workshops.)

4. When the order has been placed and fulfilled, EDS will bill the Texas Water Commission/Texas Water Development Board \$10.00 per kit purchased and will bill the River Authority \$30.00 plus imprinting and shipping costs per kit ordered. EDS will bill TWC/TWDB monthly for all sets ordered by River Authorities for that month.

5. In the "Major Rivers" classroom set, there is a Program Record Sheet which the teacher will return to the "Major Rivers Distribution Office" (EDS) after he/she has taught the two-week unit. A compilation of the test results and teacher reactions will be sent periodically to the sponsoring state agencies and River Authorities.

6. The student booklets and take-home leaflets in each classroom set will have to be repurchased annually. River Authorities who choose to provide classroom sets in 1989 will be contacted as to their desire to re-fund the consumable portions of the kit.

7. A request for Board approval for the transfer of \$20,000 from the Research and Planning Fund to the Texas Water Commission to be used as matching funds for the distribution of "Major Rivers" classroom sets is on the agenda for the March 16, 1989 Board meeting. Upon Board approval, the Texas Water Development Board legal staff will draft an interagency contract with the Texas Water Commission which will transfer \$20,000 from the TWDB Research and Planning Fund to a billing account that will be drawn on by Educational Development Specialists and will be administered by the Texas Water Commission.

Letters to the River Authorities along with "Major Rivers" preview kits were mailed on February 15, 1989. If you have questions or need assistance with the order process, I am available to help.

Also, the Texas Department of Health is reviewing our invitation to participate in the program and will let us know in the near future.

cc: Buck Wynne Jim Fries
 Allen Bienke J. D. Beffort
 Suzanne Schwartz Fred Niedermeyer, EDS



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

February 27, 1989

David Parsons
Sabine River Authority
P. O. Box 487
Quitman, Texas 75783

Dear Mr. Parsons:

Thank you for your inquiry about the TWC/TWDB co-operative education program. I have enclosed "Major Rivers" preview kit which you will see is a colorful, informative fourth-grade water education program. The program meets all of the Texas Education Agency requirements for materials to be used in the classroom, and as we discussed, is already in use in the 10-county LCRA service area. (Field testing data is available upon request.)

Should the Sabine River Authority elect to do as LCRA has done and supply the "Major Rivers" classroom sets (25 of everything) to all the fourth-grade students in your service area, you would be providing this information to 10,047 fourth-grade students in 406 classrooms (see letter attached). Kits ordered through the TWC and TWDB entitle your River Authority to a \$10 per kit match which makes your cost \$30.00 per kit for a total service area cost of \$12,180.00.

Distribution is handled by mailing an order card to each fourth-grade teacher in the Sabine River Authority service area. The teacher returns the order card to the "Major Rivers" Distribution Center, and kits are mailed as orders are received. You would be billed monthly for the number of kits distributed. As we discussed, your River Authority could choose to buy a specified number of kits which would be distributed on a first-come, first-serve basis should you not elect to do the entire service area.

All materials are imprinted with the name of the sponsoring entities. As you can see, this program provides the perfect opportunity for your River Authority to do something you have probably been talking about doing for years and to get credit for it at the same time. Distribution of the program would have an extremely high public relations value.

If you have any further questions or need help with your presentation to your Executive Committee, Bill Colbert of the TWC or I would be glad to help. Helping the next generation become water wise will benefit us all.

Sincerely,

Donna D. Darling
Director
Office of Public Information & Education

CC: Bill Colbert
Fred Niedermeyer



Texas Department of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner

Robert A. MacLean, M.D.
Deputy Commissioner
Professional Services

Hermas L. Miller
Deputy Commissioner
Management and Administration

1100 West 49th Street
Austin, Texas 78756-3199
(512) 458-7111

February 27, 1989

Members of the Board

Frank Bryant, Jr., M.D., F.A.A.F.P., Chairman
Raleigh R. White IV, M.D., Vice-Chairman
Sr. Marian Strohmeyer, R.N., M.P.H., Secretary
Ron J. Anderson, M.D.
R. Jack Ayres, Jr.
Don L. Brewer
Barry D. Cunningham, D.D.S.
Larry D. Krupala
Dennis K. McIntosh, D.V.M.
Joe N. Pyle, P.E.
Arthur L. Raines, M.D.
Robert O. Robinson, M.D.
Jose Roman, Jr., M.D.
Isadore Roosth
Barbara T. Slover, R.Ph.
Oliver R. Smith, Jr., D.C.
Max M. Stettner, D.O.
Edward H. Zunker, O.D.

Mr. B. J. Wynne, III, Chairman
Texas Water Commission
P.O. Box 13087 Capitol Station
1700 North Congress Avenue
Austin, Texas 78711-3087

Mr. M. Reginald Arnold, II, Executive Administrator
Texas Water Development Board
P.O. Box 13087 Capitol Station
1700 North Congress Avenue
Austin, Texas 78711-3087

Dear Colleagues:


I have received your letter of January 17, 1989, requesting our participation in the Major Rivers educational program.

The Department is in full support of this effort and will be pleased to join the Texas Water Commission and Texas Water Development Board in financial assistance of \$20,000 for fiscal year 1989.

An educational effort concerning an item such as Major Rivers could provide a tremendous positive impact and greater awareness of one of the State's important drinking water resources. The Department continues to take the stand that education is the major contributing factor to the success of improved public health for the future.

A priority budget revision is being processed from the Division of Water Hygiene and as soon as the internal process is completed the financial transfer can be completed.

Sincerely,


Robert Bernstein, M.D., F.A.C.P.
Commissioner of Health

cc: Mr. Bill Colbert, Director
Office of Public Information
Texas Water Commission



TEXAS WATER DEVELOPMENT BOARD

Walter W. Cardwell, III, Chairman
Stuart S. Coleman, Vice Chairman
Glen E. Roney, Member

M. Reginald Arnold II
Executive Administrator

Thomas M. Dunning, Member
Charles W. Jenness, Member
Wesley E. Pittman, Member

TO: MEMBERS OF THE BOARD

FROM: DONNA DARLING, DIRECTOR
OFFICE OF PUBLIC INFORMATION & EDUCATION

SUBJECT: "MAJOR RIVERS" WATER EDUCATION PROGRAM

DATE: MARCH 16, 1989

For the past four years, the Texas Water Development Board has been working with the Texas Society of Professional Engineers in their effort to provide water information to children in the public schools until better information about water in Texas can be included in the state adopted textbooks. To that end, TWDB and TSPE have been successful in promoting the "Water and Man," K-12 water education program. However, because of the economic conditions present in Texas, TSPE has not been able to devote as much time or resources as they did previously, so the TWDB, TWC and the Texas Department of Health (TDH) have joined forces to continue the good work started by TSPE.

The TWC/TWDB oversee the Textbook Committee that is monitoring the textbook adoption process, even testifying before the TEA when appropriate. Additionally, the TWC/TWDB/TDH have set up a matching grant program to encourage the distribution of LCRA's "Major Rivers" fourth-grade water education program (see description).

The "Major Rivers" education program was funded and field tested by the Lower Colorado River Authority. Over the past four years, LCRA worked with Educational Development Specialists (EDS) to develop a "Texas generic" program at a cost to LCRA of approximately \$60,000. The program is endorsed by the Texas Education Agency and meets all the requirements for teaching the essential elements. Field tests results are extremely positive (copies available upon request). And the program is in use in the LCRA 10-county service area. LCRA has donated the development costs and licensed EDS to distribute the program statewide.

The "Major Rivers" program was selected by the TWDB after surveying water entities statewide to find the best elementary level water education program available at a reasonable cost with a minimum of teacher preparation required. We have the program, now all we need are the sponsors (see Government/Industry plan).

State agency matching funds will be used as private sector sponsors contribute funds to purchase classroom sets for their school districts. All River Authorities have received a letter (see letter) soliciting their support in their service areas. The Sabine River Authority has expressed an interest in knowing more about the program. When River Authority commitments have been determined, associations and private sector companies will be invited to participate.

Our target date for funding and distribution to 20% of the fourth-grade classrooms in Texas is September 1989. The approximate cost to accomplish this 20% goal is \$90-100,000. The state agency matching grants will provide \$10 for each \$30 contributed to the purchase of one classroom set. (see working agreement). Distribution to the state's 10,400 fourth grade classrooms should be complete within three years.

It is the overall objective of all those involved in this program to make a positive impact on the future of our state by educating the next generation as to the importance of protecting and preserving this most valuable resource.

TEXAS WATER DEVELOPMENT BOARD
Contract Initiation Form
PAYABLE

I. Contract Initiation: (Instructions on back)

A. Type of Payable Contract:

- 1. New Contract
 Amendment of existing contract no. _____
- 2. Interagency
 Consultant
 Other (Explain) Research and Planning Fund

B. Contract Dates: From April 1, 1989 To August 31, 1989

C. Party(s) Contracting with TWDB.

Agency Texas Water Commission

D. (1) Summary statement of work to be performed TWC will be invoice co-ordinator with Educational Development Specialists, the licensed agent for the sale & distribution of a fourth grade water education packet.
(Attach detailed specifications and contract)

(2) Purpose of amendment _____
(Attach detailed specifications and contract)

E. Contract Funding

	Total	FY <u>89</u>	FY _____	FY _____
<input type="checkbox"/> General Revenue	_____	_____	_____	_____
<input type="checkbox"/> Federal Funds	_____	_____	_____	_____
Fund No. _____				
Grant No. _____				
<input checked="" type="checkbox"/> Other Funds <u>483</u>	<u>\$20,000</u>	<u>\$20,000</u>	_____	_____
Total Amount of Contract:	<u>\$20,000</u>	<u>\$20,000</u>	_____	_____

Method of Payment interagency voucher reimbursement

Current FY Funds are included in the Operating Budget in the Professional Fees category for Organization _____. If not, attach Budget Amendment.

F. Work Item No.(s) 1204

G. Date of Board/Executive Administrator Approval March 16, 1989

H. Division Contract Manager Donna Darling

I. Initiating Division Director _____ **Date** _____

II. Approval of Contract: (Certification)

- A. General Counsel** [Signature] **Date** 3-27-89
- B. Director of Accounting** [Signature] **Date** 3/28/89
- C. Development Fund Manager** [Signature] **Date** 4-7-89
- D. Director of Administrative Services** [Signature] **Date** 4-17
- E. Executive Administrator** [Signature] **Date** 5-4-89

Publications Receiving Major Rivers Promo Materials

Coastal Bend Council of Governments
Editor, State of the Region
P. O. Box 9909
Corpus Christi, Texas 78469

Colorado River Municipal Water District
Editor, CRMWD Windmill
P. O. Box 869
Big Spring, Tx. 79721-0869

Deep East Texas Council of Governments
Editor, DETCOG Newsletter
274 East Lamar
Jasper, Texas 75951

East Texas Council of Governments
Editor, ETCOG Regional Report
3800 Stone Road
Kilgore, Texas 75662

Edwards Underground Water District
Editor, The Water Level
P. O. Box 15830
San Antonio, Texas 78212

Guadalupe-Blanco River Authority
Editor, GBRA Water Resources Report
P. O. Box 271
Seguin, Texas 78156-0271

High Plains UWCD #1
Editor, Conservation Currents, Cross Section
2930 Avenue Q
Lubbock, Texas 79405

Houston Galveston Area Council
Editor, HGAC Spectrum
P. O. Box 22777
Houston, Texas 77227

North Central Texas Council of Governments
Editor, Your Region in Action
P. O. Drawer COG
Arlington, Texas 76005-5888

North Plains Water Conservation District
Editor, North Plains Water News
P. O. Box 795
Dumas, Texas 79029

Trinity Improvement Association
Editor, TIA Update
P. O. Box 165085
Irving, Texas 75016

Texas Water Report
Bill Kidd
P. O. Box 12368
Austin, Texas 78711

The Texas Gazette
Texas Department of Agriculture
P. O. Box 12847
Austin, Texas 78711

Guadalupe-Blanco River Authority
Editor, Water Resources Report
P. O. Box 271
Seguin, Texas 78156-0271

TWPCA
Editor, Pipeline
P. O. Box 1179
Wimberly, Texas 78676

Little Cypress Utility District
Editor
P. O. Box 630
Hallsville, Texas 75650-0639

Harris-Galveston Coastal Subsidence District
Editor-Subsidence Update
1660 West Bay Area Blvd.
Friendswood, Texas 77546

Texana Clarion
Lavaca-Navidad River Authority
P. O. Box 429
Edna, Texas 77957

Trinity River Authority of Texas
Editor, INTRA
5300 S. Collins
P. O. Box 60
Arlington, Texas 76010

Texas Rural Water Association
Editor, TRWA Magazine
6300 La Calma, Suite 120
Austin, Tx. 78752

North Texas Municipal Water District
Editor, NTMWD News
P. O. Drawer C
Wylie, Texas 75098

Panhandle Regional Planning Commission
Editor, Panhandle Panorama
P. O. Box 9257
Amarillo, Texas 79105

Sabine River Authority
Editor, SRA Activities
P.O. Box 579
Orange, Texas 77631-0579

Texas Agricultural Extension Service
Editor, Water Conservation Newsletter
Texas A&M University
College Station, Texas 77843

Texas Water Resources Institute
Editor, Texas Wawater Resources
Texas A&M University
College Station, Tx. 77843

Water Resources Center
Editor, WRC Newsletter
Texas Tech University
Lubbock, Texas 79409

Association of Water Board Directors
Editor, AWDB Newsletter
1617 Fannin, Suite 900
Houston, Texas 77002

Texas Municipal League
Editor, Town & City
211 East 7th, Suite 1020
Austin, Texas 78701

Texas Water Alliance
Editor, The Texas Water Alliance
One Congress Plaza
111 Congress, Suite 1820
Austin, Texas 78701

Texas Water Conservation Association
Editor, Water News
814 San Jacinto, Suite 206
Austin, Texas 78701

-
1. **Texas water information will reach classrooms.** The *Major Rivers* program teaches Texas-specific water information and objectives that are not contained in currently-adopted state textbooks.
 2. **Teachers will be receptive.** As many teachers will want and use the program as there are kits available. Associated Milk Producers Inc. (AMPI) reaches 70 to 80 percent of the 2nd and 4th grades in Texas with similar EDS-developed nutrition education kits. LCRA reaches nearly all of their school districts with the EDS-developed Energy Source Program.
 3. **Teachers will use *Major Rivers* for many years.** The above-mentioned AMPI nutrition kits have been used in Texas since 1974. Seventy percent of the *Major Rivers* teachers will request a resupply kit every year so as to reteach the program.
 4. **Students really learn about water and water conservation.** During field testing of *Major Rivers*, classes averaged near guessing levels on the program pretest and 87 percent mastery on the posttest. All Texas 4th grades will experience success with the *Major Rivers Texas Water Education Program*.
 5. **Students will develop positive attitudes.** During the *Major Rivers* field test, only 42 percent of the students said they were careful about conserving water prior to the program. After the program, 90 percent said they would now do more to save water.
 6. **Results are verifiable and measurable.** Teachers return program record sheets that contain test scores, reactions, and suggestions. Data bases can be built to substantiate teacher use and student learning.
 7. **Parents will become involved.** The home activity booklet contains a home water audit to do with the child. A recent study with the Energy Source Program found that 85 percent of the parents were aware of the program, and 70 percent of these parents said the program had influenced them to take actual energy saving measures at home.
 8. **Educational community will support program.** Dr. Barbara ten Brink, Science Specialist for the Texas Education Agency, participated on the *Major Rivers* technical advisory committee during development. Dr. ten Brink has helped the Austin ISD prepare a *Major Rivers* presentation that was given to Texas science teachers in October.
 9. **Sponsors will be recognized for leadership role.** Because *Major Rivers* is a true instructional program that teachers will really want and use, it will have much more impact and visibility than traditional informational materials. Sponsors will be listed on program materials, including the teacher guide and the home activity booklet. The sponsor's leadership in distributing the program will be recognized in many sectors.
 10. **Program will open school doors to water education.** A typical teacher reaction to the Energy Source Program is, "I enjoyed teaching this unit, and I am interested in other programs you might have (in Florida)." As teachers experience success with *Major Rivers*, they will be receptive to other water education programs and speakers offered in their communities by local water organizations.
-

Figure 2. Benefits to sponsors participating in government and industry partnership to distribute *Major Rivers Texas Water Education Program*.

MAJOR RIVERS TEXAS WATER EDUCATION PROGRAM

Program Record Sheet

Teacher Zimmern Date 5-30-89

School Anderson Mill ISD Round Rock Grade Level 4

School Mailing Address 10610 Salt Mill Hollow Austin 78750

(Materials cannot be sent to a post office box.)

After you finish teaching the program, please fill in the information requested on this sheet. Keep the original for your records. Fold and send in the bottom copy. Thank you.

Test Results

Pupil



Pretest Score (20 possible)	Posttest Score (20 possible)
70	100
70	100
85	100
50	90
60	100
45	95
25	100
55	100
70	85
25	100
55	75
60	100
60	75
50	100
45	100
70	100
absent	100
50	100
50	80
35	absent
45	55

**Note:
Students
Increased
Awareness!**

Teacher Reactions

1. What was the attitude of most of your pupils toward the program?

very positive neutral
 positive negative

Comments

2. Please list any comments or suggestions you have about any aspect of the program.

Video is good follow-up.

3. Do you want to teach the program again next year and have consumable pupil materials replaced?

yes no

Comments

We would like to use in
 August to introduce Texas
 Unit. Can materials be
 delivered that early?



MAINSTREAM

A Conservation Newsletter

Cardwell Named Chairman

Mr. Walter W. Cardwell, III, was appointed Chairman of the Texas Water Development Board by Governor Bill Clements in January 1989. Mr. Cardwell is a partner in the law firm of Cardwell & Hart of Austin. He received his law degree from the University of Texas School of Law. He served as Chairman of the Governor's Committee on Water Resources Management in 1988.



Water Conservation Philosophies Differ- But The Objectives Are The Same

To many public officials, the idea of water conservation brings to mind water restrictions required by short-term emergencies. However, the Texas Water Development Board is working to inform public leaders that, on the contrary, water conservation is simply a long-term program to make more water available for the economic benefit of the community, both now and in the future, by increasing the efficiency of water use. An effective conservation program will actually mean that the need to ration water is eliminated except in the most serious times.

The extent to which a community can establish water conservation programs depends on a number of factors, and some communities are able to conduct more extensive programs than others. However, based on the experiences of many cities, utilities, and water districts in Texas, it is becoming increasingly apparent that a good water conservation program does not have to be an all or nothing proposition. The range of possible water conservation activities available to a city or utility provides maximum flexibility in designing a program that best meets local needs and is implemented within the constraints of available resources.

As an example, the Galveston County Water Control and Improvement District recently instituted a water conservation education and information program and is providing water conservation tips in the District's newsletter and mailing water conservation retrofit kits to each customer. Although the District has not experienced water shortages,

Mark Your Calendar

Plans for the 1989 Texas Xeriscape Conference are now underway. The 1989 Conference, which is the fourth annual statewide conference, will be held in the Dallas/Fort Worth area on October 5-6, 1989. The Arlington Hilton has been selected as the conference location, and area tours are being organized. The next *Mainstream* issue will provide additional conference information.

The Texas Department of Health (TDH), Texas Water Commission (TWC), and the Texas Water Development Board in cooperation with the Texas Section of the American Water Works Association will conduct a water reuse seminar on July 26-27, 1989, in Austin, Texas. The new TDH and TWC rules on reuse of treated wastewater, as well as the technologies and examples of reuse, will be discussed. If you are interested, please write to:

Conservation
Texas Water Development Board
P. O. Box 13231, Capitol Station
Austin, Texas 78711-3231

Farmers Home Administration Requires Water Conservation Plans

Beginning in October 1988, all water supply corporations and other utilities borrowing money from the Farmers Home Administration (FmHA) in Texas were required to develop water conservation and drought contingency (rationing) plans to ensure that (a) members and customers are using water efficiently during normal times and (b) adequate preparation exists for water shortages during drought periods. These plans must be approved by the FmHA and made part of the Corporation's tariff or utility's regulations prior to loan closing.

The FmHA has asked the Texas Water Development Board's water conservation staff to provide technical assistance to the FmHA loan applicants and is using the Board's water conservation guidelines as its guidelines. The Board's water conservation staff welcomes the opportunity to assist FmHA loan applicants develop water conservation and drought contingency plans and especially appreciates FmHA's participation in the statewide water conservation effort, since approximately 10 percent of Texas' citizens receive water service through systems financed by FmHA.

See "Water Conservation", p. 2

"Water Conservation" cont. from p. 1

District officials wanted residents to be more aware of District operations and to encourage the involvement of customers in the District's decision making. Thus, with only limited resources committed to the program, the District has raised public awareness not only about water conservation but to the general activities of the District as well. Consequently, the District was able to enhance its public image and encourage people to think about conserving water. What started as a simple effort to encourage water conservation turned into one of the best public relations tools the District has ever undertaken.

An example of a more extensive water conservation program was implemented by the City of Lorena, Texas. Beginning in 1985, the City was faced with increasing population growth and water demands that placed a burden on its well water supply. An immediate action undertaken by the City to reduce water demand was to implement a conservation-oriented water rate structure, which helped to initially reduce water use by up to 30 percent. The reduction in use allowed the City to effectively plan for increasing its water supplies through drilling a new well and studying the possibility of obtaining surface water supplies in the future. To further aid in reducing water use, both to allow for construction of the new well and for extending the life of existing water supplies, the City implemented additional water conservation activities in 1988. The additional activities implemented as part of the City's comprehensive water conservation program included: (1) providing water conservation brochures and pamphlets directly to the public and publishing articles in the local newspaper on a regular basis, (2) amending the City's plumbing code to incorporate water conserving plumbing standards, (3) establishing a regular schedule for meter testing and repair, and (4) maintaining an accurate accounting of water produced versus water sold to aid in determining leaks in the system. In addition, the City is currently studying the possibility of reusing treated wastewater from the City's wastewater treatment plant.

On a larger scale, the City of El Paso has, out of necessity due to the lack of available water resources in the area, had an extensive

water conservation program in effect for many years. The City has implemented a wide range of water conservation programs designed to affect both (1) the demand for water from the customer side and (2) the supply of water from the utility side. The DEMAND MANAGEMENT activities conducted by the City include (1) comprehensive education and information activities involving the distribution of written material and presentations in the media, (2) plumbing code regulations requiring the use of water conserving fixtures in construction, (3) an ordinance prohibiting the waste of water, such as letting excess water flow into the street, (4) water efficient landscaping guidelines for developers, a desert landscaping manual, and contests to encourage water conservation landscaping techniques, and (5) conservation-oriented water rate structures that encourage efficient use. The SUPPLY MANAGEMENT measures implemented by the City include: (1) a comprehensive water use audit program to identify unaccounted-for water, (2) a meter testing, repair, and replacement program, (3) an aggressive water use accounting and leak detection survey and repair program, (4) lining newly constructed reservoirs with a new type of concrete and joint mechanism designed to reduce seepage, and (5) an extensive program to recycle and reuse treated effluent from the City's wastewater treatment system. The City's nationally recognized recycling and reuse programs include golf course irrigation with treated effluent, in-plant operational uses of treated effluent, use of highly treated effluent in an electrical generating station, and recharge of the City's aquifer with effluent treated to potable quality. The comprehensive approach taken by the City has not only been effective, but it has enabled the City to continue its steady growth even though its water resources have been and will continue to be extremely limited.

When evaluating the types of water conservation programs to establish, SUPPLY MANAGEMENT should be considered first because it is designed to improve efficiency and reduce waste in the production, treatment, and delivery systems. Since it can reduce water waste and increase revenue without depending on water users, SUPPLY MANAGEMENT is generally easy to implement and very cost effective. SUPPLY MANAGEMENT should be given a high degree of visibility

so that water customers see that the utility is doing all it can to solve water problems before asking or requiring water users to participate in the conservation effort. DEMAND MANAGEMENT requires that customers reduce water use in their homes and businesses, but it is very versatile and can be used to meet any water conservation goal. In most cases, SUPPLY MANAGEMENT and DEMAND MANAGEMENT should be used together so that all affected parties are involved in the water conservation effort.

As evidenced by the experiences of the three example utilities, the process of establishing a water conservation program does not need to be an all or nothing approach. The variety of measures available to a city or utility gives public officials the flexibility to conduct a program that not only addresses particular local needs, but that is feasible and will continue to be effective in the future.

Texas Weather Data

Need information on recent or historic weather data in Texas? Need information about a specific site on a particular date, or is there a need for large volumes of data from several sites? The source of data for these questions may be found in one of several locations.

Weekly Weather and Crop Bulletin is published jointly by NOAA/USDA Joint Agricultural Weather Facility, Room 5844 USDA South Building, Washington, D.C. 20250 and costs \$35.00 for an annual subscription. The Bulletin contains current weather data for each state in the U.S. and summaries of weather data for many other countries. For Texas, there is a weekly weather data summary for 18 major cities and an agricultural condition summary. During the U.S. growing season, there are monthly reports on the Palmer Drought Index and the Moisture Stress Index (see page 5, Fall 1988 issue of *Mainstream*).

Requests for large amounts of historic weather data may be filled by Texas Natural Resource Information System (TNRIS) Precipitation, temperature, evaporation, wind movement, and other data may be available depending on the status of the weather data source (station) for the area

of interest. Data from TNRIS is made available from National Weather Service files through the Texas Water Commission. TNRIS offers a variety of free and minimal cost data services depending on the amount of data requested and the type of requestor (individual, business, state agency, local government, etc.). For more information, contact TNRIS by telephone at (512) 463-8337.

The State Climatologist Office is located at Texas A&M University. Dr. John Griffiths and his staff also offer a variety of services. A minor request for a specific date and location may be handled over the telephone. Large volumes of data are subject to charges for processing, while smaller requests may be filled free-of-charge. Two special publications are available at nominal costs, *The Climates of Texas Counties* (\$20) and *Texas Weather-A Review of 1987* (\$7.50). Please direct inquiries to:

State Climatologist Office
 Department of Meteorology
 Texas A&M University
 College Station, Texas 77843-3146
 Telephone: (409) 845-5044

Landscaping For Water-Efficiency

At a time when personal financial resources, as well as the state's water resources, are getting scarce and more precious, efficient use of water in the landscape is an effective money-saving and water-saving strategy for Texans.

In the summer season, 40 to 60 percent of the water supplied to urban areas is used for lawn and garden watering. Water-efficient landscape design and practices can reduce landscape water use by half or more by simply using information already available to landscape professionals and easily accessible to individuals. A list of several sources of information is provided at the end of this article.

It can be a bit overwhelming to the average homeowner to consider a full-scale, complete conversion of a traditional, water-intensive landscape to a conserving, water-efficient landscape but the important point is that *it does not have to be done all at*

once. Like a savings account, the important thing is to get started. The homeowner can spread the time, labor, and materials investment over a several year period with minimal disruption of existing landscaping. For example, a three-year schedule is presented below.

Year 1: Begin by developing an overall plan and by watering efficiently with your existing lawn watering equipment so that obvious waste is eliminated; add deciduous trees and groundcover, which will reduce lawn area by 10 to 15 percent; and mulch all flower and shrub beds.

Year 2: Add more shade trees, groundcover, and shrubs, to reduce lawn area by an additional 10 to 15 percent; install drip irrigation in flower and shrub beds; and continue proper lawn maintenance.

Year 3: Add more groundcover and shrubs; install a deck or patio to reduce lawn area by another 10 to 15 percent; and keep up the good work.

Literally hundreds of native or adapted drought resistant, low water-using trees and plants are readily available, and they make beautiful, practical landscape staples and accent plantings. Which plants to choose depends on specific soil types and rainfall in your area. A few examples of the types of trees, shrubs, and ground covers are listed below.

TREES	SHRUBS
Afghan Pine	Cenizo
Chinese Pistache	Crape Myrtle
Live Oak	Mt. Laurel
Texas Red Oak	Youpon Holly
GROUNDCOVERS	PERENNIALS
Mondo Grass	Autumn Sage
Trailing Rosemary	Lantana
Verbena	Blue Sage
Wildflowers	Mex. Oregano
GRASSES	
	Bermuda
	Buffalo
	YellowStar

Water-efficient landscaping, commonly called Xeriscaping, involves seven landscaping principles:

- ★ Good design
- ★ Through soil preparation
- ★ Limited irrigated lawn and shrub areas
- ★ Adapted, lower water-demand plants
- ★ Effective and efficient watering methods
- ★ Mulched flower and shrub beds
- ★ Proper landscape maintenance

Water-conserving landscapes can be green, cool, inviting, and full of beautiful plants, while simultaneously requiring less intensive care and much less water than most conventional landscapes. The Texas Water Development Board has a wide selection of literature and several films and videotapes concerning water conservation at home. These include:

- How to Save Water Outside the Home
- How to Xeriscape
- Lawn Water Guide (Plastic Card)
- Drip Irrigation
- A Directory of Water Saving Plants & Trees for Texas
- A Homeowner's Guide to Water Use and Water Conservation

If you are interested in receiving a free copy of any of the publications, please write:

Conservation
 Texas Water Development Board
 P. O. Box 13231, Capitol Station
 Austin, Texas 78711-3231

Xeriscape Membership

The Texas Water Development Board has been promoting landscape water conservation through the concept of Xeriscape for several years. The Xeriscape movement began in Denver, Colorado, in the early 1980s to promote water conservation through seven "down to earth" principles. Landscape water conservation can be very effective in reducing peak summer demand. Since

See "Xeriscape", p. 4

**"Xeriscape" cont.
from p. 3**

its inception in Denver, many cities, organizations, and states, including many utilities and individuals in Texas, have joined the Xeriscape effort. In response to growing popularity, a National Xeriscape Council was formed in 1986. Since then, membership has increased to over 555. Members range from individuals and students to cities, utilities, academic institutions, and professional organizations. Annual membership, which includes a monthly newsletter, costs from \$25.00 for individuals to \$100.00 for municipal, regional, or state governments and agencies. If landscape water conservation is of interest to you, you can become a member of a unique national movement by calling the National Xeriscape Council, Inc., at (512) 454-8626 or write them at 940 East Fifty-First Street, Austin, Texas 78751-2241.

Computerized Water Education

Like nearly everything else in the world today, computers are being used to help educate school children of all ages about water. The Virginia Water Resources Research Center has a inexpensive number of IBM-PC compatible water education software programs available for public use. The programs include Water Conservation (WCON or WCONNO), Drowning Man (DROWN), Hot Water Cost (HWATER), How Much Water Do You Weigh (WEIGHT), and Water Trivia (WTRIV). For information on obtaining programs and a diskette, contact T.W. Johnson, Virginia Water Resources Research Center, 617 No. Main St., Blacksburg, VA 24060-3397 or telephone (703) 961-5624.

Water Resources Education Update

For the last four years, the Texas Society of Professional Engineers (TSPE) has been working under contract with the Board to conduct a water resources education program in the Texas Public School

System. The TSPE, in turn, has worked with the Texas Education Agency and their 20 Regional Education Service Centers to instruct classroom teachers in the use of materials produced by Water & Man, Inc. As a result of numerous in-service workshops, more than a thousand teachers have received training in the use of these materials which have been correlated with the Texas Essential Elements for use in Science, Social Studies, History, Geography, Math, and other disciplines.

Two Texas Education Agency proclamations have required that water resources education be incorporated into the textbooks used in Texas, and the TSPE is continuing to work closely with major textbook publishers to ensure that complete and accurate information is used in textbooks. In addition, the TSPE is working with the Education Service Centers to obtain TEA approval for Advanced Academic Training credit for teachers attending the Water & Man workshops in an effort to promote wider participation of classroom teachers.

The current contract between the Board and TSPE for teacher training and work with textbook publishers expires on August 31, 1989, and a final evaluation report on the program is due in the early fall. Those interested in participating in this program should contact the Texas Society of Professional Engineers at P. O. Box 2145, Austin, Texas 78768 or telephone (512) 472-9286.

Major Rivers

The Lower Colorado River Authority (LCRA), in cooperation with members of local water councils and educators, recently announced the creation of a water education program and the birth of water-wise comic book heroes - Major Rivers and his trusty horse Aquifer.

"Major Rivers" is a fourth-grade water education program that is teacher friendly and affordable.

Major Rivers and his horse Aquifer made their Austin debut in January, initiating the first water education program for Texas elementary school students.



Produced by the Lower Colorado River Authority in cooperation with the Texas Education Agency and Educational Development Specialists, "Major Rivers" helps students learn about the importance of water, water quality, and conservation measures. The program supplements the limited amount of "Texas water information" currently found in state-adopted textbooks.

Specifically, "Major Rivers" focuses on five learning objectives:

- the water cycle,
- water supply,
- water distribution,
- water use,
- and water conservation.

Currently, the Texas Water Commission, the Texas Water Development Board, and the Texas Department of Health are providing partial funding to help produce and distribute the classroom sets to political subdivisions interested in purchasing "Major Rivers" for the fourth-grade classrooms in their service areas. The cost to the political subdivision will be \$30.00 per classroom set, of which state agency contributions will cover one-third of the cost. Ann Crafton of Educational Development Specialists at (213) 420-6814 in Lakewood, California, can provide a cost proposal based on the number of fourth-grade classrooms in an area.

Some river authorities are planning to fund a portion of the cost for schools in their service areas (the Lower Colorado River Authority has already provided the program to all of the fourth-grade classrooms in its service area). Before placing an order, political subdivisions should check on the availability of support for this service in their area.

Texas Irrigation Water Use Continued Decline in 1987

Texas farmers used 6.64 million acre-feet of water to irrigate 6.03 million acres of land in 1987, according to estimates recently released by the Texas Water Development Board.

The 1987 estimates show that on-farm irrigation water use has dropped since the most recent previous estimates were made. In 1985, Texas farmers used 8.26 million acre-feet of water to irrigate 6.76 million acres of land. These totals indicate just how dramatically irrigation water use has declined since 1974, which was the peak irrigation water-use year. Then, Texas farmers used 13.08 million acre-feet of water on 8.62 million acres of land. The on-farm water use values estimate the water pumped from wells or water actually applied to the fields if supplied from surface water sources. The volumes of surface water diverted from streams or reservoirs are larger than the on-farm use figures because of delivery losses. In 1987, groundwater supplied 69 percent of the on-farm irrigation water use, compared with 74 percent in 1985 and 80 percent in 1974.

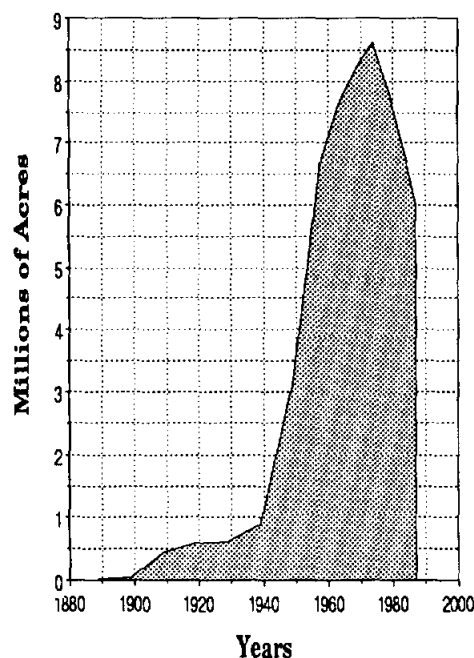
The long-term decline in irrigated acreage is the result of falling crop prices, rising energy and equipment costs for irrigation, and in some cases, a shortage of available water supplies according to agricultural experts. They attribute reductions and variations in water use per acre to new water conservation practices and, in some years, to differences in rainfall totals on cropland.

The Texas Water Development Board's irrigation water-use estimates were developed from data on irrigated acreage from the Texas Agricultural Statistics Services and from crop water use data supplied by the USDA-Soil Conservation Service. The Texas Agricultural Statistics Service conducts annual surveys by mail to develop estimates of crop acreage, production, and other statistical data. The Board's staff uses the Service's data to develop the irrigated crop acreage and total irrigated acreage data for each of the State's 254 counties.

USDA-Soil Conservation Service also cooperates with the Board and with the Texas State Soil and Water Conservation Board to conduct detailed 5-year interval irrigation surveys. For the annual estimates of irrigation water use, the SCS staff estimates the irrigation water use by individual crop type in each of the major irrigation counties, and the Board's staff develops the water use estimates for those counties not included in the SCS data. The Board has also developed estimates of irrigated acreage and on-farm irrigation water use from groundwater and surface water sources for each Texas county.

For more information, write to the Agricultural Conservation Unit, Texas Water Development Board, P. O. Box 13231, Capitol Station, Austin, Texas 78711-3231.

Texas Irrigation Development, 1889 - 1987



A Special Request

Several Mainstream readers have shared some of their innovative and valuable water conservation literature, promotional materials, and ideas with the Board's water conservation staff. Many of you certainly have developed some of your own interesting and useful activities or ideas or have written newspaper or newsletter articles. Others have developed literature that could be used as examples to help other utilities promote more effective public education and information programs. The Texas Water Development Board would like to compile your good

ideas and works so they could be shared with others. Therefore, please send examples of your utility's literature, news articles, letters, or explanations of your activities or ideas to:

Conservation
Texas Water Development Board
P. O. Box 13231, Capitol Station
Austin, Texas 78711-3231

and let the rest of Texas know what great things you are doing. *Conserve Water for the Future...Give Texas a Choice.*

Water Conservation Literature and Material Availability and Price Update

Because of reduced printing budgets and the Legislature's requirement to recover costs for printed literature whenever practical, the Board has revised the number of free copies of conservation literature and the price for literature in excess of the free amount. The number of free copies of each title now ranges from 50 to 500 for the brochures normally distributed to homeowners. In addition, all literature produced and printed by the Board is available for sale in quantities above the free amount. The name, address, and phone number of your utility can also be printed on the brochures for an additional \$21.50 per title.

The new list, which provides title names, number of free copies, unit price for purchase in excess of free copies, and other miscellaneous publications and audio visual materials available for loan is available by writing or calling the TWDB's Municipal Conservation Unit.

Water Education Materials List Available

A list of water education materials offered by local governments, state governments,

See "Water Ed. List", p. 6

**"Water Ed. List" cont.
from p. 5**

water districts, associations, and other groups is available from the Texas Water Development Board.

The list was compiled from answers to a survey mailed to 135 entities promoting the distribution of water education materials suitable for use in Texas elementary or secondary schools.

The materials include school curricula approved by the Texas Education Agency, as well as speaker bureaus, workshops, seminars, field trip opportunities, dramas, pamphlets, comic books, and other items. Environmental education materials and resources are also described.

The listings are in alphabetical order, by type of water organization or institution supplying materials or programs.

To get a copy of the list, write Texas Water Development Board, Office of Public Information, P. O. Box 13231, Capitol Station, Austin, Texas 78711-3231, or telephone (512) 463-7869.

Water Conservation Legislation

Water conservation has become a topic of legislation across the United States. At the national level, two bills, introduced very late in the 100th Congress would have drastically changed the water

industry if they had passed. Both bills were introduced by Senator Wyche Fowler, Jr. of Georgia and Congressman Chester G. Atkins of Massachusetts. The first bill, entitled the "National Water Conservation Act of 1988," would have required federal agencies to: (1) examine policies to ensure that water conservation alternatives are considered in all federal studies and funding of water supply and wastewater treatment projects and in the management of economically significant recreational reservoirs, (2) initiate and support federal research into agricultural technologies that will lessen the impact of extended dry weather and depleted aquifers on the rural economy, (3) establish a national clearinghouse through which information on water conservation and water conservation practices could be obtained, and (4) collect data on aquifer depletion and the major practices contributing to depletion.

The second bill, entitled the "National Plumbing Fixtures Efficiency Act of 1988," would have required all faucets to be 2.5 gpm flow or less, all urinals to use no more than one gallon per flush, and all toilets to use no more than 1.6 gallons per flush.

If passed, this legislation would not have allowed any fixtures that failed to meet these standards to be manufactured, imported, or sold in the United States after January 1, 1991. The bill would have also provided for maximum water use standards to be set for drinking fountains, lawn sprinklers, clothes washers, dishwashers, water-cooled air conditioning, and decorative fountains.

Both bills were introduced in October 1988 to initiate discussion. Neither bill made it out of committee because of late introduction, but the National Plumbing Fixtures Bill was re-introduced into the 101st Congress and is now under consideration. The only substantial change is the extension of the implementation date to January 1, 1992.

Many local governments have also developed their own water conservation legislation. Some of the latest local efforts focus on low flush toilets. Before the early 1980s, most toilets required five to seven gallons of water per flush. Since the early 1980s, most toilets have been modified to use under four gallons per flush, but the big change has been in "ultra-low flush" (ULF) toilets that use under 1.6 gallons per flush (six liters). Beginning in 1988, several states, cities, and local authorities incorporated the "under 1.6 gallon per flush (1.6 gpf)" standard into local codes. The State of Massachusetts and Los Angeles, California, initiated the 1.6 gpf standard in 1988, and the Delaware River Basin Commission, the State of New York, New York City, Milford, Connecticut, and the State of Rhode Island may soon join. In Texas, the Lower Colorado River Authority (LCRA), will also require all cities that purchase water from the LCRA to adopt the 1.6 gallon flush standard along with other water conservation-oriented plumbing code provisions. The *Mainstream* will keep you informed as these legislative initiatives progress.

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